

SUBSURFACE UTILITY BORING CONTRACT



BID #: ITB WS 77-19

BID OPENS: 10/2/2019 @ 3:00pm

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INVITATION TO BID (ITB) & RESPONDENT'S ACKNOWLEDGEMENT

**ITB TITLE: SUBSURFACE UTILITY
BORING CONTRACT (2019)**

**ITB NUMBER:
ITB WS 77-19**

ISSUE DATE:

August 26, 2019

MANDATORY-PRE BID MEETING:

September 10, 2019 @ 10:00am

LAST DAY FOR QUESTIONS:

September 20, 2019 @ 5:00pm

ITB OPENING DATE & TIME:

October 2, 2019 @ 3:00pm

NOTE: BIDS RECEIVED AFTER THE BID OPENING DATE & TIME WILL NOT BE CONSIDERED.

Okaloosa County, Florida solicits your company to submit a bid on the above referenced goods or services. All terms, specifications and conditions set forth in this ITB are incorporated into your response. A bid will not be accepted unless all conditions have been met. All bids must have an authorized signature in the space provided below. All bids must be sealed and received by the Okaloosa County Clerk of Court by the "ITB Opening Date & Time" referenced above. "ITB Number" and the "ITB Opening Date & Time". Okaloosa County is not responsible for lost or late delivery of bids by the U.S. Postal Service or other delivery services used by the respondent. Neither faxed nor electronically submitted bids will be accepted. Bids may not be withdrawn for a period of ninety (90) days after the bid opening unless otherwise specified

RESPONDENT ACKNOWLEDGEMENT FORM BELOW MUST BE COMPLETED, SIGNED, AND RETURNED AS PART OF YOUR BID. BIDS WILL NOT BE ACCEPTED WITHOUT THIS FORM, SIGNED BY AN AUTHORIZED AGENT OF THE RESPONDENT.

COMPANY NAME _____

MAILING ADDRESS _____

CITY, STATE, ZIP _____

FEDERAL EMPLOYER'S IDENTIFICATION NUMBER (FEIN): _____

TELEPHONE NUMBER: _____

EXT: _____

FAX: _____

EMAIL: _____

I CERTIFY THAT THIS BID IS MADE WITHOUT PRIOR UNDERSTANDING, AGREEMENT, OR CONNECTION WITH ANY OTHER RESPONDENT SUBMITTING A BID FOR THE SAME MATERIALS, SUPPLIES, EQUIPMENT OR SERVICES, AND IS IN ALL RESPECTS FAIR AND WITHOUT COLLUSION OR FRAUD. I AGREE TO ABIDE BY ALL TERMS AND CONDITIONS OF THIS BID AND CERTIFY THAT I AM AUTHORIZED TO SIGN THIS BID FOR THE RESPONDENT.

AUTHORIZED SIGNATURE: _____

TYPED OR PRINTED NAME _____

TITLE: _____

DATE _____

**SECTION 00002
NOTICE TO RESPONDENTS
ITB WS 77-19**

Notice is hereby given that the Board of County Commissioners of Okaloosa County, FL, will accept sealed bids until **October 2, 2019 @ 3:00pm (CT)**, for **Subsurface Utility Boring Contract**. Interested respondents desiring consideration shall provide an original and two (2) copies (total three (3)) of their Invitation to Bids (ITB) response with the respondent's areas of expertise identified. Submissions shall be portrait orientation, unbound, and 8 ½" x 11" where practical. **All originals must have original signatures in blue ink.**

Bid Documents can be viewed at <https://www.bidnetdirect.com/florida> or at <http://www.mvokaloosa.com/purchasing/home> then accessing the link "View Current Solicitations"

A mandatory pre-bid conference is scheduled for September 10, 2019 @ 10:00am. The conference will be held at the Okaloosa County Water & Sewer Administration Building, Small Conference Room, 1804 Lewis Turner Blvd, #300, Fort Walton Beach, Florida, 32547. You must attend this pre-bid conference in order to submit a bid.

At 3:00pm (CT), all bids will be opened and read aloud. All bids must be in sealed envelopes reflecting on the outside thereof the Respondent's name and "**Subsurface Utility Boring Contract (2019)**". The Board of County Commissioners will consider all bids properly submitted at its scheduled bid opening in the **Okaloosa County Courthouse** located at 101 E James Lee Boulevard, Room 282, Crestview, FL 32536. Bids may be submitted in the Crestview Courthouse prior to bid opening or delivered to the Okaloosa County Courthouse, 101 James Lee Boulevard, Room 282, Crestview, FL 32536. ****NOTE: MUST RING DOORBELL TO GAIN ENTRANCE INTO ROOM 282. THE CLERK WILL COME ACCEPT YOUR PACKAGE OR SHOW YOU TO THE CONFERENCE ROOM FOR THE SCHEDULED BID OPENING****

NOTE: THE NEW CRESTVIEW COURTHOUSE HAS SECURITY AT ENTRY POINT-PLEASE ALLOW FOR TIME TO GET THROUGH SECURITY WHEN ARRIVING FOR THE BID OPENING.

NOTE: Crestview, FL is not a next day guaranteed delivery location by most delivery services. Respondents using mail or delivery services assume all risks of late or non-delivery.

The County reserves the right to award the bid to the lowest responsive respondent and to waive any irregularity or technicality in bids received. Okaloosa County shall be the sole judge of the bid and the resulting negotiated agreement that is in its best interest and its decision shall be final.

Any Respondent failing to mark outside of the envelope as set forth herein may not be entitled to have their bid considered.

All bids should be addressed as follows:

Subsurface Utility Boring Contract (2019)

Clerk of Court
BCC Records
101 East James Lee Boulevard
Room 282
Crestview, FL 32536

Jeff Hyde
Purchasing Manager

Date

**OKALOOSA COUNTY
BOARD OF COUNTY COMMISSIONERS**

Charles K Windes, Jr.
Chairman

BID REQUIREMENTS

BID #: ITB WS 77-19

BID ITEM: SUBSURFACE BORING CONTRACT (2019)

SCOPE

This ITB includes the material, equipment, and labor services for ANNUAL CONTRACT FOR SUBSURFACE UTILITY BORING CONTRACT (2019) specified herein. All materials shall be manufactured within the continental United States. No substitutions will be accepted unless approved by the Purchasing and the Water & Sewer Departments.

Note: A list of quantities of items shall be used to evaluate bidder's proposal based on the unit prices provided in the official Bid Schedule. All work allocated under this Contract shall be based on the unit prices established in the Bid Schedule and Contractor will be compensated for actual work performed only. No guarantee of quantities of Work required during this Contract or Work allocated to individual Contractor(s) during the life of the Contract is provided.

Price shall be guaranteed for 90 days after the bids are read and received. Price shall include delivery of all equipment and appurtenances to the following location:

1804 LEWIS TURNER BLVD. FORT WALTON BEACH, FL 32547

OWNER Delivery Contact:

Mark Griffin, Okaloosa County Water & Sewer
850-651-7176 or mgriffin@myokaloosa.com

THE FOLLOWING MUST BE SUBMITTED WITH THE BID:

- A list of any and all exceptions to the Contract Documents.
- Any additional information requested by the OWNER.

TERM OF CONTRACT:

The contract will begin when fully executed by all parties and continue for three (3) years with the option of two (2) one (1) year renewals, with appropriate CPI increases, upon mutual agreement by both parties.

The County has the right to award the contract to more than one vendor.

COOPERATIVE PRICING

By submitting this bid, the vendor acknowledges that their pricing shall be honored for all governmental entities located within Okaloosa County, Florida. Each entity will be allowed to independently place orders, accept delivery and arrange payment under their agency guidelines. The successful vendor understands that failure to offer pricing to all Okaloosa County governmental agencies could result in cancellation of this contract.

Coordinators for agency orders shall be:

Okaloosa County BCC

Jeff Hyde, Purchasing Manager
850-689-5960; jhyde@myokaloosa.com

City of Ft. Walton Beach

Giuliana F. Scott, Purchasing Agent
850-833-9523; gscott@fwb.org

City of Mary Esther

Heather Day, Finance Director
850-243-3566 x18; findir@cityofmaryesther.com

City of Destin

Bragg Farmer, Finance Director
850-837-4242 x3146; bfarmer@cityofdestin.com

City of Niceville

Chad D. Morris, Purchasing/GIS Director
850-974-3833; cmorris@niceville.org

City of Valparaiso

Tammy Johnson, City Clerk
850-729-5402; cityclerk@valp.org

City of Crestview

Betsy Roy, City Clerk
850-682-1560; elizabethroy@cityofcrestview.org

SECTION 00100 GENERAL SERVICES BID CONDITIONS

1. PRE-BID ACTIVITY -

Addendum - Except as provided in this section, respondents are prohibited from contacting or lobbying the County, County Administrator, Commissioners, County staff, and Review Committee members, or any other person authorized on behalf of the County related or involved with the solicitation. All inquiries on the scope of work, specifications, additional requirements, attachments, terms and general conditions or instructions, or any issue must be directed in writing, by US mail or email to:

DeRita Mason
Contracts and Lease Coordinator
Okaloosa County Purchasing Department
5479A Old Bethel Road
Crestview, FL 32536
(850) 689-5960
dmason@myokaloosa.com

All questions or inquiries must be received no later than the last day for questions (reference ITB & Respondent's Acknowledgement form) and shall be in writing. Any addenda or other modification to the bid documents will be issued by the County five (5) days prior to the date and time of bid closing, as written addenda, and will be posted to <http://www.bidnetdirect.com/florida> and the Okaloosa County website at <http://www.myokaloosa.com/purchasing/home>, then accessing the link "View Current Solicitations".

Such written addenda or modification shall be part of the bid documents and shall be binding upon each respondent. Each respondent is required to acknowledge receipt of any and all addenda in writing and submit with their bid. No respondent may rely upon any verbal modification or interpretation.

- 2. PREPARATION OF BID** – The bid form is included with the bid documents. Additional copies may be obtained from the County. The respondent shall submit an original and two (2) copies {total three (3)} of the bid documents.

All blanks in the bid documents shall be completed by printing in ink or by typewriter in both words and numbers with the amounts extended, totaled and the bid signed. A bid price shall be indicated for each section, bid item, alternative, adjustment unit price item, and unit price item listed therein, or the words "No Bid", "No Change", or "Not Applicable" entered. No changes shall be made to the phraseology of the form or in the items mentioned therein. In case of any discrepancy between the written amount and the numerical figures, the written amount shall govern. Any bid which contains any omissions, erasures, alterations, additions, irregularities of any kind, or items not called for which shall in any manner fail to conform to the conditions of public notice inviting bids may be rejected.

A bid submitted by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature). The official address of the partnership shall be shown below the signature.

A bid submitted by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

A bid submitted by an individual shall show the respondent's name and official address.

A bid submitted by a joint venture shall be executed by each joint venture in the manner indicated on the bid form. The official address of the joint venture must be shown below the signature.

It is preferred that all signatures be in blue ink with the names type or printed below the signature. Okaloosa County does not accept electronic signatures.

The bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the form. The address and telephone # for communications regarding the bid shall be shown.

If the respondent is an out-of-state corporation, the bid shall contain evidence of respondent's authority and qualification to do business as an out-of-state corporation in the State of Florida in accordance with Article 3. A State contractor license # for the State of Florida shall also be included on the bid form. Respondent shall be licensed in accordance with the requirements of Chapter 489, Florida Statutes.

- 3. INTEGRITY OF BID DOCUMENTS** - Respondents shall use the original Bid documents provided by the Purchasing Department and enter information only in the spaces where a response is requested. Respondents may use an attachment as an addendum to the Bid documents if sufficient space is not available. Any modifications or alterations to the original bid documents by the respondent, whether intentional or otherwise, will constitute grounds for rejection of a bid. Any such modification or alteration that a respondent wishes to propose must be clearly stated in the respondent's response in the form of an addendum to the original bid documents.
- 4. SUBMITTAL OF BID** – A bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in an opaque sealed envelope plainly marked with the project title (and, if applicable, the designated portion of the project for which the bid is submitted), the name and address of the respondent, and shall be accompanied by the bid security and other required documents. It is the respondent's responsibility to assure that its bid is delivered at the proper time and place. Offers by telegram, facsimile, or telephone will **NOT** be accepted.

Note: Crestview is not a next day delivery site for overnight carriers.

- 5. MODIFICATION & WITHDRAWAL OF BID** - A bid may be modified or withdrawn by an appropriate document duly executed in the manner that a bid must be executed and delivered to the place where bids are to be submitted prior to the date and time for the opening of bids.

If within 24 hours after bids are opened any respondent files a duly signed written notice with the County and promptly thereafter demonstrates to the reasonable satisfaction of the County that there was a material substantial mistake in the preparation of its bid, that respondent may withdraw its bid, and the bid security may be returned. Thereafter, if the work is rebid, that respondent will be disqualified from 1) further bidding on the work, and 2) doing any work on the contract, either as a subcontractor or in any other capacity.

- 6. BIDS TO REMAIN SUBJECT TO ACCEPTANCE** – All bids will remain subject to acceptance or rejection for ninety (90) calendar days after the day of the bid opening, but the County may, in its sole discretion, release any bid and return the bid security prior to the end of this period.
- 7. IDENTICAL TIE BIDS** - In case of identical procurement responses, the award shall be determined either by lot or on the basis of factors deemed to serve the interest of the County. In the case of the latter, there must be adequate documentation to support such a decision
- 8. CONDITIONAL & INCOMPLETE BIDS** - Okaloosa County specifically reserves the right to reject any conditional bid and bids which make it impossible to determine the true amount of the bid.
- 9. BID PRICE** – The bid price shall include all equipment, labor, materials, permit(s), freight, taxes, required insurance, Public Liability, Property Damage and Workers' Compensation, etc. to cover the finished work called for.
- 10. ADDITION/DELETION OF ITEM** – The County reserves the right to add or delete any item from this bid or resulting contract when deemed to be in the County's best interest.
- 11. SPECIFICATION EXCEPTIONS** – Specifications are based on the most current literature available. Respondent shall clearly list any change in the manufacturer's specifications which conflict with the bid specifications. Respondent must also explain any deviation from the bid specification in writing, as a foot note on the applicable bid page and enclose a copy of the manufacturer's specifications data detailing the changed item(s) with their bid. Failure of the respondent to comply with these provisions will result in respondents being held responsible for all costs required to bring the equipment in compliance with bid specifications.
- 12. APPLICABLE LAWS & REGULATIONS** – All applicable Federal and State laws, County and municipal ordinances, orders, rules and regulations of all authorities having

jurisdiction over the project shall apply to the bid throughout, and they will be deemed to be included in the contract the same as though they were written in full therein.

13. DISQUALIFICATION OF RESPONDENTS - Any of the following reasons may be considered as sufficient for the disqualification of a respondent and the rejection of its bid:

- a. Submission of more than one proposal for the same work from an individual, firm or corporation under the same or different name.
- b. Evidence that the respondent has a financial interest in the firm of another respondent for the same work.
- c. Evidence of collusion among respondents. Participants in such collusion will receive no recognition as respondents for any future work of the County until such participant has been reinstated as a qualified respondent.
- d. Uncompleted work which in the judgment of the County might hinder or prevent the prompt completion of additional work if awarded.
- e. Failure to pay or satisfactorily settle all bills due for labor and material on former contracts in force at the time of advertisement of proposals.
- f. Default under previous contract.
- g. Listing of the respondent by any Local, State or Federal Government on its barred/suspended vendor list.

14. AWARD OF BID

- A. **Okaloosa County Review** - Okaloosa County designated Staff will review all bids and will participate in the Recommendation to Award.
- B. The County has the right to award the Contract to more than one vendor. The County will award the bid to the lowest respondent(s), and the County reserves the right to award the bid to the respondent(s) submitting a responsive bid with a resulting negotiated agreement which is most advantageous and in the best interest of the County, and to reject any and all bids or to waive any irregularity or technicality in bids received. Okaloosa County shall be the sole judge of the bid and the resulting negotiated agreement(s) that is/are in its best interest and its decision shall be final.
- C. Okaloosa County reserves the right to waive any informalities or reject any and all bids, in whole or part, to utilize any applicable state contracts in lieu of or in addition to this bid and to accept the bid that in its judgment will best serve the interest of the County.

- D. Okaloosa County specifically reserves the right to reject any conditional bids and will normally reject those which made it impossible to determine the true amount of the bid. Each item must be bid separately and no attempt is to be made to tie any item or items to any other item or items.
- 15. WARRANTY** – (The warranty will be in the name of Okaloosa County) Warranty work specified herein is for defects in materials and in labor and workmanship. State the manufacturer’s warranty with your bid.
- 16. PAYMENTS** – The respondent shall be paid upon submission of invoices and approval of acceptance by Okaloosa County Board of County Commissioners, Finance Office, 302 N. Wilson St., #203, Crestview FL 32536, for the prices stipulated herein for articles delivered and accepted. Invoices must show Contract #.
- 17. DISCRIMINATION** - An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not award or perform work as a contractor, supplier, subcontractor, or consultant under contract with any public entity, and may not transact business with any public entity.
- 18. PUBLIC ENTITY CRIME INFORMATION** - Pursuant to Florida Statute 287.133, a respondent may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. [287.017](#) for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.
- 19. CONFLICT OF INTEREST** - The award hereunder is subject to the provisions of Chapter 112, Florida Statutes. All respondents must disclose with their bids the name of any officer, director, or agent who is also a public officer or an employee of the Okaloosa Board of County Commissioners, or any of its agencies. Furthermore, all respondents must disclose the name of any County officer or employee who owns, directly or indirectly, an interest of five percent (5%) or more in the firm or any of its branches.
- Note: For respondent’s convenience, this certification form is enclosed and is made a part of the bid package.**
- 20. REORGANIZATION OR BANKRUPTCY PROCEEDINGS** – Bids will not be considered from respondents who are currently involved in official financial reorganization or bankruptcy proceedings.
- 21. INVESTIGATION OF RESPONDENT** – The County may make such investigations, as it deems necessary to determine the stability of the respondent to perform the work and that there is no conflict of interest as it relates to the project. The respondent shall furnish to the

Owner any additional information and financial data for this purpose as the County may request.

- 22. AUTHORITY TO PIGGYBACK** - All respondents submitting a response to this Request for Bid agree that such response also constitutes a bid to all governmental agencies within the State of Florida under the same conditions, for the same contract price, and for the same effective period as this bid, should the respondent feel it is in their best interest to do so.

Each governmental agency desiring to accept these bids and make an award thereof shall do so independently of any other governmental agency. Each agency shall be responsible for its own purchases and each shall be liable only for materials and/or services ordered and received by it, and no agency assumes any liability by virtue of this bid.

This agreement in no way restricts or interferes with the right of any governmental agency to bid any or all items.

- 23. CONE OF SILENCE** - The Okaloosa County Board of County Commissioners has established a solicitation silence policy (**Cone of Silence**) that prohibits oral and written communication regarding all formal solicitations for goods and services (formal proposals, Request for Proposals, Requests for Qualifications) issued by the Board through the County Purchasing Department. The period commences from the date of advertisement until award of contract.

Note: For respondent's convenience, this certification form is enclosed and is made a part of the bid package.

- 24. REVIEW OF PROCUREMENT DOCUMENTS** - Per Florida Statute 119.071(1)(b) 2 sealed bids, proposals, or replies received by the County pursuant to a competitive solicitation are exempt from public disclosure until such time as the County provides notice of an intended decision or until 30 days after opening the bids, proposals, or final replies, whichever is earlier.

- 25. COMPLIANCE WITH FLORIDA STATUTE 119.0701** - The Respondent shall comply with all the provisions of section 119.0701, Florida Statutes relating to the public records which requires, among other things, that the Respondent: (a) Keep and maintain public records; (b) Provide the public with access to public records on the same terms and conditions that the public agency would provide the records; (c) ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and (d) Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the respondent upon termination of the contract.

- 26. PROTECTION OF RESIDENT WORKERS** – The Okaloosa County Board of County Commissioners actively supports the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verifications, and nondiscrimination. Under the INA, employers may hire only persons who may legally work

in the United States (i.e., citizens and nationals of the U.S.) and aliens authorized to work in the U.S. The employer must verify the identity and employment eligibility of anyone to be hired, which includes completing the Employment Eligibility Verifications. The respondent shall establish appropriate procedures and controls so no services or products under the Contract Documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment. Okaloosa County reserves the right to request documentation showing compliance with the requirements.

Respondents doing construction business with Okaloosa County are required to use the Federal Government Department of Homeland Security's website and use the E-Verify Employment Eligibility Verifications System to confirm eligibility of all employees to work in the United States.

- 27. SUSPENSION OR TERMINATION FOR CONVENIENCE** - The County may, at any time, without cause, order Respondent in writing to suspend, delay or interrupt the work in whole or in part for such period of time as the County may determine, or to terminate all or a portion of the Contract for the County's convenience. Upon such termination, the Contract Price earned to the date of termination shall be paid to Respondent, but Respondent waives any claim for damages, including loss of profits arising out of or related to the early termination. Those Contract provisions which by their nature survive final acceptance shall remain in full force and effect. If the County orders a suspension, the Contract price and Contract time may be adjusted for increases in the cost and time caused by suspension, delay or interruption. No adjustment shall be made to the extent that performance is, was or would have been so suspended, delayed or interrupted by reason for which Respondent is responsible; or that an equitable adjustment is made or denied under another provision of this Contract.
- 28. FAILURE OF PERFORMANCE/DELIVERY** - In case of default by the respondent, the County after due notice (oral or written) may procure the necessary supplies or services from other sources and hold the respondent responsible for difference in cost incurred. Continuous instances of default shall result in cancellation of the award and removal of the respondent from the bid list for duration of one (1) year, at the option of the County.
- 29. AUDIT** - If requested, respondent shall permit the County or an authorized, independent audit agency to inspect all data and records of respondent relating to its performance and its subcontracts under this bid from the date of the award through and until the expiration of contract.
- 30. EQUAL EMPLOYMENT OPPORTUNITY; NON DISCRIMINATION** – Respondent will not discriminate against any employee or an applicant for employment because of race, color, religion, gender, sexual orientation, national origin, age, familial status or handicap.
- 31. NON-COLLUSION** – Respondent certifies that it has entered into no agreement to commit a fraudulent, deceitful, unlawful or wrongful act, or any act which may result in an unfair advantage over other respondents. See Florida Statute 838.22.

32. UNAUTHORIZED ALIENS/PATRIOT'S ACT – The knowing employment by respondent or its subcontractors of any alien not authorized to work by the immigration laws is prohibited and shall be a default of the contract. In the event that the respondent is notified or becomes aware of such default, the respondent shall take steps as are necessary to terminate said employment with 24 hours of notification or actual knowledge that an alien is being employed. Respondent's failure to take such steps as are necessary to terminate the employment of any said alien within 24 hours of notification or actual knowledge that an alien is being employed shall be grounds for immediate termination of the contract. Respondent shall take all commercially reasonable precautions to ensure that it and its subcontractors do not employ persons who are not authorized to work by the immigration laws.

33. BID DOCUMENTS - The following documents are to be submitted with the proposal packet. Failure to submit all required documents might result in your submittal being deemed non-responsive:

- A. Exhibit "B"-General Grant Funding Special Proposal Conditions
- B. Drug-Free Workplace Certification Form
- C. Conflict of Interest
- D. Federal E-Verify
- E. Cone of Silence
- F. Indemnification and Hold Harmless
- G. Certification Regarding Lobbying Proposal Sheet
- H. Company Data
- I. System of Awards Management
- J. Vendors On Scrutinized Companies Lists
- K. List of Subcontractors
- L. Bid Schedule/Bid Evaluation
- M. Addendum Acknowledgement
- N. Qualifications Statement
- O. Schedule A, B and C

EXHIBIT B

GENERAL GRANT FUNDING SPECIAL PROPOSAL CONDITIONS

This solicitation may be fully or partially Grant funded. Respondents shall comply with the clauses as enumerated below.

1. **Drug Free Workplace Requirements:** Drug-free workplace requirements in accordance with Drug Free Workplace Act of 1988 (Pub 1 100-690, Title V, Subtitle D) All contractors entering into Federal funded contracts over \$100,000 must comply with Federal Drug Free workplace requirements as Drug Free Workplace Act of 1988.
2. **Contractor Compliance:** The contractor shall comply with all uniform administrative requirements, cost principles, and audit requirements for federal awards.
3. **Conflict of Interest:** The contractor must disclose in writing any potential conflict of interest to the County or pass-through entity in accordance with applicable Federal policy.
4. **Mandatory Disclosures:** The contractor must disclose in writing all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award.
5. **Utilization of Minority and Women Firms (M/WBE):** The contractor must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible, in accordance with 2CFR 200.321. If subcontracts are to be let, prime contractor will require compliance by all sub-contractors. Prior to contract award, the contractor shall document efforts to utilize M/WBE firms including what firms were solicited as suppliers and/or subcontractors as applicable and submit this information with their bid submittal. Information regarding certified M/WBE firms can be obtained from:
 - Florida Department of Management Services (Office of Supplier Diversity)
 - Florida Department of Transportation
 - Minority Business Development Center in most large cities and
 - Local Government M/DBE programs in many large counties and cities
6. **Equal Employment Opportunity:** (As per Executive Order 11246) The contractor may not discriminate against any employee or applicant for employment because of age, race, color, creed, sex, disability or national origin. The contractor agrees to take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their age, race, color, creed, sex, disability or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship.
7. **Davis-Bacon Act:** If applicable to this contract, the contractor agrees to comply with all provisions of the Davis Bacon Act as amended (40 U.S.C. 3141-3148). Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. If the grant award contains Davis Bacon provisions, the County will place a copy of the current prevailing wage determination issued by the Department of Labor in the solicitation document. The decision to award a contract shall be conditioned upon the acceptance of the wage determination.
8. **Copeland Anti Kick Back Act:** If applicable to this contract, contractors shall comply with all the requirements of 18 U.S.C. § 874, 40 U.S.C. § 3145, 29 CFR Part 3 which are incorporated by reference to this contract. Contractors are prohibited from inducing by any means any person employed in the

construction, completion or repair of public work to give up any part of the compensation to which he or she is otherwise entitled.

9. **Contract Work Hours and Safety Standards Act** (40 U.S.C. 3701–3708): Where applicable, all contracts awarded in excess of \$100,000 that involve the employment of mechanics or laborers must be in compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor is required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
10. **Clean Air Act (42 U.S.C. 7401–7671q.)** and the Federal Water Pollution Control Act (33 U.S.C. 1251–1387): as amended—The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
11. **Debarment and Suspension** (Executive Orders 12549 and 12689): A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension. SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. The contractor shall certify compliance. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions and subcontracts.
12. **Byrd Anti-Lobbying Amendment** (31 U.S.C. 1352): Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award. The contractor shall certify compliance.
13. **Rights to Inventions Made Under a Contract or Agreement**: If the Federal award meets the definition of “funding agreement” under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under

Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.

14. **Procurement of Recovered Materials:** Contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

15. **Access to Records and Reports:**

Contractor will make available to the County’s granting agency, the granting agency’s Office of Inspector General, the Government Accountability Office, the Comptroller General of the United States, Okaloosa County, Okaloosa County Clerk of Court’s Inspector General, or any of their duly authorized representatives any books, documents, papers or other records, including electronic records, of the contractor that are pertinent to the County’s grant award, in order to make audits, investigations, examinations, excerpts, transcripts, and copies of such documents. The right also includes timely and reasonable access to the contractor’s personnel during normal business hours for the purpose of interview and discussion related to such documents. This right of access shall continue as long as records are retained.

16. **Record Retention:**

Contractor will retain of all required records pertinent to this contract for a period of three years, beginning on a date as described in 2 C.F.R. §200.333 and retained in compliance with 2 C.F.R. §200.333.

17. **Federal Changes:** Contractor shall comply with all applicable Federal agency regulations, policies, procedures and directives, including without limitation those listed directly or by reference, as they may be amended or promulgated from time to time during the term of the contract.

18. **Termination for Default (Breach or Cause):**

Contracts in excess of \$10,000 – If Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the County may terminate the contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

19. **Safeguarding Personal Identifiable Information**

Contractor will take reasonable measures to safeguard protected personally identifiable information and other information designated as sensitive by the awarding agency or is considered sensitive consistent with applicable Federal, state and/or local laws regarding privacy and obligations of confidentiality.

- 20. **Prohibition on utilization of cost plus a percentage of cost contracts:** The County will not award contracts containing Federal funding on a cost plus percentage of cost basis.
- 21. **Prohibition on utilization of time and material type contracts:** The County will not award contracts based on a time and material basis if the contract contains Federal funding.
- 22. **Disputes:** Any dispute arising under this Agreement which is not settled by Agreement of the parties may be settled by mediation, arbitration, or other appropriate legal proceedings. Pending any decision, appeal or judgment in such proceedings or the settlement of any dispute arising under this Agreement, shall proceed diligently with the performance of this Agreement in accordance with the decision of the County. This Agreement shall be construed under the laws of the State of Florida, and venue for any actions arising out of this Agreement shall be in the Circuit Court of Okaloosa County.
- 23. **Energy Policy and Conservation Act (43 U.S.C.§6201)**

All contracts except micro-purchases (\$3000 or less, except for construction contracts over \$2000). Contracts shall comply with mandatory standards and policies relating to energy efficiency, stating in the state energy conservation plan issued in compliance with the Energy Policy and Conservation act. (Pub. L. 94-163, 89 Stat. 871) [53 FR 8078, 8087, Mar. 11, 1988, as amended at 60 FR 19639, 19645, Apr. 19, 1995].

As the person authorized to sign this statement, I certify that this company complies/will comply fully with the above requirements.

DATE: _____ SIGNATURE: _____

COMPANY: _____ NAME: _____

ADDRESS: _____ TITLE: _____

E-MAIL: _____

PHONE NO.: _____

Exhibit "C"

Standard Contract Clauses

Title VI Clauses for Compliance with Nondiscrimination Requirements

Compliance with Nondiscrimination Requirements

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts And Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts And Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
 - a. Withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. Cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment,

unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Title VI List of Pertinent Nondiscrimination Acts and Authorities

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

The [*contractor / consultant*] has full responsibility to monitor compliance to the referenced statute or regulation. The [*contractor / consultant*] must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor’s compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

E-VERIFY

Enrollment and verification requirements.

- (1) If the Contractor is not enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall-
 - a. Enroll. Enroll as a Federal Contractor in the E-Verify Program within thirty (30) calendar days of contract award;
 - b. Verify all new employees. Within ninety (90) calendar days of enrollment in the E-Verify program, begin to use E-Verify to initiate verification of employment

eligibility of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); and,

- c. Verify employees assigned to the contract. For each employee assigned to the contract, initiate verification within ninety (90) calendar days after date of enrollment or within thirty (30) calendar days of the employee's assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section.)
- (2) If the Contractor is enrolled as a Federal Contractor in E-Verify at time of contract award, the Contractor shall use E-Verify to initiate verification of employment eligibility of
- a. All new employees.
 - i. Enrolled ninety (90) calendar days or more. The Contractor shall initiate verification of all new hires of the Contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); or
 - b. Enrolled less than ninety (90) calendar days. Within ninety (90) calendar days after enrollment as a Federal Contractor in E-Verify, the Contractor shall initiate verification of all new hires of the contractor, who are working in the United States, whether or not assigned to the contract, within three (3) business days after the date of hire (but see paragraph (b)(3) of this section); or
 - ii. Employees assigned to the contract. For each employee assigned to the contract, the Contractor shall initiate verification within ninety (90) calendar days after date of contract award or within thirty (30) days after assignment to the contract, whichever date is later (but see paragraph (b)(4) of this section.)
- (3) If the Contractor is an institution of higher education (as defined at 20 U.S.C. 1001(a)); a State of local government or the government of a Federally recognized Indian tribe, or a surety performing under a takeover agreement entered into with a Federal agency pursuant to a performance bond, the Contractor may choose to verify only employees assigned to the contract, whether existing employees or new hires. The Contractor shall follow the applicable verification requirements of (b)(1) or (b)(2), respectively, except that any requirement for verification of new employees applies only to new employees assigned to the contract.
- (4) Option to verify employment eligibility of all employees. The Contractor may elect to verify all existing employees hired after November 6, 1986 (after November 27, 2009, in the Commonwealth of the Northern Mariana Islands), rather than just those employees assigned to the contract. The Contractor shall initiate verification for each existing employee working in the United States who was hired after November 6, 1986 (after November 27, 2009, in the Commonwealth of the Northern Mariana Islands), within one hundred eighty (180) calendar days of-
- i. Enrollment in the E-Verify program; or

- ii. Notification to E-Verify Operations of the Contractor's decision to exercise this option, using the contract information provided in the E-Verify program Memorandum of Understanding (MOU)
- (5) The Contractor shall comply, for the period of performance of this contract, with the requirements of the E-Verify program MOU.

i. The Department of Homeland Security (DHS) or the Social Security Administration (SSA) may terminate the Contractor's MOU and deny access to the E-Verify system in accordance with the terms of the MOU. In such case, the Contractor, will be referred to a suspension or debarment official.

ii. During the period between termination of the MOU and a decision by the suspension or debarment official whether to suspend or debar, the contractor is excused from its obligations under paragraph (b) of this clause. If the suspension or debarment official determines not to suspend or debar the Contractor, then the Contractor must reenroll in E-Verify.

iii. Web site. Information on registration for and use of the E-Verify program can be obtained via the Internet at the Department of Homeland Security Web site: <http://www.dhs.gov/E-Verify>.

Individuals previously verified. The Contractor is not required by this clause to perform additional employment verification using E-Verify for any employee-

- (a) Whose employment eligibility was previously verified by the Contractor through the E-Verify program;
- (b) Who has been granted and holds an active U.S. Government security clearance for access to confidential, secret, or top secret information in accordance with the National Industrial Security Program Operating Manual; or
- (c) Who has undergone a completed background investigation and been issued credentials pursuant to Homeland Security Presidential Directive (HSPD)-12. Policy for a Common Identification Standard for Federal Employees and Contractors.

Subcontracts. The Contractor shall include the requirements of this clause, including this paragraph € (appropriately modified for identification of the parties in each subcontract that-

- (1) Is for-(i) Commercial and noncommercial services (except for commercial services that are part of the purchase of a COTS item (or an item that would be a COTS item, but for minor modifications), performed by the COTS provider, and are normally provided for that COTS item); or
- (ii) Construction;
- (2) Has a value of more than \$3,500; and
- (3) Includes work performed in the United States.

DRUG-FREE WORKPLACE CERTIFICATION

THE BELOW SIGNED RESPONDENT CERTIFIES that it has implemented a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under quote a copy of the statement specified in subsection 1.
4. In the statement specified in subsection 1, notify the employees that, as a condition of working on the commodities or contractual services that are under quote, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893, Florida Statutes, or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in, drug abuse assistance or rehabilitation program if such is available in employee's community, by any employee who is convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

DATE: _____

SIGNATURE: _____

COMPANY: _____

NAME: _____
(Typed or Printed)

ADDRESS: _____

TITLE: _____

E-MAIL: _____

PHONE NO.: _____

CONFLICT OF INTEREST DISCLOSURE FORM

For purposes of determining any possible conflict of interest, all respondents, must disclose if any Okaloosa Board of County Commissioner, employee(s), elected officials(s), or if any of its agencies is also an owner, corporate officer, agency, employee, etc., of their business.

Indicate either “yes” (a county employee, elected official, or agency is also associated with your business), or “no”. If yes, give person(s) name(s) and position(s) with your business.

YES _____

NO _____

NAME(S)

POSITION(S)

FIRM NAME: _____

BY (PRINTED): _____

BY (SIGNATURE): _____

TITLE: _____

ADDRESS: _____

PHONE NO. _____

E-MAIL _____

DATE _____

FEDERAL E-VERIFY COMPLIANCE CERTIFICATION

In accordance with Okaloosa County Policy and Executive Order Number 11-116 from the office of the Governor of the State of Florida, Respondent hereby certifies that the U.S. Department of Homeland Security's E-Verify system will be used to verify the employment eligibility of all new employees hired by the respondent during the contract term, and shall expressly require any subcontractors performing work or providing services pursuant to the contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and shall provide documentation such verification to the COUNTY upon request.

As the person authorized to sign this statement, I certify that this company complies/will comply fully with the above requirements.

DATE: _____

SIGNATURE: _____

COMPANY: _____

NAME: _____

ADDRESS: _____

TITLE: _____

E-MAIL: _____

PHONE NO.: _____

CONE OF SILENCE

The Board of County Commissioners have established a solicitation silence policy (**Cone of Silence**) that prohibits oral and written communication regarding all formal solicitations for goods and services (ITB, RFP, ITQ, ITN, and RFQ) or other competitive solicitation between the bidder (or its agents or representatives) or other entity with the potential for a financial interest in the award (or their respective agents or representatives) regarding such competitive solicitation, and any County Commissioner or County employee, selection committee member or other persons authorized to act on behalf of the Board including the County's Architect, Engineer or their subconsultants, or anyone designated to provide a recommendation to award a particular contract, other than the Purchasing Department Staff.

The period commences from the time of advertisement until contract award.

Any information thought to affect the committee or staff recommendation submitted after bids are due, should be directed to the Purchasing Manager or an appointed representative. It shall be the Purchasing Manager's decision whether to consider this information in the decision process.

Any violation of this policy shall be grounds to disqualify the respondent from consideration during the selection process.

All respondents must agree to comply with this policy by signing the following statement and including it with their submittal.

I _____ representing _____
Signature Company Name

On this _____ day of _____ 20__ hereby agree to abide by the County's "**Cone of Silence Clause**" and understand violation of this policy shall result in disqualification of my proposal/submittal.

INDEMNIFICATION AND HOLD HARMLESS

Respondent shall indemnify and hold harmless the County, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Respondent and other persons employed or utilized by the Respondent in the performance of this Agreement.

Respondent's Company Name

Authorized Signature – Manual

Physical Address

Authorized Signature – Typed

Mailing Address

Title

Phone Number

FAX Number

Cellular Number

After-Hours Number(s)

Date

Email

LOBBYING

31 U.S.C. 1352, 49 CFR Part 19, 49 CFR Part 20

APPENDIX A, 49 CFR PART 20--CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

(To be submitted with each bid or offer exceeding \$100,000)

The undersigned [Contractor] certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form--LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, *et seq.*.)]
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

_____ Signature of Contractor's Authorized Official

_____ Name and Title of Contractor's Authorized Official

_____ Date

COMPANY DATA

Respondent's Company Name: _____

Physical Address & Phone #: _____

Contact Person (Typed-Printed): _____

Phone #: _____

Cell #: _____

Federal ID or SS #: _____

DUNNS/SAM #: _____

Respondent's License #: _____

Fax #: _____

Emergency #'s After Hours,
Weekends & Holidays: _____

System for Award Management (Oct 2016)

(a) Definitions. As used in this provision.

“Electronic Funds Transfer (EFT) indicator” means a four-character suffix to the unique entity identifier. The suffix is assigned at the discretion of the commercial, nonprofit, or Government entity to establish additional System for Award Management records for identifying alternative EFT accounts (see [subpart 32.11](#)) for the same entity.

“Registered in the System for Award Management (SAM) database” means that:

(1) The Offeror has entered all mandatory information, including the unique entity identifier and the EFT indicator, if applicable, the Commercial and Government Entity (CAGE) code, as well as data required by the Federal Funding Accountability and Transparency Act of 2006 (see [subpart 4.14](#)) into the SAM database;

(2) The offeror has completed the Core, Assertions, and Representations and Certifications, and Points of Contact sections of the registration in the SAM database;

(3) The Government has validated all mandatory data fields, to include validation of the Taxpayer Identification Number (TIN) with the Internal Revenue Service (IRS). The offeror will be required to provide consent for TIN validation to the Government as a part of the SAM registration process; and

(4) The Government has marked the record “Active”.

“Unique entity identifier” means a number or other identifier used to identify a specific commercial, nonprofit, or Government entity. See www.sam.gov for the designated entity for establishing unique entity identifiers.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the SAM database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.

(2) The Offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation “Unique Entity Identifier” followed by the unique entity identifier that identifies the Offeror’s name and address exactly as stated in the offer. The Offeror also shall enter its EFT indicator, if applicable. The unique entity identifier will be used by the Contracting Officer to verify that the Offeror is registered in the SAM database.

(c) If the Offeror does not have a unique entity identifier, it should contact the entity designated at www.sam.gov for establishment of the unique entity identifier directly to obtain one. The Offeror should be prepared to provide the following information:

(1) Company legal business name.

(2) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(3) Company Physical Street Address, City, State, and Zip Code.

(4) Company Mailing Address, City, State and Zip Code (if separate from physical).

(5) Company telephone number.

(6) Date the company was started.

(7) Number of employees at your location.

(8) Chief executive officer/key manager.

(9) Line of business (industry).

(10) Company Headquarters name and address (reporting relationship within your entity).

(d) If the Offeror does not become registered in the SAM database in timely manner, the Contracting Officer may proceed to award to the next otherwise successful registered Offeror.

(e) Processing time, which normally takes 48 hours, should be taken into consideration when registering. Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.

(f) Offerors may obtain information on registration at <https://www.acquisition.gov> .

Offerors SAM information:

Entity Name: _____

Entity Address: _____

Duns Number: _____

CAGE Code: _____

VENDORS ON SCRUTINIZED COMPANIES LISTS

By executing this Certificate _____, the bid proposer, certifies that it is not: (1) listed on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725, Florida Statutes, (2) engaged in a boycott of Israel, (3) listed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to section 215.473, Florida Statutes, or (4) engaged in business operations in Cuba or Syria. Pursuant to section 287.135(5), Florida Statutes, the County may disqualify the bid proper immediately or immediately terminate any agreement entered into for cause if the bid proposer is found to have submitted a false certification as to the above or if the Contractor is placed on the Scrutinized Companies that Boycott Israel List, is engaged in a boycott of Israel, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria, during the term of the Agreement. If the County determines that the bid proposer has submitted a false certification, the County will provide written notice to the bid proposer. Unless the bid proposer demonstrates in writing, within 90 calendar days of receipt of the notice, that the County's determination of false certification was made in error, the County shall bring a civil action against the bid proposer. If the County's determination is upheld, a civil penalty shall apply, and the bid proposer will be ineligible to bid on any Agreement with a Florida agency or local governmental entity for three years after the date of County's determination of false certification by bid proposer.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

DATE: _____

SIGNATURE: _____

COMPANY: _____

NAME: _____
(Typed or Printed)

ADDRESS: _____

TITLE: _____

E-MAIL: _____

PHONE NO.: _____

LIST OF SUBCONTRACTORS

The BIDDER expressly agrees that:

1. If awarded the contract as a result of the proposal, the subcontractors used in the prosecution of the work will be those listed below.
2. The following list includes all subcontractors who will perform work on this project.
3. The subcontractors listed below are financially responsible and are qualified to do the work required.
4. Use of any of the subcontractors is subject to the approval of the County and Engineer.

CATEGORY	NAME OF SUBCONTRACTOR	ADDRESS

CONTRACTOR'S NAME

AUTHORIZED SIGNATURE

TITLE

Section 00300 BID SCHEDULE

BID #: ITB WS 77-19

BASE BID (Item 1-210) – ANNUAL BORING CONTRACT (2019)

Item #		Unit	UNIT PRICE
Mobilization Services - HDD			
1	Up to \$10,000 per Task Order	EA	
2	\$10,001 to \$60,000 per Task Order	EA	
3	\$60,001 and Up per Task Order	EA	
Mobilization Services – Jack and Boring			
4	Up to \$10,000 per Task Order	EA	
5	\$10,001 to \$60,000 per Task Order	EA	
6	\$60,001 and Up per Task Order	EA	
7	Flagmen	Per Hour	
Jack and Bore Steel Casing (without Carrier Pipe) for Water or Force Main			
8	4" Casing, 0.172" Wall Thickness	LF	
9	4" Casing, 0.188" Wall Thickness	LF	
10	6" Casing, 0.172" Wall Thickness	LF	
11	6" Casing, 0.188" Wall Thickness	LF	
12	8" Casing, 0.172" Wall Thickness	LF	
13	8" Casing, 0.188" Wall Thickness	LF	
14	10" Casing, 0.188" Wall Thickness	LF	
15	10" Casing, 0.250" Wall Thickness	LF	
16	12" Casing, 0.188" Wall Thickness	LF	
17	12" Casing, 0.250" Wall Thickness	LF	
18	16" Casing, 0.250" Wall Thickness	LF	
19	16" Casing, 0.281" Wall Thickness	LF	
20	18" Casing, 0.250" Wall Thickness	LF	
21	18" Casing, 0.312" Wall Thickness	LF	
22	20" Casing, 0.250" Wall Thickness	LF	
23	20" Casing, 0.344" Wall Thickness	LF	
24	24" Casing, 0.250" Wall Thickness	LF	
25	24" Casing, 0.375" Wall Thickness	LF	
26	30" Casing, 0.375" Wall Thickness	LF	
27	30" Casing, 0.469" Wall Thickness	LF	
28	36" Casing, 0.375" Wall Thickness	LF	
29	36" Casing, 0.532" Wall Thickness	LF	
30	42" Casing, 0.375" Wall Thickness	LF	
31	42" Casing, 0.657" Wall Thickness	LF	
32	48" Casing, 0.500" Wall Thickness	LF	

33	48" Casing, 0.688" Wall Thickness	LF	
34	54" Casing, 0.500" Wall Thickness	LF	
35	54" Casing, 0.781" Wall Thickness	LF	
36	60" Casing, 0.625" Wall Thickness	LF	
37	60" Casing, 0.844" Wall Thickness	LF	
	Jack and Bore Steel Casing (without Carrier Pipe) for Gravity Main On Grade		
38	10" Casing, 0.188" Wall Thickness	LF	
39	10" Casing, 0.250" Wall Thickness	LF	
40	12" Casing, 0.188" Wall Thickness	LF	
41	12" Casing, 0.250" Wall Thickness	LF	
42	16" Casing, 0.250" Wall Thickness	LF	
43	16" Casing, 0.281" Wall Thickness	LF	
44	18" Casing, 0.250" Wall Thickness	LF	
45	18" Casing, 0.312" Wall Thickness	LF	
46	20" Casing, 0.250" Wall Thickness	LF	
47	20" Casing, 0.344" Wall Thickness	LF	
48	24" Casing, 0.250" Wall Thickness	EA	
49	24" Casing, 0.375" Wall Thickness	LF	
50	30" Casing, 0.375" Wall Thickness	LF	
51	30" Casing, 0.469" Wall Thickness	LF	
52	36" Casing, 0.375" Wall Thickness	LF	
53	36" Casing, 0.532" Wall Thickness	LF	
54	42" Casing, 0.375" Wall Thickness	LF	
55	42" Casing, 0.657" Wall Thickness	LF	
56	48" Casing, 0.500" Wall Thickness	LF	
57	48" Casing, 0.688" Wall Thickness	LF	
58	54" Casing, 0.500" Wall Thickness	LF	
59	54" Casing, 0.781" Wall Thickness	LF	
60	60" Casing, 0.625" Wall Thickness	LF	
61	60" Casing, 0.844" Wall Thickness	LF	
	Horizontal Directional Drill Installation of HDPE, DR-11, DIPS for Water or Force Main		
62	2" HDPE (0'-250')	LF	
63	2" HDPE (> 250')	LF	
64	4" HDPE (0'-250')	LF	
65	4" HDPE (> 250')	LF	
66	6" HDPE (0'-250')	LF	
67	6" HDPE (> 250')	LF	
68	8" HDPE (0'-250')	LF	
69	8" HDPE (> 250')	LF	
70	10" HDPE (0'-250')	LF	
71	10" HDPE (> 250')	LF	
72	12" HDPE (0'-250')	LF	
73	12" HDPE (> 250')	LF	

74	14" HDPE (0'-250')	LF	
75	14" HDPE (> 250')	LF	
76	16" HDPE (0'-250')	LF	
77	16" HDPE (> 250')	LF	
78	18" HDPE (0'-250')	LF	
79	18" HDPE (> 250')	LF	
80	20" HDPE (0'-250')	LF	
81	20" HDPE (> 250')	LF	
82	24" HDPE (0'-250')	LF	
83	24" HDPE (> 250')	LF	
84	30" HDPE (0'-250')	LF	
85	30" HDPE (> 250')	LF	
86	36" HDPE (0'-250')	LF	
87	36" HDPE (> 250')	LF	
	Horizontal Directional Drill Installation of HDPE, DR-11, DIPS for Gravity Main On Grade		
88	6" HDPE (0'-250')	LF	
89	6" HDPE (> 250')	LF	
90	8" HDPE (0'-250')	LF	
91	8" HDPE (> 250')	LF	
92	10" HDPE (0'-250')	LF	
93	10" HDPE (> 250')	LF	
94	12" HDPE (0'-250')	LF	
95	12" HDPE (> 250')	LF	
96	14" HDPE (0'-250')	LF	
97	14" HDPE (> 250')	LF	
98	16" HDPE (0'-250')	LF	
99	16" HDPE (> 250')	LF	
100	18" HDPE (0'-250')	LF	
101	18" HDPE (> 250')	LF	
102	20" HDPE (0'-250')	LF	
103	20" HDPE (> 250')	LF	
104	24" HDPE (0'-250')	LF	
105	24" HDPE (> 250')	LF	
106	30" HDPE (0'-250')	LF	
107	30" HDPE (> 250')	LF	
108	36" HDPE (0'-250')	LF	
109	36" HDPE (> 250')	LF	
	Butt Fused HDPE Pipe Adapter - HDPE to MJ Adapter Fitting (Same Size)		
110	2" HDPE MJ Adapters	PAIR	
111	4" HDPE MJ Adapters	PAIR	
112	6" HDPE MJ Adapters	PAIR	
113	8" HDPE MJ Adapters	PAIR	

114	10" HDPE MJ Adapters	PAIR	
115	12" HDPE MJ Adapters	PAIR	
116	14" HDPE MJ Adapters	PAIR	
117	16" HDPE MJ Adapters	PAIR	
118	18" HDPE MJ Adapters	PAIR	
119	20" HDPE MJ Adapters	PAIR	
120	24" HDPE MJ Adapters	PAIR	
	Butt Fused HDPE Pipe Adapter - HDPE to MJ Adapter Fitting (Reducing)		
121	4" HDPE x 2" MJ Adapters	PAIR	
122	6" HDPE x 4" MJ Adapters	PAIR	
123	8" HDPE x 6" MJ Adapters	PAIR	
124	10" HDPE x 8" MJ Adapters	PAIR	
125	12" HDPE x 10" MJ Adapters	PAIR	
126	14" HDPE x 12" MJ Adapters	PAIR	
127	16" HDPE x 14" MJ Adapters	PAIR	
128	18" HDPE x 16" MJ Adapters	PAIR	
129	20" HDPE x 18" MJ Adapters	PAIR	
130	24" HDPE x 20" MJ Adapters	PAIR	
131	30" HDPE x 24" MJ Adapters	PAIR	
132	36" HDPE x 30" MJ Adapters	PAIR	
	Horizontal Directional Drill Installation of Fusible PVC, DIPS, for Water or Force Main		
133	4" FPVC, DR-18, C900 (0'-250')	LF	
134	4" FPVC, DR-18, C900 (> 250')	LF	
135	6" FPVC, DR-18, C900 (0'-250')	LF	
136	6" FPVC, DR-18, C900 (> 250')	LF	
137	8" FPVC, DR-18, C900 (0'-250')	LF	
138	8" FPVC, DR-18, C900 (> 250')	LF	
139	10" FPVC, DR-18, C900 (0'-250')	LF	
140	10" FPVC, DR-18, C900 (> 250')	LF	
141	12" FPVC, DR-18, C900 (0'-250')	LF	
142	12" FPVC, DR-18, C900 (> 250')	LF	
143	14" FPVC, DR-18, C905 (0'-250')	LF	
144	14" FPVC, DR-18, C905 (> 250')	LF	
145	16" FPVC, DR-18, C905 (0'-250')	LF	
146	16" FPVC, DR-18, C905 (> 250')	LF	
147	18" FPVC, DR-18, C905 (0'-250')	LF	
148	18" FPVC, DR-18, C905 (> 250')	LF	
149	20" FPVC, DR-18, C905 (0'-250')	LF	
150	20" FPVC, DR-18, C905 (> 250')	LF	
151	24" FPVC, DR-18, C905 (0'-250')	LF	
152	24" FPVC, DR-18, C905 (> 250')	LF	
153	30" FPVC, DR-21, C905 (0'-250')	LF	

154	30" FPVC, DR-21, C905 (> 250')	LF	
155	36" FPVC, DR-21, C905 (0'-250')	LF	
156	36" FPVC, DR-21, C905 (> 250')	LF	
	Horizontal Directional Drill Installation of Fusible PVC, DIPS, for Gravity Main On Grade		
157	4" FPVC, DR-18, C900 (0'-250')	LF	
158	4" FPVC, DR-18, C900 (> 250')	LF	
159	6" FPVC, DR-18, C900 (0'-250')	LF	
160	6" FPVC, DR-18, C900 (> 250')	LF	
161	8" FPVC, DR-18, C900 (0'-250')	LF	
162	8" FPVC, DR-18, C900 (> 250')	LF	
163	10" FPVC, DR-18, C900 (0'-250')	LF	
164	10" FPVC, DR-18, C900 (> 250')	LF	
165	12" FPVC, DR-18, C900 (0'-250')	LF	
166	12" FPVC, DR-18, C900 (> 250')	LF	
167	14" FPVC, DR-18, C905 (0'-250')	LF	
168	14" FPVC, DR-18, C905 (> 250')	LF	
169	16" FPVC, DR-18, C905 (0'-250')	LF	
170	16" FPVC, DR-18, C905 (> 250')	LF	
171	18" FPVC, DR-18, C905 (0'-250')	LF	
172	18" FPVC, DR-18, C905 (> 250')	LF	
173	20" FPVC, DR-18, C905 (0'-250')	LF	
174	20" FPVC, DR-18, C905 (> 250')	LF	
175	24" FPVC, DR-18, C905 (0'-250')	LF	
176	24" FPVC, DR-18, C905 (> 250')	LF	
177	30" FPVC, DR-21, C905 (0'-250')	LF	
178	30" FPVC, DR-21, C905 (> 250')	LF	
179	36" FPVC, DR-21, C905 (0'-250')	LF	
180	36" FPVC, DR-21, C905 (> 250')	LF	
	Horizontal Directional Drill Installation of HDPE DR-11 Communication Conduit (Orange)		
181	1 x 2" HDPE w/pull tape (0'-250')	LF	
182	1 x 2" HDPE w/pull tape (> 250')	LF	
183	2 x 2" HDPE w/pull tape (0'-250')	LF	
184	2 x 2" HDPE w/pull tape (> 250')	LF	
185	3 x 2" HDPE w/pull tape (0'-250')	LF	
186	3 x 2" HDPE w/pull tape (> 250')	LF	
	Miscellaneous Site Work, Erosion Control, Restoration, Etc.		
187	Furnish & Install Solid Sod (type varies)	SY	
188	Furnish & Install Seed & Mulch	SY	
189	Furnish & Install Silt Fence	LF	
190	Furnish & Install Staked Hay Bales	EACH	
191	Remove & Replace Roadway Pavement (All Types)	SY	
192	Remove & Replace Sidewalks (All Types)	SY	

193	Remove & Replace Driveways (All Types)	SY	
194	Remove & Replace Gravel	SY	
195	Remove & Replace Curb & Gutter (All Types)	LF	
196	Remove & Replace Drainage Flume (All Types)	SY	
Maintenance of Traffic on Multi-Laned Roads			
197	Traffic control for three-lane roadway, if required	Per Day	
198	Traffic control for four-lane roadway, if required	Per Day	
199	Traffic control for five-lane roadway, if required	Per Day	
200	Traffic control for six-lane or greater roadway, if required	Per Day	
201	Traffic ramps for dewatering pumping piping, if required	Per Day	
Dewatering			
202	Dewatering Setup for Each 3" Pump	EACH	
203	Dewatering Setup for Each 4" Pump	EACH	
204	Dewatering Setup for Each 6" Pump	EACH	
205	Dewatering Setup for Each 8" Pump	EACH	
206	Dewatering Operation for Each 3" Pump	Per Day	
207	Dewatering Operation for Each 4" Pump	Per Day	
208	Dewatering Operation for Each 6" Pump	Per Day	
209	Dewatering Operation for Each 8" Pump	Per Day	
Wire Line Guidance			
210	Wireline Guidance Add-on	Per Bore	

Proposal Evaluation - A list of quantities of items shall be used to evaluate all bidders' proposals based on the unit prices provided in the bid schedule above. All work allocated under this Contract shall be based on the unit prices established in the bid schedule and Contractor will be compensated for actual work performed only. No guarantee of quantities of Work required during this Contract or Work allocated to individual Contractor(s) during the life of the Contract is provided.

ADDENDUM ACKNOWLEDGEMENT

ITB WS 77-19

Acknowledgment is hereby made of the following addenda (identified by number) received since issuance of solicitation:

ADDENDUM NO. _____ **DATE** _____

NOTE: Prior to submitting the response to this solicitation, it is the responsibility of the respondent to confirm if any addenda have been issued. If such addenda have been issued, acknowledge receipt by noting number(s) and date(s) above.

SECTION 00451

QUALIFICATIONS STATEMENT

THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT PERMITTED BY LAWS AND REGULATIONS

1. SUBMITTED BY:

Official Name of Firm:

Address:

2. SUBMITTED TO:

3. SUBMITTED FOR:

Owner:

Project Name:

TYPE OF WORK:

4. CONTRACTOR'S CONTACT INFORMATION

Contact Person:

Title:

Phone:

Email:

5. AFFILIATED COMPANIES:

Name: _____

Address: _____

6. TYPE OF ORGANIZATION:

SOLE PROPRIETORSHIP

Name of Owner: _____

Doing Business As: _____

Date of Organization: _____

PARTNERSHIP

Date of Organization: _____

Type of Partnership: _____

Name of General Partner(s): _____

CORPORATION

State of Organization: _____

Date of Organization: _____

Executive Officers:

- President: _____

- Vice President(s): _____

- Treasurer: _____

- Secretary: _____

LIMITED LIABILITY COMPANY

State of Organization: _____

Date of Organization: _____

Members: _____

JOINT VENTURE

Sate of Organization: _____

Date of Organization: _____

Form of Organization: _____

Joint Venture Managing Partner

- Name: _____

- Address: _____

Joint Venture Managing Partner

- Name: _____

- Address: _____

Joint Venture Managing Partner

- Name: _____

- Address: _____

7. LICENSING

Jurisdiction: _____

Type of License: _____

License Number: _____
Jurisdiction: _____
Type of License: _____
License Number: _____

8. CERTIFICATIONS

CERTIFIED BY:

Disadvantage Business Enterprise: _____
Minority Business Enterprise: _____
Woman Owned Enterprise: _____
Small Business Enterprise: _____
Other (_____): _____

9. BONDING INFORMATION

Bonding Company: _____
Address: _____
Bonding Agent: _____
Address: _____
Contact Name: _____
Phone: _____
Aggregate Bonding Capacity: _____
Available Bonding Capacity as of date of this submittal: _____

10. FINANCIAL INFORMATION

Financial Institution: _____
Address: _____

Account Manager: _____

Phone: _____

INCLUDE AS AN ATTACHMENT AN AUDITED BALANCE SHEET FOR EACH OF THE
LAST 3 YEARS

11. CONSTRUCTION EXPERIENCE:

Current Experience:

List on **Schedule A** all uncompleted maintenance and/or service projects currently under contract (If Joint Venture list each participant's projects separately). Not necessary to include all current projects.

Previous Experience:

List on **Schedule B** all maintenance and/or service projects completed within the last 5 Years (If Joint Venture list each participant's projects separately). Not necessary to include all completed projects.

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

12. SAFETY PROGRAM:

Name of Contractor's Safety Officer: _____

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide the following for the firm listed in Section V (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

Total Recordable Frequency Rate (TRFR) for the last 5 years:

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

13. EQUIPMENT:

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HERewith, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: _____

BY: _____

TITLE: _____

DATED: _____

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF _____, 20__

NOTARY PUBLIC - STATE OF _____

MY COMMISSION EXPIRES: _____

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
4. Audited balance sheet for each of the last 3 years for firm named in Section 1.
5. Evidence of authority for individuals listed in Section 7 to bind organization to an agreement.
6. Resumes of officers and key individuals (including Safety Officer) of firm named in Section 1.
7. Required safety program submittals listed in Section 13.
8. Additional items as pertinent.

SCHEDULE A

CURRENT EXPERIENCE *Cost of Work (last column) should indicate total work completed to date on current maintenance/service/continuing contracts

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	*Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL maintenance/service/continuing contract Projects Completed within last 5 years) *Cost of Work (last column) should indicate total final work completed on maintenance/service/continuing contracts

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	*Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL maintenance/service/continuing contract Projects Completed within last 5 years) *Cost of Work (last column) should indicate total final work completed on maintenance/service/continuing contracts

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SECTION 00520

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between Okaloosa County Board of County Commissioners (“Owner”) and _____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

- 1.01 *Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:*

ARTICLE 2 – THE PROJECT

- 2.01 *The Project, of which the Work under the Contract Documents is a part, is generally described as follows:*
ANNUAL CONTRACT FOR SUBSURFACE UTILITY BORING CONTRACT (2019)

ARTICLE 3 – ENGINEER

- 3.01 *The part of the Project that pertains to the Work has been designed by Consultant.*
- 3.02 *For some projects, The Owner may retain “Engineer” to act as Owner’s representative, in which case they shall assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents. For other projects, The Owner may elect to act as their own representative. All language in the Contract Documents including Specifications that refer to “Engineer” acting as representative of Owner, shall revert to Owner on projects where Owner is acting as their own representative.*

ARTICLE 4 – CONTRACT TIMES

- 4.01 *Total Contract Term*
- The contract will begin when fully executed by all parties and last for three (3) years with the option of two (2) one (1) year renewals, with appropriate CPI increases at each renewal, upon mutual agreement by both parties
- 4.02 *Time of the Essence*
- All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
- 4.03 *Contract Times: Days*
- Substantial completion and final completion dates **for each Task Order** issued under this Contract shall be established in said Task Order. The Work will be substantially completed within the number of days set up per Task Order to run as provided in Paragraph 4.01 of the General Conditions and

completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within number of days established per Task Order.

4.04 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. Substantial Completion: Contractor shall pay Owner **\$500** for each day that expires after the time (as duly adjusted pursuant to the Contract) established **in each Task Order** specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.

ARTICLE 5 – CONTRACT PRICE

5.01 *Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:*

Fixed Rate Unit Prices

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment during performance of the Work **for each Task Order** as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
1. Prior to Substantial Completion **for each Task Order**, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

90 percent of Work completed (with the balance being retainage). If the Work **for each Task Order** has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

2. Upon Substantial Completion **for each Task Order** (which shall include all field work, testing, cleanup and worksite restoration), Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

Upon final completion and acceptance of the Work **for each Task Order** in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price **for each Task Order** as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – CONTRACTOR'S REPRESENTATIONS

7.01 *In order to induce Owner to enter into this Contract, Contractor makes the following representations:*

- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- E. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- F. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- G. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- I. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 8 – CONTRACT DOCUMENTS

8.01 *Contents*

- A. The Contract Documents consist of the following:
1. This Agreement (pages 1 to █, inclusive).
 2. General Conditions (pages █ to █, inclusive).
 3. Supplementary Conditions (pages █ to █, inclusive).
 4. Special Conditions (pages ___ to ___, inclusive)
 5. Specifications as listed in the table of contents of the Project Manual.
 6. Addenda (numbers █ to █, inclusive).
 7. Exhibits to this Agreement (enumerated as follows):
 - Contractor’s Bid (pages █ to █, inclusive).
 8. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - Notice to Proceed.
 - Work Change Directives.
 - Change Orders.
 - Field Orders.
- B. The documents listed in Paragraph 8.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 8.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 9 – MISCELLANEOUS

9.01 *Terms*

Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

9.02 *Assignment of Contract*

Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.03 *Successors and Assigns*

Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

9.04 *Severability*

Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

9.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph.
1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

9.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

9.07 *Public Records*

Any record created by either party in accordance with this Contract shall be retained and maintained in accordance with the public records law, Florida Statutes, Chapter 119.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT OKALOOSA COUNTY RISK MANAGEMENT DEPARTMENT 5479 OLD BETHEL ROAD CRESTVIEW, FL 32536 PHONE: (850) 689-5977 riskinfo@myokaloosa.com.

Contractor must comply with the public records laws, Florida Statute chapter 119, specifically Contractor must:

1. Keep and maintain public records required by the County to perform the service.

2. Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in chapter 119 Florida Statutes or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the County.
4. Upon completion of the contract, transfer, at no cost, to the County all public records in possession of the contractor or keep and maintain public records required by the County to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining the public records. All records stored electronically must be provided to the public agency, upon the request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

Okaloosa County Board of County Commissioners

By: _____

By: _____

Title: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____

(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

SECTION 00550
NOTICE TO PROCEED

Owner: Okaloosa County Board of County Commissioners
Owner's Contract No.:

Contractor: Contractor's Project No.:

Engineer: Engineer's Project No.:

Project: ANNUAL CONTRACT FOR SUBSURFACE UTILITY BORING CONTRACT (2019)
Contract Name:

Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [REDACTED], 2019].

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the number of days to achieve Substantial Completion will be established **per Task Order**, and the number of days to achieve readiness for final payment is established **per Task Order**.

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

SECTION 00625
CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	Okaloosa County Board of County Commissioners	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:		Engineer's Project No.:	
Project:	ANNUAL CONTRACT FOR SUBSURFACE UTILITY BORING CONTRACT (2019)	Contract Name:	

This [preliminary] [final] Certificate of Substantial Completion applies to:

- All Work The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: None
 As follows

Amendments to Contractor's responsibilities: None
 As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

EXECUTED BY ENGINEER:		RECEIVED:		RECEIVED:	
By: _____	By: _____	By: _____	By: _____	By: _____	By: _____
(Authorized signature)	Owner (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)	Contractor (Authorized Signature)	Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____	Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____

SECTION 00700
STANDARD GENERAL CONDITIONS OF THE
CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a

contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. Intent of Certain Terms or Adjectives:

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. Day:

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective:

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

E. Furnish, Install, Perform, Provide:

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor's Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner's Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

- A. Reporting Discrepancies:
 - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
 - 2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or

Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. Resolving Discrepancies:

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 Commencement of Contract Times; Notice to Proceed

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. ~~In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.~~

4.02 Starting the Work

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 Reference Points

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 Progress Schedule

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.

- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. abnormal weather conditions;
 - 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 - 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

- A. **Limitation on Use of Site and Other Areas:**
 - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. **Removal of Debris During Performance of the Work:** During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste

materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

- C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
 - 1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 - 2. is of such a nature as to require a change in the Drawings or Specifications; or
 - 3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. Possible Price and Times Adjustments:
 1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
 2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and

contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

- c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and

advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. Possible Price and Times Adjustments:
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

~~5.06 Hazardous Environmental Conditions at Site~~

~~A. Reports and Drawings: The Supplementary Conditions identify:~~

- ~~1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and~~
- ~~2. Technical Data contained in such reports and drawings.~~

~~B. Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report~~

~~prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:~~

- ~~1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or~~
 - ~~2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or~~
 - ~~3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.~~
- ~~C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.~~
- ~~D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.~~
- ~~E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.~~
- ~~F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.~~
- ~~G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.~~

- H. ~~If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.~~
- I. ~~To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.~~
- J. ~~To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.~~
- K. ~~The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.~~

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Bid Bonds*

- A. ~~Contractor shall furnish a bid bond, in an amount of five (5) percent of the Bid Price.~~
- B. ~~All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.~~

- ~~C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.~~
- ~~D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.~~
- ~~E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.~~
- ~~F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.~~

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
 - 5. Where applicable, the County shall be shown as an Additional Insured with a Waiver of Subrogation on the Certificate of Insurance.
- B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.
 - 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
 - 1. Products and completed operations coverage:

- a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. ~~*Contractor's pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.~~
- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error,

omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
 1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this

Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as “insureds.”

2. be written on a builder’s risk “all risk” policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.
8. allow for the waiver of the insurer’s subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.
13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform

the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"Or Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
- b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or

device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then

within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole

or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

- A. Shop Drawing and Sample Submittal Requirements:
 - 1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
 3. With each submittal, Contractor shall give Engineer 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 set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
1. Shop Drawings:
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. 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 required by Paragraph 7.16.D.
 2. Samples:
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. 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 in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 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 will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
 8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.
- E. Resubmittal Procedures:
1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
 2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
 3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 Contractor's General Warranty and Guarantee

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.

- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract

Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. Change Orders:

- a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
 3. *Field Orders:* Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
 - 1. a mutually acceptable fixed fee; or
 - 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.04.C.2.a and 11.04.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. When both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
 - 1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 - 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 - 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer

is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its

information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

ARTICLE 13 – COST OF THE WORK; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials

and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.
- E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary

determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.

- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 2. there is no corresponding adjustment with respect to any other item of Work; and
 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 Access to Work

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 Tests, Inspections, and Approvals

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. ~~Owner~~ **Contractor** shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by ~~Owner~~ **Contractor**, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final

payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. Applications for Payments:
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 - 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of

the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

- d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.
- D. Payment Becomes Due:
 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.
- E. Reductions in Payment by Owner:
 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;

- g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the

preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. Application for Payment:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. Engineer's Review of Application and Acceptance:

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment,

indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

- C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.

The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. Correct the defective repairs to the Site or such other adjacent areas;
 - 2. Correct such defective Work;
 - 3. If the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. Satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced.

Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 2. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 3. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 4. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 5. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. Declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. Enforce the rights available to Owner under any applicable performance bond.

- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. Completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. Expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. Other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 6. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 7. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. Elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. Agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. If no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 Giving Notice

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 8. Delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 9. Delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 Computation of Times

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SECTION 00800
SUPPLEMENTARY CONDITIONS

ARTICLE 2 – PRELIMINARY MATTERS

SC -2.01 Copies of Documents

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

A. Owner shall furnish to Contractor four copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

ARTICLE 6 – BONDS AND INSURANCE

SC - 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	Statutory
Federal, if applicable (e.g., Longshoreman's):	Statutory

Employer's Liability: \$ 1,000,000

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate \$ 2,000,000

Products - Completed Operations Aggregate \$ 2,000,000

Personal and Advertising Injury \$ 1,000,000

Each Occurrence (Bodily Injury and Property
Damage) \$ 1,000,000

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

Each person \$ 1,000,000

Each accident \$ 1,000,000

Property Damage:

Each accident \$ 500,000

[or]

Combined Single Limit of \$ 2,000,000

4. Excess or Umbrella Liability:

Per Occurrence \$ 1,000,000

General Aggregate \$ 1,000,000

SC-6.05 Property Insurance

SC-6.05 Add the following to the list of requirements in Paragraph 6.05.A, as a numbered item:

13. be subject to a deductible amount of no more than \$1,000 for direct physical loss in any one occurrence.

ARTICLE 8 – OTHER WORK AT THE SITE

SC-8.02 Coordination

SC-8.02 Delete Paragraph 8.02.A in its entirety and replace with the following:

A. Owner intends to contract with others for the performance of other work at or adjacent to the Site.

1. The Owner shall have authority and responsibility for coordination of the various contractors and work forces at the Site;
2. The following specific matters are to be covered by such authority and responsibility:

--The Owner to coordinate activities with contractors.

ARTICLE 9 – OWNER’S RESPONSIBILITIES

SC-9.13 Add the following new paragraph immediately after Paragraph 9.12 of the General Conditions:

SC-9.13 Owner will furnish an “Owner’s Site Representative” to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner’s Site Representative is not Engineer’s consultant, agent, or employee. Owner’s Site Representative will be Mark Wise.-Deputy Director.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

SC-10.03 Project Representative

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.

1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.

2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
4. Liaison:
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
6. Shop Drawings and Samples:
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
8. Review of Work and Rejection of Defective Work:
 - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in

progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

9. Inspections, Tests, and System Start-ups:

a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.

b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

10. Records:

a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.

c. Maintain records for use in preparing Project documentation.

11. Reports:

a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.

b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.

c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to

be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

14. Completion:

- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
- b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
- c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

The arbitration option is as follows:

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

SC-17.02 Arbitration

A. All matters subject to final resolution under this Article will be decided by arbitration in accordance with the rules of State of Florida, subject to the conditions and limitations of this paragraph. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand f will be filed in writing with the other party to the Contract and with the selected arbitrator provider, and a copy will be sent to Engineer for information. The demand f will be made within the specific time required in this Article, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations. The demand f should include specific reference to Paragraph SC-17.02.D below.

C. No arbitration arising out of or relating to the Contract shall include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:

1. the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and
2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings.

D. The award rendered by the arbitrator(s) shall be consistent with the agreement of the parties, in writing, and include a concise breakdown of the award, and a written explanation of the award specifically citing the Contract provisions deemed applicable and relied on in making the award.

E. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

F. The fees and expenses of the arbitrators and any arbitration service shall be shared equally by Owner and Contractor.

**SECTION C-00941
CHANGE ORDER**

Change Order No. _____

Date of Issuance:

Effective Date:

Owner:

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:

ACCEPTED:

ACCEPTED:

By: _____
Engineer (if required)

By: _____
Owner (Authorized Signature)

By: _____
Contractor (Authorized Signature)

Title: _____

Title: _____

Title: _____

Date: _____

Date: _____

Date: _____

Approved by Funding Agency (if applicable)

By: _____
Title: _____

Date:

SECTION 00950

SPECIAL CONDITIONS

1. INSPECTION FACILITIES

The Contractor shall at all times provide access to, and all means necessary to provide for inspection of all parts of the work by the Engineer.

2. UTILITIES

The Contractor shall be responsible for any damage done by him or any of his subcontractors to all utilities within the limits of the work. It shall be his responsibility to locate and determine the depth of the existing utilities and manholes as far ahead of his operations as practicable and shall keep the Engineer informed of possible vertical and horizontal conflicts. The Engineer shall adjust the alignment and/or profile of the proposed facilities insofar as practically feasible to eliminate potential conflicts. Unavoidable conflicts will be eliminated as described below. Should any utilities or appurtenances be damaged by the Contractor's activities and operations under this contract, the Contractor shall cause the necessary repairs to be made and shall pay the entire cost thereof without compensation. Temporary repairs may be made by the Contractor to utilities damaged by his operations when such utilities are to be relocated, provided such temporary repairs are adequate to maintain the utility in service until the permanent relocation or adjustment is made.

No separate compensation shall be allowed the Contractor for any work required by this paragraph due to conflicts with lines and appurtenances or as a result of grade revisions.

- a. High Pressure Gas Lines: Where they interfere with work, high-pressure gas lines and appurtenances will be moved by the Okaloosa Gas District. The Contractor shall pay any charges made by the Gas District.
- b. Low Pressure Gas Lines: Where they interfere with work, low pressure gas lines and appurtenances will be moved by the Contractor at no expense to the Owner.
- c. Sanitary Sewers: Where they interfere with the work, existing sanitary sewer lines and laterals will be moved by the Contractor. The Contractor shall notify the Director of the Water and Sewer System at least twenty-four (24) hours prior to the initiation of any such relocation work.
- d. Water Lines: Where water lines interfere with the work they will be relocated by the Contractor. The Contractor shall notify the Director of the Water and Sewer System at least twenty-four (24) hours prior to the initiation of any such relocation work.

- e. Storm Drainage Pipe: The Contractor shall excavate a sufficient distance ahead of his work to allow the Engineer time and space to resolve conflicts with any storm drainage pipes which are not shown on the plans. It is the Contractor's responsibility to protect all existing storm drainage pipes which interfere with his operations. When the plans do not indicate the conflict and the Engineer finds that the conflict creates an undue hardship on the Contractor or calls for work outside the scope of the contract, the Engineer will determine the most appropriate method for resolving the conflict which is satisfactory to both the Owner and the Contractor. This additional work shall be handled by contract change order or field instructions by the Engineer or his representative depending upon the extent and cost of said additional work.

3. CONTRACTOR'S RESPONSIBILITY FOR WORK

Until final acceptance of the work by the Owner, the work shall be in the custody and under the charge and care of the Contractor and he shall take every necessary precaution against injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from execution or from the non-execution of the work, unless otherwise provided for elsewhere in the Contract Documents. The Contractor shall rebuild, repair, restore, and make good, without extra compensation, all injuries or damages to any portion of the work occasioned by any of the above causes before its completion and acceptance, and shall bear the expenses thereof. In case of suspension of the work from any cause whatever, the Contractor shall be responsible for all materials and equipment and shall properly store them, if necessary, and shall provide suitable shelter from damage and shall erect temporary structures where necessary.

4. EXTRA CHARGES

Upon receiving a change order or field order, the Contractor shall notify the Engineer of any additional charges the Contractor feels he is due prior to initiating the work under consideration.

5. EXAMINATION OF PLANS, SPECIFICATIONS, SUPPLEMENTARY CONDITIONS, AND SITE WORK

Before submitting a proposed Task Order under this Contract, bidders shall examine carefully the site of the proposed work, the general and local conditions, the proposal form, standard specifications, supplemental specifications, provisions, and the contract forms, and it is mutually agreed that the submission of a proposal shall be prima facie evidence that the bidder has made such examination and has judged for and satisfied himself as to the surface and subsurface conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished, and as to the requirements of plans, standard specifications, supplemental specifications, special provision contract, and any other documents provided during drafting of each Task Order. No adjustments or compensation will be allowed for losses caused by failure to comply with this requirement.

Bidders are advised that the Owner disclaims responsibility for any opinions, conclusions, interpretations, or deductions that may be expressed or implied in any of the information presented or made available to bidders; it being expressly understood that the making of deductions, interpretations, and conclusions from all of the accessible factual information is the bidder's sole responsibility.

6. SUBSURFACE CONDITIONS

The Contractor shall check all subsurface conditions and satisfy himself on those conditions before submitting a bid. Subsurface conditions discovered during construction shall not be a basis for extra compensation.

7. ENVIRONMENTAL CONTROL

The Contractor shall insure that good environmental protection practices and methods are instituted to protect surface waters from excessive silt, sediments and nutrients caused by his construction operations.

Storm drainage facilities and temporary dikes, checks, channelization, grassing and any other prudent control shall be installed in the initial stages and as necessary in order to fulfill the requirements set forth in the above regulations. The Contractor shall be responsible for all environmental damages caused by his operations.

Cost for complying with these regulations shall be considered incidental to the work on the bid schedule and no separate payment will be made unless specified in the Measurement and Payment Section of these Specifications.

8. PROSECUTION OF WORK

a. All the work shall be prosecuted in a manner which according to local conditions shall be best calculated to promote rapidity in construction, to secure safety to life and property and also to reduce to a minimum any interference with abutting property or public travel.

b. The Contractor shall conduct his operations diligently in all parts of the work, coordinating his part so that the completion of the work shall not be unnecessarily delayed.

9. USE OF ADJOINING PROPERTY

Whenever it is necessary for the Contractor to occupy or otherwise use land adjacent to the work which is not the property of the Owner or for use of which no permit has been granted, the Contractor must make his own arrangements with the Owner of such property.

10. SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under 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).

11. OBSERVANCE OF LAWS AND REGULATIONS

The Contractor shall keep himself informed of all laws, ordinances, and regulations in any manner affecting those employed on the work, or the materials used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. He shall at all times himself observe and comply with, and shall require all his agents, employees and subcontractors to observe and comply with all such applicable laws, ordinances, regulations, orders and decrees in effect or which may become effective before completion of this contract; and shall protect and indemnify the Owner against any claim of liability arising from or based upon the violation of any such law, ordinance, regulation, order, or decree, whether by himself, his employees or his subcontractors. When local or state laws or ordinances conflict with federal laws or regulations, federal laws or regulations shall take precedence.

12. FINAL CONSTRUCTION INSPECTION

Whenever the Contractor considers the work required by the Task Order is nearing completion and ready for use, he shall notify the Owner and request an inspection of substantial completion. Within five (5) days after receiving the notification by the Contractor, the Owner will make arrangements to inspect all work in the Task Order in a timely fashion. If the Owner finds that the work has been substantially completed, he will issue a letter of substantial completion. If the Owner finds that the work has not been substantially completed at the time of such inspection, he will advise the Contractor in writing as to the work to be done or the particular defects in the construction discovered during the inspection. After such work has been completed satisfactorily, the Owner will re-inspect the work for substantial completion.

When the Contractor considers the work completed, he shall notify the Owner and request a final inspection. Within five (5) days after receiving the notification by the Contractor, the Owner shall schedule a final inspection in a timely fashion. If the Owner finds the work has been completed, he will issue a letter stating that the project described in the subject Task Order is complete. If the Owner finds that the work has not been completed at the time of the inspection, he will advise the Contractor in writing as to the work to be done to complete the project. After such work has been satisfactorily completed, the Owner will re-inspect the work. When the Owner considers the work complete, he will issue a letter of final completion.

13. EQUIPMENT AND MATERIALS REMOVED

All equipment and materials removed and/or replaced in the contract which the Owner wants shall become the property of the Owner and shall be placed at a location on the site designated by the Owner. All other equipment and materials which the Owner does not want shall be disposed of off-site at the expense of the Contractor. The Owner shall be final judge of what is salvageable.

14. REMOVAL OF DEBRIS

The Contractor shall frequently clean up all refuse, rubbish, scrap materials and debris caused by his operations, so that at all times the site of the work shall present a neat, orderly and workmanlike appearance.

15. TEMPORARY ROADS, DETOURS AND MAINTENANCE OF ACCESS

- a. Detours and temporary structures necessary for travel during the prosecutions of the work will be at the expense of the Contractor, unless covered under specific MOT per day bid items in the Contract and included in the subject Task Order.
- b. No section of the work shall be closed to traffic unless approved by the Owner. Suitable signs indicating "Road Closed" or "Detour" shall be erected by the Contractor as ordered by the Owner at no expense beyond that covered in specific MOT bid items in the Contract and included in the subject Task Order.
- c. If in the opinion of the Owner the Contractor does not comply with the above requirements such work as the Owner may deem necessary may be performed by others at the direction of the Owner and the charges therefor held from any money due or to become due to the Contractor on this or any other Contract.

16. RESTORATION OF THE GROUNDS

As the work progresses and whenever so directed by the Owner, the Contractor is to remove all surplus material and completely restore to good condition, all surface, disturbed, destroyed or removed by the Contractor, or his agent, or on account of construction, unless other arrangements were established in the subject Task Order defining the Work in the Project. When the Contractor fails to promptly restore the streets or other property, the Owner, after having given three (3) days notice to the Contractor shall have the work shut down until the streets and other property have been restored. Loss of time due to such shut-down will not entitle the Contractor to any extension of time or extra compensation.

Before final inspection is made, all surfaces disturbed on account of this construction shall be leveled up and all surplus material and rubbish incident to the construction must be removed and disposed of and streets, gutters, ditches, sidewalks, crossings, railroads, grass plots and other property affected by the Construction shall be left in good and acceptable condition.

17. UNDERGROUND UTILITIES AND SERVICES

The plans for each project may show certain features of the topography and certain underground utilities, but they do not purport to show in detail all such lines or obstructions. Such topography and notes on the plans were inserted from records available and are for the Contractor's convenience only and shall not be used as basis for any claims of extra compensation.

All pipes or other underground utilities shall be maintained in continuous service where possible and shall be properly protected and supported. In no case shall interruptions to utilities be allowed to exist outside of working hours.

Prior to starting the Work, the proper authorities of all utilities shall be notified by the Contractor and the Contractor shall cooperate in every way possible with these authorities. Whenever necessary to determine the location of existing pipes, valves or other underground structures, the Contractor shall examine all available records and shall make all explorations and excavations necessary for such purpose.

18. CHEMICALS

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

19. COOPERATION BETWEEN CONTRACTORS

Contractor shall cooperate to the fullest extent in order to expedite the completion of the entire project. Any contractor deemed by the Owner to be in violation of this clause can be subject to disciplinary action including but not limited to fines to be paid to the Owner or direct payment to other contractors.

20. DAMAGE BETWEEN CONTRACTORS

If a Contractor damages any of the work performed by another contractor, that contractor causing the damage shall replace, repair, or make any other compensation deemed appropriate by the Owner to the Contractor who did the original work.

21. PROJECT WARRANTY

The **one-year warranty period** provided under this contract shall begin on the date of the final inspection when the Engineer certifies the project substantially complete. In accordance with Section 29 of the General Conditions, this warranty shall cover defects in all material, equipment, and labor furnished under this contract.

Included in each manufacturer's submittal data shall be a certified statement that the manufacturer will comply with the above warranty provisions. In the event that the manufacturer's warranty expires prior to the Contractor's warranty, the Contractor shall assume full responsibility for all warranties to the Owner for the remainder of the contract warranty period.

22. DEPOSITS AND WATER USAGE ON A HYDRANT METER

1. For any construction water utilized via a hydrant meter, the contractor shall setup an account with OCWS' Customer Service office and provide contract information.
2. The account shall be setup in the contractor's name with a deposit and service fee paid by the contractor. The deposit will be refunded when the account terminates if the meter has not been damaged or lost.
3. OCWS will be responsible for setting the hydrant meter, along with the monthly reading. If the hydrant meter needs to be relocated, Contractor to coordinate this with OCWS Maintenance.
4. Water usage will not be charged to the contractor, provided that the above conditions are met.

END OF SECTION 00950.

SECTION 01 22 00 - MEASUREMENT AND PAYMENT

PART 1 -

1.1

PART 2 - GENERAL

2.1 GENERAL

- A. This section describes the methods by which measurement will be made of the quantities for which payment will be made for the project.
- B. It is the intention of this specification that payment will be made for those items listed in the Bid Form only. All items of work not specifically listed in the Bid Form shall be considered incidental to the construction, and the cost of all such work and material shall be included in the prices bid for the various items listed.

2.2 STORED MATERIALS

- A. Partial payment shall be made for approved materials stored at the project site at the presentation of material invoices in the proper manner as stated in the General Conditions and Contract.

2.3 MOBILIZATION

- A. Mobilization shall cover the preparatory work and operations, including, but not limited to those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of all offices, buildings, and other facilities necessary for work on the project, and for all other work and operations which must be performed or costs incurred prior to beginning work on the various items on the project site.
- B. Payment for mobilization shall be full compensation for organizing and moving all labor, tools, equipment, supplies, and incidentals to the project site and for disbanding, disorganizing, and removing all labor, tools, equipment, supplies, and incidentals from the project site, regardless of number of times such moves are made, including all preconstruction costs exclusive of bidding costs.
- C. Payment for mobilization when the amount bid for mobilization is \leq 12% of the total Task Order amount will be as follows:
 - 1. 20% of the amount bid for mobilization will be paid in the first estimate.
 - 2. After the first estimate and upon completion of 5% of the original Task Order amount for the entire project excluding prior payment for mobilization, 50% of the amount bid for mobilization will be paid.

3. After the first estimate and upon completion of 50% of the original Task Order amount for the entire project covered under the Task Order including prior payment for mobilization, the remaining 30% of the amount bid for mobilization will be paid.
4. The total sum of all payments shall not exceed the original line item amount bid for the item of mobilization and included in the subject Task Order, regardless of the fact that the Contractor may have, for any reason, shut down his work on the project or moved equipment away from the project and then back again.

D. Payment for mobilization when the amount bid for mobilization is \geq 12% of the total contract amount will be as follows:

1. 2% of the amount bid for mobilization will be paid in the first estimate.
2. After the first estimate and upon completion of 5% of the original Task Order amount for the entire project excluding prior payment for mobilization, 6% of the amount bid for mobilization will be paid.
3. After the first estimate and upon completion of 50% of the original Task Order amount for the entire project covered under the Task Order including prior payment for mobilization, 4% of the amount bid for mobilization will be paid.
4. The remaining 88% will be paid with the final estimate.
5. The total sum of all payments shall not exceed the original line item amount bid for the item of mobilization and included in the subject Task Order, regardless of the fact that the Contractor may have, for any reason, shut down his work on the project or moved equipment away from the project and then back again.

2.4 SECTION 01 35 24, SAFETY

- A. Complying with all safety requirements including Trench Safety Act compliance, temporary detours and structures and barricades, lights and signs, including all Maintenance of Traffic (MOT) for two lane streets shall be included in the per foot prices included in the Bid Form. Separate payment will be made for only for MOT for three lane or larger streets at the Per Day unit prices included in the Bid Form, as deemed necessary and for quantities established in the Task Order for each project.

2.5 SECTION 01 57 13, TEMPORARY EROSION CONTROL

- A. Measurement for silt fencing shall be actual linear feet of silt fence installed. Payment shall be made at the price per linear foot included in the Bid Form.
- B. Payment for hay bales will be at the per each price included in the Bid Form.

2.6 SECTION 31 00 00, EARTHWORK

- A. Excavation:
 1. No separate measurement or payment will be made for trench earth excavation for sewers and other pipelines, nor for any other appurtenant facilities such as manholes, collars, saddles, piers, and pipe protection or encasement. Payment for all such excavation shall be included in the unit prices bid per linear foot of the various sizes of pipe laid for the respective trench depths as provided for in the contract Bid Form. Where special bedding or cradles are shown on the Drawings or required by the Engineer, no allowance shall be

- made for extending earth excavation in trenches to the bottom of such bedding or cradles; such costs shall be included in the unit price bid per cubic yard of bedding material or cradle.
2. The removing of all pavements, pavement foundations, sidewalks, driveways, etc., will be included in the trench excavation for which payment will be made as provided for in paragraph a. above. No separate payment will be made for these items.
 3. Separate payment shall be made for dewatering at the unit prices established in the Bid Form and in the subject Task Order for each project. All pumping, bailing, testing, disposal of water, draining, backfilling, removing debris or waste material and for the disposal of any materials or similar work shall be included in the unit prices for dewatering.
- B. Sheeting and Shoring: For temporary sheeting and shoring required to comply with all safety regulations refer to Section 01 35 24 above.
1. No separate payment will be made for sheeting and shoring left in place in trenches in accordance with these Specifications.
- C. Sand-Clay or Crushed Stone Base or Temporary Surfacing: If specifically listed as a pay item in the Bid Form, separate payment will be made for crushed stone for temporary surfacing of cut streets. Measurement will be made on an in-place basis based on width, depth, and length of area placed. Payment will be made at the unit price bid in the Bid Form.
- D. Rock Excavation: No separate measurement or payment will be made for trench rock excavation for sewers and other pipelines, or for any other appurtenant facilities such as manholes, collars, saddles, piers, and pipe protection or encasement. Payment for all such excavation shall be included in the unit prices bid per linear foot of the various sizes of pipe laid for the respective trench depths as provided for in the Bid Form for this contract. Where special bedding or cradles are shown on the Drawings, or required by the Engineer, no allowance shall be made for extending rock excavation in trenches to the bottom of such bedding or cradle.
- E. Select Backfill Borrow Material: If specifically listed as a pay item in the Bid Form, separate payment will be made for Select Backfill Borrow Material at designated or authorized locations. Measurement will be on a Loose Truck Basis using truck dump tickets signed by the Engineer. Payment will be made at the unit price bid in the Bid Form.
- F. Testing: The cost of all testing shall be included in the various bid items associated with the construction. No separate payment will be made for compaction testing.
- 2.7 SECTION 32 20 10, REPLACEMENT PAVING, DRIVEWAYS, SIDEWALKS AND FLUMES
- A. Paving to be removed and replaced (not resurfacing) under these Specifications will be paid for according to the price bid per square yard for the various types of paving replaced. Measurement shall be the actual area of pavement replaced along the pipe centerline. The price bid for removal and replacement of asphalt paving shall include all sand-clay, crushed stone or concrete base course, asphaltic concrete, and any and all additional work incidental to the installation.

- B. Pavement surface course under these specifications will be paid at the price bid per square yard included in the Bid Form. Measurement will be the actual width in feet and the actual linear feet of pavement surface placed converted to square yards.
- C. Bituminous prime coat shall be measured as the actual width in feet and the actual linear footage of pavement primed. Bituminous tack shall be measured as the actual width in feet and the actual linear feet of area tacked. Payment shall be made at the price bid per square yard in the Bid Form. NOTE: Separate payment shall be made for prime or tack only when a separate pay item is included in the Bid Form, and then it shall be paid at the price bid per square yard included in the Bid Form. Otherwise there will be no separate payment for prime or tack.
- D. Concrete, drives, sidewalks or other structures (such as flumes) shall be measured in linear feet or square yards as indicated in the bid proposal. Measurements shall be of the actual width and/or length of concrete drive, sidewalk, flume, etc. installed. Payment shall be made at the unit price bid per linear feet or square yard in the Bid Form and shall include all forming, compaction, material, labor, reinforcing, placing, consolidating, finishing, curing, and all incidentals necessary to provide a complete and finished product.
- E. No separate payment shall be made for striping. It shall be included in the price bid for paving.

2.8 SECTION 32 92 20, SEEDING AND SODDING (Grassing)

Seeding performed under these Specifications will be paid for according to the rate bid per acre in the Bid Form for the actual installation as measured in the field in the construction area only.

Sodding performed under these specifications will be paid for according to the rate bid per square yard in the Bid Form for the actual installation as measured in the field in the construction area only. Measurement for payment shall be the area calculated from field measurements of width and length along pipeline centerline. Price bid for grassing shall include all soil preparation required, including furnishing and placing topsoil, lime, and fertilizer, all seeding, and maintenance of grassed area until a stand of grass is achieved and until acceptance by Owner.

2.9 SECTION 33 05 23.12 - FUSIBLE POLYVINYLCHLORIDE PIPE FOR INSTALLATION
BY HORIZONTAL DIRECTIONAL DRILL (HDD)
SECTION 33 05 23.13, UTILITY HORIZONTAL DIRECTIONAL DRILLING AND
SECTION 33 05 23.14, UTILITY DIRECTIONAL DRILLING PRESSURE TESTING

- A. Pipeline installed by horizontal, directional drilling shall be measured in linear feet of actual pipe installed from end to end. Pipeline end shall be defined as point of connection to conventional pipeline.
- B. Payment shall be made at the per linear foot price included in the Bid Form and shall include payment for all labor, materials, equipment, walkover guidance, anchoring, pressure testing and all other incidentals required for a complete and operational pipeline.
- C. If wire-line guidance is required to ensure the proposed installation is installed as intended, the Wire-Line Guidance Add-On should be requested by the Contractor during the development of the Task Order for each bore. Payment for the Wire-line Guidance Add-On shall be made at the

“per bore” price included in the Bid Form and shall include payment for all labor, materials, equipment, setup, coordinate acquisition, calibration, verification, operation and all other incidentals required for a complete and operational wire-line guidance system.

- D. Partial payment may be made (up to 50% of linear foot price, less retainage) upon installation of pipeline, which shall include successful pressure testing. Remaining payment (less retainage) will be made upon completion of all work activities covered under the subject Task Order, including complete site restoration.

2.10 SECTION 33 05 23.16, JACKING AND BORING OF UTILITY PIPE

- A. Payment for furnishing all labor, materials, equipment and services required for the complete installation of casing pipe by boring or jacking methods, including all classes of excavation, crushed stone, concrete, wooden blocks, anchors, straps, etc., all in accordance with these Specifications and details shown on the Drawings, shall be made at the applicable unit price bid in the Bid Form and the actual number of linear feet of casing pipe installed. This measurement shall be made from outside end to outside end of casing pipe and shall include the end sections that may be installed in open trench excavation. Unit price bid shall also include the cost of any additional insurance required by the highway department for the individual crossing(s).
- B. Carrier pipe shall be furnished, installed and paid for under applicable provisions of the piping sections of these Specifications at the unit price bid under the respective section in the Bid Form.
- C. Payment for pipeline construction in state highway/railroad rights-of-way shall be contingent upon approval and acceptance by the highway or railroad department.
- D. Coordination of the work with other utilities shall be included in all per foot piping prices included in the Bid Form. There shall be no separate payment for coordination with other utilities, including line spots, etc.

2.11 SECTION 33 05 51, DUCTILE IRON PIPING AND DUCTILE IRON AND CAST IRON FITTINGS

- A. Measurement:
 - 1. The quantities of ductile iron carrier pipe for which payment will be made under this item shall be expressed in linear feet for each size and type of pipe as shown in the Bid Form and shall be the horizontal length of ductile iron pipe installed complete in place as measured along the centerline of the pipe.
- B. Payment:
 - 1. No separate payment shall be made for any borrow excavation, clearing, or backfill. The cost of these items shall be included in the unit price bid for pipe under Section 33 05 51 and as provided for in the Bid Form.
 - 2. Payment for ductile iron carrier pipe constructed under these Specifications shall be made for the quantities determined in the manner specified above in A-1 at the price per linear foot, for each size and type of pipe listed in the Bid Form and shall include all casing spacers, end seals, tracer wire and all other appurtenances.

3. Payment so made shall constitute full compensation to the Contractor for the material, common excavation, backfill, installation, including all labor, materials, tools, equipment, and services necessary to complete the work as specified herein.
4. Coordination of the work with other utilities shall be included in all per foot piping prices included in the Bid Form. There shall be no separate payment for coordination with other utilities, including line spots, etc.

PART 3 - PRODUCTS (NOT USED)

PART 4 - EXECUTION (NOT USED)

END OF SECTION 01 22 00

SECTION 01 35 24 - SAFETY

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. The Contractor shall be responsible for conducting all work in a safe manner and taking all necessary precautions to ensure the safety and protection of workers, property, and the general public. The Contractor's responsibility for protecting the public is described in the "General Conditions".
- B. All construction work shall be conducted in accordance with the latest applicable requirements of 29CFR, Part 1926, Subpart P of the Occupational Safety and Health Act, Safety and Health Regulations for Construction, Section 107 of the Contract Work Hours and Safety Standards Act, as well as any other local and state safety codes and regulations.
- C. The Contractor shall designate a trained and qualified employee who is to be responsible for ensuring that the work is performed safely and in conformance with all applicable regulations.
- D. The Contractor shall determine for himself the safety hazards involved in prosecuting the work and the precautions necessary to conduct the work safely. If the Contractor is unsure as to any special hazards which may be unique on this project, it shall be his responsibility to hire a qualified professional to assist the Contractor in completing the project in a safe manner.
- E. The Contractor shall bear all risks associated with performing the work and shall fully indemnify the Owner and Engineer.
- F. All traffic control shall conform to the Manual on Uniform Traffic Control Devices published by the U.S. Department of Transportation, Federal Highway Administration.
- G. The Contractor shall comply with all provisions of the Trench Safety Act.

1.2 MAINTENANCE OF TRAFFIC

- A. General: No streets or roads shall be closed to traffic unless approved by the Owner and Engineer. Before approval will be granted, the Contractor shall submit a traffic accommodation plan and construction schedule satisfactory to the Owner and Engineer.
- B. Lane Closures: Prior to closing any traffic lane, the Contractor shall furnish, erect and maintain, at no expense to the Owner, suitable barrels, cones, warning signs or other devices necessary to protect the safety of the public. If the traffic lane is to be closed during the night, suitable flares or lights shall be kept burning from sunset to sunrise.
- C. Detours: Prior to closing any street or road to traffic, the Contractor shall furnish, erect, and maintain, at no expense to the Owner, suitable barricades, warning signs, flares, or lights which shall be kept burning from sunset to sunrise to keep traffic out of the area of construction and suitable signs saying "Detour" with directional arrows.

- D. If in the opinion of the Engineer the Contractor does not comply with the above requirements, the Engineer and Owner may deem necessary such work to be performed by others and the charges therefore withheld from any money due or to become due to the Contractor.

1.3 PAYMENT

- A. Compensation for complying with all safety provisions; furnishing, erecting, and maintaining the necessary detours, temporary structures, barricades, lights, flares, and signs; or for any other incidentals necessary for the good and proper safety, convenience, and direction of traffic during the period prior to final inspection and acceptance shall be made at the Lump Sum price bid in the Bid Proposal for Safety.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 35 24

SECTION 01 57 13.02 - TEMPORARY EROSION CONTROL

PART 1 - GENERAL

1.1 SCOPE OF THE WORK

- A. Erosion control shall be employed during the construction period and shall include all necessary temporary measures required to prevent soil erosion from the site until permanent erosion control and finished surfaces are installed.
- B. Erosion control measures shall be considered incidental to all construction involving land disturbing activities.

1.2 RELATED SECTIONS

- A. Section 02130 - FDEP Stormwater Permit for Construction Activity

1.3 QUALITY ASSURANCE

- A. The Contractor shall comply with applicable codes, rules, ordinances, regulations, and laws of local, municipal, state or federal authorities having jurisdiction over the project.
- B. Work on the various state and federal highways shall comply with the current Standard Specifications for Construction.
- C. Erosion control measures for construction shall conform to these Specifications and the applicable federal, state, or local codes regarding erosion.

PART 2 - PRODUCTS

2.1 SLOPE DRAINS

- A. Slope drains shall be flexible plastic pipe of a manufacture for the intended purpose.

2.2 FILTER CLOTH

- A. Filter cloth for silt fences shall be a pervious sheet of synthetic polymer filaments forming a stable network so that fibers retain their relative positions. Filter cloth shall be of the type recommended by its manufacturer for the intended application. The filter cloth shall meet the following requirement.
 - 1. Minimum Average Thickness: 30 mils (by ASTM D1777).
 - 2. Air Permeability: 250 to 550 C.F.M./Sq. Ft.
 - 3. Minimum Grab Strength: 110 lbs. (by ASTM D1682).

PART 3 - EXECUTION

3.1 GENERAL

- A. Temporary erosion control construction shall be directed toward and have the purpose of controlling soil erosion at its potential source. Downstream sediment entrapment measures shall be employed, but only as a backup to primary control at the source.
- B. A continuing program of installation and maintenance of sediment control shall be employed during the construction period.

3.2 TEMPORARY EROSION CONTROL DURING CONSTRUCTION

- A. Temporary erosion control construction shall be employed until such time as permanent paving, planting, and restoration of natural areas is effective in control of erosion from the site. Measures shall conform to the SWPPP approved as part of the submittal required in Section 01 41 26.02 of these specifications.
- B. Silt Fences:
 - 1. Temporary silt fences shall be located at all points where surface water can leave the construction area if the source area is subject to soil erosion.
 - 2. Silt fences shall be constructed to remove sediments from flowing water through filtration and sedimentation. Silt fences shall be constructed in accordance with the details shown on the drawings and the manufacturer's printed instructions.
 - 3. Silt fences shall be arranged to create ponding behind them. Provision shall be made for removing accumulated sediments and maintaining ponding capacity.
 - 4. Silt fences shall be removed and the area restored when permanent erosion control is effective.
- C. Grading Operations: Grading operations shall be scheduled so that the ground surface will be disturbed for the shortest possible time before permanent construction is installed. Large areas shall be maintained as flat as possible to minimize soil transport through surface flow.
 - 1. Wherever steeper slopes or abrupt changes in grade are required, a diversion or berm shall be constructed at the top of the slope to cause the surface water to flow along the diversion to a control point to be transported downslope in a slope drain. In no case shall surface water be allowed to flow uncontrolled down slopes.
- D. Slope Drains: Temporary slope drains shall be provided to convey surface water down slopes. Slope drains shall be provided with an apron at their tops to anchor them and properly direct water into them. Stone or rubble shall be placed at slope drain outlets to prevent scour at these points.
- E. Ground Cover:
 - 1. All exposed soils sloping 5% or greater shall be protected by application of ground cover.
 - 2. Ground cover may consist of any effective erosion preventative treatment such as straw or other mulches, plantings, etc.
 - 3. All grassing or planting operations shall include mulching as stabilization until ground cover by planting is effective.

- F. Hay Bales: This work shall consist of construction of baled hay or straw dams to protect against downstream accumulations of silt. The baled hay or straw shall be constructed as detailed or in such a manner to remain securely in place subject to the approval of the Engineer. The dam shall be placed so as to effectively control silt dispersion under conditions present on this project.

3.3 CLEANUP AND REMOVAL

- A. At the time that permanent erosion control is effective temporary devices and their accumulated sediments shall be removed.

END OF SECTION 01 57 13.02

SECTION 01 74 13 - CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Execute cleaning during progress of the work, at completion of the work and as required by General Conditions.

1.2 DISPOSAL REQUIREMENTS

- A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION

- A. Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.
- B. Provide on-site containers for the collection of waste materials, debris and rubbish.
- C. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

3.2 FINAL CLEANING

- A. Employ skilled persons for final cleaning.

- B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed surfaces.
- C. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
- D. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of sight-exposed surfaces, and all work areas, to verify that the entire work is clean.

END OF SECTION 01 74 13

SECTION 01 74 23 - CLEANUP

PART 1 - GENERAL

1.1 GENERAL

- A. This section covers the general cleanup which the Contractor shall be required to perform both during construction and before final acceptance of the project unless otherwise shown on the Drawings or specified elsewhere in these Specifications or in the subject Task Order.

1.2 HAZARD CONTROL

- A. The Contractor shall prevent accumulation of wastes which create hazardous conditions.
- B. Burning or burying rubbish and waste materials on the site shall not be allowed.

1.3 DISPOSAL OF SURPLUS MATERIALS

- A. Unless otherwise shown on the Drawings, specified or directed, the Contractor shall dispose of all surplus excavated materials and equipment from demolition, legally off the site, and shall provide his own suitable, off-site spoil area, unless an on-site area is designated by the Owner.

1.4 DURING CONSTRUCTION

- A. Execute periodic cleanup to keep the work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.
- B. Provide on-site containers for the collection of waste materials, debris and rubbish.
- C. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

1.5 FINAL CLEANING

- A. The Contractor shall remove from the site all waste material and leave the site with an appearance acceptable to the Owner.
- B. Restoration of Landscape Damage. Any landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense. The Owner or his designated representative (Engineer, etc.) will decide what method of restoration shall be used.

- C. Post-Construction Cleanup or Obliteration. The Contractor shall obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, stockpiles of excess or waste materials, or any other vestiges of construction, as directed by the Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 74 23

SECTION 03 30 00.02 - CONCRETE WORK, SHORT FORM

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. The extent of concrete work is shown on the drawings and specified in the specifications.

1.2 SUBMITTALS

- A. Shop Drawings; Concrete Reinforcement: Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement" showing bar schedules, stirrup spacing diagrams of bent bars, arrangement of concrete reinforcement.
- B. Concrete Mix Design: Submit data on each class of concrete required showing concrete mix meets all ACI requirements. Submit product data on all admixtures and other concrete related materials.

PART 2 - PRODUCTS

2.1 REINFORCING MATERIALS

- A. Reinforcing Bar (Rebar): ASTM A-615. Provide Grade 60, except where otherwise shown, for bars Nos. 3 to 18.
- B. Welded Wire Fabric (WWF): ASTM A-185, welded steel wire fabric.

2.2 CONCRETE MATERIALS

- A. Portland Cement: ASTM C-150, Type 1, unless otherwise acceptable to Engineer.
 - 1. Use only one brand of cement throughout the project, unless otherwise acceptable to Engineer.
- B. Normal Weight Aggregates: ASTM C-33, and as herein specified. Provide aggregates from a single source for all exposed concrete.
- C. Fine Aggregate: Clean, sharp, natural sand free from loam, clay, lumps, or other deleterious substances.
 - 1. Dune sand, bank-run sand and manufactured sand are not acceptable.
- D. Coarse Aggregate: Clean, uncoated, processed aggregate containing no clay, mud, loam, or foreign matter, as follows:
 - 1. Crushed stone, processed from natural rock or stone.
 - 2. Washed gravel, either natural or crushed. Use of pit or bankrun gravel is not permitted.

- E. Maximum Aggregate Size: Not larger than 1/5 of the narrowest dimensions between sides of forms, 1/3 of the depth of slabs, nor 3/4 of the minimum clear spacing between individual reinforcing bars or bundles of bars.
- F. Water: Clean, fresh, drinkable.
- G. Fly Ash: Fly ash shall be Class F. The latest version of ASTM C 618 classification must be followed for chemical requirements, physical properties (e.g., fineness, soundness, etc.), and for all other technical and non-technical specifications regarding fly ash. Sampling and testing for the verification of fly ash characteristics must be done according to the latest edition of ASTM C311. Contractor should make sure that the supplier of the fly ash should have a quality control program in conformance with ASTM C 618 that is technically and statistically sound.
- H. Corrosion Resistant Concrete: Where shown on the drawings, special corrosion resistant concrete shall be utilized. This concrete shall utilize Type II Portland Cement with Class F fly ash substituted for 25-30% of the portland cement at a ratio of 1-1/2 lbs fly ash per lb. of portland cement or shall utilize "New Cem" product manufactured by Blue Circle Cement added at the proportion recommended by the manufacturer.

2.3 PROPORTIONING AND DESIGN OF MIXES

- A. Mix Designs: All mix designs shall be proportioned in accordance with Section 3.8.2 (field experience or trial batches) of ACI 301. Submit mix designs on each class of concrete for review. If trial batches are used, the testing facility shall not be the same as used for field quality control testing unless otherwise acceptable to the Engineer.
- B. Submit written reports to the Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by the Engineer.
- C. Proportioning of fly ash or New-Cem shall be as recommended by the manufacturer.
- D. If mix is not designed by a. above, design mixes to provide normal weight concrete with the following properties as indicated on drawings and schedules.
 - 1. 4,000 psi 28-day compressive strength; 560 lbs. cement per cu. yd. minimum; maximum W/C ratio 0.35; air-entrained concrete.
 - 2. 3,000 psi 28-day compressive strength; 480 lbs. cement per cu. yd. minimum; maximum W/C ratio 0.46; air entrained concrete.
 - 3. All poured in placed concrete shall have a minimum compressive strength of 4,000 psi in 28 days except sidewalks on grade, which shall have a minimum compressive strength of 3000 psi in 28 days, or unless shown otherwise.
- E. The mix designer shall submit with the mix design a maximum amount of water that may be added to the concrete on site and still maintain the specified strength, along with supporting information and calculations. In no case shall this amount be more than 1 gallon of water per cubic yard of concrete.
- F. Slump: Proportion and design mixes to result in concrete slump at the point of placement not less than 2 inches or more than 4 inches.

PART 3 - EXECUTION

3.1 PLACING REINFORCEMENT

- A. Clean reinforcement of loose rust and mill scale, earth, ice and other materials which reduce or destroy bond with concrete.
- B. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers as required.
- C. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.
- D. Where splices in reinforcing are necessary, reinforcing shall be lapped 30 diameters.

3.2 CONCRETE PLACEMENT

- A. **Preplacement Inspection:** The Engineer must be notified 24 hours prior to concrete placement in order to inspect the areas to receive concrete. Before placing concrete, inspect and complete the formwork installation, reinforcing steel, and items to be embedded or cast-in.
- B. **General:** Comply with ACI-304 and as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation due to rehandling or flowing.
- C. Consolidate place concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidations of concrete in accordance with the recommended practices of ACI-309 to suit the type of concrete project conditions.
- D. Do not use vibrators to transport concrete inside of forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than the visible effectiveness of the machine.
- E. **Placing Concrete Slabs:** Deposit and consolidate concrete slabs in a continuous operation within the limits of construction joints until the placing of a panel or section is completed.
 - 1. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Bring slab surfaces to the correct level with a straight-edge and strikeoff. Use bull floats or darbies to smooth the surface, leaving it free of lumps or hollows. Do not sprinkle water on the plastic surface. Do not disturb the slab surfaces prior to beginning finishing operations.
 - 3. Maintain reinforcing in the proper position during concrete placement operations.
 - 4. Where slabs are poured on the ground, the soil should be thoroughly wet prior to placing the concrete.

3.3 MONOLITHIC SLAB FINISH

- A. Float Finish (Flt-Fn): Apply float finish to monolithic slab surfaces that are to receive trowel finish and other finishes as hereinafter specified.
1. After screeding and consolidating concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by handfloating if area is small or inaccessible to power units. Check and level surface plane to a tolerance so that depressions between high spots do not exceed 3/16-inch under a 10 foot straightedge. Cut down high spots and fill low spots.
 2. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

3.4 CONCRETE CURING AND PROTECTION

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures, and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper hardening.
1. Start curing as soon as free water has disappeared from concrete surface after placing and finishing.
 2. Continue curing for at least seven (7) days in accordance with ACI-301 procedures. Avoid rapid drying at end of final curing period.
- B. Curing: Perform curing of concrete by moist curing. Keep concrete surface continuously wet by covering with water, continuous water-fog spray, or by covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges with a 4 inch lap over adjacent absorptive covers.

3.5 QUALITY CONTROL TESTING DURING CONSTRUCTION

- A. The Contractor will employ a testing laboratory to perform all tests and to submit test reports. Sampling and testing for quality control during the placement of concrete shall include the following:
1. Slump: ASTM C-143; one test for each concrete load at point of discharge; and one test for each set of compressive strength test specimens.
 2. Compression Test Specimen: ASTM C-31; one set of six (6) standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.
 3. Compressive Strength Tests: ASTM C-39; one set for each 100 cu. yds. or fraction thereof, of each concrete class placed in any one day or for each 5,000 sq. ft. of surface area placed, minimum one set for each day; two (2) specimens tested at seven (7) days, three (3) specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
 4. When frequency of testing will provide less than five (5) strength tests for a given class of concrete, conduct testing from at least five (5) randomly selected batches or from each batch if fewer than five (5) are used.

5. The strength level shall be considered satisfactory so long as the average of all sets of three consecutive strength test results equal or exceed the specified strength and no individual strength test result falls below the specified strength by more than 500 psi.
- B. Tests results will be reported in writing to the Engineer and the Contractor on the same day that tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in the structure, design compressive strength at 28 days; concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.
- C. Additional Tests: The testing service will make additional test, of in-place concrete when test results indicate the required strength level has not been achieved and other characteristics have not been attained in the structure, as directed by the Engineer. The testing service may conduct tests to determine adequacy of concrete of cored cylinders complying with ASTM C-42, or by other methods as directed. Contractor shall pay for such tests conducted, and any additional testing as may be required, when unacceptable concrete is verified.

END OF SECTION 03 30 00.02

SECTION 31 00 01 - EARTHWORK FOR UTILITY LINES

PART 1 - GENERAL

1.1 SCOPE

- A. This specification section includes earthwork and related operations, including but not limited to, dewatering, as required; excavating all classes of material encountered; pumping, draining and handling of water encountered in the excavations; handling, storage, transportation, and disposal of all excavated and unsuitable material; backfilling all trenches and pits; compacting; all sheeting, shoring and bracing; and any other similar, incidental, or appurtenant earth-work operation which may be necessary to properly complete the work involving the construction of water, sewer, and force mains.
- B. The Contractor shall provide all services, labor, materials, and equipment required for all earthwork and related operations necessary or convenient to the Contractor for furnishing a complete work as shown on the Drawings or specified in these Contract Documents.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 32 12 16.04 - Replacement Paving, Driveways, and Sidewalks.

1.3 GENERAL

- A. Earthwork operations shall be performed in a safe and proper manner with appropriate precautions being taken against all hazards.
- B. All excavated and filled areas for manholes, trenches, etc., shall be maintained by the Contractor in good condition at all times until final acceptance by the Owner. All damage caused by erosion or other construction operations shall be repaired by the Contractor using material of the same type as the damaged material.
- C. Earthwork within the rights-of-way of the State Department of Transportation, the County Road Department, and any municipality in which work shall occur shall be done in accordance with requirements and provisions of the permits issued by those agencies for the construction within their respective rights-of-way. Such requirements and provisions, where applicable, shall take precedence and supersede the provisions of these Specifications.
- D. The Contractor shall control grading in a manner to prevent water from running into excavations. Obstruction of surface drainage shall be avoided and means shall be provided whereby storm water can be uninterrupted in existing gutters, other surface drains, or temporary drains. Material for backfill or for protection of excavation in public roads from surface drainage shall be neatly placed and kept shaped so as to cause the least possible interference with public travel. Free access must be provided to all fire hydrants, meters, and private drives.

- E. No classification of excavated materials will be made. Excavation and trenching work shall include the removal and subsequent handling of all materials excavated or otherwise removed in performance of the contract work, regardless of the type, character, composition, or condition thereof.
- F. Tests of compaction and density shall be conducted by an independent testing laboratory approved by the Engineer. Costs of compaction tests shall be paid for directly by the Contractor. The Contractor shall make all necessary excavations and shall supply any samples of materials necessary for conducting compaction and density tests. The cost of all retests made necessary by the failure of materials to conform to the requirements of these Contract Documents shall be paid by the Contractor.
- G. All earthwork operations shall comply with the requirements of OSHA Construction Standards, Part 1926, Subpart P, Excavations, Trenching, and Shoring, and Subpart O, Motor Vehicles, Mechanized Equipment, and Marine Operations, and the Florida Trench Safety Act and shall be conducted in a manner acceptable to the Owner.
- H. It is understood and agreed that the Contractor has made a thorough investigation of the surface and subsurface conditions of the project and any special construction problems which might arise as a result of nearby watercourses and flood plains, particularly in areas where construction activities may encounter water-bearing sands and gravels or limestone solution channels. The Contractor shall be responsible for providing all services, labor, equipment, and materials necessary or convenient to him for completing the work within the time specified in these Contract Documents.

PART 2 - PRODUCTS

2.1 SELECT EARTH MATERIAL

- A. Fine, sound, loose earth containing optimum moisture content for compaction to 100% of maximum density, free from all wood, vegetable matter, debris, and other objectional material, and having scattered clods, stones, or broken concrete less than 1½ inches in maximum dimension except that the maximum particle size shall be ¾-inch when used with PVC or other flexible thermoplastic pipe.

2.2 COMMON EARTH BACKFILL

- A. Sound, loose earth containing optimum moisture content for compaction to 100 percent of maximum density as determined by AASHTO T-99, Methods A, free from all wood, vegetable matter, debris, and other objectionable material, and have scattered clods, stones, or broken concrete and pavement less than ¾ inches in maximum dimension.

2.3 SELECT BACKFILL BORROW MATERIAL

- A. Select backfill borrow material shall be obtained from offsite and shall be an approved sand/clay free from all wood, vegetable matter, debris, or other objectionable material.

2.4 SAND

- A. Natural or imported sand conforming to ASTM D 1073.

2.5 CRUSHED STONE SELECT FOUNDATION MATERIAL

- A. Crushed stone size 67 conforming to Section 901 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition.

2.6 CLASS B CONCRETE

- A. Class B concrete as specified in the section entitled "Cast-in-Place Concrete" of these specifications.

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor shall exercise special precautions for the protection and preservation of trees, cultivated shrubs, sod, fences, buildings, and other structures which are located in the construction area but not within designated clearing limits. The Contractor shall be responsible for the repair and/or replacement of any of the aforementioned items damaged by his operation or construction activities.

3.2 DEWATERING

- A. The Contractor shall provide and maintain at all times during construction ample means and devices with which to promptly remove and properly dispose of all water from any source entering the excavations or other parts of the work. Dewatering shall be accomplished by methods which will ensure a dry excavation and preservation of the final lines and grades of the bottoms of excavations. Methods of dewatering may include sump pumps, well points, deep wells, or other suitable methods which do not damage or weaken structures, foundations, or subgrades. Shallow excavations may be dewatered using open ditches provided such ditches are kept open and free-draining at all times. The actual dewatering methods used shall be acceptable to the Owner.
- B. Unless specifically authorized by the Owner, no concrete or mortar shall be placed in water nor shall water be allowed to rise over newly-placed concrete or mortar for at least 24 hours after placement.
- C. Water shall not be allowed to rise above bedding during pipe-laying operations. The Contractor shall exercise care to prevent damage to pipelines or manholes resulting from flotation, undermining, or scour. Dewatering operations shall commence when ground or surface water is first encountered and shall be continuous until such times as water can safely be allowed to rise in accordance with the provisions of this section.

- D. Standby pumping equipment shall be on the jobsite. A minimum of one standby unit shall be available for immediate installation should any pumping unit fail. The design and installation of well points or deep wells shall be suitable for the accomplishment of the work. Drawings or diagrams on proposed well point or deep well dewatering systems shall be submitted to the Owner for his files, if requested.
- E. The Contractor shall dispose of the water from the work in a suitable manner without damage to adjacent property. Conveyance of the water shall be such as to not interfere with traffic flow or treatment facilities operation. The Contractor will be held responsible for the condition of any pipe or conduit which he may use for drainage purposes, and all such pipes or conduits shall be left clean and free of sediment.
- F. The Contractor shall be responsible for obtaining coverage under the *Generic Permit for the Discharge of Produced Ground water from Non-Contaminated Site Activity* (FDEP Document Number 62-621.300 (2)) for any water that is discharged to surface waters of the State, as defined in Chapter 62-620, F.A.C., during dewatering operations.
 - 1. Required water testing shall be performed by an independent laboratory certified by the State of Florida FDEP to perform testing on ground water.
 - 2. If initial testing proves that the produced water does not meet the requirements for disposal under the generic permit other methods of disposal may be considered as approved by the Engineer.
 - 3. All costs associated with permitting, testing of water and proper disposal of water from the earthwork operation shall be the sole responsibility of the Contractor. See Section 01 41 26.

3.3 SHEETING, SHORING, AND BRACING

- A. The sides of all excavations shall be sufficiently sheeted, shored, and braced as necessary to prevent slides, cave-ins, settlement or movement of the banks, to maintain the excavation clear of all obstructions, and to provide safe working conditions. Wood or steel sheeting of approved design and type shall be used in wet, saturated or flowing ground. All sheeting, shoring, and bracing shall have sufficient strength and rigidity to withstand the pressure exerted and to maintain shape and position under all circumstances.
- B. The responsibility for correctly assessing the need for sheeting and analyzing the stresses induced shall be the total responsibility of the Contractor. Since the Owner does not dictate or determine the Contractor's sequence or limits of excavation, the Owner assumes no responsibility for sheeting and shoring. The Contractor must employ or otherwise provide for adequate professional structural and geotechnical engineering supervision to assess the need for sheeting and shoring and design same.
- C. Excavations adjacent to existing or proposed buildings and structures, or in paved streets or alleys shall be sheeted, shored, and braced adequately to prevent undermining beneath or subsequent settlement of such structures or pavements. Underpinning of adjacent structures shall be done when necessary to maintain structures in safe condition. Any damage to structures or pavements occurring through settlements, water or earth pressures, slides, caves, or other causes, due to failure or lack of sheeting or bracing, or due to improper bracing, or occurring through negligence or fault of the Contractor in any other manner shall be repaired by the Contractor at his own expense.

- D. Sheeting, shoring, or bracing materials shall not be left in place unless otherwise specified or shown on the Drawings or ordered by the Owner in writing. Such materials shall be removed in such manner that no danger or damage will occur to new or existing structures or property, public or private, and so that cave-ins or slides will not take place. Trench sheeting shall be left in place until backfill has been brought to a level 12 inches above the top of the pipe.
- E. All holes and voids left in the work by the removal of sheeting, shoring, or bracing shall be filled and thoroughly compacted.

3.4 EXCAVATION

A. General:

- 1. Excavation shall include the removal of all material from an area necessary for the construction of the pipeline or manholes. Excavations shall provide adequate working space and clearances for the work to be performed therein.
- 2. Where quicksand, soft clay, spongy, swampy or other materials unsuitable for subgrade or foundation purposes are encountered below the excavation limits, they shall be removed and disposed of to the level of suitable material. Areas so excavated shall be backfilled with compacted layers of ASTM C-136, #67 crushed rock or other approved material conforming to the requirements specified herein for backfill to the lines and grades shown on the Drawings.
- 3. Barriers shall be placed at each end of all excavations and at such places as may be necessary along excavations to warn all pedestrian and vehicular traffic of such excavations. Lights shall also be placed along excavations from sunset each day to sunrise of the next day until the excavations are backfilled. All excavations shall be barricaded in such a manner as to prevent persons from falling or walking into any excavation.

B. Borrow Material:

- 1. Wherever the backfill of excavated areas or the placement of embankments or other fills requires specified material not available at the site or material in excess of suitable material available from the authorized excavations, such materials shall be obtained from other sources. This may require the opening of borrow pits at points not immediately accessible from the work. In such cases the Contractor shall make suitable arrangements with the property owner and shall pay all costs incidental to the borrow material including royalties, if any, for the use of the material. Before a borrow pit is opened, the quality and suitability of the material to be obtained therefrom shall be approved by the Engineer.

C. Trench Excavation:

- 1. Trench excavation shall consist of the removal of materials necessary for the construction of force mains, water, sewer, and other pipelines and all appurtenant facilities including manholes called for on the Drawings.
- 2. Excavation for pipelines shall be made in open cut unless shown otherwise on the Drawings. Trenches shall be cut true to the lines and grades shown on the Drawings or established by the Engineer on the ground. The banks of trenches shall be cut in vertical, parallel planes equidistant from the pipe centerline. From an elevation 12 inches above the top of the pipe to the bottom of the trench, the horizontal distance between vertical planes for different sizes of pipe shall not exceed those shown on the Drawings. When sheeting is used, the width of the trench shall be considered as the distance between the

inside faces of the sheeting. The bottom of the trench shall be cut carefully to the required grade of the pipe except where bedding materials or cradles are shown, in which case the excavation shall extend to the bottom of the bedding or cradles as shown on the Drawings. Minimum pipe cover shall be as shown on the Drawings or specified in these Contract Documents.

3. The use of a motor-powered trenching machine will be permitted but full responsibility for the preservation, replacement, and/or repair of damage to any existing utility services and private property shall rest with the Contractor.
4. Bell holes for bell and spigot pipe and/or mechanical joint pipe shall be excavated at proper intervals so the barrel of the pipe will rest for its entire length upon the bottom of the trench. Bell holes shall be large enough to permit proper installation of all joints in the pipe. Bell holes shall not be excavated more than 10 joints ahead of pipe laying. No part of any bell or coupling shall be in contact with the trench bottom, trench walls, or granular embedment when the pipe is jointed.
5. Pipe trenches shall not be excavated more than 200 feet in advance of pipe laying and all work shall be performed to cause the least possible inconvenience to the public.
6. Unless otherwise specified herein or shown on the Drawings wherever pipe trenches are excavated below the elevation shown on the Drawings, the Contractor, at his own expense, shall fill the void thus made to the proper grade with compacted layers of ASTM C-136, #67 crushed rock or sand conforming to the requirements specified herein for backfill.
7. In all cases where materials are deposited along open trenches they shall be placed so that no damage will result to the work and/or adjacent property in case of rain or other surface wash.

3.5 BACKFILLING

A. General:

1. Unless otherwise specified herein, earth backfill shall be compacted to not less than 95% of the maximum density at optimum water content as determined by AASHTO T-99, Method A (Standard Proctor). Crushed stone shall be compacted or consolidated to not less than 83% of the solid volume density as determined from the bulk specific gravity by AASHTO T-84 and T-85 and the dry weight of the aggregate.
2. Material that is too dry for adequate compaction shall receive a prior admix of sufficient water to secure optimum moisture content. Material having excessive water content shall not be placed at any time.
3. Unless otherwise specified herein backfill material required to be compacted shall be placed in horizontal layers not to exceed 6 inches in thickness (before compaction) and compacted in place by ramming, tamping, or rolling. Compaction shall be accomplished by power driven tools and machinery wherever possible. Compaction and consolidation of sand and crushed rock backfill shall be accomplished using vibrating equipment in a manner acceptable to the Owner.

B. Backfilling Trenches:

1. The backfilling of sewer, water, and other pipeline trenches shall be started immediately after the construction of same has been inspected and approved by the Owner. Backfill shall be placed in the trench under and on each side of the pipe in 6-inch layers for the full width of the trench and thoroughly and uniformly compacted by ramming and/or tamping to a minimum of 95% of the maximum density as described below. Sufficient select earth backfill shall be placed under and over the pipe and compacted to provide a

cover of not less than 12 inches over the top of the pipe. Mechanical compactors or tampers shall not be used within 12 inches of pipe. Compaction in this area shall be accomplished by hand methods. Sand or specified crushed stone select foundation material shall be substituted for select earth backfill when the pipe is bituminous coated steel pipe or wrapped steel pipe or when crushed stone select foundation material is required. Backfilling using common earth backfill material shall proceed simultaneously on both sides of the pipe to prevent lateral displacement. Caution shall be used during backfill operations for PVC or other flexible thermoplastic pipe to prevent pipe deformation. PVC or other flexible thermoplastic pipe shall not be subjected to roller or wheel loads until a minimum of 36 inches of backfill has been placed over the top of the pipe and hydrohammer shall NOT be used until a minimum depth of 48 inches backfill has been placed over the top of the pipe.

2. In streets, alleys, across sidewalks and driveways, and at any other places subject to vehicular traffic or other superimposed loads, backfill shall be placed as described above, except for the top 6 or 8 inches (as indicated on the Drawings or in the Bid Form) of backfill, which shall be compacted sand/clay or crushed stone temporary surfacing as described in Section 32 20 10. All earth backfill shall be compacted to not less than 100% of the maximum density at optimum moisture content as determined by AASHTO T-99, Method A (Standard Proctor) instead of the 95% specified above. Where specified or shown on the Drawings, compacted crushed rock shall be substituted for common earth backfill for the entire depth of the trench. Crushed stone backfill shall be compacted to 83% of the solid volume density determined as specified above. When crushed rock backfill is required it shall be placed in lifts of 48 inches maximum and compacted by use of a hydro-hammer or approved vibratory compactor.
3. In all other areas not affected by superimposed loads, common earth backfill may be placed as described in B.1 above and compacted to not less than 95% of the maximum density at optimum moisture as determined by AASHTO T-99, Method A (Standard Proctor).
4. All backfilling shall be performed in such a manner that the pipe or structure over or against which it is being placed will not be disturbed or injured. Any pipe or structure injured, damaged, or moved from its proper line or grade during backfilling operations shall be removed and repaired to the satisfaction of the Engineer and then re-backfilled.

3.6 TEST REPORTS

- A. All testing, including necessary retests, will be paid for by Contractor. The Contractor shall furnish two (2) copies of all test reports within 24 hours to the Owner's representative on the site. Tests shall be taken as follows:
 1. In areas subject to superimposed loads: One proctor density test and one field density test at approximately 500 foot intervals at the points and depths selected by the Engineer plus one field density test at each manhole.
 2. In areas not subject to superimposed loads: One proctor density test and one field density test at approximately 1,000 foot intervals at the points and depths selected by the Engineer.

3.7 DISPOSAL OF WASTE AND UNSUITABLE MATERIALS

- A. All materials removed by excavation, which are suitable for the purpose, shall be used to the extent possible for backfilling pipe trenches or for such other purposes as may be shown on the

Drawings. All materials not used for such purposes shall be considered as waste materials and the disposal thereof shall be made by the Contractor in a manner and at locations consistent with rules and regulations.

- B. With approval of the Owner waste materials may be spread on site in uniform layers and neatly leveled and shaped. Spoil banks shall be provided with sufficient and adequate openings to permit surface drainage of adjacent lands.
- C. Unsuitable materials, consisting of wood, vegetable matter, debris, soft or spongy clay, peat, and other objectionable material so designated by the Owner shall be removed from the work site and disposed of by the Contractor in a manner and at a location consistent with rules and regulations.

3.8 FINAL GRADING

- A. After other earthwork operations have been completed, the sites of all structures, and embankments shall be graded to reinstate the original condition. Grading operations shall be so conducted that materials shall not be removed or loosened beyond the required limits. The finished surfaces shall be left in smooth and uniform planes such as are normally obtainable from the use of hand tools. If the Contractor is able to obtain the required degree of evenness by means of mechanical equipment he will not be required to use hand labor methods. Slopes and ditches shall be neatly trimmed and finished to slopes shown on the Drawings unless otherwise approved by the Engineer.
- B. Unless otherwise specified or shown on the Drawings, all finished ground surfaces shall be graded and dressed to present a surface varying not more than plus or minus 0.10 foot as regards to local humps or depressions and shall be acceptable to the Owner.

3.9 MAINTENANCE OF SEWER TRENCHES

- A. Immediately after backfill and compaction of the excavated main and lateral trenches, the Contractor shall dress the trenches flush with the existing pavement and begin maintenance of same. The Contractor shall provide backfill material for the trenches when settlement or washing of the trenches occur. The maintenance period shall cover a minimum of the time period from initial pavement removal until the final inspection of the project unless otherwise directed by the Owner. At no time during the maintenance period shall the trenches show a settlement of 2 inches without additional backfill being placed on the trenches. Maintenance is to be performed daily or as needed to maintain in good condition in the opinion of the Owner.

3.10 SETTLEMENT WARRANTY

- A. The Contractor shall be responsible for all settlement of backfill, fills, and embankments which may occur within two (2) years after final acceptance of the work by the Owner.
- B. The Contractor shall make, or cause to be made, all repairs or replacements made necessary by settlement within 30 days after receipt of written notice from the Owner.

END OF SECTION 31 00 01

SECTION 32 20 10 - REPLACEMENT PAVING, DRIVEWAYS, SIDEWALKS AND FLUMES

PART 1 - GENERAL

1.1 RELATED WORK ELSEWHERE

- A. Section 31 00 01 – Earthwork for Utilities

1.2 SCOPE

- A. The work to be performed under this section shall consist of replacing existing sidewalks and pavement in paved streets and driveways where such sidewalks and pavement have been removed for constructing pipelines, manholes, and all other appurtenances and structures.

1.3 SUBMITTALS

- A. Submit product data on prime and tack, asphaltic concrete materials, paint materials and pavement markers.
- B. Submit mix designs on each type of asphaltic concrete.
- C. Submit in accordance with Section 01 33 00.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cement: Conform to the requirements of Section 346-2 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition.
- B. Bituminous Prime and Tack: Conform to the requirements of (Section 300-2 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition.
- C. Asphaltic Concrete Materials: Conform to the requirements of Section 334 and 337 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition.
- D. Traffic Line Stripe, Traffic Control Markings, and Pavement Markers: Sections 710 and 706 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition.
- E. Crushed Stone for Temporary Surfacing/Base: Crushed stone size 67 conforming to Section 901 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition.

2.2 CRUSHED STONE SELECT FOUNDATION MATERIAL

- A. Crushed stone size 67 conforming to Section 901 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition

PART 3 - EXECUTION

3.1 TYPES OF PAVEMENTS

- A. All existing pavement in streets or driveways which is removed, destroyed, or damaged by construction shall be replaced with the same type of pavement (portland cement pavement, bituminous concrete pavement or gravel) as that which existed before construction work was started unless shown otherwise on the Drawings. Materials, equipment, and construction methods used for paving work shall conform to the State Department of Transportation specifications applicable to the particular type required for replacement, repair, or new pavements.
- B. Portland cement concrete pavement or similar structures such as flumes shall be replaced with concrete in accordance with paragraph 2.1.A of these Specifications. The surface finish of the concrete replaced shall conform to that of the existing. The surface of the replaced concrete base course shall be left rough. The slab shall be of depth equivalent to the existing concrete pavement/structure or base course, but in no case less than 6 inches thick. Expansion joints removed shall be replaced. Concrete pavements or concrete base courses shall be reinforced and shall conform to details shown on the Drawings and applicable specification, Portland Cement Concrete Pavement, Section 350 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition.
- C. Asphaltic concrete pavement shall be replaced with Type SP-9.5 (coarse), Level A asphaltic concrete conforming to Section 334 of the Florida DOT Standard Specifications for Road and Bridge Construction, 2014 Edition, unless indicated otherwise.
- D. Gravel Pavement: Where sewerage lines and appurtenances are constructed in or across unpaved, chert, or crushed stone surfaced streets, roadways or driveways, or when a temporary crushed stone surface is called for in a paved street, the surface removed or damaged shall be repaired or replaced with a minimum of 6 inches of crushed stone in accordance with the section of these specification titled "EARTHWORK".

3.2 REMOVAL AND REPLACEMENT OF ASPHALT PAVEMENT (PATCHING)

- A. Where sewerage lines and appurtenances are constructed in existing paved streets, the pavements shall be removed and replaced in accordance with the following procedure:
1. The existing street pavement or surface shall be neatly and squarely cut and removed along the line of the work for the width required for the trench or structure.
 2. Immediately following sewer installation, trench backfill shall be compacted for the full depth of the trench as specified in the section of these specifications titled "EARTHWORK".
 3. Trench backfill along paved streets and driveways shall include 9-1/2 inches of sand-clay or 7-1/2 inches of No. 67 Crushed Stone as a temporary surfacing of the trenches. This

- temporary surface shall be installed level with the existing asphalt surface and shall be maintained dust-free by the Contractor until compaction tests are performed and the replacement pavement is placed.
4. if the street is to be resurfaced following patching, the asphalt surface shall be replaced within 5 days after backfill is placed. If not, the asphalt surface shall be replaced within 30 days after backfill is placed.
 5. When temporary sand-clay or crushed stone surface is considered by the Engineer to be sufficient to be used as base, the surface shall be graded smooth and to the proper elevation. If adjacent undisturbed paving remains, the proper elevation is that which will make the final surfacing level with the adjacent surfacing that was undisturbed. If the entire street is to be resurfaced later, the proper elevation is such that the new paving will be at the same elevation as that removed. Then compaction tests shall be performed. One (1) proctor density and one (1) field density test shall be performed at approximately 500 foot intervals at points selected by the Engineer plus one (1) field density test at each manhole. Minimum requirement for compaction shall be 98% of the maximum density at the optimum moisture as determined by AASHTO T-180, Method A (Modified Proctor) for sand-clay, and for crushed stone shall be 83% of the solid volume density determined from the bulk specific gravity by AASHTO T-84 and T-85 and the dry weight of the aggregate.
 6. If the temporary sand-clay or crushed rock surface is to be replaced, it shall be removed and new sand-clay or crushed stone base shall be placed and tested as described above. Crushed stone base shall be placed and allowed to sit for three (3) days before concrete base and/or pavement surface courses are applied.
 7. A prime coat consisting of a single application of bituminous material shall be applied to the prepared base. No prime coat shall be applied until the preparation of the old surface has been approved by the Engineer. Before applying prime, the surface shall be swept clean and all loose and foreign matter removed. Method of material application for prime shall conform to the requirements as set forth in Section 300 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition.
 8. Following application of prime, a surface course shall be applied. This item shall consist of a bituminous plant mix wearing surface applied in accordance with Section 330 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2014 Edition and accepted according to Section 334-5.2 of said specifications. The plant mix surface shall be placed at a minimum rate of 165 lbs/s.y. unless shown otherwise on the drawings.
 9. If the street is to be subsequently resurfaced, the replaced asphalt shall be allowed to sit subject to weather and traffic until it has completely settled before the resurfacing takes place.
 10. Wherever sewer lines are constructed across state highways, the Contractor shall comply with all requirements and provisions of the Standard Method of the State Department of Transportation for opening trenches through highways and replacing pavements as shown on the Drawings and specified herein. All such work shall be subject to inspection and approval by the State Department of Transportation.
 11. Contractor shall remove all surplus excavation materials and debris and overspray of prime or tack from the street surfaces and rights-of-way and shall restore street, roadway, or sidewalk surfacing to its original condition. This work shall be done immediately following placement of asphalt and shall be considered as cleanup and no separate payment will be made for this item.

3.3 RESURFACING OF PATCHED STREETS AND PAVED AREAS

- A. Where called for on the Plans or in the Specifications full-width bituminous resurfacing shall be applied in addition to asphalt patching. Full-width bituminous resurfacing shall consist of either pulverizing the existing asphalt, reworking the base and placing a wearing surface or placing a leveling course and wearing surface.
- B. Pulverized In-situ Material Base Course: This item shall consist of mixing by pulverizing the existing asphalt surface and base material to provide a foundation course for a surface course or pavement.
1. The pulverized base course shall be in accordance with these specifications and in conformity with the lines, grades, thicknesses, and typical cross-sections shown on the plans or as designated by the Engineer. The work covered shall consist of furnishing all labor, equipment, and operation required to mix, shape water and compact the in-situ materials base course in accordance with the plans and specifications thereof. The base course shall be processed by thoroughly pulverizing, blending, and mixing until uniform in texture and appearance, the existing asphalt surface and base material. The material shall then be shaped, watered and compacted. Density requirements for compaction shall be 98% of the maximum density at optimum moisture content as measured by AASHTO T-180, Method A (Modified Proctor). The section and density shall be maintained until placement of the surface course.
 2. Prime Coat: The bituminous treatment shall consist of a prime coat composed of a single application of bituminous material on a prepared base course. No prime coat shall be applied until base course has been approved by the Engineer. Before applying prime, the surface shall be swept clean and sprinkled with water if directed by the Engineer. Care shall be taken to keep prime off curb and gutter. If splattered prime is unable to be removed from curb and gutter, it will be just cause for replacing the curb and gutter at the expense of the Contractor. Method of application for prime shall conform to the requirements as set forth in (FOR ALABAMA) Section 401 of the Alabama Highway Department Standard Specifications for Highway Construction, 2012 Edition (FOR FLORIDA) Section 300 of the Florida Department of Transportation Standard Specification for Road and Bridge Construction, 2014 Edition.
- C. Resurfacing Existing Paved and Patched Surfaces:
1. Loose material, dust, dirt, caked clay, and any foreign material that might prevent proper bond with the existing surface shall be removed to the shoulders or curb for the full width of the treatment by means of blading, revolving brooms, mechanical sweepers, and blowers. Surface dust and other loose materials not removed by mechanical means shall be removed with hand brooms. Particular care shall be taken to clean the outer edges of the strip to be treated in order to insure that the bituminous treatment will adhere. Sweeping and blowing shall be continued until all the loose dirt is removed and the surfaces of the larger size aggregate in the road surface are exposed but not dislodged. All sweeping shall be removed before any bituminous material is applied. Heavy concentration of broomed or loose stone, on or adjacent to resurfacing areas shall be removed and disposed of by the Contractor at a site obtained by the Contractor. No tack coat shall be applied until the preparation of the old surface has been approved by the Engineer. Before applying tack all vegetation shall have been removed and surface treated with an approved soil sterilant to prevent the emergence of vegetation.
 2. Tack Coat: The tack coat shall consist of a single application of bituminous material on a prepared existing asphalt surface. No tack coat shall be applied until the preparation of the old surface has been approved by the Engineer. Before applying tack the surface

shall be swept clean and all vegetation and foreign matter removed. Method of material application for tack shall conform to the requirements as set forth in (FOR ALABAMA) Sections 401 and 405 of the Alabama State Highway Department Standard Specifications, 2012 Edition (FOR FLORIDA) Section 300 of the Florida DOT Standard Specifications for Road and Bridge Construction, 2014 Edition.

3. Bituminous Plant Mix Leveling Course: This item shall consist of a Bituminous Plant mix leveling course applied in accordance with (FOR ALABAMA) Sections 410 and 424 of the Alabama State Highway Department Standard Specifications, 2012 Edition. The mix shall be designed on the fine side of the restricted zone. (FOR FLORIDA) Section 330 of the Florida DOT Standard Specifications for Road and Bridge Construction, 2014 Edition.

- D. Bituminous Plant Mix Wearing Surface: This item shall consist of a Bituminous Plant Mix wearing surface applied in accordance with (FOR ALABAMA) Sections 410 and 424 of the Alabama Highway Department Standard Specifications, 2012 Edition. The mix shall be designed on fine side of the restricted zone. (FOR FLORIDA) Section 330 of the Florida DOT Standard Specifications for Road and Bridge Construction, 2014 Edition and accepted in accordance with Section 334-5.2 of said Specifications. The finished plant mix wearing course shall be placed at a rate of 125 lbs. per square yard, unless shown otherwise on the plans.

E. Manhole and Valve Adjustments:

1. Manholes shall be adjusted to finished paving surface prior to the placement of any asphalt resurfacing. The manholes shall be adjusted by resetting manhole frames. Manhole frames shall be dug up and re-set to the proper grade to match the new resurfacing. The frames shall be properly grouted in place and all patching around the manhole shall be completed with concrete left below finish grade appropriate thickness of bituminous resurfacing course.
2. Valves boxes shall also be adjusted to the finished paving surface prior to the placement of any asphalt resurfacing. The Contractor shall notify the water and gas companies that serve the area and have them locate all known valves to be affected by this project.

3.4 REMOVING PAVEMENT, REPLACING BASE AND PAVING (ENTIRE WIDTH)

- A. Where sewerage lines and appurtenances are constructed in existing paved streets, the pavements shall be removed and replaced with base in accordance with the following procedures:

1. The existing street pavement or surface shall be removed along the line of the work for the width required for the trench or structure.
2. Immediately following sewer installation, trench backfill shall be compacted for the full depth of the trench as specified in the section of these Specifications entitled "EARTHWORK".
3. Trench backfill along paved streets and driveways shall include 6 inches of No. 57 Crusher Run Stone or Sand-Clay Base as a temporary surfacing of the trenches. This temporary surface shall be installed level with the existing asphalt surface and shall be maintained dust-free by the Contractor until compaction tests are performed and the replacement pavement is placed.
4. Within 30 days after backfill is placed the asphalt surface shall be replaced.

- B. Full-width bituminous paving shall be applied to all areas where pavement was removed. Full-width bituminous paving shall consist of the following items:

1. Pulverized In-situ Material Base Course: This item shall consist of mixing by pulverizing the existing surface and base material for the entire street width to provide a foundation for a surface course of pavement.
 - a. The pulverized base course shall be in accordance with these specifications and in conformity with the lines, grades, thicknesses, and typical cross-sections shown on the plans or as designated by the Engineer. The work covered shall consist of furnishing all labor, equipment, and operation required to mix, shape water and compact the in-situ materials base course in accordance with the plans and specifications thereof. The base course shall be processed by thoroughly pulverizing, blending, and mixing until uniform in texture and appearance, the existing surface and base material. The material shall then be shaped, watered and compacted. Density requirements for compaction shall be 98% of the maximum density at optimum moisture content as measured by AASHTO T-180, Method A (modified proctor) for sand clay, and for crushed stone shall be 83% of the volume density as determined from the bulk specific gravity by AASHTO T-84 and T-85 and the dry weight of aggregate. Testing requirements shall be as follows: One (1) Proctor Density test and one (1) Field Density test at approximately 500 foot intervals at points selected by the Engineer plus one (1) Field Density test at each manhole. The section and density shall be maintained until placement of the surface course.
2. Prime Coat: The bituminous treatment shall consist of a prime coat composed of a single application of bituminous material on a prepared base course. No prime coat shall be applied until base course has been approved by the Engineer. Before applying prime, the surface shall be swept clean and sprinkled with water if directed by the Engineer. Care shall be taken to keep prime off curb and gutter. If splattered prime is unable to be removed from curb and gutter, it will be just cause for replacing the curb and gutter at the expense of the Contractor. Method of material application for prime shall conform to the requirements as set forth in (FOR ALABAMA) Section 401 and 405 of the Alabama State Highway Department Standard Specifications, 2012 Edition (FOR FLORIDA) Section 300 of the Florida Department of Transportation Standard Specification for Road and Bridge Construction, 2014 Edition.
3. Bituminous Plant Mix Wearing Surface: This item shall consist of a Bituminous Plant Mix wearing surface applied in accordance with Section 330 of the Florida DOT Standard Specifications for Road and Bridge Construction, 2014 Edition and accepted in accordance with Section 334-5.2 of said specifications. The finished plant mix wearing course shall be placed at a rate of 165 lbs. per square yard, unless shown otherwise on the plans.
4. Manhole and Valve Adjustments:
 - a. Manholes shall be adjusted to finished paving surface prior to the placement of any asphalt resurfacing. The manholes shall be adjusted by resetting manhole frames. Manhole frames shall be dug up and re-set to the proper grade to match the new resurfacing. The frames shall be properly grouted in place and all patching around the manhole shall be completed with concrete and left 1½ inches below finish grade for bituminous resurfacing course.
 - b. Valve boxes shall also be adjusted to the finished paving surface prior to the placement of any asphalt resurfacing. The Contractor shall notify the water and gas companies that serve the area and have them locate all known valves to be affected by this project.

3.5 REMOVAL AND REPLACEMENT OF GRAVEL PAVING

- A. Where sewerage lines and appurtenances are constructed in existing gravel drives, the gravel shall be removed and replaced in accordance with the following procedure:
1. The existing gravel will be removed along the line of the work for the width required for the trench or structure.
 2. Immediately following sewer installation, trench backfill shall be compacted for the full depth of the trench as specified in the section of these specifications titled "EARTHWORK".
 3. Trench backfill shall include 6 inches of No. 57 Crusher Run Stone installed level with the undisturbed surface.
 4. The gravel surface shall be replaced within 5 days after backfill is placed.
 5. The compaction tests shall be performed. One (1) density test shall be performed at each driveway. Minimum requirement for compaction shall be 83% of the solid volume density determined from the bulk specific gravity by AASHTO T-84 and T-85 and the dry weight of the aggregate.

3.6 SIDEWALK, DRIVEWAY AND FLUME REPLACEMENT

- A. Construction:
1. All concrete sidewalks, driveways, flumes and similar concrete structures shall be built and/or replaced with concrete material as specified herein.
 2. Asphalt sidewalks and driveways shall be replaced with asphalt material as specified herein.
 3. Shell or gravel driveways shall be replaced with a minimum of 8" of #57 crushed stone which shall be shaped and compacted to the template of the remaining driveway.
 4. Preformed joints for use in concrete structures shall be 1/2-inch thick conforming to the latest edition of AASHTO Standard Specifications, M59, for preformed bituminous fiber joints.
 5. Concrete forms shall be of wood or metal, shall be straight and free from warp, and shall be of sufficient strength when in place to hold the concrete true to line and grade within springing or distortion.
- B. When a section of sidewalk, driveway, flume or similar structure is removed, the existing shall be cut to a neat line perpendicular to both the centerline and the surface of the slab. Concrete shall be cut along the nearest existing contraction joints unless such joints do not exist in which case the cut shall be made at minimum distances shown on the Drawings.
- C. Existing concrete structures that have been cut and removed for construction purposes shall be replaced with structures of the same width and surface as the portion removed. Concrete sidewalks and flumes shall have a minimum uniform thickness of 4 inches. Asphalt sidewalks or driveways shall have a minimum placement of 150 pounds per square yard. The new work shall be neatly jointed to the old so that the surface of the new work shall form an even unbroken plane with the old.
- D. Subgrade:
1. The subgrade for concrete structures shall be formed by excavating to a depth equal to the thickness of the concrete plus 2 inches. Subgrade shall be of such width as to permit the proper installation and bracing of the forms. Subgrades shall be compacted by hand tamping or rolling. Soft, yielding, or unstable material shall be removed and backfilled

with satisfactory material. Two (2) inches of porous crushed stone shall be placed under all sidewalks and shall be compacted thoroughly and finished to a smooth unyielding surface at proper line, grade, and cross section.

2. The subgrade for asphalt sidewalks or driveways shall be formed by excavating to a depth equal to the thickness of the asphalt plus 6 inches and to a width of the asphalt plus 12 inches.
 - E. Base for asphalt sidewalks or driveways shall be 6 inches thick sand/clay and shall be 12 inches wider than the asphalt surface. Base shall be compacted to a minimum of 95% of the maximum laboratory density at optimum water content as determined by AASHTO T-99, Method A (Standard Proctor).
 - F. A prime coat shall be sprayed uniformly over the compacted base at a rate of 0.15 gallons per square yard.
 - G. A minimum of 150 pounds per square yard of asphalt shall be placed and compacted the entire width of the sidewalk or driveway. Asphalt shall be compacted to 95% of the maximum laboratory density. A core shall be cut every 100 linear feet at locations selected by the Engineer and used to determine the average thickness of the asphalt. The thickness of no core shall be less than ¼-inch less than the average thickness of all cores.
 - H. Expansion joints shall be required to replace any existing expansion joints that are removed with the sidewalk or driveway or in new construction every 30 feet. Expansion joints shall be true and even, shall present a satisfactory appearance, and shall extend to within ½-inch of the top of finished concrete surface.
 - I. Concrete shall be suitably protected from freezing and excessive heat. It shall be kept covered with burlap or other suitable material and kept wet until cured.

3.7 MAINTENANCE

- A. The Contractor shall maintain the surfaces of roadways built and pavements replaced until the acceptance of the project. Maintenance shall include such dragging, reshaping, wetting, and rerolling as are necessary to prevent raveling of the road material, the preservation of reasonably smooth surfaces and repair of damaged or unsatisfactory surfaces to the satisfaction of the Engineer. Maintenance shall also include sprinkling as may be necessary to abate dust.

END OF SECTION 32 20 10

SECTION 33 05 23.12 - FUSIBLE POLYVINYLCHLORIDE PIPE FOR INSTALLATION BY HORIZONTAL DIRECTIONAL DRILL (HDD)

1.1 GENERAL DESCRIPTION

A. Scope

1. This section specifies fusible polyvinylchloride pipe, including standards for dimensionality, testing, quality, acceptable fusion practice, safe handling, storage and installation of the pipe by horizontal directional drilling, directional boring, or guided boring.

B. Requirements

1. Contractor shall provide fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification for installation by horizontal directional drilling.
2. Contractor shall be responsible for all installation processes and procedures associated with the installation by horizontal directional drilling in accordance with this specification.

C. Pipe Description

1. Pipe Supplier shall furnish fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification.
2. Pipe shall conform to the following dimensionality and general characteristics table:

Pipe Description	Nominal Diameter (in.)	DR	Color	Pressure Class (psi)	Required Inner Diameter (in.)
30" DR25 Fusible C-905® PVC	30"	25	Blue	165	29.29

1.2 QUALITY ASSURANCE

A. References:

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those other standards are included as references under this section as if referenced directly. In the event of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of design, bid, or construction, whichever is earliest. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.
3. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether

the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ANSI/AWWA C110/A21.10	American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
ANSI/AWWA C111/A21.11	American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
ANSI/AWWA C153/A21.53	AWWA Standard for Ductile-Iron Compact Fittings for Water Service
AWWA C605	Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
AWWA C651	Standard for Disinfecting Water Mains
AWWA C900	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100mm Through 300mm), for Water Distribution
AWWA C905	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350mm Through 1200mm), for Water Distribution and Transmission
AWWA M23	AWWA Manual of Supply Practices PVC Pipe—Design and Installation, Second Edition
ASTM C923	Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
ASTM D1784	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D1785	Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
ASTM D2152	Test Method for Degree of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
ASTM D2241	Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
ASTM D2665	Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM F477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F679	Standard Specification for Poly(Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
ASTM F1057	Standard Practice for Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique
ASTM F1417	Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
UNI-B-6	Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe
UNI-PUB-08	Tapping Guide for PVC Pressure Pipe
NSF-14	Plastics Piping System Components and Related Materials
NSF-61	Drinking Water System Components--Health Effects
PPI TR-2	PVC Range Composition Listing of Qualified Ingredients

B. Manufacturer Requirements

1. All piping shall be made from PVC compound conforming to cell classification 12454 per ASTM D1784.

C. Fusion Technician Requirements

1. Fusion Technician shall be fully qualified by the pipe supplier to install fusible polyvinylchloride pipe of the type(s) and size(s) being used. Qualification shall be current as of the actual date of fusion performance on the project.
- D. Specified Pipe Suppliers
1. Fusible polyvinylchloride pipe shall be used as manufactured under the trade names Fusible C-900®, Fusible C-905®, and FPVC®, for Underground Solutions, Inc., Poway, CA, (858) 679-9551. Fusion process shall be as patented by Underground Solutions, Inc., Poway, CA, Patent No. 6,982,051. Owner and engineer are aware of no other supplier of fusible polyvinylchloride pipe that is an equal to this specified pipe supplier and products.
- E. Warranty
1. The pipe shall be warranted for one year per the pipe supplier's standard terms.
 2. In addition to the standard pipe warranty, the fusion services shall be warranted for one year per the fusion service provider's standard terms.
- F. Pre-Construction Submittals
1. The following PRODUCT DATA is required from the pipe supplier and/or fusion provider:
 - a. Pipe Size
 - b. Dimensionality
 - c. Pressure Class per applicable standard
 - d. Color
 - e. Recommended Minimum Bending Radius
 - f. Recommended Maximum Safe Pull Force
 - g. Fusion technician qualification indicating conformance with this specification
 2. The following WORK PLAN AND INFORMATION is required from the contractor and/or horizontal directional drilling Contractor. This WORK PLAN AND INFORMATION shall also be supplied to the pipe supplier, should it be requested:
 - a. Work plan shall include for each HDD installation any excavation locations and dimensions, interfering utilities, bore dimensions and locations including bend radii used, and traffic control schematics.
 - b. A project safety and contingency plan which shall include but shall not be limited to drilling fluid containment and cleanup procedures, equipment and plan for compromised utility installations including electrical and power lines, water, wastewater and any other subsurface utility in the area.
 - c. An HDD schedule identifying daily work hours and working dates for each installation.
- G. Post-Construction Submittals
1. The following AS-RECORDED DATA is required from the contractor and/or fusion provider to the owner or pipe supplier upon request:
 - a. Approved datalogger device reports
 - b. Fusion joint documentation containing the following information:
 - 1) Pipe Size and Thickness
 - 2) Machine Size
 - 3) Fusion Technician Identification
 - 4) Job Identification
 - 5) Fusion Joint Number
 - 6) Fusion, Heating, and Drag Pressure Settings

- 7) Heat Plate Temperature
 - 8) Time Stamp
 - 9) Heating and Cool Down Time of Fusion
 - 10) Ambient Temperature
- c. As-recorded Information
- 1) The as-recorded plan and profile will reflect the actual installed alignment, and reflect the horizontal offset from the baseline and depth of cover.
 - 2) All fittings, valves, or other appurtenances will also be referenced and shown.
 - 3) A daily project log, along with tracking log sheets, should they be used, shall be provided. Tracking log sheet data, should it be employed, shall include any and all that apply, including inclination, depth, azimuth, and hydraulic pull-back and rotational force measured.

PART 2 - PRODUCTS

2.1 FUSIBLE POLYVINYLCHLORIDE PRESSURE PIPE FOR POTABLE WATER

- A. Fusible polyvinylchloride pipe shall conform to AWWA C900, AWWA C905, ASTM D2241 or ASTM D1785 for standard dimensions, as applicable. Testing shall be in accordance with the referenced AWWA standards for all pipe types.
- B. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.
- C. Fusible polyvinylchloride pipe shall be manufactured in a standard 40' nominal length, or custom lengths as specified.
- D. Fusible polyvinylchloride pipe shall be blue in color for potable water use.
- E. Pipe shall be marked as follows:
 1. Nominal pipe size
 2. PVC
 3. Dimension Ratio, Standard Dimension Ratio, or Schedule
 4. AWWA pressure class, or standard pressure rating for non-AWWA pipe, as applicable
 5. NSF-61 mark verifying suitability for potable water service
 6. Extrusion production-record code
 7. Trademark or trade name
 8. Cell Classification 12454 and/or PVC material code 1120 may also be included
- F. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

2.2 FUSION JOINTS

- A. Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's written guidelines for this procedure. All fusion joints shall be completed as described in this specification.

2.3 CONNECTIONS AND FITTINGS FOR PRESSURE APPLICATIONS

- A. Connections shall be defined in conjunction with the coupling of project piping, as well as the tie-ins to other piping systems.
- B. Ductile Iron Mechanical And Flanged Fittings
 1. Acceptable fittings for use with fusible polyvinylchloride pipe shall include standard ductile iron fittings conforming to AWWA/ANSI C110/A21.10, or AWWA/ANSI C153/A21.53 and AWWA/ANSI C111/A21.11.
 2. Connections to fusible polyvinylchloride pipe may be made using a restrained or non-restrained retainer gland product for PVC pipe, as well as for MJ or flanged fittings.
 3. Bends, tees and other ductile iron fittings shall be restrained with the use of thrust blocking or other means as indicated in the construction documents.
 4. Ductile iron fittings and glands must be installed per the manufacturer's guidelines.
- C. PVC Gasketed, Push-On Fittings
- D. Acceptable fittings for use with fusible polyvinylchloride pipe shall include standard PVC pressure fittings conforming to AWWA C900 or AWWA C905.
 1. Acceptable fittings for use joining fusible polyvinylchloride pipe other sections of fusible polyvinylchloride pipe or other sections of PVC pipe shall include gasketed PVC, push-on type couplings and fittings, including bends, tees, and couplings as shown in the drawings.
 2. Bends, tees and other PVC fittings shall be restrained with the use of thrust blocking or other restraint products as indicated in the construction documents.
 3. PVC gasketed, push-on fittings and mechanical restraints, if used, must be installed per the manufacturer's guidelines.
- E. Fusible Polyvinyl Chloride Sweeps Or Bends
 1. Fusible polyvinyl chloride sweeps or bends shall conform to the same sizing convention, diameter, dimensional tolerances and pressure class of the pipe being joined using the sweep or bend.
 2. Fusible polyvinyl chloride sweeps or bends shall be manufactured from the same fusible polyvinyl chloride pipe being used for the installation, and shall have at least 2 feet of straight section on either end of the sweep or bend to allow for fusion of the sweep to the pipe installation. There shall be no gasketed connections utilized with a fusible polyvinyl chloride sweep.
 3. Standard fusible polyvinyl chloride sweep or bend angles shall not be greater than 22.5 degrees, and shall be used in nominal diameters ranging from 4 inch through 16 inch.
- F. Sleeve-Type Couplings
 1. Sleeve-type mechanical couplings shall be manufactured for use with PVC pressure pipe, and may be restrained or unrestrained as indicated in the construction documents.
 2. Sleeve-type couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

G. Expansion and Flexible Couplings

1. Expansion-type mechanical couplings shall be manufactured for use with PVC pipe, and may be restrained or unrestrained as required for the installation.
2. Expansion-type mechanical couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

H. Connection Hardware

1. Bolts and nuts for buried service shall be made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.

2.4 DRILLING SYSTEM EQUIPMENT

A. General

1. The directional drilling equipment, as a minimum, shall consist of a directional drilling rig of sufficient capacity to perform the bore(s) and pull-back of the pipe(s), a drilling fluid mixing & delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations, and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project. All required equipment shall be included in the emergency and contingency plan as submitted per these specifications.

B. Drilling Rig

1. The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull drill pipe while delivering a pressurized fluid mixture to a drill head. The machine shall be anchored to withstand the pulling, pushing and rotating forces required to complete the project.
2. The drilling rig hydraulic system shall be of sufficient pressure and volume to power drilling operations. The hydraulic system shall be free from leaks.
3. The drilling rig shall have a system to monitor pull-back hydraulic pressure during pull-back operations.

C. Drill Head

1. The horizontal directional drilling equipment shall produce a stable fluid lined tunnel with the use of a steer-able drill head and any subsequent pre-reaming heads.
2. The system must be able to control the depth and direction of the drilling operation.
3. Drill head shall contain all necessary cutters and fluid jets for the operation, and shall be of the appropriate design for the ground medium being drilled.

D. Drilling Fluid System

1. Drilling Fluid (Drilling Mud)
 - a. Drilling fluid shall be composed of clean water and the appropriate additive(s) for the fluid to be used. Water shall be from a clean source and shall meet the mixing requirements of the mixture manufacturer(s).
 - b. The water and additives shall be mixed thoroughly to assure the absence of any clumps or clods. No hazardous additives may be used.
 - c. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall(s).

- d. Drilling fluid shall be disposed of off-site in accordance with local, state and federal requirements and/or permit conditions.
- e. No additional chemicals or polymer surfactants shall be allowed to be added to the drilling fluid unless they have been submitted per this specification.
- 2. Mixing System
 - a. A drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid for the project.
 - b. The mixing system shall be able to ensure thorough mixing of the drilling fluid. The drilling fluid reservoir tank shall be sized for adequate storage of the fluid.
 - c. The mixing system shall continually agitate the drilling fluid during drilling operations.
- 3. Drilling Fluid Delivery and Recovery System
 - a. The drilling fluid pumping system shall have a minimum capacity to supply drilling fluid in accordance with the drilling equipment pull-back rating at a constant required pressure.
 - b. The delivery system shall have filters or other appropriate in-line equipment to prevent solids from being pumped into the drill pipe.
 - c. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. The use of spill containment measures shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps, vacuum truck(s), and/or storage of sufficient size shall be in place to contain excess drilling fluid.
 - d. A closed-loop drilling fluid system and a drilling fluid cleaning system should be used to whatever extent practical, depending upon project size and conditions. Under no circumstances shall drilling fluid that has escaped containment be reused in the drilling system.
- 4. Drilling Control System
 - a. Calibration of the electronic detection and control system shall be verified prior to the start of the bore.
 - b. The drilling head shall be remotely steer-able by means of an electronic or magnetic detection system. The drilling head location shall be monitored in three dimensions:
 - 1) Offset from the baseline,
 - 2) Distance along the baseline, and
 - 3) Depth of cover.
 - c. Point of rotation of the head shall also be monitored.
 - d. For gravity application and on-grade drilling, sonde/beacon or approved equipment applicable for grade increments of 1/10th of one percent shall be used.

2.5 PIPE PULL HEADS

- A. Pipe pull heads shall be utilized that employ a positive through-bolt design assuring a smooth wall against the pipe cross-section at all times.
- B. Pipe pull heads shall be specifically designed for use with fusible polyvinylchloride pipe, and shall be as recommended by the pipe supplier.

2.6 PIPE ROLLERS

- A. Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe during handling and pullback operations.
- B. A sufficient quantity of rollers and spacing, per the pipe supplier's guidelines shall be used to assure adequate support and excessive sagging of the product pipe.

PART 3 - EXECUTION

3.1 DELIVERY AND OFF-LOADING

- A. All pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the owner or engineer.
- B. Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify owner or engineer immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe size, color, and type.
- C. Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all of the pipe supplier's guidelines shall be followed.
- D. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.
- E. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.
- F. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.

3.2 HANDLING AND STORAGE

- A. Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the owner or engineer.
- B. Any scratch or gouge greater than 10% of the wall thickness will be considered significant and will be rejected.
- C. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

- D. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.
- E. If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.
- F. Pipe shall be stored and stacked per the pipe supplier's guidelines.

3.3 FUSION PROCESS

A. General

- 1. Fusible polyvinylchloride pipe will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
- 2. Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
- 3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine.
- 4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following elements:
 - a. HEAT PLATE - Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly; cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
 - b. CARRIAGE – Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
 - c. GENERAL MACHINE - Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
 - d. DATA LOGGING DEVICE – An approved datalogging device with the current version of the pipe supplier's recommended and compatible software shall be used. Datalogging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.
- 5. Other equipment specifically required for the fusion process shall include the following:
 - a. Pipe rollers shall be used for support of pipe to either side of the machine
 - b. A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement, extreme temperatures, and /or windy weather, per the pipe supplier's recommendations.
 - c. An infrared (IR) pyrometer for checking pipe and heat plate temperatures.
 - d. Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.
 - e. Facing blades specifically designed for cutting fusible polyvinylchloride pipe shall be used.

B. Joint Recording

1. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of fusible polyvinyl chloride pipe. The software shall register and/or record the parameters required by the pipe supplier and these specifications. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

3.4 DRILLING OPERATIONS

A. General

1. Bore path and alignment are as indicated in the contract documents. The path of the bore may be modified based on field and equipment conditions. Entry and exit locations and control-point elevations shall be maintained as indicated in the contract documents.
2. Bend radii shown in the contract documents are minimum allowable radii and shall not be reduced.

B. Location And Protection Of Underground Utilities

1. Correct location of all underground utilities that may impact the HDD installation is the responsibility of the Contractor, regardless of any locations shown on the drawings or previous surveys completed.
2. Utility location and notification services shall be contacted by the Contractor prior to the start of construction.
3. All existing lines and underground utilities shall be positively identified, including exposing those facilities that are located within an envelope of possible impact of HDD installation as determined for the project specific site conditions. It is the Contractor and HDD system operator's responsibility to determine this envelope of safe offset from existing utilities. This will include, but is not limited to, soil conditions and layering, utility proximity and material, HDD system and equipment, and foreign subsurface material.

C. Site Location Preparation

1. Work site as indicated on drawings shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made.
2. Contractor shall confine all activities to designated work areas.

D. Drilling Layout And Tolerances

1. The drill path shall be accurately surveyed with entry and exit areas placed in the appropriate locations within the areas indicated on drawings. If using a magnetic guidance system, drill path will be surveyed for any surface geomagnetic variations or anomalies.
2. Instrumentation shall be provided and maintained at all times that accurately locates the pilot hole, measures drill-string axial and torsional loads and measures drilling fluid discharge rate and pressure.
3. Entry and exit areas shall be drilled so as not to exceed the bending limitations of the pipe as recommended by the pipe supplier.
4. **PRODUCT LOCATING AND TRACKING:** The method of locating and tracking the drill head during the pilot bore shall be shown in each individual Task Order. Walkover and DC wire-line guidance are the accepted methods of tracking directional bores. Contractor shall use a locating and tracking system capable of ensuring that the proposed

installation is installed as intended. Walkover guidance shall be the standard method for installation included in the per foot price bid for each bore type.

E. Pilot Hole Bore

1. Pilot hole shall be drilled along bore path. In the event that the pilot bore does deviate from the bore path, it may require contractor to pull-back and re-drill from the location along bore path before the deviation.
2. The Contractor shall limit curvature in any direction to reduce force on the pipe during pull-back. The minimum radius of curvature shall be no less than that specified by the pipe supplier and as indicated on the drawings.

F. Reaming

1. After successfully completing the pilot hole, the bore hole shall be reamed to a diameter which meets the requirements of the pipe being installed. The following table is offered as an estimated guide:

Nominal Pipe Diameter	Bore Hole Diameter
< 8 inches	Pipe Dia. + 4 inches
8 inches to 24 inches	Pipe Dia. X 1.5
> 24 inches	Pipe Dia. + 12 inches

2. Multiple reaming passes shall be used at the discretion of the Contractor and shall conform to this specification.
3. In the event of a drilling fluid fracture, returns loss or other loss of drilling fluid, the Contractor shall be responsible for restoring any damaged property to original condition and cleaning up the area in the vicinity of the damage or loss.

3.5 PIPE PULL-BACK AND INSERTION

- A. Pipe shall be fused prior to insertion, if the site and conditions allow, into one continuous length.
- B. Contractor shall handle the pipe in a manner that will not over-stress the pipe prior to insertion. Vertical and horizontal curves shall be limited so that the pipe does not bend past the pipe supplier's minimum allowable bend radius, buckle, or otherwise become damaged. Damaged portions of the pipe shall be removed and replaced.
- C. The pipe entry area shall be graded as needed to provide support for the pipe and to allow free movement into the bore hole.
 1. The pipe shall be guided into the bore hole to avoid deformation of, or damage to, the pipe.
 2. The fusible polyvinylchloride pipe may be continuously or partially supported on rollers or other Owner and Engineer approved friction decreasing implement during joining and insertion, as long as the pipe is not over-stressed or critically abraded prior to, or during installation.
 3. A swivel shall be used between the reaming head and the fusible polyvinylchloride pipe to minimize torsion stress on the pipe assembly.

- D. Buoyancy modification shall be at the sole discretion of the Contractor, and shall not exceed the pipe supplier's guidelines in regards to maximum pull force or minimum bend radius of the pipe. Damage caused by buoyancy modifications shall be the responsibility of the Contractor.
- E. Once pull-back operations have commenced, the operation shall continue without interruption until the pipe is completely pulled through the bore hole.
- F. The pipe shall be installed in a manner that does not cause upheaval, settlement, cracking, or movement and distortion of surface features. Any damages caused by the Contractor's operations shall be corrected by the Contractor at no additional cost to the Owner.

3.6 INSTALLATION CLEANUP

- A. Following the installation, the project site shall be returned to a condition equal to or better than the pre-construction condition of the site. All excavations will be backfilled and compacted per the construction documents and jurisdictional standards. All pavement and hardscape shall be repaired per applicable jurisdictional standards, excess materials shall be removed from the site, and disturbed areas shall be re-landscaped. All drilling fluid shall be properly disposed of per these specifications and all applicable jurisdictional laws.
- B. Contractor shall verify that all utilities, structures, and surface features in the project area are sound.

3.7 PREPARATION PRIOR TO MAKING CONNECTIONS INTO EXISTING PIPING SYSTEMS

- A. Approximate locations for existing piping systems are shown in the construction documents. Prior to making connections into existing piping systems, the contractor shall:
 - 1. Field verify location, size, piping material, and piping system of the existing pipe.
 - 2. Obtain all required fittings, which may include saddles, sleeve type couplings, flanges, tees, or others as shown in the construction documents.
 - 3. Have installed all temporary pumps and/or pipes in accordance with established connection plans.
- B. Unless otherwise approved, new piping systems shall be completely assembled and successfully tested prior to making connections into existing pipe systems.

3.8 PIPE SYSTEM CONNECTIONS

- A. Pipe connections shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines. Pipe connections to structures shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines.
- B. If possible, pipe installed via HDD shall be filled with water prior to making any connections to the existing system or other portions of the project.

3.9 TAPPING FOR POTABLE WATER APPLICATIONS

- A. Tapping shall be performed using standard tapping saddles designed for use on PVC piping in accordance with AWWA C605. Tapping shall be performed only with use of tap saddles or sleeves. **NO DIRECT TAPPING WILL BE PERMITTED.** Tapping shall be performed in accordance with the applicable sections for Saddle Tapping per Uni-Pub-8.
- B. All connections requiring a larger diameter than that recommended by the pipe supplier, shall be made with a pipe connection as specified and indicated on the drawings.
- C. Equipment used for tapping shall be made specifically for tapping PVC pipe:
 - 1. Tapping bits shall be slotted "shell" style cutters, specifically made for PVC pipe. 'Hole saws' made for cutting wood, steel, ductile iron, or other materials are strictly prohibited.
 - 2. Manually operated or power operated drilling machines may be used.
- D. Taps may be performed while the pipeline is filled with water and under pressure ('wet' tap,) or when the pipeline is not filled with water and not under pressure ('dry' tap).

3.10 TESTING

- A. Testing shall comply with all applicable jurisdictional building codes, statutes, standards, regulations, and laws.
- B. Hydrostatic Testing and Leakage Testing for Pressure Piping
 - 1. Hydrostatic and leakage testing for piping systems that contain mechanical jointing as well as fused PVC jointing shall comply with AWWA C605.
 - 2. Unless agreed to or otherwise designated by the owner or engineer, for a simultaneous hydrostatic and leakage test following installation, a pressure equal to 150% of working pressure at point of test, but not less than 125% of normal working pressure at highest elevation shall be applied. The duration of the pressure test shall be for two (2) hours. **The minimum hydrostatic test pressure for any segment of the completed water mains shall be 150 psi.**
 - 3. If hydrostatic testing and leakage testing are performed at separate times, follow procedures as outlined in AWWA C605.
 - 4. **All equipment and appurtenances necessary for pressure testing, including but not limited to a test cap with 2" nipple and stainless-steel ball valves, shall be provided by the Contractor.**
 - 5. In preparation for pressure testing the following parameters must be followed:
 - a. All air must be vented from the pipeline prior to pressurization. This may be accomplished with the use of the air relief valves or corporation stop valves, vent piping in the testing hardware or end caps, or any other method which adequately allows air to escape the pipeline at all high points. Venting may also be accomplished by 'flushing' the pipeline in accordance with the parameters and procedures as described in AWWA C605.
 - b. The pipeline must be fully restrained prior to pressurization. This includes complete installation of all mechanical restraints per the restraint manufacturer's guidelines, whether permanent or temporary to the final installation. This also includes the installation and curing of any and all required thrust blocking. All appurtenances included in the pressure test, including valves, blow-offs, and air-relief valves shall be checked for proper installation and restraint prior to beginning the test.

- c. Temporary pipeline alignments that are being tested, such as those that are partially installed in their permanent location shall be configured to minimize the amount of potentially trapped air in the pipeline.

- C. Disinfection of the Pipeline for Potable Water Piping
 - 1. After installation, the pipeline, having passed all required testing, shall be disinfected prior to being put into service. Unless otherwise directed by the owner or engineer, the pipeline will be disinfected per AWWA C651.

- D. Partial Testing
 - 1. Segments of the pipe may be tested separately in accordance with standard testing procedure, as approved by the owner and engineer. Testing of each HDD installation prior to connection to the system or other piping is required

END OF SECTION 33 05 23.12

SECTION 33 05 23.13 - UTILITY HORIZONTAL DIRECTIONAL DRILLING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish all labor, materials, equipment, and consumables as necessary to install a pressure pipeline via horizontal directional drilling.

1.2 DESIGN/PERFORMANCE REQUIREMENTS

- A. Provide design engineering for the work as described in paragraph 1.1 and as described herein and on the contract drawings, including, but not limited to, the following elements:
 - 1. Bore hole diameter and length
 - 2. Pipeline size and material
 - 3. Drilling procedures
 - 4. Pipeline pulling operations
 - 5. Method of drilling fluid disposal
 - 6. Area required for drilling operations
 - 7. Drilling fluids and disposal management plan
 - 8. Plans and profile drawings of the proposed horizontal and vertical alignment of the pipeline run, including points of entry and exit.
 - 9. The contractor's submitted design shall be signed and sealed by a Professional Engineer whose specialty includes design of horizontal drilling operations.
- B. The contractor shall be responsible for conducting the job in accordance with all applicable federal, state and local permits, codes and statutes.

1.3 SUBMITTALS

- A. Submit six (6) copies to the Engineer for approval.
- B. Shop Drawings: Complete layout and details for fabrication and installation of pipeline; including design data and calculations. Submittal shall include, but not limited to, elements listed in paragraph 1.2 A.
- C. Task Schedule: Detailed schedule of tasks for each stage or operation involved in the work of this section. Include as a minimum the following major tasks:
 - 1. Preparatory earthwork operations
 - 2. Drilling rig mobilization and set-up
 - 3. Pipe delivery and on-site pipe joining operations
 - 4. Pilot hole drilling and reaming operations
 - 5. Pipeline hydrostatic testing
 - 6. Pipeline pulling operations
 - 7. Drilling fluid disposal
 - 8. Restoration and demobilization

9. Task schedule shall conform to contract schedule as outlined in the General Provisions.
- D. As-Built Drawings: Plan and profile drawing of the installed pipeline, within 30 days of completing the pipeline installation.
- E. Product Data: Manufacturer's descriptive product data and current material specifications, including installation specifications.
 1. Pipeline specifications including size and composition.
- F. Disposal Management Plan: The plan shall describe the contractor's plans for disposal of the drilling fluid and the names, addresses and telephone numbers of any and all subcontractors who will be performing any portion of the disposal activities. At a minimum the plan shall include:
 1. Disposal method
 2. Disposal hauler(s)
 3. Disposal location
 4. Estimated quantity to be disposed
 5. Type of vehicle hauling drilling fluid
 6. Verification of disposal equipment registration with appropriate state agencies if applicable.
 7. Copy of disposal permit or written statement from permitting agency stating that permit is not required.
- G. Pipe Connection Procedures: The contractor shall submit pipe connection procedures to the Engineer prior to connecting any pipe. For plastic pipe (HDPE) the contractor shall submit written approval, of his procedures, by the pipe manufacturers' representatives. For steel pipe, the contractor shall submit welder's certifications, welding procedure and proposed joint design sealed by Professional Engineer whose specialty includes design of large welded piping. For ductile iron pipe, the Contractor shall submit proposed joint design and connection description.

1.4 PERMITS

- A. Army Corps of Engineers has advised that the pipeline installation is covered under a nationwide general permit.
- B. The contractor shall obtain all necessary permits for the transportation and disposal of the drilling fluids. Copies of the disposal permits shall be kept on-site during drilling operations.

1.5 QUALITY ASSURANCE

- A. The contractor shall provide evidence of at least 3 years experience in horizontal directional drilling and pipe pulling of the type required by this project as evidenced by at least 5 jobs of equal or greater diameter and length and shall maintain on-site at least one supervisor who has at least 5 years of experience on projects of this type.

1.6 MATERIAL DELIVERY, STORAGE, AND HANDLING

- A. In the case of each type of material, the contractor shall transport, handle, and store such products in a manner as recommended by the respective product manufacturer.
- B. Provide the proper off-ground storage of pipe products as required by the pipe manufacturers.
- C. The contractor shall be responsible for securing all project materials and shall bear the cost of replacing any materials which may become misplaced or stolen.

PART 2 - PRODUCTS

2.1 DRILLING MATERIALS

- A. The drilling materials used by the contractor to aid in the directional drilling operations shall be of the contractor's choosing, but they shall supply with all federal and local requirements as applicable to this project.
- B. Water required for drilling operations shall be provided by the contractor. Fresh water shall be used for all drilling operations.
- C. Drilling fluid additives shall be of the contractor's choosing.

2.2 PIPE

- A. The pipeline shall be either High Density Polyethylene (HDPE), steel or ductile iron of the diameter as called for on the plans. Thickness shall be as required for installation stresses and overburden pressures.
 - 1. HDPE pipe shall conform to ASTM F714. Polyethylene resin compound shall conform to ASTM D1248, Type III, Category 5, Class C, Grade P34, and shall have a long term hydrostatic strength of 1600 psi per ASTM D2837.
 - 2. Steel pipe shall conform to ASTM A53, A106, or A524 for seamless pipe and shall be epoxy coated interior and exterior in accordance with the specification requirements for steel sewer pipe.
 - 3. Ductile iron pipe shall conform to ANSI A21.50 and ANSI A21.51, using 60,000 psi tensile strength, 42,000 psi yield strength and 10 percent minimum elongation.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Perform the necessary general earthwork operations as required for the directional drilling and pipe pulling operations. Prior to commencement of excavation and drilling operations locate all above ground and underground utilities.

3.2 SITE ACCESS

- A. The contractor shall be responsible for constructing all means of temporary access to the designated work sites and shall be liable for all damages caused as a result of the work.

3.3 PIPELINE JOINTS

- A. Perform all pipeline joints in accordance with approved procedures.
- B. HDPE Piping: Thermal butt-fusion conforming to ASTM D2657. The HDPE pipe manufacturer shall inspect, and approve in writing, all butt-fusion joints.
- C. Steel Piping: Joints shall be butt welded with backing rings. Weld shall conform to ANSI B-31.1. Welder shall be certified per ASME-17. Pipe shall be shipped from the fabricator with ends prepared for welding. Field cuts shall be portable lathes. Field burning is prohibited. All welds shall be visually examined and shall meet acceptance standards in ANSI B-31.
- D. Ductile Iron Piping: Joints shall be Tri-flex.

3.4 ENTRY POINT LOCATION

- A. The location of the pit excavation, equipment set-up and entry point shall be determined by the contractor.

3.5 EXIT POINT LOCATION

- A. The exit point shall be determined by the contractor.

3.6 DRILLING OPERATIONS

- A. The contractor shall at all times during drilling operations maintain instrumentation in operation which will accurately locate the pilot hole and which will accurately measure the drilling fluid flow discharge rate and pressure.
- B. The contractor shall take the necessary precautions to insure that the drilling fluid pressure in the drill hole does not exceed that which can be contained by the overburden soil to prevent any discharge or leakage into the channel or onto adjacent banks.
- C. The pilot hole shall be drilled along the path indicated on the contractor's submittal drawing under Section 1.2 A.8.
- D. The contractor shall inspect for buckled/crimped pipe after pull-back into the drill hole and inspection records shall be provided to the owner. The contractor shall be liable for retrieving or sealing any pipe that becomes lodged in the drill hole. If it becomes necessary to drill an alternate hole, the contractor shall redrill the hole and furnish all additional materials required to complete the job as indicated on the plans and specifications at no additional cost to the owner.

- E. Provide metal fluid tanks on the north and south sides of the channel, sufficient in size to contain all drilling fluids resulting from the drilling operation. Insure that all fluids are contained within the metal tanks or the drill hole prior to the removal from the site. In the event of a drilling fluid discharge, the contractor shall notify Owner and perform immediate clean up.
- F. Promptly remove from the job and properly dispose of all drilling fluids and associated cuttings (sand, rock, dirt) in accordance to the approved disposal management plan after completion of drilling and pipe pull-back operations.
- G. Provide the Engineer with a copy of the Bill of Lading/Trip Ticket for each truckload of disposed fluid and submit to the Engineer the lab sample results if lab samples are required by the disposal permit.
- H. **PRODUCT LOCATING AND TRACKING:** The method of locating and tracking the drill head during the pilot bore shall be shown in each individual Task Order. Walkover and DC wire-line guidance are the accepted methods of tracking directional bores. Contractor shall use a locating and tracking system capable of ensuring that the proposed installation is installed as intended. Walkover guidance shall be the standard method for installation included in the per foot price bid for each bore type.

3.7 PIPE PULLING OPERATIONS

- A. The pulling head shall be designed by the contractor to withstand the continuous tensile pull stresses with intermittent sudden occasional surges. The contractor shall be responsible for determining the pulling loads.
- B. Provide sufficient pipe launching and guiding supports to prevent pipe damage during the pulling in operation.
- C. The pipe manufacturer's representative shall inspect and approve, in writing, the contractor's pipe pulling method.
- D. Should the pipe become damaged, the damaged pipe section(s) shall be removed and replaced by the contractor, at no additional cost to the owner.

END OF SECTION 33 05 23.13

SECTION 33 05 23.14 - UTILITY HORIZONTAL DIRECTIONAL DRILLING PRESSURE TESTING

PART 1 - GENERAL

1.1 WORK INCLUDED IN THIS SECTION

- A. The work of this section includes requirements for hydrostatic leakage testing of pressure pipelines for transmission mains installed by directional drilling.

1.2 SUBMITTALS

- A. The following shall be submitted in compliance with Section 01 33 00:
1. Pressure test bulkhead locations with design calculations, water supply details including back flow preventers, flow meters, valves, and drains.
 2. Requests for use of water from waterlines of appropriate water utility 48 hours in advance.
 3. Provide a recent record of pressure gauge and chart recorder calibrations.
 4. Provide records of each directionally installed pipe section during testing. Test records shall include:
 - a. Date of test.
 - b. Identification of pipeline, or pipeline section, tested and retested.
 - c. Identification of pipeline material.
 - d. Identification of pipeline specification.
 - e. Test pressure.
 - f. Remarks: Leaks identified (type and location), types of repairs, or corrections made.
 - g. Certification by Contractor that the leakage rate measured conformed to the specifications.
 - h. Test duration.
 - i. Allowable losses.
 - j. Actual losses.
 - k. All charts of pressure recordings.

PART 2 - PRODUCTS

2.1 TEST BULKHEADS

- A. Design and fabricate test bulkheads per Section VIII of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. Materials shall comply with Part UCS of said Code. Design pressure shall be at least 2.0 times the specified test pressure for the section of pipe containing the bulkhead. Limit stresses to 70% of yield strength of the bulkhead at the bulkhead design pressure. Include air-release and water drainage connections if necessary.

2.2 TEST OUTLETS AND TEMPORARY VALVES

- A. Provide additional outlets and temporary valves for releasing air or apply the test where automatic air valves or other outlets are available in the pipeline. Construct the outlets in the same manner as for a permanent outlet and after use, seal with a blind flange, pipe cap, or plug and coat equal to the adjacent pipe.

2.3 TEST FLUID AND TEMPORARY PIPING

- A. Use only potable water for the hydrostatic pressure test. Provide an approved and certified reduced pressure back flow prevention assembly if source of potable water is from public waterlines. If necessary, provide temporary piping to convey the test fluid used in the pipeline. Disconnect and remove temporary piping after complying with the allowable leakage.

2.4 TEST EQUIPMENT

Provide calibrated pressure gauges, pressure chart recorder, pipes, pumps, meters, and other equipment necessary to perform the hydrostatic pressure test. **All equipment and appurtenances necessary for pressure testing, including but not limited to a test cap with 2” nipple and stainless-steel ball valves, shall be provided by the Contractor.**

PART 3 - EXECUTION

3.1 GENERAL

- A. All testing shall be performed in the presence of the engineer or his designated representative. Subject the pipeline and appurtenances to a hydrostatic pressure test as stipulated below. Use a calibrated recorder during the test and provide a record to the Engineer. Existing facilities will be operated by or under the direction of the Owner only. When the Owner furnishes and installs valves at takeoffs from its existing system, the Contractor shall omit a length of pipe, provide adequate blocking, and test the new piping independently of the Owner’s existing system. Test shall not be made against Owner furnished or installed valves.

3.2 CLEANING

- A. Pipes shall be cleaned using high pressure water jet, sweeping, scrubbing, pigging, or equally effective means. All water, sediment, dirt, and foreign material accumulated during this cleaning operation shall be discharged, vacuumed, or otherwise removed from the pipe and properly disposed.

3.3 SEQUENCE OF TESTING

- A. Pipeline shall be tested prior to insertion and after insertion.

3.4 LENGTH OF TEST SECTION

- A. The entire length of each directionally installed pipeline section, with adapters and reducers in place, shall be hydrostatically tested as one test section before and after installation.

3.5 INITIAL PIPELINE FILLING FOR HYDROSTATIC TESTING

- A. Maximum rate of filling with test fluid shall not cause water velocity in the pipeline to exceed 5 fps. Expel air from the pipeline while filling and prior to testing. Provide necessary vents and outlets at the ends to fill and test pipeline.

3.6 TESTING OF HDPE PIPE

- A. Provide a snubber or dampener between the pump and the pipeline to reduce instantaneous pressure pulses to 10% of the test pressure.
- B. Monitored Make-Up Water Test
 1. The pipeline shall be hydrostatically tested with 160 psi internal pressure at the lowest end of the pipe section.
 2. The pipe shall be tested as follows: The test procedure shall consist of an initial expansion phase and a test phase. During the initial expansion phase, the entire pipeline shall be filled with potable water and the pipeline hydraulically pressurized to the 160 psi test pressure, measured at the lowest end of the pipeline section, by means of a positive displacement pump connected to the pipe in a satisfactory manner. After filling with water and before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at the highest elevation on both ends of the pipeline, and afterwards, tightly plugged. The pump, pipe connection, gauges, back flow preventers, and all necessary apparatus shall be furnished by the Contractor.
 3. Enough make-up liquid from a measurable reservoir will be added each hour for three (3) hours to return to test pressure.
 4. The test phase shall commence immediately following the last addition of liquid in the expansion phase, and shall be two (2) hours in duration. At the end of the test time, the pipeline shall be returned to test pressure by adding a measured amount of liquid. Draw water from containers in which the volume of water can be readily measured. If the amount of make-up liquid added does not exceed the volume shown in Table 1 below per 100 linear feet of pipe, leakage is not indicated, however, all visible leaks are to be repaired regardless of quantity.

TABLE 1 TEST PHASE MAKE-UP AMOUNT							
Nominal Pipe Size (in)	U.S. Gals/100 ft of Pipe			Nominal Pipe Size (in)	U.S. Gals/100 ft of Pipe		
	1-hr	2-hr	3-hr		1-hr	2-hr	3-hr
2	0.07	0.11	0.19	20	2.80	5.50	8.00
3	0.10	0.15	0.25	22	3.50	7.00	10.50
4	0.13	0.25	0.40	24	4.50	8.90	13.30
5	0.19	0.38	0.58	28	5.50	11.10	16.80
6	0.30	0.60	0.90	30	6.30	12.70	19.20
8	0.50	1.00	1.50	32	7.00	14.30	21.50
10	0.80	1.30	2.10	36	9.00	18.00	27.00
12	1.10	2.30	3.40	42	12.00	23.10	35.30
14	1.40	2.80	4.20	48	15.00	27.00	43.00
16	1.70	3.30	5.00	54	18.50	31.40	51.70
18	2.00	4.30	6.50	--	--	--	--

C. Non-Monitored Make-Up Water Test

1. The test procedure consists of initial expansion, and test phases. For the initial expansion phase, make-up water is added as required to maintain the test pressure for four (4) hours. For the test phase, the test pressure is reduced by 10 psi. If the pressure remains steady (within 5% of the target value) for an hour, no leakage is indicated.
2. The above testing procedures were taken from the Plastic Pipe Institute Engineering Handbook; Inspections, Tests and Safety Concerns.
3. For either test procedure, the total test time including initial pressurization, initial expansion, and time at test pressure, must not exceed eight (8) hours. If the test is not completed due to leakage, equipment failure, etc., the pipeline shall be depressurized and allowed to “relax” for at least (8) hours before bringing the pipeline up to test pressure again.

3.7 TESTING OF DUCTILE IRON PIPE

- A. Ductile iron pipe shall be subjected to hydrostatic test as described in Section 33 05 51, “Ductile Iron Piping and Ductile and Cast Iron Fittings.”

3.8 REPETITION OF TEST

- A. If the actual leakage exceeds the allowable, locate and correct the faulty work and repeat the test until the leakage does not exceed the allowable. Restore the work and all damage resulting from the leak and its repair. All visible leakage shall be eliminated.

3.9 BULKHEAD AND TEST FACILITY REMOVAL

- A. After a satisfactory test, remove test bulkheads and other test facilities, restore the pipe lining and coatings, and fill the pipeline with water and maintain it full until completion of the contract. The Contractor shall assume all responsibility for any damage to the pipeline as a

result of pressure imposed during the operations of filling the pipeline with water and conducting the tests.

3.10 DISINFECTION

- A. After installation and testing, all potable water piping shall be disinfected using one of three methods specified in AWWA C651.

3.11 PNEUMATIC TESTING FOR GRAVITY SEWERS

- A. For gravity sewer lines, low-pressure air may be used as per ASTM F1417. However, any other pneumatic testing is not recommended. Additional safety precautions may be required.
- B. The piping manufacturer should be consulted before using pressure-testing procedures other than those presented here. Other pressure testing procedures may or may not be applicable depending upon piping products and/or piping applications.

END OF SECTION 33 05 23.14

SECTION 33 05 23.16 - UTILITY PIPE JACKING AND BORING

PART 1 - GENERAL

1.1 SCOPE

- A. The work covered by this section includes furnishing all labor, materials, service, and equipment required to properly complete sewer and/or force main pipeline construction under federal, state highways, county roads and city streets and railroads as described herein and/or as shown on the Drawings. All work to be performed shall meet the Utility Manual of the respective Highway Department in effect at the time of the construction and be in accordance with the American Railway Engineering Association (AREA), Specifications Part 5 (Pipelines) and the railroad affected.

1.2 SHOP DRAWINGS AND ENGINEERING DATA

- A. Complete engineering data and product information shall be submitted to the Engineer in accordance with the requirements of the section entitled "Submittals" of these Specifications.

1.3 STORAGE AND DELIVERY

- A. All materials shall be stored and protected with strict conformance to the manufacturer's recommendations and as approved by the Engineer.

1.4 INSURANCE

- A. Certificates of public liability and property damage insurance showing the Railway as the certificate holder shall be furnished by the Contractor at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Steel casing pipe shall be straight seam welded steel pipe conforming to ASTM A 139 Grade B of the latest standard specifications. Minimum pipe wall thickness shall be as follows:

<u>Casing Outside Diameter (in.)</u>	<u>Highway (in.)</u>	<u>Railroad (in.)</u>
8	0.172	0.188
12	0.188	0.250
16	0.250	0.281
18	0.250	0.312
20	0.250	0.344
24	0.250	0.375
30	0.375	0.469
36	0.375	0.532
42	0.375	0.657
48	0.500	0.688
54	0.500	0.781
60	0.625	0.844
66	0.625	0.938
72	0.750	1.000

PART 3 - EXECUTION

3.1 GENERAL

- A. Any solidification of embankments, boring headings, or tunnel headings or sides shall be the Contractor's responsibility and shall be done at his own expense.
- B. Bored installations shall have a bored-hole diameter essentially the same as the outside diameter of the casing pipe to be installed. Smooth wall new steel pipe meeting the required material standards shall be installed with suitable equipment providing a mechanically augered bore followed immediately by the casing pipe, without the use of water at any time during the work.
- C. The casing pipe shall be jacked into the boring as soon as possible after the boring is made. Lengths of casing pipe as long as practical shall be used. Joints between sections shall be completely welded as recommended for joining the particular type of pipe. Casing pipe installed shall be guided by a jacking frame and rails to maintain line and grade. Not more than 6 inches of excavation ahead of the casing pipe will be allowed during installation.
- D. Once the jacking procedure has begun, it should be continued without stopping until completed subject to weather and conditions beyond the control of the Contractor. Voids outside the jacked casing shall be filled with pumped cement grout, applied at a pressure of not less than 40 psi where an annular space between the casing and earth is established.
- E. Any replacement of carrier pipe in an existing casing shall be considered a new installation, subject to the applicable requirements of these Specifications.
- F. Care shall be taken to ensure that casing pipe installed by boring and jacking will be at the proper alignment and grade.

- G. The Contractor shall maintain and operate pumps, well points, and drainage system equipment to keep work dewatered at all times.
- H. Adequate sheeting, shoring, and bracing for embankments, operating pits, and other appurtenances shall be placed and maintained to ensure that work proceeds safely and expeditiously. Upon completion of the required work, the sheeting, shoring, and bracing shall be left in place, cut off, or removed, as designated by the Engineer.
- I. Trench excavation; all classes and types of excavation; the removal of rock, muck, debris; the excavation of all working pits; and backfill requirements of the section entitled "Earthwork" are included under this section.
- J. Carrier pipe installed in casing shall be as specified in the detailed plans or as required in the bid proposal.
- K. After the casing pipe is installed, the carrier pipe shall be installed exercising care at all times to protect the interior of the casing pipe and to maintain tight, full-seated joints in the carrier pipe. The carrier pipe shall be installed at the proper line and grade without any sags or high spots.
- L. The carrier pipe shall be held concentric with the casing pipe by the use of **hardwood blocks** spaced radially around the pipe and secured together so that they remain firmly in place or by special pipe spacers. The spacing of such blocks or spacers longitudinally in the casing pipe shall not be greater than 10 feet.
- M. Casing pipe shall be sealed at the ends with an approved flexible boot to prevent flowing water and debris from entering the annular space between the casing and the carrier pipe.

3.2 HIGHWAY AND RAILWAY CROSSINGS

- A. Contractor shall be held responsible and accountable for the coordinating and scheduling of all construction work within the right-of-ways.
- B. Work along or across the right-of-way shall be under the supervision of the Engineer, state highway department engineer and the railroad engineer.
- C. All pipelines installed under paved roads and paved crossroads within the right-of-ways of the state highway department and railroads shall be encased. This includes, but is not limited to, all water and sewer service lines.
- D. All lines shall have a minimum cover of 48 inches unless otherwise shown on the Drawings, but in no case shall the minimum cover be less than that required by the regulations of the agency involved.
- E. Unless otherwise shown, encasement shall extend 5 feet beyond the embankment or back of side ditch. On curbed portions of conventional highways the casing pipe shall extend past the back of the curb or sidewalk.
- F. All installations shall be done to leave free flows in drainage ditches, pipes, culverts, or other surface drainage facilities of the highway, street, or its connections.

- G. Where sodding is disturbed, such areas shall be replaced by mulch sodding on slopes 5% or less. All slopes over 5% shall be replaced with block sodding.
- H. All surplus materials shall be removed from the right-of-way and the excavation finished flush with surrounding ground.
- I. Grout backfill shall be used for unused holes or abandoned pipes.
- J. Boring, jacking, or driving of carrier or casing pipes under existing highways shall be accomplished without jetting, sluicing, or wetboring.
- K. No excavated material or equipment shall be placed on the pavement or shoulders of the highway without the express approval of the state highway department engineer.
- L. In no instance will the Contractor be permitted to leave equipment (trucks, backhoes, etc.) on the pavement or shoulder overnight. Construction materials to be installed which are placed on the right-of-way in advance of construction shall be placed in such a manner as not to interfere with the safe operation of the highway.

END OF SECTION 33 05 23.16

SECTION 33 05 51 - DUCTILE IRON PIPING & DUCTILE IRON & CAST IRON FITTINGS

PART 1 - GENERAL

1.1 SCOPE

- A. The work covered by this section includes furnishing all labor, equipment, and materials required to furnish, install, and test ductile iron piping, including all fittings, wall pipe and sleeves, couplings, toppings, anchor blocks, and accessories, as specified herein and/or shown on the Drawings.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 33 31 23.12 – Fusible Polyvinyl Chloride Pipe for Installation by HDD

1.3 QUALITY ASSURANCE

- A. The Contractor shall submit to the Engineer written evidence that the pipe furnished under this specification is in conformance with the material and mechanical requirements specified herein. Certified copies of independent laboratory test results or mill test results from the pipe supplier may be considered evidence of compliance provided such tests are performed in accordance with the appropriate ASTM or AWWA testing standards by experienced, competent personnel. In case of doubt as to the accuracy or adequacy of mill tests, the Engineer may require that the Contractor furnish test reports from an independent testing laboratory on samples of pipe materials.
- B. Each ductile iron pipe length and fitting and cast iron fitting shall be clearly marked with the pressure rating, metal thickness class, heat mark, net weight (excluding lining or coating) and name of manufacturer. In addition, each item of piping shall be marked with an identifying mark corresponding to the appropriate mark on the shop drawings for that particular item of piping.

1.4 SHOP DRAWINGS AND ENGINEERING DATA

- A. Complete shop drawings and engineering data on all piping and accessories shall be submitted to the Engineer in accordance with the requirements of the section entitled "Submittals" of these Specifications.

1.5 STORAGE AND PROTECTION

- A. All pipe and fitting shall be stored under cover.

- B. All pipe and accessories shall be stored aboveground and fully supported so as not to bend or deflect excessively under its own weight. Height of stacked pipe shall not exceed 4 feet. Bundled pipe shall not be stacked more than two (2) bundles high.
- C. Kinked, flattened, buckled, broken, or otherwise defective pipe and fittings shall not be used and shall be removed from the site.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All pipe shall be manufactured in the United States. All pipe and fittings shall be either new or refurbished by the original manufacturer who shall certify them equivalent to new.
- B. No broken, cracked, deformed, misshapen, imperfectly coated, or otherwise damaged or defective pipe or fittings shall be used. All such material shall be removed from the site of the work.
- C. Unless otherwise shown on the Drawings or directed by the Engineer, the minimum pipe wall thickness and thickness class of pipe shall be as follows:

Pipe Size (in.)	Metal Wall	
	Pressure Class	Thickness (in.)
4	350	0.25
6	350	0.25
8	350	0.25
10	350	0.26
12	350	0.28
16	250	0.30
18	250	0.31
20	250	0.33
24	200	0.33
30	150	0.34

2.2 DUCTILE IRON PIPE

- A. Ductile iron pipe shall be designed in accordance with ANSI A21.50, Thickness Design of Ductile Iron Pipe, using 60,000 psi tensile strength, 42,000 psi yield strength, and 10 percent elongation.
- B. Ductile iron pipe shall be manufactured in accordance with ANSI A21.51, Ductile Iron Pipe Centrifugally Cast in Metal Molds or Sand-Lined Molds for Water or Other Liquids, and shall be made of ductile iron having a minimum tensile strength of 60,000 psi, a minimum yield strength of 42,000 psi and 10 percent minimum elongation.

2.3 CAST IRON AND DUCTILE IRON FITTINGS

- A. All fittings 2 inch through 48 inch shall conform in every respect to ANSI A21.10 or A21.53 or AWWA C153 or C110.
- B. Unless otherwise shown on the Drawings, directed or specified, all fittings shall be for pressure rating of 250 psi.
- C. In general, fittings shall be any ANSI pattern. Long radius elbows shall be used where shown on the drawings. Special fittings and cast iron and ductile iron wall pipes and sleeves shall conform to the dimensions and details shown on the Drawings.

2.4 JOINTS FOR DUCTILE IRON PIPE AND FITTINGS AND CAST IRON FITTINGS

- A. General
 - 1. Joints for ductile iron pipe and fittings and cast iron fittings shall be mechanical joints, flanged joints, or push-on joints, as shown on the Drawings or specified herein.
 - 2. Unless otherwise shown on the Drawings, specified or directed, all ductile iron pipe laid underground shall be joined using mechanical joints or push-on type joints.
- B. Mechanical Joints
 - 1. Mechanical joints shall consist of a bolt joint of the stuffing box type as detailed in ANSI A21.10 and described in ANSI A21.11.
 - 2. Mechanical joints shall be thoroughly bolted in accordance with the manufacturer's recommendations with Tee Head Bolts and bolts of high strength, heat treated cast iron containing 0.50 copper or high strength low-alloy steel having a minimum yield point strength of 40,000 pounds per square inch and an ultimate tensile strength of 70,000 pounds per square inch.
 - 3. Gaskets and bolts and nuts shall conform to ANSI A21.11. Gaskets shall be of neoprene or rubber of such quality that they will not be damaged by the liquid or gases with which they will come into contact.
 - 4. Glands shall be of high strength cast iron.
- C. Flanged Joints
 - 1. Flanged joints shall conform to ANSI B 16.1, Class 125, and in accordance with Table 10.23 of ANSI A21.10.
 - 2. Flanged joints shall be bolted with through stud or tap bolts of required size as directed. Bolts and nuts shall conform in dimensions to the American Standard heavy series. Nuts shall be hexagonal, cold pressed. Bolts and nuts shall be cadmium plated, cold pressed, steel machine bolts, conforming to ASTM A 307, Grade B. Cadmium plating shall be by an approved process and shall be between 0.003- to 0.0005-inch thick. After each joint has been made, all bolts, heads, and nuts shall be coated with two coats of heavy asphaltum or other approved coating.
 - 3. Gaskets of "Cranite," red rubber, asbestos composition, or other approved quality shall be used in all flanged joints. Gaskets shall conform to the requirements of ANSI B16.21.
 - 4. Flanged ductile iron pipe approximately 12 inches or less in length shall have flanges cast solidly to the pipe barrel. Flanges on ductile iron pipe longer than 12 inches may be of the screw type. Pipe threads shall be of such length that the flanges screwed home, the end of the pipe shall project beyond the face line of the flange. Flange and pipe shall then be machined to give a flush finish to the pipe and the flange and surface shall be

normal to the axis of the pipe. Ductile iron flanges shall be of such design that the flange neck completely covers the threaded portion of the pipe to protect same against corrosion. Flange faces on cast iron fittings shall be coated with white lead immediately after they have been faced and drilled. All pipe with screw type flanges shall be assembled, faced, and drilled at the point of manufacture, unless otherwise approved by the Engineer.

5. Where tap or stud bolts are required, flanges shall be drilled and tapped accordingly.

D. Push-On Joints

1. Push-on joints shall conform to ANSI 21.10 and ANSI 21.11 or AWWA C110 and AWWA C111. Push-On fittings shall conform to ANSI 21.10 or ANSI 21.53 or AWWA C110 or AWWA C153. Details of the joint design shall be in accordance with the manufacturer's standard practice such as "Fastite," "Bell-Tite," or "Tyton" joints.
2. Gaskets shall be in accordance with ANSI A21.11 and shall be of such quality that they will not be damaged by the liquid or gases with which they will come into contact.

2.5 COATING AND LINING

A. Lining for Wastewater: Interior of pipe and fittings to be lined with factory applied ceramic epoxy (Cermapure PL 90, Perma-Shield PL Series 431, Permax-CTF, or approved equal), 40 mils thickness.

1. All internal surfaces of ductile iron pipe and fittings shall be delivered to the application facility without asphalt or any other protective lining on the interior surface. All oils, small deposits of asphalt paint, grease, and soluble deposits shall be removed in accordance with NAPF 500-03-01 Solvent Cleaning prior to abrasive blasting.
2. Pipe: Uniformly rotary-abrasive blast using angular abrasive to a NAPF 500-03-04: Internal Pipe Surface condition, full removal of annealing oxide layer. When viewed through magnification, the interior surfaces shall be free of all visible dirt, dust, annealing oxide, rust, mold coating, and other foreign matter. Any area where rust appears before application shall be reblasted. The surface shall contain a minimum angular anchor profile of 3.0 mils (reference NACE RP0287 or ASTM D 4417, Method C).
3. Fittings: Uniformly abrasive blast using angular abrasive to a NAPF 500-03-05: Fitting Blast Clean #1 condition, no staining. When viewed without magnification, the interior surfaces shall be free of all visible dirt, dust, annealing oxide, rust, mold coating, and other foreign matter. Any area where rust appears before application shall be reblasted. The surface shall contain a minimum angular anchor profile of 3.0 mils (reference RP0287 or ASTM D 4417, Method C).
4. All surfaces must be clean, dry, and free of oil, grease, and other contaminants.
5. Contractor shall have available on-site enough field touch-up and coating repair kits to coat pipes that are cut or otherwise damaged. Coating using field repair kits shall be installed per manufacturer's written instructions.
6. The interior lining of all pipe and fittings shall be tested for pinholes with a non-destructive, 2500 volt test. Any defects shall be repaired prior to shipment.

B. Lining for Water: Interior of pipe and fittings to receive a cement mortar lining of standard thickness in accordance with ANSI A21.4.

C. Coating: Coat exterior of pipe and fittings to be buried with an asphaltic material approximately 1 mil thick in accordance with AWWA C151/ANSI A21.51, AWWA C110/ANSIA 21.10, and AWWA C153/ANSI A 21.53. Coat exterior of all exposed ductile iron pipe and fittings with a primer as specified in paragraph 3.6.

- D. Color Identification: Pipe shall have four (4) each, 2-inch wide stripes painted at 90-degree angles around the pipe exterior. Color of stripes shall be blue for water, green for sewer and purple for reclaimed.

2.6 PIPE COUPLINGS

- A. Pipe couplings shall be installed where shown on the Drawings, required for installation, or directed by the Engineer.

2.7 WALL PIPE AND WALL SLEEVES

- A. Contractor shall furnish and install cast iron wall pipe or wall sleeves where ductile iron piping connects with or passes through concrete walls or floors and in locations where small piping and electric wiring and conduits connect with or pass through concrete walls or floors.
- B. Where wall pipes or sleeves are to be installed flush with the wall or slab, the flange or bell shall be tapped for studs. Where the flange or bell will project beyond the wall, the projection shall be sufficient to allow for installation of connecting bolts.

PART 3 - EXECUTION

3.1 LAYING

- A. Proper and suitable tools and appliances for safe and convenient handling and laying of pipe and fittings shall be used. Great care shall be taken to prevent the pipe coating from being damaged, particularly cement linings on the inside of the pipes and fittings. Any damage shall be remedied as directed by the Engineer.
- B. All pipe and fittings shall be carefully examined by the Contractor for defects just before laying and no pipe or fitting shall be laid which is defective. If any defective pipe or fitting is discovered after having been laid, it shall be removed and replaced in a satisfactory manner with a sound pipe or fitting by the Contractor at his own expense.
- C. All pipes and fittings shall be thoroughly cleaned before they are laid and shall be kept clean until they are used in the completed work. Open ends of pipe shall be kept plugged with a bulkhead during construction.
- D. Pipe laid in trenches shall be laid true to line and grade on a firm and even bearing for its full length at depths and grades as shown on the Drawings. Adequate precautions shall be taken to prevent floatation of pipelines prior to backfilling. Installation of ductile iron pipe in underground pressure piping systems shall conform to the requirements of AWWA C600. Excavation of trenches and backfilling around pipes shall conform to the requirements of the section entitled "Earthwork" of these Specifications.
- E. All bends, tees, branches, crosses, plugs, caps, fire hydrants, and reducers in pressure piping systems shall be adequately restrained against thrust. Underground pressure piping containing unharnessed push-on or mechanical joints or expansion joints shall be restrained by thrust

blocks. Thrust blocks shall consist of concrete having a minimum 28-day compressive strength of 2,500 psi and shall be of the size and shape as shown on the Drawings. The Contractor may use forms or earth walls to mold the thrust blocks. When earth walls are used, they shall be cut true to shape and all excess earth removed. The work shall be conducted so that no loose earth will become mixed with the concrete. At the end of 24 hours, damp earth may be placed over the concrete to retain moisture.

- F. Wall pipe and wall sleeves shall be accurately located and securely fastened in place before concrete is poured. All wall pipe and wall sleeves shall have wall collars properly located to be in the center of the wall where the respective pipes are to be installed.
- G. Wall pipe and wall sleeves shall be installed when the wall or slab is constructed. Blocking out or breaking of the wall for later insertion shall not be permitted.
- H. Cutting or weakening of structural members to facilitate pipe installation shall not be permitted. All piping shall be installed in place without springing or forcing.
- I. Sufficient couplings and flanged joints shall be provided to facilitate equipment installation and removal.

3.2 CUTTING

- A. Whenever pipe requires cutting to fit the lines, the work shall be done in such manner as to leave a smooth end at right angles to the axis of the pipe. When a piece of pipe is cut to fit into the line, no payment will be made for the portion cut off and not used.
- B. Whenever existing pipe requires cutting to install new fittings, the work shall be done in such manner as to leave a smooth end at right angles to the axis of the pipe and special care shall be exercised to guard against breaking or splitting the existing piping.
- C. All cutting of ductile iron pipe shall be done with a cutting saw. All burrs shall be removed from the inside and outside edges of all cut pipe.

3.3 JOINING

- A. Mechanical Joints
 1. The successful operation of the mechanical joint specified requires that the spigot be centrally located in the bell and that adequate anchorage shall be provided where abrupt changes in direction and dead ends occur.
 2. The surfaces with which the rubber gasket comes in contact shall be brushed thoroughly with a wire brush just prior to assembly to remove all loose rust or foreign material which may be present and to provide clean surfaces which shall be brushed with a liberal amount of soapy water or other approved lubricant just prior to slipping the gasket over the spigot end and into the bell. Lubricant shall be brushed over the gasket prior to installation to remove loose dirt and lubricate the gasket as it is forced into its retaining space.
 3. Joint bolts shall be tightened by the use of approved wrenches and to a tension recommended by the pipe manufacturer. When tightening bolts, it is essential that the gland be brought up toward the pipe flange evenly, maintaining approximately the same

distance between the gland and the face of the flange at all points around the socket. This may be done by partially tightening the bottom bolt first, then the top bolt, next the bolts at either side and last, the remaining bolts. This cycle shall be repeated until all bolts are within the range of acceptable torques. If effective sealing is not attained at the maximum torque indicated above, the joint shall be disassembled and reassembled after thorough cleaning. Overstressing of bolts to compensate for poor installation shall not be permitted.

4. After installation, bolts and nuts in buried or submerged piping shall be given two (2) heavy coats of a bituminous paint.

B. Flanged Joints

1. All flanges shall be true and perpendicular to the axis of the pipe. Flanges shall be cleaned of all burrs, deformations, or other imperfections before joining. Flanged joints shall be installed so as to ensure uniform gasket compression. All bolting shall be pulled up to the specified torque by crossover sequence. Where screwed flanges are used, the finished pipe edge shall not extend beyond the face of the flange, and the flange neck shall completely cover the threaded portion of the pipe.
2. Connections to equipment shall be made in such a way that no strain is placed on the equipment flanges. Connecting flanges must be in proper position and alignment and no external force may be used to bring them together properly.
3. After installation, bolts and nuts in buried or submerged piping shall be given two (2) heavy coats of a bituminous paint.

C. Push-On Joints

1. The inside of the bell and the outside of the pipe from the plain end to the guide stripe must be wiped clean immediately before assembling the pipe joint. Then the rubber gasket shall be inserted into a groove or shaped recess in the bell. Both the bell and spigot ends to be jointed shall be wiped again to ensure they are thoroughly clean. A liberal coating of special lubricant furnished by the pipe manufacturer shall be applied to the outside of the pipe from the plain end to the yellow guide stripe and to the inside of the gasket. The plain end shall be centered in the bell and the spigot pushed home. Wherever possible the pipe shall be socketed by hand; however, jacking may be required to push the spigot in place on the larger sizes of pipe. The completed joint shall be permanently sealed and watertight.
2. Whenever the pipe is cut in the field, the cut end shall be conditioned so it can be used in making up a joint by filing or grinding the cut end to remove burrs or sharp edges that might damage the gasket.

D. Permissible Deflection of Joints

1. Deflection of ductile iron pipe at joints for long radius curves or for avoiding obstacles shall be permitted only upon approval of the Engineer.
2. Where deflection of joints is permitted, such deflection shall be made in accordance with and shall not exceed limits provided in Section 9b.5 and Section 9c.4 as applicable, of the AWWA C600.

E. Joints of Dissimilar Metals

1. When a flanged joint consists of a ductile iron flange mated to a steel or alloy flange, the steel flanges shall be flat faced and furnished with full-faced gaskets, insulating bushings, and stainless steel bolts.

3.4 THRUST RESTRAINT

- A. General: Plugs, caps, tees bends deflecting $1\frac{1}{4}^{\circ}$ or more, and fire hydrants shall be provided with thrust blocking and/or retainer glands or metal tie rods as directed. Valves shall be security anchored or provided with thrust blocking to prevent movement.
- B. Concrete Thrust Blocks: Concrete having a minimum 28 day strength of 2,500 psi shall be placed between the fitting and undisturbed ground. The thrust and bearing sides of the blocks shall be poured directly against the fitting and undisturbed earth. The sides of the blocking not subject to thrust may be poured against form. Blocking shall be placed so that the fitting will be accessible for repair. The minimum area of bearing shall be as shown however actual area of bearing shall be increased to provide sufficient bearing area when low strength soils are encountered.
- C. Retainer Gland: Retainer glands shall be used on ductile iron pipe only and be designed and manufactured in accordance with DIPRA-01. The gland shall be rated for 350 psig by Underwriters Laboratories. Restraining shall be accomplished by wedge acting lugs tightened by bolts with break-away heads to provide uniform pressure.
- D. Metal Tie Rods: Tie rod joints shall consist of threaded tie rods connected to joints with eye bolts or lugs or lugged fittings. All rods, eyebolts, couplings and nuts shall be $\frac{3}{4}$ -inch high strength ASTM A242-81 (CorTen) corrosion resistant steel. The minimum number of rods used on 4 inch and 6 inch joints shall be two (2), three (3) rods for 8 inch pipe, four (4) for 10 inch pipe and six (6) rods for 12 inch pipes.
- E. Megalug Joint Restraint: Mechanical joint restraint shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial. Gland body, wedges, and wedge actuating components shall be manufactured of ductile iron conforming to ASTM A536-84. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off nuts shall be used to insure proper actuating of the restraining devices.
 - 1. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum of safety factor of 2:1 and shall be EBAA Iron, Inc. MEGALUG or equal.

3.5 FIELD TESTING

- A. After all piping has been placed and backfilled between the joints, each run of newly laid pipe, or any valved section thereof, shall be tested by the Contractor in the presence of the Engineer, and tests shall be continued until all leaks have been made tight to the satisfaction of the Engineer.
- B. Inspection and testing of ductile iron pipe and all fittings used for pressure applications shall be carried out in accordance with procedures established in Section 33 05 50 of these specifications.

- C. Inspection and testing of ductile iron pipe and all fittings used for gravity sewer shall be carried out in accordance with procedures established in Section 33 31 13.01 or 33 31 13.03 of these Specifications.

3.6 FIELD PAINTING

- A. After installation and testing, all exposed piping shall be field primed and painted in accordance with the requirements of the section entitled "General Materials Stipulations" of these Specifications.

END OF SECTION 33 05 51