BID DOCUMENTS AND TECHNICAL SPECIFICATIONS FOR CONSTRUCTION OF THE PUMP STATION UPGRADE AND REPLACEMENT TO SERVE FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14 CITY OF SUGAR LAND ETJ FORT BEND COUNTY, TEXAS

LJA JOB NO. 1301-1413

SEPTEMBER 2024

LJA ENGINEERING, INC.
1904 WEST GRAND PARKWAY NORTH
SUITE 100
KATY, TEXAS 77449
713.953.5200

BID SET

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14

BID DOCUMENTS AND TECHNICAL SPECIFICATIONS FOR CONSTRUCTION OF THE PUMP STATION UPGRADE AND REPLACEMENT TO SERVE FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14 CITY OF SUGAR LAND ETJ FORT BEND COUNTY, TEXAS

LJA JOB NO. 1301-1413



SEPTEMBER 2024

LJA ENGINEERING, INC.
1904 WEST GRAND PARKWAY NORTH
SUITE 100
KATY, TEXAS 77449
713.953.5200

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS

LJA JOB NO. 1301-1413

TABLE OF CONTENTS

INVITATION TO BIDDERS

LIST OF DRAWINGS

INSTRUCTIONS TO BIDDERS

PREVAILING WAGE RATES

CONFLICT OF INTEREST QUESTIONNAIRE

BID PROPOSAL

VENDOR COMPLIANCE WITH RECIPROCITY OF NON-RESIDENT BIDDERS (TWDB-0459)

STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

SUPPLEMENTARY CONDITIONS

SPECIAL CONDITIONS

TWDB SUPPLEMENTAL CONDITIONS

PERFORMANCE BOND

PAYMENT BOND

TECHNICAL SPECIFICATIONS

APPENDIX

CERTIFICATE OF COMPLIANCE WITH U.S. IRON AND STEEL REQUIREMENTS (TWDB-1105A)

SITE CERTIFICATE (ED-101)

CONTRACTORS ACT OF ASSURANCE (ED-103)

CONTRACTORS ACT OF ASSURANCE RESOLUTION (ED-104)

STATEMENT OF QUALIFICATIONS

HOLD HARMLESS AGREEMENT

PROGRESS ESTIMATE

REQUEST FOR EXTENSION OF TIME

CONDITIONAL WAIVER FOR PROGRESS PAYMENTS

UNCONDITIONAL WAIVER FOR PROGRESS PAYMENTS

CONDITIONAL WAIVER FOR FINAL PAYMENT

UNCONDITIONAL WAIVER FOR FINAL PAYMENT

AFFIDAVIT OF BILLS PAID

CONTRACTOR'S AFFIDAVIT OF CONSTRUCTION COMPLIANCE

STAKING REQUEST FORM

INVITATION TO BIDDERS

SEALED PROPOSALS addressed to Fort Bend County Levee Improvement District No. 14 for construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14, LJA Job No. 1301-1413, will be received at the office of the Engineer, LJA Engineering, Inc., 1904 West Grand Parkway North, Suite 120, Katy, Texas 77449, until 3:00 p.m., Thursday, October 24, 2024, and then publicly opened and read aloud. To attend the Bid Opening by telephone, dial +1 346-202-6170, Phone Conference ID: 492 745 019#.

Bidding Documents may be examined at LJA Engineering, Inc., 1904 West Grand Parkway North, Suite 120, Katy, Texas 77449 or at https://civcastusa.com.

Fort Bend County Levee Improvement District No. 14 will hold a non-mandatory pre-bid conference at 5325 Dawnington Place, Sugar Land, Texas 77479, at 3:00 p.m., Thursday, October 10, 2024. Fort Bend County Levee Improvement District No. 14 reserves the right to reject any and all bids. The Successful Bidder, if any, will be the responsible Bidder which in the Board's judgment will be most advantageous to the District and result in the best and most economical completion of the Project. (Texas Water Code 49.273)

Bid security in the form of bid bond or cashier's check payable to Fort Bend County Levee Improvement District No. 14 in an amount not less than five percent (5%) of the Bid submitted, must accompany each Bid.

The requirements of Subchapter J, Chapter 552, Government Code, may apply to this Bid and/or Contract and bidder/contractor agrees that the Contract can be terminated if the bidder/contractor knowingly or intentionally fails to comply with a requirement of that subchapter.

Bidder/Contractor declares that it has not received from a governmental body a notice of noncompliance with a provision of Subchapter J, Chapter 552, Texas Government Code, or, if such notice has been received, bidder/contractor has taken adequate steps to ensure future compliance with such subchapter and has provided or upon request will provide documentation of same.

This contract is contingent upon release of funds from the Texas Water Development Board. Any contract or contracts awarded under this Invitation for Bids is/are expected to be funded in part by a loan or grant from the Texas Water Development Board. Neither the state of Texas, nor any of its departments, agencies, or employees are or will be a party to this Invitation for Bids or any resulting contract.

Any contract(s) awarded under this Invitation for Bids is/are subject to the United States Iron and Steel requirements of Texas Water Code §17.183 and/or Texas Government Code, Chapter 2252, Subchapter F, as amended by SB 1289, 85th Legislative Session. The contractor must complete the statement of understanding regarding this requirement, found in the Supplemental Contract Conditions, Item No. 9. Refer to TWDB-1105 – United States Iron and Steel (US I&S) Guidance.

Dates of Advertisement: 09/25/2024; 10/02/2024

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS

LJA JOB NO. 1301-1413

LIST OF DRAWINGS

SHEET NUMBER	SHEET DESCRIPTION	SHEET TITLE
1	C1	COVER SHEET
2	C2	GENERAL NOTES I
3	C3	GENERAL NOTES II
4	C4	EXISTING SITE PLAN
5	C5	DEMOLITION SITE PLAN
6	C6	PROPOSED SITE PLAN
7	C7	STORM WATER POLLUTION PREVENTION PLAN
8	C8	PLAN VIEW
9	C9	SECTION VIEW
10	C10	FENCING PLAN
11	C11	FENCING DETAILS
12	C12	CIVIL DETAILS 1 OF 4
13	C13	CIVIL DETAILS 2 OF 4
14	C14	CIVIL DETAILS 3 OF 4
15	C15	CIVIL DETAILS 4 OF 4
16	C16	EROSION CONTROL 1 OF 3
17	C17	EROSION CONTROL 2 OF 3
18	C18	EROSION CONTROL 3 OF 3
19	C19	GATOR PUMP DETAILS
20	S1	STRUCTURAL GENERAL NOTES
21	S2	EXISTING OUTFALL STRUCTURE & DEMOLITION
22	S3	PROPOSED OUTFALL MODIFICATIONS SHEET 1 OF 4
23	S4	PROPOSED OUTFALL MODIFICATIONS SHEET 2 OF 4
24	S5	PROPOSED OUTFALL MODIFICATIONS SHEET 3 OF 4
25	S6	PROPOSED OUTFALL MODIFICATIONS SHEET 4 OF 4
26	S7	STAIRCASE DETAILS 1 OF 2
27	S8	STAIRCASE DETAILS 2 OF 2
28	S9	MISCELLANEOUS CONCRETE DETAILS 1
29	S10	MISCELLANEOUS CONCRETE DETAILS 2
230	S11	RAILING DETAILS AND MISCELLANEOUS METALS
31	E1	NOTES AND LEGEND
32	E2	ONE LINE DIAGRAM
33	E3	CONTROL DIAGRAMS SHEET 1 OF 3
34	E4	CONTROL DIAGRAMS SHEET 2 OF 3
35	E5	CONTROL DIAGRAMS SHEET 3 OF 3
36	E6	SITE AND FLOOR PLANS
37	E7	DEMOLITION PLAN

INSTRUCTIONS TO BIDDERS

IMPORTANT NOTICE: Bidder must read ALL Instructions. Failure to do so may result in a non-responsive Bid. Failure to do so does not release Bidder from the obligation to comply.

1. Submission of Bids

1.1 In accordance with the Plans and Specifications prepared by the ENGINEER, any Proposal received after the published time of the bid opening will be returned unopened.

1.2 The OWNER reserves the right to reject any or all Bids if the OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or other criteria established by OWNER.

1.3 Bids shall be submitted at the location and time indicated in the Invitation to Bidders and shall be enclosed in an opaque sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and name and address of Bidder and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it. Bids which are not received by the time and at the location specified in the Bidding Documents, will be returned unopened to the Bidder.

1.4 By submitting a Bid, each Bidder agrees to fully and forever waive and release any claim (known or unknown) it has or may have against the OWNER, DEVELOPER, ARCHITECT and ENGINEER, and their respective attorneys, employees, consultants, representatives, agents, successors, assigns, officers, directors, and members arising under the statutes of Texas, tort, contract or otherwise; or out of or in connection with the: (i) administration, evaluation, or recommendation (or lack thereof) of any Bid; (ii) waiver of any requirements under the Bid Documents or the CONTRACT DOCUMENTS; (iii) acceptance or rejection of any bids; (iv) award of the Contract; and, (v) provision of references (positive or negative) in connection with any work performed by Bidder, and Bidder's contractors and subcontractors in connection with the Project and the CONTRACT DOCUMENTS, to which Bidder hereby consents and authorizes.

1.5 All work must conform to Federal, State and local governmental rules and criteria.

2. Copies of the Bidding Documents

2.1 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Invitation to Bidders may be obtained from the ENGINEER's Office. Checks for the Plans and Specifications shall be made payable to LJA Engineering, Inc.

2.2 Copies of Bidding Documents are made available only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

2.3 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.4 The Bidding Documents may include reports on the geotechnical, subsurface, physical or environmental conditions which contain information used by the ENGINEER and OWNER. Neither the ENGINEER nor OWNER are responsible for accuracy or completeness of any such information or data. Bidder shall have full responsibility for interpretation of the reports and use of the information for bidding and construction purposes.

3. Bid Security

3.1 Each Bid must be accompanied by Bid security made payable to OWNER in an amount of no less than five percent (5%) of the Bidder's maximum Bid price and in the form of certified or cashier's check or bid bond as specified in the Invitation to Bidders. The surety company providing the Bid Bond must conform to the same requirements for surety companies providing Performance and Payment Bonds as described in the Special Conditions. If a cashier's check is furnished, it is to be drawn on a bank in the county where the Project is located or counties bordering that county. The security is a guarantee that the successful Bidder will enter into the Contract and execute the required payment and performance and maintenance bonds.

3.2 The Bid security of Successful Bidder will be retained until such Bidder has executed the Agreement, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and furnish the required contract security within seven (7) days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited.

3.3 The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of the seventh (7th) day after the Effective Date of the Agreement or the ninetieth (90th) day after the Bid opening, whereupon Bid security furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within seven (7) days after the Bid opening.

4. Contract Documents

Contract Documents include the Agreement, Addenda, all Conditions (General, Supplementary and Special), specifications and plans, the Bid Proposal, and any written modifications.

5. Defined Terms

Terms used in these Instructions to Bidders which are defined in the Standard General Conditions have the meanings assigned to them in the Standard General Conditions unless modified by the Supplementary and Special Conditions.

6. Successful Bidder

Successful Bidder if any, will be the responsible Bidder which in the Board's judgment will be most advantageous to the District and result in the best and most economical completion of the Project. (Texas Water Code 49.273)

7. Bid Proposal Form

7.1 The Bid Proposal Form is included with the Bidding Documents; additional copies may be obtained from the ENGINEER.

7.2 All blanks on the Bid Proposal Form must be completed by printing in ink or by typewriter.

7.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign), and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

7.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature. Bids by limited partnerships must be executed by an authorized representative of the general partner on behalf of the general partner.

7.5 All names must be typed or printed in ink below the signature. The address (including County), telephone number, e-mail address (if available), and facsimile number for communications regarding the Bid must be shown.

7.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Proposal Form).

7.7 Evidence of authority to conduct business as an out-of-state corporation in the state where the Work is to be performed, shall be provided. State Contractor license number, if any, must also be shown.

8. Interpretations and Addenda

8.1 All questions about the meaning or intent of the Bidding Documents are to be directed to ENGINEER. As necessary, interpretations or clarifications will be issued by Addenda mailed or delivered to all parties having received the Bidding Documents. Questions received less than three days prior to the date for opening of Bids may not be answered. Verbal discussions and answers are not binding.

8.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.

9. Self Performing

As a condition of this Agreement, the CONTRACTOR is required to self perform at least 60 percent of the work (based on total contract price awarded, complete in place) with personnel directly employed by CONTRACTOR.

10. Subcontractors, Suppliers and Others

10.1 If the Special Conditions require the identity of certain Subcontractors, Suppliers and other persons and organizations (including those who are to furnish the principal items of material and equipment) to be submitted to OWNER prior to the Effective Date of the Agreement, apparent Successful Bidder, and any other Bidder so requested, shall within five days after the Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers and other persons and organizations.

10.2 OWNER reserves the right to reject a proposed subcontractor or supplier at its sole discretion. OWNER may request apparent Successful Bidder to submit an acceptable substitute without an increase in Bid price.

If apparent Successful Bidder declines to make any such substitution, OWNER may award the contract to another Bidder meeting the Bid requirements that proposes to use acceptable subcontractors, suppliers, and other persons and organizations. By declining to make requested substitutes, the apparent Successful Bidder will not sacrifice their Bid security.

10.3 No CONTRACTOR shall be required to employ any subcontractor, supplier, organization against whom CONTRACTOR has reasonable objection.

11. Examination of Contract Documents and Site

11.1 It is the responsibility of each Bidder before submitting a Bid:

11.1.1 To thoroughly examine the Contract Documents and other reports, tests, and drawings identified in the Bidding Documents and Special Conditions. Bidder is instructed to read all Bidding and Contract Documents before completing the bid form. Bidder is advised that failure to read Contract Documents, including without limitation, the General, Supplementary and Special Conditions, does not relieve Bidder from compliance with these documents.

11.1.1.1 Copies of available reports, tests and drawings will be produced by OWNER for review by Bidder on request. OWNER and ENGINEER disclaim any responsibility for the accuracy, true location and extent of surface and subsurface investigations that have been prepared by others.

11.1.1.2 Bidder is responsible for any interpretation or conclusion drawn from any reports, tests, and drawings, or any such data, interpretations, opinions or information, and OWNER and ENGINEER disclaim any responsibility for such interpretations by Bidders, e.g., without limitation, projecting soil-bearing values, rock profiles, soil stability and the presence, level and extent of underground water or underground facilities.

11.1.1.3 Bidder will be responsible for considering how said reports, tests and drawings may relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs performing the Work in accordance with the Contract Documents.

11.1.2 To visit the site to become familiar with and satisfy Bidder as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work;

11.1.3 To consider Federal, State and local laws and regulations that may affect cost, progress, performance or furnishing of the Work;

11.1.4 To correlate Bidder's knowledge and observations of the site with the Contract Documents and such other related reports, tests and drawings;

11.1.5 To promptly notify ENGINEER of all conflicts, errors, ambiguities or discrepancies which Bidder has discovered in or between the Contract Documents and such other related documents.

11.2 On request, OWNER may provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests and studies as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the site to its former conditions upon completion of such explorations, investigations, tests and studies.

12. Availability of Lands for Work, etc.

The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment or storage of materials and equipment to be incorporated in the

Work are to be obtained and paid for by the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.

13. Substitute and "Or-Equal" Items

All Bids shall be based on work, materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Although the Drawings or Specifications may state a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, Bids shall not be based on any substitutions or as equal items. ENGINEER will not consider any application for substitute or as equal until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the Standard General Conditions and may be supplemented in the Special Conditions.

14. Contract Time

The number of calendar days within which, or the dates by which, the Work is to be substantially completed and the Work is to achieve final completion are set forth in the Agreement.

15. Economic Disincentive for Late Completion of Work

The CONTRACTOR and the OWNER agree that time is of the essence of this Contract. The CONTRACTOR and the OWNER agree that the Agreement is based on completion of the Work by CONTRACTOR in the time specified in the Agreement. CONTRACTOR and the OWNER agree that for each and every calendar day the work or any portion thereof shall remain uncompleted after the expiration of the time limit set in the Contract, or as extended under the provisions for Extension of Time in this Contract, CONTRACTOR shall be liable to OWNER for an economic disincentive in an amount specified in the Special Conditions for such calendar day. The OWNER shall have the option to deduct and withhold said amount from any monies that the OWNER owes the CONTRACTOR or to recover such amount from the CONTRACTOR or the Sureties on the CONTRACTOR's bond.

16. Modification and Withdrawal of Bids

16.1 Bids 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 at any time prior to the opening of Bids.

16.2 If, within twenty-four hours after Bids are opened, any Bidder files a duly signed, written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid and the Bid security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

17. Opening of Bids

Bids will be opened and read aloud publicly at the place where Bids are to be submitted. OWNER shall rank the Bidders within forty-five (45) days after opening the Bids. An abstract of the amounts of the base Bids and major alternatives (if any) will be made available to Bidders after the opening of Bids.

18. Bids to Remain Subject to Acceptance

18.1 All Bids will remain subject to acceptance for ninety (90) days after the day of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to that date.

19. Award of Contract

19.1 If the contract is to be awarded, it will be awarded to the Successful Bidder as evaluated by OWNER. The Bid price shall include such amounts as the Bidder deems proper for overhead and profit.

19.2 Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. In case of any ambiguity or lack of clarity in stating the prices in the Bid, OWNER reserves the right to consider the most advantageous construction thereof or reject the Bid.

19.3 OWNER reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, non-responsive, unbalanced or conditional Bids. OWNER also reserves the right to waive all irregularities and defects in the Bids and the bidding process, except time of submitting a Bid.

19.4 OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any bid and to establish the responsibility, qualifications and financial ability of bidders, proposed subcontractors, suppliers and other persons and organizations to perform and furnish the Work in accordance with the CONTRACT DOCUMENTS to OWNER's satisfaction. OWNER may require Bidders to submit bank references and financial statements in connection with bid evaluation.

19.5 OWNER may also consider Bidder's (or Bidder's officers', partners', directors', affiliates') (i) prior dealings with OWNER or with any entity responsible for payment to Bidder under this Contract and (ii) the amount, size, number, cost and completion-status of any projects that Bidder currently has underway (including, without limitation, projects underway with OWNER or with any entity responsible for payment to Bidder under this Contract), and the amount, nature and quality of the manpower, materials and equipment available to bidder.

19.6 By submitting a Bid, each Bidder agrees to fully and forever waive and release any claim (known or unknown) it has or may have against the OWNER, DEVELOPER, ARCHITECT and ENGINEER, and their respective attorneys, employees, consultants, representatives, agents, successors, assigns, officers, directors, and members arising under the statutes of Texas, tort, contract or otherwise; or out of or in connection with the: (i) administration, evaluation, or recommendation (or lack thereof) or any BID; (ii) waiver of any requirements under the Bid Documents or the CONTRACT DOCUMENTS; (iii) acceptance or rejection of any bids; (iv) award of the Contract; and (v) provision of references (positive or negative) in connection with any work performed by Bidder, and Bidder's contractors and subcontractors in connection with the Project and the CONTRACT DOCUMENTS, to which Bidder hereby consents and authorizes.

19.7 If the contract is to be awarded, OWNER will give the Successful Bidder Notice of Award within ninety (90) days after the day of the Bid opening.

19.8 This contract is contingent upon release of funds from the Texas Water Development Board. Any contract or contracts awarded under this Invitation for Bids is/are expected to be funded in part by a loan or grant from the Texas Water Development Board. Neither the state of Texas, nor any of its departments, agencies, or employees are or will be a party

to this Invitation for Bids or any resulting contract.

19.9 Any contract(s) awarded under this Invitation for Bids is/are subject to the United States Iron and Steel requirements of Texas Water Code §17.183 and/or Texas Government Code, Chapter 2252, Subchapter F, as amended by SB 1289, 85th Legislative Session. The contractor must complete the statement of understanding regarding this requirement, found in the Supplemental Contract Conditions, Item No. 9. Refer to TWDB-1105 – United States Iron and Steel (US I&S) Guidance.

20. Award of Contract to Nonresident Bidder

A governmental entity may not award a governmental contract to a nonresident bidder unless the nonresident underbids the lowest bid submitted by a responsible resident bidder by an amount that is not less than the amount by which a resident bidder would be required to underbid the nonresident bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located. A non-resident bidder is a Contractor whose corporate offices or principal place of business is outside of the state of Texas (Source: Texas Government Code, Chapter 2252, Subchapter A, Nonresident Bidders, §2252.002).

The bidder will complete form TWDB-0459, Vendor Compliance with Reciprocity on Non-Resident Bidders, which must be submitted with the bid.

21. Bonds

Standard General Conditions and the Special Conditions set forth OWNER's requirements, if any, as to Bonds. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by the required payment and performance bonds.

22. Signing of Agreement

When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within seven days thereafter CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds.

23. Retainage

The amount of retainage is set forth in the Special Conditions.

24. Sales Tax

23.1 Applicable taxes, licenses, fees and other similar items are part of the cost of the work and it shall be CONTRACTOR's responsibility to familiarize itself with these costs and to observe and comply with the laws and regulations relating to the same. The prices, sums, rates and other charges set forth in the CONTRACTOR's bid shall cover and include all such costs.

23.2 The Supplementary Conditions will indicate if OWNER is exempt from sales tax.

25. Insurance Requirements

CONTRACTOR shall maintain such insurance as specified in the Standard General, Supplementary, and Special Conditions.

26. Estimates of Quantities

Unless otherwise noted in the Special Conditions, the quantities listed in the Bid Proposal shall be considered as approximate and will be used only for comparison of Bids. Payment to the CONTRACTOR will be made only for the actual quantities of work performed or materials furnished in accordance with the contract. The quantities may be increased or decreased as provided in the Standard General Conditions without in any way invalidating the unit Bid prices.

27. Statement of Qualifications

The Bidder may be required to submit a detailed Statement of Qualifications on the form provided by the Engineer within five (5) working days of the bid opening to be considered for award of the bid.

28. Conflicts of Interest

Effective January 1, 2006, Chapter 176 of the Texas Local Government Code ("Chapter 176") mandates the disclosure of certain items by contractors doing business with or proposing to do business with local government entities, including municipal utility districts, road utility districts, road improvement districts, levee improvement districts, drainage districts, water control and improvement districts, bayou improvement districts, regional water authorities, fresh water supply districts, management districts, tax increment reinvestment zones, development authorities, etc.

Bidders should review Chapter 176 with their attorney and, if required, return the attached completed FORM CIQ with their Bid. The following is a list of the Board of Directors of Owner to facilitate Bidder's compliance with Chapter 176.

Board of Directors

Sujeeth Draksharam
Rashid Khalfe
Shaizad Chatriwala

29. Prevailing Wage Rate

"Chapter 2258 of the Texas Government Code provides that any political subdivision of the State of Texas shall ascertain the general prevailing wage rate received by the classes of workers employed on projects similar to this project and shall specify in the call for bids and in the Contract the minimum wage rates which shall be paid for each type of worker. This statute further provides that the Contractor or Subcontractors shall pay, as a penalty, to the Owner Sixty Dollars ($60.00) for each worker employed for each calendar day or part of the day that the worker is paid less that the wage rates stipulated in the Contract. The Owner is authorized to withhold from the Contractor the amount of this penalty from any payment due under the Contract.

The statute likewise requires that the Contractor and subcontractors keep an accurate record of the names and occupations of all persons employed by them in the construction of the Project and to show the actual per diem wages paid to each worker. These records are open to the inspection of the Owner.

The Prevailing Wage Rate Scale that applies to this Contract is attached to this Section.

29. Provision of Texas Ethics Commission Form 1295 ("TEC Form 1295") by Bidders

Effective January 1, 2016, pursuant to Texas Government Code § 2252.908 (the "Interested Party Disclosure Act" or the "Act"), the District may not award a contract to an bidder unless the bidder has provided to the District a completed, signed and notarized TEC Form 1295 which has been

assigned a certificate number by the Texas Ethics Commission (the "TEC"). Pursuant to the rules prescribed by the TEC, the TEC Form 1295 must be completed online through the TEC's website, assigned a certificate number, printed, signed and notarized, and provided to the District. The TEC Form 1295 must be provided to the District prior to the time prescribed for award of the contract. The TEC Form 1295 may be provided to the District via facsimile or electronically; however, the original signed and notarized TEC Form 1295 complete with certificate number must be physically delivered to the District within two business days of the award. Following the award of the contract, the District will notify the TEC of the receipt of each completed TEC Form 1295, and the completed form will be on the TEC's website and will be accessible by the public. The District reserves the right to reject any bid that does not comply with the requirements prescribed herein or to waive any such requirements. For purposes of completing the TEC Form 1295, the entity's name is Fort Bend County Levee Improvement District No. 14 and the contract ID number is 1301-1413. Neither the District nor its consultants have the ability to verify the information included in a TEC Form 1295, and neither have an obligation nor undertake responsibility for advising any bidder with respect to the proper completion of the TEC Form 1295. Consequently, an entity intending to bid on a contract should consult its own advisors to the extent it deems necessary and be prepared to submit the completed form promptly upon notification from the District that its bid is the apparent winning bid.

"General Decision Number: TX20240054 01/05/2024

Superseded General Decision Number: TX20230054

State: Texas

Construction Type: Heavy

County: Fort Bend County in Texas.

HEAVY CONSTRUCTION PROJECTS Including Water and Sewer Lines
(Does Not Include Flood Control)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2024

SFTX0669-001 01/01/2023

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers)	$ 33.11	23.30

SUTX2005-020 06/14/2005

	Rates	Fringes
CARPENTER	$ 14.38 **	0.00
CEMENT MASON/CONCRETE FINISHER	$ 11.37 **	1.13
ELECTRICIAN	$ 18.40	1.34
Formbuilder/Formsetter	$ 13.35 **	1.17
IRONWORKER, REINFORCING	$ 11.29 **	0.00
Laborers:		
Common	$ 8.95 **	0.00
Landscape	$ 7.35 **	0.00
Mason Tender Cement	$ 9.96 **	0.00
Pipelayer	$ 10.31 **	0.91
PIPEFITTER	$ 17.00 **	0.04
POWER EQUIPMENT OPERATOR:		
Backhoe	$ 12.08 **	0.00
Bulldozer	$ 10.44 **	0.00
Crane	$ 12.67 **	0.45
Excavator	$ 16.74 **	0.00
Front End Loader	$ 10.68 **	1.42
Grader	$ 12.20 **	1.48
Tractor	$ 12.38 **	1.51
TRUCK DRIVER	$ 12.28 **	0.98

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.20) or 13658 ($12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is

like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a

new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION"

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

_____

Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

_____ _____

Signature of vendor doing business with the governmental entity Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

BID PROPOSAL

Date:_____

Bid of _____
(Legal Name of Bidder – Company)

[ ] an individual proprietorship

[ ] a corporation organized and existing under the laws of _____

[ ] a partnership consisting of _____

_____

[ ] a joint venture

[ ] other _____

FOR:

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

TO: **FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14**
c/o LJA Engineering, Inc.
1904 West Grand Parkway North, Suite 120
Katy, Texas 77449

BID PROPOSAL

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

Ladies and Gentlemen:

Pursuant to the foregoing Invitation and Instructions to Bidders, the undersigned bidder hereby proposes to do all the work for the unit prices bid to furnish all necessary superintendence, labor, machine, equipment, tools, materials, insurance and miscellaneous items, to complete all work according to the bids, as provided in the construction plan and contract documents for the construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14, and clean up the site to the satisfaction of the Owner/Engineer, and bind himself on acceptance of this proposal to execute a contract and bonds for completing said project within the time stated for the following prices, to wit:

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
STORMWATER PUMP STATION SITE ITEMS					
1.	SITE WORK, INCLUDING BUT NOT LIMITED TO SITE DEMOLITION. DEBRIS REMOVAL AND DISPOSAL, GRADING, SITE DRAINAGE, SITE PAVING, DRIVEWAY, SLABS ON GRADE, BOLLARDS AND ALL APPURTENANCES, COMPLETE IN PLACE	LS	1	$_____	$_____
2.	7-FOOT METAL FENCING, INCLUDING BUT NOT LIMITED TO DRILLED SHAFTS, BASE PLATES, HARDWARE, AND ALL RELATED AND MISCELLANEOUS APPURTENANCES AND ITEMS RELATED TO AND NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE PLANS, COMPLETE IN PLACE	LF	495	$_____	$_____
3.	DOUBLE SWING GATE, INCLUDING ALL APPURTENANCES, COMPLETE IN PLACE	EA	1	$_____	$_____
4.	24-INCH DIP DISCHARGE PIPES, INCLUDING BENDS, TEES, AND ALL APPURTENANCES, COMPLETE IN PLACE	LF	270	$_____	$_____

* Denotes Minimum Unit Price Bid for Each Item

BID PROPOSAL

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
STORMWATER PUMP STATION SITE ITEMS					
5.	36-INCH RCP, INCLUDING BENDS, TEES, AND ALL APPURTENANCES, COMPLETE IN PLACE	LF	50	$_____	$_____
6.	REMOVE AND REPLACE EXISTING 42-INCH STORM MANHOLE AND REPLACE WITH 72-INCH STORM MANHOLE WITH E-INLET TOP, ALL DEPTHS, COMPLETE IN PLACE	LS	1	$_____	$_____
7.	24-INCH PTO DRIVEN PUMP (15,300 GPM, TDH 18') BY GATOR PUMP, INC. (OR APPROVED EQUAL), COMPLETE IN PLACE	EA	2	$_____	$_____
8.	145 HP NATURAL GAS ENGINE, CAT G3306B INCLUDING WEATHER ENCLOSURE/PROTECTION (OR APPROVED EQUAL)	EA	2	$_____	$_____
9.	DERAN PUMP GEARHEAD FOR 145 HP NATURAL GAS ENGINE	EA	2	$_____	$_____
10.	24-INCH FLAPGATE, F-55 WATERMAN HEAVY DUTY (OR APPROVED EQUAL)	EA	2	$_____	$_____
11.	SLIDE GATES WITH ELECTRONIC ACTUATORS	EA	4	$_____	$_____
12.	ALLOWANCE FOR TEMPORARY SHORING AND FLOOD PROTECTION DURING CONSTRUCTION INCLUDING CONTRACTOR DESIGN SUBMITTAL, INSTALLATION, REMOVAL, AND COMPACTION AND BACKFILL OF THE SITE.	LS	1	$_____	$_____

* Denotes Minimum Unit Price Bid for Each Item

BID PROPOSAL

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
STORMWATER PUMP STATION SITE ITEMS					
SUBTOTAL STORMWATER PUMP STATION SITE ITEMS				$_____	

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
STORMWATER PUMP STATION ELECTRICAL ITEMS					
13.	SERVICE MCC WITH AUTOMATIC TRANSFER SWITCH, CABLE EXTENSION (AS NEEDED), AND TERMINATIONS	LS	1	$_____	$_____
14.	FURNISH AND INSTALL CONTROL PANEL, INCLUDING PLC, BACK UP PLC, HMI, PS, SPD, PUMP CONTROLLER, RADAR LEVEL TRANSMITTER, PRESSURE TRANSDUCERS, RELAYS, SWITCHES, LIGHTS, COMMUNICATION EQUIPMENT, WIRING, FUSES, AND TERMINALS	LS	1	$_____	$_____
15.	FURNISH AND INSTALL PUMP AND TRANSMITTERS J-BOXES (NEMA-4X-SS), MECHANICAL SEALS, WIRING, AND TERMINATIONS FOR NEW DIESEL ENGINE PUMPS	LS	1	$_____	$_____
16.	DEMOLITION OF ELECTRICAL AND CONTROL COMPONENTS INCLUDING CONTROL PANEL AND MISCELLANEOUS ELECTRICAL AND HAULING	LS	1	$_____	$_____
17.	ELECTRICAL INSTALLATION OF FOUR (4) NEW SLIDE GATES WITH ELECTRIC ACTUATORS	LS	1	$_____	$_____

* Denotes Minimum Unit Price Bid for Each Item

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
STORMWATER PUMP STATION ELECTRICAL ITEMS					
18.	ELECTRICAL AND CONTROL SYSTEM INSTALLATIONS LABOR, DELIVERY, TESTING, AND COMMISSIONING	LS	1	$_____	$_____
19.	ALLOWANCE FOR ESTABLISHED GAS UTILITY BY CENTERPOINT ENERGY. THE AMOUNTS PAID, SUPPORTED BY INVOICES SHALL BE INCLUDED IN PAY REQUESTS FOR REIMBURSEMENT WITHOUT A GENERAL CONTRACTOR MARKUP, (TO BE USED ONLY AS DIRECTED BY THE ENGINEER), COMPLETE IN PLACE	LS	1	$_____	$_____
SUBTOTAL STORMWATER PUMP STATION ELECTRICAL ITEMS					$_____

* Denotes Minimum Unit Price Bid for Each Item

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
STORMWATER PUMP STATION STRUCTURAL ITEMS					
20.	DEMOLITION OF EXISTING STRUCTURES, INCLUDING BUT NOT LIMITED TO, DEMOLITION AND REMOVAL OF STEEL FRAMEWORK, UPPER RETAINING WALL, HEADWALL STEM, ANY OTHER STRUCTURAL CONCRETE, HAND RAILS, AND ALL RELATED AND MISCELLANEOUS APPURTENANCES AND ITEMS RELATED TO AND NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE PLANS, COMPLETE IN PLACE.	LS	1	$_____	$_____
21.	CORING OF EXISTING HEADWALL, INCLUDING BUT NOT LIMITED TO, DEMOLITION AND REMOVAL OF HAND RAIL, CORE HOLES, GROUT, AND ALL RELATED AND MISCELLANEOUS APPURTENANCES AND ITEMS RELATED TO AND NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE PLANS, COMPLETE IN PLACE.	LS	1	$_____	$_____

* Denotes Minimum Unit Price Bid for Each Item

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
STORMWATER PUMP STATION STRUCTURAL ITEMS					
22.	HEADWALL EXTENSION, INCLUDING BUT NOT LIMITED TO, STRUCTURAL CONCRETE, NEW HAND RAILS, EXCAVATION, BACKFILL (IN-SITU MATERIAL), CONCRETE BARRIERS, WATER STOPS, FILTER FABRIC, SLOPE PAVEMENT, WEEP HOLES, GRAVEL, ANCHORAGE HARDWARE, EXPANSION MATERIAL, AND ALL RELATED AND MISCELLANEOUS APPURTENANCES AND ITEMS RELATED TO AND NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE PLANS, COMPLETE IN PLACE.	CY	144	$_____	$_____
23.	PTO DRIVEN PUMP PAD, INCLUDING BUT NOT LIMITED TO, STRUCTURAL CONCRETE, FOUNDATION, VAPOR BARRIER, COMPACTED SELECT FILL, EXCAVATION AND ALL RELATED AND MISCELLANEOUS APPURTENANCES AND ITEMS RELATED TO AND NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE PLANS, COMPLETE IN PLACE.	CY	15	$_____	$_____

* Denotes Minimum Unit Price Bid for Each Item

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
STORMWATER PUMP STATION STRUCTURAL ITEMS					
24.	STAIRCASE STRUCTURE, INCLUDING BUT NOT LIMITED TO, STRUCTURAL CONCRETE, SLAB, FOUNDATION, COMPACTED SELECT FILL, COMPACTED SAND CUSHION, ANCHORAGE HARDWARE, EXCAVATION AND ALL RELATED AND MISCELLANEOUS APPURTENANCES AND ITEMS RELATED TO AND NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE PLANS, COMPLETE IN PLACE.	LS	1	$_____	$_____
25.	HEADWALL STRUCTURAL MODIFICATIONS, INCLUDING BUT NOT LIMITED TO, STRUCTURAL CONCRETE, REMOVABLE GRATE PANELS, SLAB TROUGHS, CEMENT STABILIZED SAND, CONCRETE BAFFLES, CONCRETE WALLS, CONCRETE CLOSURE POURS, HAND RAILS, WATER STOPS, FILTER FABRIC, SLOPE PAVEMENT, WEEP HOLES, GRAVEL, ANCHORAGE HARDWARE AND INSTALLATION, EXPANSION MATERIAL, AND ALL RELATED AND MISCELLANEOUS APPURTENANCES AND ITEMS RELATED TO AND NECESSARY TO COMPLETE THE PROJECT AS SHOWN IN THE PLANS, COMPLETE IN PLACE.	CY	60	$_____	$_____
26.	EXCAVATION, HAULING, PLACEMENT AND COMPACTION OF SPOILS, EXCESS TO BE HAULED OFF-SITE AND LEGALLY DISPOSED OF BY THE CONTRACTOR.	CY	211	$_____	$_____

* Denotes Minimum Unit Price Bid for Each Item

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
STORMWATER PUMP STATION STRUCTURAL ITEMS					
27.	SELECT FILL, TO BE HAULED IN FROM OFFSITE SOURCE, TO BE PLACED AND COMPACTED TO 95% STANDARD PROCTOR DENSITY WITH MAXIMUM 6" LIFTS, COMPLETE IN PLACE	CY	109	$_____	$_____
28.	CEMENT STABILIZED SAND, (2 SACKS OF CEMENT PER CUBIC YARD CEMENT STABILIZED SAND), COMPLETE IN PLACE.	CY	32	$_____	$_____
29.	SAND CUSHION, TO BE HAULED IN FROM OFFSITE SOURCE, TO BE PLACED AND COMPACTED TO 95% STANDARD PROCTOR DENSITY WITH MAXIMUM 6" LIFTS, COMPLETE IN PLACE	CY	1	$_____	$_____
SUBTOTAL STORMWATER PUMP STATION STRUCTURAL ITEMS					$_____

* Denotes Minimum Unit Price Bid for Each Item

BID PROPOSAL

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
MISCELLANEOUS ITEMS					
30.	MOBILIZATION	LS	1	$_____	$_____
31.	STORM WATER POLLUTION PREVENTION PLAN WITH CONCRETE TRUCK WASHOUT, ROCK FILTER DAM AND STABILIZED CONSTRUCTION ENTRANCE, TO BE MAINTAINED UNTIL CONTRACTOR'S NOTICE OF TERMINATION IS SUBMITTED. INCLUDING ADMINISTRATION, MAINTENANCE, AND REMOVAL AS REQUIRED BY THE PLANS, (TO BE USED ONLY AS DIRECTED BY THE ENGINEER), COMPLETE IN PLACE	LS	1	$_____	$_____
32.	EXTRA CEMENT STABILIZED SAND, (2 SACKS OF CEMENT PER CUBIC YARD CEMENT STABILIZED SAND), (TO BE USED ONLY AS DIRECTED BY THE ENGINEER), COMPLETE IN PLACE.	CY	10	$_____	$_____
33.	EXTRA 4,000 PSI CONCRETE WITH REINFORCING STEEL, (TO BE USED ONLY AS DIRECTED BY THE ENGINEER), COMPLETE IN PLACE.	CY	10	$_____	$_____
34.	EXTRA SELECT FILL, (TO BE USED ONLY AS DIRECTED BY THE ENGINEER), COMPLETE IN PLACE.	CY	30	$_____	$_____
35.	DEWATERING FOR STRUCTURE, AS REQUIRED BY SOIL CONDITIONS, (TO BE USED ONLY AS DIRECTED BY THE ENGINEER), COMPLETE IN PLACE.	LS	1	$_____	$_____

* Denotes Minimum Unit Price Bid for Each Item

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
MISCELLANEOUS ITEMS					
36.	DEWATERING OF LINE WORK, (TO BE USED ONLY AS DIRECTED BY THE ENGINEER), COMPLETE IN PLACE.	LS	1	$_____	$_____
37.	SITE RESTORATION, INCLUDING BUT NOT LIMITED TO TURF ESTABLISHMENT, HYDROMULCH SEEDING, AND DEBRIS REMOVAL, COMPLETE IN PLACE.	LS	1	$_____	$_____
38.	TRENCH SAFETY SYSTEM, ALL DEPTHS, ALL SIZES, COMPLETE IN PLACE	LF	320	$_____	$_____
SUBTOTAL MISCELLANEOUS ITEMS					$_____

* Denotes Minimum Unit Price Bid for Each Item

BID PROPOSAL

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL AMOUNT
ALTERNATE BID					
1.	16-INCH DIP DISCHARGE BENDS, TEES, AND PIPES, INCLUDING ALL APPURTENANCES, COMPLETE IN PLACE.	LF	51	$_____	$_____
2.	16-INCH GATE VALVES, COMPLETE IN PLACE.	EA	9	$_____	$_____
SUBTOTAL ALTERNATE BID ITEMS					$_____

CONTRACTOR IS REQUIRED TO BID ALTERNATE BID. OWNER RETAINS THE RIGHT TO EVALUATE THE BID BASED ON THE BASE BID ALONE, CONSIDERING ONE ALTERNATE OR MORE THAN ONE ALTERNATE, WHICHEVER IS DEEMED MOST ADVANTAGEOUS TO THE OWNER.

* Denotes Minimum Unit Price Bid for Each Item

BID PROPOSAL

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

PROPOSAL BIDDING SUMMATION

SUBTOTAL STORMWATER PUMP STATION SITE ITEMS	$_____
SUBTOTAL STORMWATER PUMP STATION ELECTRICAL ITEMS	$_____
SUBTOTAL STORMWATER PUMP STATION STRUCTURAL ITEMS	$_____
SUBTOTAL MISCELLANEOUS ITEMS	$_____

ALTERNATE BID

TOTAL AMOUNT BASE BID	$_____
SUBTOTAL ALTERNATE BID	$_____
TOTAL AMOUNT BID INCLUDING ALTERNATE	$_____

It is understood that in the event the successful bidder fails to enter into the Contract and to furnish a Performance Bond and Payment Bond in the amount of 100 percent of the Contract and for all parts of the work, as specified in the Instructions to Bidders, the Bidder will forfeit the Certified or Cashier's Check, OR Bid Bond, as provided in the Contract Documents.

The undersigned proposes, if awarded the Contract, to begin work as stipulated in the written Notice to Proceed issued by the Engineer, and to substantially complete the work within 240 calendar days after the date of the written Notice to Proceed and to complete the project within 270 calendar days after the date of the written Notice to Proceed.

This bid proposal shall be considered part of the contract.

_____	_____
(Signature)	(Company Name – Bidder)
_____	_____
(Type Name)	(Address)
_____	_____
(Title)	(City) (County) (Zip)
_____	_____
(Attest)	(Phone No.)
(Seal, If Bidder is a Corporation)	_____
	(E-mail Address)

BID PROPOSAL

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ACKNOWLEDGMENT OF RECEIPT OF ADDENDUM

ADDENDUM NO. 1_____ _____
Signature Date

ADDENDUM NO. 2_____ _____
Signature Date

ADDENDUM NO. 3_____ _____
Signature Date

ADDENDUM NO. 4_____ _____
Signature Date

ADDENDUM NO. 5_____ _____
Signature Date

ADDENDUM NO. 6_____ _____
Signature Date

VENDOR COMPLIANCE WITH RECIPROCITY ON NON- RESIDENT BIDDERS

Texas Government Code Section 2252.002 provides that in order for nonresident bidders to be awarded a governmental contract, the bidder must bid projects for construction, improvements, supplies, or services in Texas at an amount lower than the lowest Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid the nonresident bidder in order to obtain a comparable contract in the nonresident bidder's state. A nonresident bidder is a person, including a contractor, whose principal place of business or corporate office is outside of the state of Texas. This requirement does not apply to a contract involving Federal funds. The appropriate blanks in Section A must be filled out by all nonresident bidders in order for your bid to meet specifications. The failure of a nonresident bidder to do so will automatically disqualify that bidder. Resident bidders must check the blank in Section B.

A. Non-resident vendors in _____(give state), our principal place of business, are required to be _____percent lower than resident bidders by state law. A copy of the statute is attached.

   Non-resident vendors in _____ (give state), our principal place of business, are not required to underbid resident bidders.

B. Our principal place of business or corporate office is in the state of Texas:_____.

BIDDER:

_____
Company

_____
City State Zip

_____
By (print name)

_____
Signature

_____
Title (print)

THIS FORM MUST BE RETURNED WITH THE BID

STANDARD FORM OF AGREEMENT BETWEEN
OWNER AND CONTRACTOR

THIS AGREEMENT is effective as of the _____ day of _____ in the year 2024 by and between Fort Bend County Levee Improvement District No. 14 (hereinafter called "**OWNER**") and _____ _____ (hereinafter called "**CONTRACTOR**").

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK.

CONTRACTOR shall complete all work as specified or indicated in the Contract Documents. The Work is generally described as follows:

CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS
LJA JOB NO. 1301-1413

ARTICLE 2. ENGINEER.

The Project has been designed by: **LJA ENGINEERING, INC.** who is hereinafter called "**ENGINEER**" and who is to act as OWNER's representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3. CONTRACT TIME.

3.1 The Contract Time begins to run on the date indicated in the Notice to Proceed. Contractor shall mobilize and begin Work in earnest no later than ten (10) days after the date indicated on the Notice to Proceed. The Work will be substantially complete within 240 calendar days after the date the Contract Time commences. The Work will be finally completed in accordance with Contract Documents within 270 calendar days after the date when the Contract Time commences.

ARTICLE 4. CONTRACT PRICE.

4.1 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds as follows: _____ /100th Dollars ($_____).

ARTICLE 5. PAYMENT PROCEDURES.

CONTRACTOR shall submit, and ENGINEER shall process, Applications for Payment in accordance with the General, Supplementary, and Special Conditions.

5.1 **Progress Payments.** OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER. The CONTRACTOR must submit its pay estimate as prescribed in the Supplementary and Special Conditions of these Contract Documents. An amount not exceeding ten percent of the total of each progress payment shall be retained by OWNER as allowed by law.

5.2 **Final Payment.** Completion and acceptance of the Work by ENGINEER and OWNER is a condition precedent to final payment. Contingent upon completion and acceptance of the Work by ENGINEER and OWNER, the OWNER shall make final payment including payment of retainage as allowed by law.

ARTICLE 6. CONTRACTOR'S REPRESENTATIONS.

To induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

6.1 CONTRACTOR has examined, carefully studied and understands the Contract Documents (including Addenda) and the other related data identified in the Bidding Documents.

6.2 CONTRACTOR visited the site and became familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.

6.3 CONTRACTOR is familiar with and is satisfied as to all federal, state and local laws and regulations that may affect cost, progress, performance and furnishing of the Work.

6.4 CONTRACTOR has carefully studied all reports, explorations and tests of subsurface conditions and physical conditions at or contiguous to the site. CONTRACTOR acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of such and information and data.

6.5 CONTRACTOR is aware of the general nature of work performed by OWNER and others at the site that relates to the Work as indicated in the Contract Documents.

6.6 CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.

6.7 CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents and written resolution thereof by ENGINEER is acceptable to CONTRACTOR, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

6.8 The requirements of Subchapter J, Chapter 552, Government Code, may apply to this contract and _____ (CONTRACTOR) agrees that the Contract can be terminated if CONTRACTOR knowingly fails to comply with a requirement of that subchapter. Accordingly, if the Contract Price is equal to or greater than $1,000,000, CONTRACTOR shall: (1) preserve all Contracting Information (defined below) in CONTRACTOR'S possession related to this Contract as provided by the District's Records Control Schedule for the duration of the Contract; (2) promptly provide to the District on the District's request any Contracting Information in CONTRACTOR'S custody or possession; and (3) on completion of the Contract, either provide at no cost to the District all Contracting Information related to the Contract in CONTRACTOR'S possession, or preserve such Contracting Information as provided by the District's Records Control Schedule. For purposes of this Contract, Contracting Information means information related to the Contract in CONTRACTOR'S custody or possession including:

(A) information in a voucher or the Contract relating to the receipt or expenditure of public funds by the District;

(B) solicitation or bid documents relating to the Contract with the District;

(C) communications sent between the District and Contractor during the solicitation, evaluation, or negotiation of the Contract;

(D) documents, including bid tabulations, showing the criteria by which the District evaluated Contractor or potential contractors responding to a solicitation and, if applicable, an explanation of why Contractor was selected; and

(E) communications and other information sent between the District and Contractor related to the performance of the Contract or work performed thereunder on behalf of the District

6.9 _____ declares that it has not received from a governmental body a notice of noncompliance with a provision of Subchapter J, Chapter 552, Texas Government Code, or, if such a notice has been received, _____ has taken adequate steps to ensure future compliance with such subchapter and has provided or upon request will provide documentation of same.

6.10 As required by Section 2271.002 of the Texas Government Code, _____ hereby verifies that it does not boycott Israel and will not boycott Israel during the term of this Contract. For purposes of this Contract, the phrase “boycott Israel” means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes.

6.11 Pursuant to Section 2252.152 of the Texas Government Code, _____ hereby verifies that it is not engaged in active business operations with Sudan, Iran, or a foreign terrorist organization. For purposes of this Contract, the phrase “foreign terrorist organization” means an organization designated as a foreign terrorist organization by the United States secretary of state as authorized by 8 U.S.C. Section 1189.

6.12 As required by 2274.002, Texas Government Code (as added by Senate Bill 13, 87th Texas Legislature, Regular Session), as amended, _____ hereby verifies that _____ _____, including any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the same, does not boycott energy companies, and will not boycott energy companies during the term of this Agreement. As used in the foregoing verification, “boycott energy companies” shall have the meaning assigned to the term “boycott energy company” in Section 809.001, Texas Government Code, as amended.

6.13 As required by Section 2274.002, Texas Government Code (as added by Senate Bill 19, 87th Texas Legislature, Regular Session, "SB 19"), as amended, _____ hereby verifies that _____, including any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the same, (i) does not have a practice, policy, guidance or directive that discriminates against a firearm entity or firearm trade association, and (ii) will not discriminate against a firearm entity or firearm trade association during the term of this Agreement. As used in the foregoing verification, "discriminate against a firearm entity or trade association" shall have the meaning assigned to such term in Section 2274.001(3), Texas Government Code (as added by SB 19), as amended.

6.14 Pursuant to Chapter 2274 of the Texas Government Code (as added by Senate Bill 2116, 87th Legislature, Regular Session), as amended, and to the extent this Agreement grants to _____ _____ direct or remote access to the control of critical infrastructure, excluding access specifically allowed for product warranty and support, _____ verifies that neither ___ _____, including any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the same, nor any of its sub-contractors are: (i) owned or controlled by (a) individuals who are citizens of China, Iran, North Korea, Russia or a designated country; or (b) a company or other entity, including a governmental entity, that is owned or controlled by citizens of or is directly controlled by the government of China, Iran, North Korea, Russia, or a designated country; or (ii) headquartered in China, Iran, North Korea, Russia or a designated country. The

term “designated country” means a country designated by the Governor as a threat to critical infrastructure under Section 2274.0103, Texas Government Code. The term “critical infrastructure” shall have the meaning assigned to such term in Section 2274.0101, Texas Government Code.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed three (3) copies of this Agreement. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

This Agreement will be effective on _____, 2024 (which is the effective date of the Agreement).

OWNER:	**CONTRACTOR:**
Fort Bend County Levee Improvement District No. 14	_____
By: _____	By: _____
Sujeeth Draksharam, President	Authorized Agent
Attest: _____	Attest: _____
Shaizad Chatriwala, Secretary	
Address for giving notices:	Address for giving notices:
c/o Husch Blackwell	_____
600 Travis Street, Suite 2350	_____
Houston, Texas 77002	_____

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

National Society of Professional Engineers®

Endorsed by

CSI NUCA
REPRESENTING UTILITY & EXCAVATION CONTRACTORS

EJCDC® C-700 (Rev. 1), Standard General Conditions of the Construction Contract.
Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

Copyright © 2013:

National Society of Professional Engineers

1420 King Street, Alexandria, VA 22314-2794

(703) 684-2882

www.nspe.org

American Council of Engineering Companies

1015 15th Street N.W., Washington, DC 20005

(202) 347-7474

www.acec.org

American Society of Civil Engineers

1801 Alexander Bell Drive, Reston, VA 20191-4400

(800) 548-2723

www.asce.org

The copyright for this document is owned jointly by the three sponsoring organizations listed above. The National Society of Professional Engineers is the Copyright Administrator for the EJCDC documents; please direct all inquiries regarding EJCDC copyrights to NSPE.

NOTE: EJCDC publications may be purchased at www.ejcdc.org, or from any of the sponsoring organizations above.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

Page

Article 1 – Definitions and Terminology 1

1.01 Defined Terms 1

1.02 Terminology 5

Article 2 – Preliminary Matters 6

2.01 Delivery of Bonds and Evidence of Insurance 6

2.02 Copies of Documents 6

2.03 Before Starting Construction 6

2.04 Preconstruction Conference; Designation of Authorized Representatives 7

2.05 Initial Acceptance of Schedules 7

2.06 Electronic Transmittals 7

Article 3 – Documents: Intent, Requirements, Reuse 8

3.01 Intent 8

3.02 Reference Standards 8

3.03 Reporting and Resolving Discrepancies 8

3.04 Requirements of the Contract Documents 9

3.05 Reuse of Documents 10

Article 4 – Commencement and Progress of the Work 10

4.01 Commencement of Contract Times; Notice to Proceed 10

4.02 Starting the Work 10

4.03 Reference Points 10

4.04 Progress Schedule 10

4.05 Delays in Contractor's Progress 11

Article 5 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions 12

5.01 Availability of Lands 12

5.02 Use of Site and Other Areas 12

5.03 Subsurface and Physical Conditions 13

5.04 Differing Subsurface or Physical Conditions 14

5.05 Underground Facilities 15

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

5.06 Hazardous Environmental Conditions at Site 17
Article 6 – Bonds and Insurance 19
6.01 Performance, Payment, and Other Bonds 19
6.02 Insurance—General Provisions 19
6.03 Contractor's Insurance 20
6.04 Owner's Liability Insurance 23
6.05 Property Insurance 23
6.06 Waiver of Rights 25
6.07 Receipt and Application of Property Insurance Proceeds 25
Article 7 – Contractor's Responsibilities 26
7.01 Supervision and Superintendence 26
7.02 Labor; Working Hours 26
7.03 Services, Materials, and Equipment 26
7.04 "Or Equals" 27
7.05 Substitutes 28
7.06 Concerning Subcontractors, Suppliers, and Others 29
7.07 Patent Fees and Royalties 31
7.08 Permits 31
7.09 Taxes 32
7.10 Laws and Regulations 32
7.11 Record Documents 32
7.12 Safety and Protection 32
7.13 Safety Representative 33
7.14 Hazard Communication Programs 33
7.15 Emergencies 34
7.16 Shop Drawings, Samples, and Other Submittals 34
7.17 Contractor's General Warranty and Guarantee 36
7.18 Indemnification 37
7.19 Delegation of Professional Design Services 37
Article 8 – Other Work at the Site 38
8.01 Other Work 38
8.02 Coordination 39
8.03 Legal Relationships 39

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

Article 9 – Owner's Responsibilities 40
9.01 Communications to Contractor 40
9.02 Replacement of Engineer 40
9.03 Furnish Data 40
9.04 Pay When Due 40
9.05 Lands and Easements; Reports, Tests, and Drawings 40
9.06 Insurance 40
9.07 Change Orders 40
9.08 Inspections, Tests, and Approvals 41
9.09 Limitations on Owner's Responsibilities 41
9.10 Undisclosed Hazardous Environmental Condition 41
9.11 Evidence of Financial Arrangements 41
9.12 Safety Programs 41
Article 10 – Engineer's Status During Construction 41
10.01 Owner's Representative 41
10.02 Visits to Site 41
10.03 Project Representative 42
10.04 Rejecting Defective Work 42
10.05 Shop Drawings, Change Orders and Payments 42
10.06 Determinations for Unit Price Work 42
10.07 Decisions on Requirements of Contract Documents and Acceptability of Work 42
10.08 Limitations on Engineer's Authority and Responsibilities 42
10.09 Compliance with Safety Program 43
Article 11 – Amending the Contract Documents; Changes in the Work 43
11.01 Amending and Supplementing Contract Documents 43
11.02 Owner-Authorized Changes in the Work 44
11.03 Unauthorized Changes in the Work 44
11.04 Change of Contract Price 44
11.05 Change of Contract Times 45
11.06 Change Proposals 45
11.07 Execution of Change Orders 46
11.08 Notification to Surety 47
Article 12 – Claims 47

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

12.01 Claims....47
Article 13 – Cost of the Work; Allowances; Unit Price Work....48
13.01 Cost of the Work....48
13.02 Allowances....50
13.03 Unit Price Work....51
Article 14 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work....52
14.01 Access to Work....52
14.02 Tests, Inspections, and Approvals....52
14.03 Defective Work....53
14.04 Acceptance of Defective Work....53
14.05 Uncovering Work....53
14.06 Owner May Stop the Work....54
14.07 Owner May Correct Defective Work....54
Article 15 – Payments to Contractor; Set-Offs; Completion; Correction Period....55
15.01 Progress Payments....55
15.02 Contractor's Warranty of Title....58
15.03 Substantial Completion....58
15.04 Partial Use or Occupancy....59
15.05 Final Inspection....59
15.06 Final Payment....59
15.07 Waiver of Claims....61
15.08 Correction Period....61
Article 16 – Suspension of Work and Termination....62
16.01 Owner May Suspend Work....62
16.02 Owner May Terminate for Cause....62
16.03 Owner May Terminate For Convenience....63
16.04 Contractor May Stop Work or Terminate....63
Article 17 – Final Resolution of Disputes....64
17.01 Methods and Procedures....64
Article 18 – Miscellaneous....64
18.01 Giving Notice....64
18.02 Computation of Times....64
18.03 Cumulative Remedies....64

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

18.04 Limitation of Damages 65
18.05 No Waiver 65
18.06 Survival of Obligations 65
18.07 Controlling Law 65
18.08 Headings 65

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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,

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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 arbitration or other 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 arbitration 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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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,

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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 arbitration 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 arbitration 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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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).

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

4. Foreign voluntary worker compensation (if applicable).

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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).

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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 arbitration 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 arbitration 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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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 arbitration 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;

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, 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 arbitration 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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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 arbitration 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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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*

A. 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.

D. *Mediation*:

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; 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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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, expediters, 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 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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 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, 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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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:

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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,

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

B. 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 arbitration 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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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:

1. 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);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. 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,

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and

2. 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:

1. 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

2. 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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

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.

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC C-700) (2013 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect. To the extent of a conflict between the standard General Conditions and these Supplementary Conditions, these Supplementary Conditions Control.

COPIES OF PLANS AND SPECIFICATIONS FURNISHED

Standard General Condition 2.02A is deleted in its entirety and replaced with the following:

Six (6) sets of hard copy plans and three (3) copies of specifications shall be furnished to the CONTRACTOR, at no charge, for construction purposes. Additional copies of the documents may be purchased by the CONTRACTOR from the ENGINEER at cost plus 15% handling charges.

ELECTRONIC TRANSMITTALS

Standard General Condition 2.06A and 2.06B are deleted in their entirety and replaced with the following:

ENGINEER or OWNER may, for convenience and expediency, furnish data in electronic format, including but not limited to, CAD files. Before receiving electronic drawings CONTRACTOR is required to execute a disclaimer specifically relating to electronic documents. ENGINEER and OWNER make no representations or guarantees that the electronic format used will be compatible with CONTRACTOR's operating systems, software or hardware.

CONTRACTOR shall immediately notify ENGINEER if it is unable to access electronic data or if electronic data appears inconsistent with hard copy documents.

Email may be used for routine Project correspondence and transmittal of documents. If a dispute arises as to whether the email, including any attachments, was received by the intended recipient, the Party sending the email has the burden of proving receipt by the intended recipient.

Even if transmitted by email, Parties shall provide a hard copy of: amendments to the Contract; change orders; pay applications; lien releases; certificates of Substantial and Final Completion; and any document requiring signature by an authorized Party to be effective. If a Party also emails a copy of these documents as attachments, the attachments shall be in a file format which does not allow revision of the document.

REFERENCE STANDARDS AND ADDITIONAL REGULATIONS AND SPECIFICATIONS

Standard General Condition 3.02 is modified by adding the following:

3.02.A.3 All construction by the CONTRACTOR, or subcontractors, shall be in accordance with all applicable municipal, county, State of Texas, and other Governmental ordinances, rules, and regulations. The applicable city or county Standard Specifications, latest edition, shall apply to this Project, and are included herein by reference.

REPORTING AND RESOLVING DISCREPANCIES

Standard General Condition 3.03B is deleted in its entirety and replaced with the following:

3.03.B. CONTRACTOR shall seek ENGINEER's written opinion if CONTRACTOR discovers discrepancies. In general, if the Contract Documents have discrepancies or conflicts, the order of precedence shall be as follows: the Special Conditions prevail over Supplementary Conditions, and both Special and Supplementary Conditions prevail over the Standard General Conditions.

In case of discrepancy in the Contract Documents, not resolved by the order of precedence, or in case any ambiguity, error or omission is discovered by CONTRACTOR, the ENGINEER should be notified immediately so that a written clarification can be issued. If a discrepancy occurs between the technical specifications in these Contract Documents and the technical specifications of the jurisdiction where the Work is being performed, the more stringent shall take precedence.

COMMENCEMENT OF CONTRACT TIMES; NOTICE TO PROCEED

Standard General Conditions 4.01A is deleted in its entirety and replaced with the following:

The Contract Times will commence to run on the day indicated in the Notice to Proceed. CONTRACTOR is required to begin Work within ten (10) days of the date indicated on the Notice to Proceed.

CONSTRUCTION STAKING AND PROTECTION OF PROPERTY PINS

Standard General Condition 4.03A shall be modified by adding the following:

Owner will set limited control stakes (reference points) one time only. Contractor must satisfy himself, before commencing work, as to the meaning or correctness of all stakes or marks, and no claim will be considered for, or on account of any alleged inaccuracies, or for alterations subsequently rendered necessary on account of such alleged inaccuracies, unless Contractor notifies ENGINEER in writing before commencing work thereon.

Contractor shall be responsible for construction staking. Contractor shall protect stakes and pay all costs involved in any restaking. Stakes will be furnished as required by Contractor within 72 hours after written notification to ENGINEER by Contractor.

MARKING WATER AND SEWER LEADS AND STACKS AND OTHER PERMANENT MARKERS PER PLANS

Standard General Condition 4.03 shall be modified by adding the following:

4.03B All leads and stacks shall be marked at the property line or in the manner required by the governmental body having jurisdiction or as provided in the construction plans at the time of construction. The required marking shall begin at the flow line of the lead or stack and extend two (2) feet above finished grade. It shall be labeled appropriately, and be maintained plumb and in good condition throughout the remainder of the Project. This does not relieve the CONTRACTOR of his obligation to furnish exact locations in the form of Record Drawings. No additional compensation shall be paid for marking leads or stacks. Until all sewer leads and stacks are completely marked to the ENGINEER's satisfaction, final payment to the CONTRACTOR will not be made. As a requirement of the Texas Commission on Environmental Quality (TCEQ), new wastewater collection lines must be constructed with "stub outs" for the connection of anticipated extensions. The location of such "stub outs" must be marked on the ground such that the location of such "stub outs" can be easily determined at the time of connection of the extensions. Such "stub outs" must be manufactured wyes or tees that are compatible in size and material with both the sewer line and the extension. At the time of original construction, new "stub outs" must be constructed sufficiently to extend beyond the edge(s) of any street pavement under which they must pass to the property line. All "stub outs" must be sealed with a manufactured cap to prevent leakage.

DELAY

Standard General Condition 4.05A shall be deleted in its entirety and replaced with the following:

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. 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.

Notwithstanding anything else in the Contract, CONTRACTOR will not receive compensation from OWNER for claimed interference or delay by other contractors or utility or facility owners.

USE OF SITE AND OTHER AREAS

Standard General Condition 5.02 shall be modified by adding the following:

5.02E CONTRACTOR shall propose, for ENGINEER's review and approval, access roads for moving construction personnel and equipment. CONTRACTOR shall comply with all ordinances and regulations of local, municipal, county and State Governments, including without limitation, limits on the type of, or the gross weight of, motor vehicles or construction equipment operating on public roads and streets or restrictions on the use of such equipment on certain streets.

The access routes are subject to change by the ENGINEER, occasioned by the progress of the Work or unforeseen conditions. If routes are changed, CONTRACTOR may propose alternate routes. Changes required in haul routes shall not be the basis for extra payment.

CONTRACTOR shall, whenever possible, keep all construction traffic out of existing neighborhoods. CONTRACTOR shall keep haul routes clean at all times to the satisfaction of the ENGINEER and the local governing body having jurisdiction over the haul routes. CONTRACTOR shall care for existing pavement (all types), and will be held liable for any damage to the existing pavements, which will be used by construction equipment or suppliers while construction is in progress. On completion of the construction, the street or route, whether paved or not, shall be restored to its original condition or better.

The cost for maintaining and repairing the existing road surface shall be included in the prices bid for other items. No additional payment will be made to the CONTRACTOR for these repairs. Any bonds, permits or fees required for use of roadways will be the sole obligation of the CONTRACTOR.

All private property along and adjacent to the CONTRACTOR's operation, including lawns, yards, shrubs, trees, structures, trails, paths, livestock, and fences, shall be adequately protected, and when damaged or removed, shall be repaired, replaced, renewed or otherwise put in a condition equal to or better than that which existed before the CONTRACTOR caused the damage or removal, at the CONTRACTOR's expense. Where livestock are present, CONTRACTOR shall take all necessary precautions to assure that no construction or construction related activity will allow livestock to leave their confine. Where existing fences are being crossed, CONTRACTOR shall maintain the integrity of the fence during construction through placement of guards, temporary fences, or other adequate measures as approved by the ENGINEER. All construction activities, including ingress and egress, shall occur within the boundaries and Contract constraints of the temporary and permanent construction limits. Additionally, no staging, parking, loading and/or unloading shall occur outside of the designated construction limits.

Additionally, if CONTRACTOR damages public property, including without limitation facilities, pavement or utilities, CONTRACTOR shall restore the facility to its original condition prior to completion of the Work.

SUBSURFACE AND PHYSICAL CONDITIONS REPORTS

Standard General Condition 5.03 is modified by adding the following:

5.03C If the ENGINEER used drawings or reports of physical conditions to prepare the Contract Documents, those drawings or reports will be identified in the Special Conditions.

OWNER and ENGINEER disclaim any responsibility for the accuracy, true location and extent of the surface and subsurface investigations that have been prepared by others. OWNER and ENGINEER further disclaim responsibility for interpretation of that data by CONTRACTOR, i.e. projecting soil-bearing values,

rock profiles, soil stability and the presence, level and extent of underground water.

ARCHEOLOGICAL OR HISTORICAL MATERIAL

Standard General Condition 5.04A shall be modified by adding the following:

If any materials are discovered which might be of archeological or historical significance, all construction shall immediately cease, and the CONTRACTOR shall notify ENGINEER. The ENGINEER shall then consult with a professional archeologist and the Texas Historical Society to determine the significance of the find. The CONTRACTOR shall protect the site and material from disturbance until a professional has examined the site or CONTRACTOR is cleared by ENGINEER to Work.

SC-5.06 Delete Paragraph 5.06.I of the General Conditions in its entirety.

SC-5.06 Delete Paragraph 5.06.K of the General Conditions in its entirety.

SC-6.01 Add to the end of 6.01B the following:

> "The surety company issuing Payment and Performance Bonds, and a Maintenance Bond (if so required by the Contract Documents), must (a) be authorized to do business in the State of Texas as evidenced by licensing through the Texas Department of Insurance; (b) be authorized to issue Payment and Performance Bonds, and Maintenance Bonds (if so required by the Contract Documents), in the amount required for the contract as indicated by the records of the Texas Department of Insurance; (c) for contracts over $100,000.00, the surety must also hold a certificate of authority from the United States Secretary of Treasury to qualify as a surety or reinsurer on obligations permitted or required under federal law ("Certificate of Authority") or have obtained reinsurance for any liability in excess of $100,000.00 from a reinsurer that is authorized and admitted as a reinsurer in the State of Texas and is the holder of a Certificate of Authority; and (d) have a rating of at least "A-" in the current Best's Key Rating Guide. The person executing the Bonds must be licensed as a Texas Local Recording Agent as required by the laws of the State of Texas and such licensing must be recorded.

SC-6.02.D Delete Paragraph 6.02.D of the General Conditions in its entirety.

INSURANCE

Standard General Conditions 6.02K shall be modified by adding the following:

Without intending to limit indemnification liability, CONTRACTOR and subcontractor shall furnish the insurance below and shall maintain it in full force until a minimum of four (4) years after completion of the Work. The CONTRACTOR shall not perform any Work until he has obtained all insurance required under these insurance provisions and until proof of such insurance has been submitted. Nor shall the CONTRACTOR allow any subcontractor to commence any Work on this subcontract until proof of required insurance has been so submitted by the subcontractor. If requested, CONTRACTOR shall furnish certified copies of the policies.

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

Workers Compensation under 6.03.A

(1) State:	Statutory
(2) Applicable Federal:	Statutory
(3) Employers Liability:	Accident $500,000 each accident;

Disease $500,000 each employee;
Disease $500,000 policy limit

CONTRACTOR shall provide Waiver of Subrogation on Worker's Compensation to OWNER and ENGINEER.

Commercial General Liability Insurance under Paragraphs 6.03.C:

Commercial General Liability form, including Premises/ Operations, Independent Contractors, Products - Completed Operations, Broad Form Property Damage (including Completed Operations). Contractual Liability, Blanket basis insuring the liability assumed under this contract.

Limits of Liability: Bodily Injury, $1,000,000 each occurrence, $2,000,000 aggregate; Products - Completed Operations, $2,000,000 aggregate; Personal Injury, $1,000,000 each occurrence, $1,000,000 aggregate; and Property Damage, $1,000,000 each occurrence, $1,000,000 aggregate.

Business Automobile Liability (including owned, non-owned and hired) under 6.03.D:

Combined Single Limit (Bodily Injury and Property Damage): $1,000,000 each accident

Umbrella or excess liability under 6.03.E:

$5,000,000 per occurrence; $5,000,000 aggregate

SC-6.03.F Delete Paragraph 6.03.F of the General Conditions in its entirety.

SC-6.03.A Add the following language to the end of Paragraph 6.03.A of the General Conditions:

"Workers' Compensation Insurance Coverage

(A) Definitions

Certificate of coverage ("certificate") - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the Texas Workers' Compensation Commission (the "TWCC"), or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project - includes the time from the beginning of the work on the project until the CONTRACTOR's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractor' in Section 406.096 of the Texas Labor Code) - includes all persons or entities performing all or part of the services the CONTRACTOR has undertaken to perform on the project, regardless of whether that person contracted directly with the CONTRACTOR and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity or employees of any entity which furnishes persons to provide services on the project. "Services' include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

(B) The CONTRACTOR shall provide coverage, based on proper reporting of classification codes and payroll amount and filing of any coverage agreement, which meets the statutory requirements of Texas Labor Code, §401.011(44) for all employees of the CONTRACTOR providing services on the project, for the duration of the project.

(C) The CONTRACTOR must provide a certificate of coverage to the OWNER prior to being awarded the contract.

(D) If the coverage period shown on the CONTRACTOR's current certificate of coverage ends during the duration of the project, the CONTRACTOR must, prior to the end of the coverage period, file a new certificate of coverage with the OWNER, showing that the coverage has been extended.

(E) The CONTRACTOR shall obtain from each person providing services on the project, and provide to the OWNER:

(1) a certificate of coverage, prior to that person beginning work on the project, so that the OWNER will have on file certificates of coverage showing coverage for all persons providing services on the project; and

(2) no later than seven days after receipt by the CONTRACTOR, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(F) The CONTRACTOR shall retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(G) The CONTRACTOR shall notify the OWNER in writing by certified mail or personal delivery, within 10 days after the CONTRACTOR knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project;

(H) The CONTRACTOR shall post on each project site a notice, in the text, form and manner prescribed by the TWCC, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage.

(I) The CONTRACTOR shall contractually require each person with whom it contracts to provide service on a project to:

(1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code §401.011(44) for all its employees providing services on the project, for the duration of the project;

(2) provide to the CONTRACTOR, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project.

(3) provide the CONTRACTOR, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(4) obtain from each other person with whom it contracts, and provide to the CONTRACTOR:

(a) a certificate of coverage, prior to the other person beginning work on the project; and

(b) a new certificate of coverage showing extension of the coverage period, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(6) notify the OWNER in writing by certified mail or personal delivery, within 10 days after the person knew or should know, of any change that materially affects the provision of coverage of any person providing service on the project; and

(7) contractually require each other person with whom it contracts to perform as required by paragraphs (1) - (7), with the certificate of coverage to be provided to the person for whom they are providing services.

(J) By signing this contract or providing or causing to be provided a certificate of coverage, the CONTRACTOR is representing to the OWNER that all employees of the CONTRACTOR who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the TWCC's Division of Self-Insurance Regulation. Providing false or misleading information may subject the CONTRACTOR to administrative penalties, criminal penalties, civil penalties, or other civil actions.

(K) The CONTRACTOR's failure to comply with any of these provisions is a breach of contract by the CONTRACTOR which entitles the OWNER to declare the contract void if the CONTRACTOR does not remedy the breach within ten days after receipt of notice of breach from the OWNER."

SC-6.05G Add the following language to the end of Paragraph 6.05 of the General Conditions:

Installation Floater: If builder's risk insurance is not generally available in the insurance marketplace for the Work, the Contractor shall obtain an installation floater insurance policy acceptable to the Owner, or other acceptable equivalent policy in the amount of all installed fabricated, or erected property being incorporated into the Work under the Contract.

Such policy shall cover all risks of physical loss or damage, including flood and earthquake, to the Work. The installation floater or equivalent policy shall name the Owner, Contractor, and any individuals or entities required by the Special Conditions to be insured under such installation floater, as insureds.

INSUREDS OR ADDITIONAL INSUREDS

Standard General Condition 6.03G shall be modified by adding the words "and/or Special Conditions" after the words "Supplementary Conditions."

SC-6.06.B Delete 6.06.B of the General Conditions in its entirety.

SC-6.06.C Delete 6.06.C of the General Conditions in its entirety.

SC-7.01.A Delete 7.01.A and substitute the following in lieu thereof:

"Contractor shall supervise and direct the Work, using the Contractor's best skill and attention, in a good and workmanlike manner and in the best and most expeditious and economical manner consistent with the interests of the Owner, shall exercise the degree of care, skill and diligence in the performance of the Work in accordance with and consistent with industry standards for similar circumstances, shall utilize its best skill, efforts and judgment in furthering the interests of Owner, and shall furnish efficient business administration and supervision (the Contractor's "Standard of Care")."

WORK DAYS AND HOURS

Standard General Condition 7.02 B shall be deleted in its entirety and replaced with:

Recognized holidays are New Years Day, Good Friday, Memorial Day, July 4th, Labor Day, Thanksgiving, the day after Thanksgiving, the day before Christmas and Christmas.

The CONTRACTOR shall limit his Work to the following hours unless otherwise extended in writing by the OWNER or unless otherwise limited by the governmental entity with jurisdiction:

Monday - Friday:	7:00 AM to 7:00 PM
Saturday:	8:00 AM to 7:00 PM
Sunday:	No Work Allowed
Legal Holidays:	No Work Allowed

If CONTRACTOR requests, and is allowed, to work other than during working hours, CONTRACTOR shall be liable for any and all additional costs incurred by the ENGINEER. These costs will be deducted from the Contract, and the OWNER will make payment to the ENGINEER for these costs. Overtime is at CONTRACTOR's expense.

SC-7.06.P Add Paragraph 7.06.P as follows:

"CONTRACTOR SHALL AT ITS COST INDEMNIFY, DEFEND, AND SAVE OWNER HARMLESS FROM ALL CLAIMS GROWING OUT OF THE DEMANDS OF PERSONS SUPPLYING LABOR AND/OR MATERIALS FOR THE WORK, AS THOSE TERMS ARE DEFINED IN CHAPTER 2253 OF THE TEXAS GOVERNMENT CODE. Contractor shall furnish satisfactory evidence that all obligations for labor and materials have been satisfied in the form of an Affidavit of Bills Paid as set forth in these Contract Documents. If Contractor fails to provide an affidavit as to any laborer or supplier, then Owner may, at Owner's option, pay directly any unpaid sums otherwise due to Contractor under this Contract or withhold from Contractor's unpaid compensation a sum of money deemed reasonably sufficient to liquidate any and all claims until satisfactory evidence is furnished that all liabilities have been fully discharged, whereupon payments to Contractor shall be resumed in full in accordance with the terms of this Contract. In no event shall the provisions of this paragraph be construed to impose any obligation upon Owner by either Contractor or its Surety."

SC-7.07 Delete Paragraph 7.07 of the General Conditions in its entirety and insert the following in its place:

"INTELLECTUAL PROPERTY RIGHTS AND INDEMNIFICATION

(A) Contractor shall not furnish or provide to Owner any Materials or Work that infringes a third party's intellectual property rights (whether it be claims of improper use of confidential information, patent infringement, copyright infringement, or the like). Contractor shall not disclose or provide to Owner any information, ideas, concepts, improvements, discoveries, inventions, or forms of expression of ideas which Contractor does not own or otherwise have the right to disclose or provide to Owner.

(B) Contractor represents and warrants that the Materials, the Work, all processes or methods utilized and all information, ideas, concepts improvements, discoveries, inventions or forms of expression of ideas disclosed shall be free from third party claims of ownership and that Owner's right to own, use, or otherwise disclose such Materials and Work shall be free from third party claims of infringement of intellectual property rights (whether it be claims of improper use of confidential information, patent infringement, copyright infringement, trademark infringement or the like)."

(C) CONTRACTOR SHALL DEFEND, PROTECT, INDEMNITY AND HOLD OWNER HARMLESS FROM AND AGAINST ALL LIABILITY, CLAIMS, DEMANDS AND CAUSES OF ACTION BROUGHT BY THIRD PARTIES (AND ALL COSTS, EXPENSES, DAMAGES, LIABILITIES, OR JUDGMENTS SUSTAINED OR INCURRED BY OWNER IN CONNECTION THEREWITH, INCLUDING THE COSTS OF INVESTIGATION AND REASONABLE ATTORNEYS FEES) ARISING OUT OF OR RELATING TO: (I) CONTRACTORS BREACH OF ANY REPRESENTATION OR WARRANTY, WHETHER EXPRESS OR IMPLIED, REGARDING INTELLECTUAL PROPERTY RIGHTS.

SC-7.08.B Add the following language as new Paragraph 7.08 of the General Conditions:

"The Construction Drawings and Special Specifications include a Storm Water Pollution Prevention Plan in accordance with TCEQ requirements. The Contractor shall be responsible for obtaining permit coverage under the TCEQ's Construction Storm Water General Permit for all phases of project construction, and shall be further responsible for all activities necessary to initially meet and thereafter continuously maintain strict compliance with such permit as well as all applicable rules of TCEQ relating to Storm Water discharges (including, but not limited to, implementing the best management practices set forth in the Storm Water Pollution Prevention Plan for this project."

SC-7.09 Add the following language at the end of Paragraph 7.09 of the General Conditions:

"Owner is exempt from Texas sales and use taxes pursuant to Texas Tax Code § 151.309 as a political subdivision of the State of Texas. Owner shall provide Contractor with a completed Texas Sales and Use Tax Exemption Certification as evidence of the applicability of such exemption and, accordingly, Contractor shall not collect Texas sales and use taxes from Owner with respect to this contract. Contractor and all subcontractors to Contractor shall issue a Texas Sales and Use Tax Exemption Certification with respect to, and shall not pay Texas sales and use taxes on, all purchases of the following items that are exempt from Texas sales and use taxes pursuant to Texas Tax Code § 151.311: (i) tangible personal property that will be incorporated into Owner's realty; (ii) tangible personal property that is necessary and essential for the performance of this contract and is consumed entirely on the job site; and (iii) taxable services for use in the performance of this contract that are performed at the job site and are either integral to the performance of this contract or expressly required to be provided by this contract. In addition, Contractor and all subcontractors to Contractor (i) shall not include any provision for Texas sales and use taxes with respect to such exempt items in any bid or contract amount, and (ii) shall pass on to the Owner cost savings due to the exempt status of such exempt items. Contractor's contracts with all subcontractors to Contractor shall include the foregoing provision regarding the exemption from Texas Sales and use taxes.

Contractor shall pay, when due, all taxes, fees, and contributions imposed by reason of prosecution of the Work **AND SHALL PROTECT, INDEMNIFY, AND HOLD OWNER HARMLESS FROM LIABILITY RESULTING FROM FAILURE TO MAKE TIMELY PAYMENT OF THESE AMOUNTS AND COMPLY WITH THE REPORTING, FILING, OR OTHER PROCEDURAL REQUIREMENTS WITH RESPECT TO PAYMENT**. Interest, penalties, or other liabilities arising from failure to make payments shall not be reimbursed to Contractor."

SC-7.10.D Add Paragraph 7.10.D as follows:

"Contractor shall at all times observe and comply with federal, state, and local laws, ordinances, and regulations which in any manner affect this Contract of the Work; TO THE MAXIMUM EXTENT PERMITTED BY LAW INDEMNIFY AND SAVE OWNER HARMLESS AGAINST ANY CLAIM ARISING FROM VIOLATION OF ANY SUCH LAWS OR ORDINANCES WHETHER BY CONTRACTOR, ITS EMPLOYEES, AGENTS, PERMITTEES, OR LICENSEES; and notify Owner promptly upon discovery of any instance of failure to comply with applicable laws, ordinances, and regulations."

SC-7.10.E Add the following language as new Paragraph 7.10.E of the General Conditions:

"Chapter 2258 of the Texas Government Code provides that any political subdivision of the State of Texas shall ascertain the general prevailing wage rate received by the classes of workers employed on projects similar to this project and shall specify in the call for bids and in the Contract the minimum wage rates which shall be paid for each type of worker. This statute further provides that the Contractor or Subcontractors shall pay, as a penalty, to the Owner Sixty Dollars ($60.00) for each worker employed for each calendar day or part of the day that the worker is paid less that the wage rates stipulated in the Contract. The Owner is authorized to withhold from the Contractor the amount of this penalty from any payment due under the Contract.

The statute likewise requires that the Contractor and subcontractors keep an accurate record of the names and occupations of all persons employed by them in the construction of the Project and to show the actual per diem wages paid to each worker. These records are open to the inspection of the Owner.

The Prevailing Wage Rate Scale that applies to this Contract is attached in the Instructions to Bidders."

SAFETY

Standard General Condition 7.12 shall be modified by adding the following:

7.12H Observance and compliance with all safety regulations and provisions of a safe site is the sole and unqualified responsibility of CONTRACTOR and/or its subcontractors.

The Work and the CONTRACTOR's operational activities shall comply with all applicable provisions of the Department of Labor, Safety and Health Regulations ("OSHA") for Construction and applicable Occupational Safety and Health Standards, and any applicable regulations of governmental units that have jurisdiction over the site and Work.

CONTRACTOR acknowledges that ENGINEER and OWNER are relying upon CONTRACTOR to provide a safe Workplace and to establish a comprehensive safety program to accomplish this goal. CONTRACTOR further represents that CONTRACTOR is experienced and knowledgeable in the area of construction safety and applicable laws, ordinances, codes and regulations, including, but not limited to OSHA regulations and CONTRACTOR shall supervise, train, or educate the laborers on the choice of particular safety procedures or equipment or choice not to use particular safety methods or equipment. CONTRACTOR further agrees that due to the "ENGINEER's Limitations," stated below, a failure by the ENGINEER to give directions or instructions during the course of the Work shall not be a primary cause of injury or damage on the job site.

TRAFFIC CONTROL

Standard General Condition 7.12 shall be modified by adding the following:

7.12l Traffic control during construction shall be generally in accordance with the Texas Department of Transportation (TxDOT) and the Texas Manual on Uniform Traffic Control Devices. CONTRACTOR shall provide for the safety and convenience of workers, pedestrians and the public, and comply with all applicable traffic regulations and ordinances.

GUARANTEE

Standard General Conditions 7.17 and 15.08 shall be modified by adding the following:

7.17E and 15.08F The CONTRACTOR shall guarantee the Work against failure and malfunction due to defective materials or Workmanship and nonconformance with the Contract documents for the period specified in the Special Conditions.

The guarantee period shall begin following the later of the start of actual operation of the equipment or final acceptance, exclusive of the time for installing, testing, adjusting, equipment prior to final acceptance of the facilities from the CONTRACTOR.

SC-7.18 Delete Paragraph 7.18 of the General Conditions in its entirety and insert the following in its place:

"TO THE MAXIMUM EXTENT ALLOWED BY LAW, THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER, ITS BOARD, DIRECTORS, OFFICERS, EMPLOYEES AND AGENTS, ENGINEER AND ITS CONSULTANTS, DIRECTORS, OFFICERS, AGENTS AND EMPLOYEES AND DEVELOPER AND ITS DIRECTORS, OFFICERS, AGENTS AND EMPLOYEES (COLLECTIVELY, THE "INDEMNITEES"), FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS, SUITS, CAUSES OF ACTION, SETTLEMENTS, LIABILITIES, COSTS, EXPENSES, FINES, AND JUDGMENTS (INCLUDING, WITHOUT LIMITATION, REASONABLE AND NECESSARY COURT COSTS, EXPERTS' FEES AND ATTORNEY'S FEES) (COLLECTIVELY, "LOSSES"), WHETHER ARISING IN EQUITY, AT COMMON LAW, OR BY STATUTE, INCLUDING WITHOUT LIMITATION THE TEXAS DECEPTIVE TRADE PRACTICES ACT (AS AMENDED) OR SIMILAR STATUTE OF OTHER JURISDICTIONS, OR UNDER THE LAW OF CONTRACTS, TORTS (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE AND STRICT LIABILITY WITHOUT REGARD TO FAULT) OR PROPERTY, OF EVERY KIND OR CHARACTER (INCLUDING, WITHOUT LIMITATION, CLAIMS FOR PROPERTY DAMAGE, PERSONAL INJURY (INCLUDING WITHOUT LIMITATION EMOTIONAL DISTRESS), AND ECONOMIC LOSS), ARISING IN FAVOR OF OR BROUGHT BY ANY OF THE CONTRACTOR'S EMPLOYEES, AGENTS, SUBCONTRACTORS SUPPLIERS OR REPRESENTATIVES, OR BY ANY GOVERNMENTAL AGENCY OR ANY OTHER THIRD PARTY, BASED UPON, IN CONNECTION WITH, RELATING TO OR ARISING OUT OF THE WORK, THE CONTRACTOR'S FAILURE TO COMPLY WITH THE CONTRACT DOCUMENTS, OR THE CONTRACTOR'S ACTIONS OR INACTIONS UNDER THE CONTRACT DOCUMENTS, INCLUDING WITHOUT LIMITATION ANY FAILURE TO PAY TAXES OR FAILURE TO COMPLY WITH ANY APPLICABLE LAW, AND EVEN IF ANY SUCH LOSSES ARE DUE IN PART TO ANY INDEMNITEES' SOLE OR CONCURRENT NEGLIGENCE OR OTHER FAULT, BREACH OF CONTRACT OR WARRANTY, VIOLATION OF STATUTE, OR STRICT LIABILITY WITHOUT REGARD TO FAULT. TO THE EXTENT THIS INDEMNITY IS LIMITED BY TEXAS INSURANCE CODE SECTION 151.102, THEN THE LIMITATIONS OF SAID STATUTE SHALL BE INCORPORATED HEREIN SO THAT THIS INDEMNITY PROVIDES THE MAXIMUM PERMISSIBLE INDEMNITY UNDER 151.102

The foregoing indemnification obligation shall apply regardless of the amount of insurance

coverage held by the Contractor, including without limitation any such coverage under any worker's compensation act, disability act, or other act or law which would limit the amount or type of damages, compensation, or benefits payable by or for the Contractor, and shall not be limited by any insurance carried or provided by the Contractor in accordance with the Contract Documents or otherwise.

Contractor shall and does hereby waive all causes of action it has for, and releases and forever discharges the Indemnitees from, Losses for injuries (including death) to any person or damage to or destruction of any property sustained or alleged to have been sustained in connection with or arising out of or incidental to the Work.

Contractor shall promptly settle or cause the settlement of all Losses for which it is responsible pursuant to the Contract Documents. Upon becoming aware of facts which may constitute any Loss, Contractor shall immediately notify the Owner of the full particulars thereof, and the Owner may elect, by notice to Contractor, to have its representative accompany Contractor's representative in making settlement of the same.

Contractor agrees and covenants that it will not contest the validity or enforceability of any indemnity or exculpatory provision of this Contract on the basis that it has no notice or knowledge of any such provision or that any such provision is not "conspicuous."

Other provisions in the Contract Documents containing indemnities shall be deemed to be cumulative of and to operate independently of the indemnities provided above such that all indemnities provided in the Contract Documents shall be construed to grant indemnity to the Indemnitees to the fullest extent possible."

COOPERATION BETWEEN CONTRACTORS

Standard General Conditions 8.01B and 8.02 shall be deleted in their entirety and replaced with:

Prior to other contractors mobilizing, OWNER may, but is not obligated to, notify CONTRACTOR of the name of the other contractors, their respective site management personnel, and the general scope of work. Upon CONTRACTOR's written request, ENGINEER will promptly provide such information pertaining to each separate CONTRACTOR performing work on the site. Each contractor shall be responsible to the other for all damage to the other's work, to persons, or to property caused to the other by its operations, and for loss caused to the other from unreasonable or unjustified delays or failure to finish the work or portions thereof, or furnish materials within the time requested.

EVIDENCE OF FINANCIAL ARRANGEMENTS

Standard General Condition 9.11 shall be deleted in its entirety and replaced with:

If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ENGINEER'S LIMITATIONS OF AUTHORITY

Standard General Condition Article 10 shall be modified by adding the following:

10.10 As stated elsewhere herein, CONTRACTOR has control of, and responsibility for, the safe performance of Work and safety on the site. ENGINEER and OWNER reserve the right, but not the obligation, to stop Work when OWNER or ENGINEER has observed and/or has actual knowledge of unsafe practices and to order the Work remains stopped until CONTRACTOR remedies same. CONTRACTOR's responsive actions and those of its subcontractors or suppliers will be at CONTRACTOR's expense.

Notwithstanding anything else herein, neither OWNER nor ENGINEER is responsible for means and methods, procedures or safety programs and practices for safe performance of Work or a safe site.

DUTIES, RESPONSIBILITIES AND LIMITATION OF AUTHORITY OF PROJECT REPRESENTATIVE

Standard General Condition 10.03 shall be modified by adding the following:

10.03B General: Project Representative will act as ENGINEER's Agent, will be under the direct supervision of the ENGINEER, and will confer with ENGINEER regarding his actions. Project Representatives shall, in general, deal only with the ENGINEER and CONTRACTOR, and will deal directly with subcontractors only with the full knowledge of the CONTRACTOR.

Duties and Responsibilities Project Representative include:

Schedules: Review the progress schedule and schedule of values prepared by CONTRACTOR, and consult with ENGINEER concerning their acceptability. Review does not relieve CONTRACTOR from responsibility to meet all Contract deadlines.

Conferences: Attend pre-construction conferences, progress meetings and other job conferences as required in consultation with ENGINEER; notify those expected to attend in advance and maintain and circulate copies of minutes thereof.

Liaison: Serve as ENGINEER's liaison with CONTRACTOR to assist in understanding the intent of the Contract Documents. As requested by ENGINEER, assist in obtaining from OWNER additional details or information, when required at the job site for proper execution of the Work.

Review of Work, Rejection of Defective Work, Observations and Tests: Conduct on-site observations of the Work in progress to assist ENGINEER in determining if the Work is proceeding in accordance with the Contract Documents.

Report to ENGINEER and CONTRACTOR whenever he believes that any Work is unsatisfactory, faulty, defective, does not conform to the Contract Documents, does not meet the requirements of the plans and specifications, tests or approval required to be made, or has been damaged prior to final payment. Advise ENGINEER when he believes Work should be corrected or rejected or should be uncovered for observation or requires special testing, inspection, or approval.

Verify that tests of equipment and systems, startups, and operating and maintenance instructions are conducted as required by the Contract Documents and in the presence of the required personnel, and that CONTRACTOR maintains adequate records thereof. Observe, records and reports to ENGINEER appropriate details relative to the test procedures and startups.

Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections, and report to ENGINEER.

Coordination of Procedures: Transmit to CONTRACTOR the ENGINEER's clarifications and interpretations of the Contract Documents.

Modifications: Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report them with recommendations to ENGINEER.

Records: Maintain orderly files for correspondence, reports of job conferences, Contract Documents including all addenda, change orders, field orders, additional drawings issued subsequent to the execution of the Contract, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, cut sheets, and other Project related documents. These items will be submitted to the ENGINEER for his final review and approval.

Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions, list of visiting officials and representatives of manufacturers, fabricators, suppliers and distributors daily activities decisions, observations in general, and specific observations in more detail, as in the case of observing test procedures. Send copies to ENGINEER.

Record names, addresses, and telephone numbers of all contractors, subcontractors and major suppliers of materials and equipment.

Reports: Furnish ENGINEER periodic reports as required of progress of the Work and CONTRACTOR's compliance with the approved progress schedule.

Consult with ENGINEER in advance of scheduled major tests, inspections or start of important phases of the Work and report as necessary.

Report immediately to ENGINEER upon the occurrence of any accident.

Payment Requisitions: Review applications for payment with CONTRACTOR for compliance with the established procedure for their submission and forward them with recommendations to ENGINEER, noting particularly their relation to the schedule of values, Work completed, and materials and equipment delivered at the site but not incorporated in the Work.

Completion: Before ENGINEER issues a Certificate of Substantial Completion submit to CONTRACTOR a list of observed items requiring completion or correction.

Conduct final walk through in the company of ENGINEER, OWNER, and CONTRACTOR and prepare a final punch list of items to be completed or corrected.

Verify that all items on the final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance.

Limitations of Authority to Deviate: Except upon written instructions of ENGINEER, and in the event the deviation affects the contract price or scope, the agreement of the OWNER, Project Representative shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.

ENGINEER'S PROFESSIONAL SERVICES

Standard General Condition 10.08 shall be modified by adding the following:

10.08F "Professional Services" provided by the ENGINEER are defined as the drawing and approving of designs, Plans or Specifications.

"Professional Services" do not include:

1. Training of CONTRACTOR or subcontractors or their agents, employees or representatives;

2. Supervision of CONTRACTOR or subcontractors or their agents, employees or representatives;

3. Implementation, enforcement or approval of safety programs or procedures on the job site;

4. Instructing or directing CONTRACTOR or subcontractors or their agents, employees or representatives to use or not use safety equipment or to follow or disregard safety procedures;

5. Constant physical presence on the job site;

6. Constant inspection of soil conditions during trenching operations or any excavations;

7. Inspection of trenching or excavation operations or any other part of the Work for the purpose of determining compliance with OSHA or other regulations statutes, ordinances or laws;

8. Ensuring safety on the job site including but not limited to compelling the CONTRACTOR, subcontractors, their agents, employees, or representatives to comply with applicable laws, ordinances, statutes or regulations; or

9. Giving directions or instructions to CONTRACTOR or subcontractors or their agents, employees or representatives regarding the methods or manner of their Work.

COSTS

Standard General Conditions 13.01 shall be modified by adding the following.

13.01F Costs identified in 13.01B subparagraphs 4 (consultants) and 5 (supplemental costs) are excluded unless approved in writing by ENGINEER before CONTRACTOR incurs the costs.

CONTRACTOR's markup, if applicable, shall be as stated in the Special Conditions.

UNIT PRICE WORK

Standard General Condition 13.03C shall be deleted in its entirety and replaced with the following:

Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover completion of all Work, including without limitation, labor, materials, excavation, incidentals, clean up, disposal of materials, clearing and Contractor's overhead and profit for each separately identified item.

DEWATERING

Standard General Condition 13.03 shall be modified by adding the following:

13.03 F. If, and only if, the proposal includes a Unit Price, either as part of the base Contract or as an alternate, for dewatering, then dewatering shall be compensated at the Contract price. If the proposal does not include a price, then dewatering, if necessary, will be considered incidental to the Work and will not constitute a basis for additional payment.

CONTRACTOR'S RESPONSIBILITY FOR TESTING

Standard General Condition 14.02B shall be modified by adding the following:

If any test fails, the test will be retaken at the CONTRACTOR's expense, until the test results meet the applicable requirements or standards. Any additional tests requested by the CONTRACTOR will be paid for by the CONTRACTOR. The OWNER will deduct the re-testing and additional testing cost from the Contract amount.

CONTRACTOR is referred to the specifications and Special Conditions for additional information concerning specifics for testing procedures.

PROGRESS PAYMENTS

Standard General Condition 15.01A and 15.01B shall be deleted in their entirety and replaced with the following:

A. *Basis for Progress Payments*: All Work and material in the Contract are to be paid for through applications for payment prepared by the CONTRACTOR and subject to approval of the OWNER

and ENGINEER. The Bid Proposal 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:*

a. CONTRACTOR shall meet with the project representative of the ENGINEER prior to submittal of pay requests to verify the quantities of items being requested for payment.

b. CONTRACTOR shall submit its pay application to the ENGINEER on the 25th day of each month covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. CONTRACTOR shall not submit a pay application more often than once a month.

c. CONTRACTOR shall submit Applications for Payment using standard forms supplied by the ENGINEER. The Progress Estimate Form, Texas Conditional Waiver and Release on Progress Payment, Texas Unconditional Waiver and Release on Progress Payment, Texas Conditional Waiver and Release on Final Payment, Texas Unconditional Waiver and Release on Final Payment, Contractor's Affidavit of Construction Compliance, and Affidavit of Bills Paid forms that must be used are located in the appendix of the contract. These forms may be copied from the contract for submission with pay applications. If the CONTRACTOR submits retyped forms they will be returned for resubmission.

1) Monthly Applications for Payment must include Progress Estimate Form, schedule of values showing quantities complete to date signed by LJA Inspector, Texas Conditional Waiver for Progress Payment, Texas Unconditional Waiver for Progress Payment (for previous payments), and Consent of Surety to Reduction in or Partial Release of Retainage (if applicable).

2) The Final Applications for Payment must include the Progress Estimate Form, Texas Conditional Waiver and Release on Final Payment, Texas Unconditional Waiver and Release on Progress Payment (for previous estimates), Affidavit of Bills Paid (effective through the completion date), Contractor's Affidavit of Construction Compliance, As-Built Drawings, Maintenance Bond, Consent of Surety to Final Payment, receipts from agencies to show all inspection and maintenance fees have been paid, and any other documentation required by the ENGINEER. Upon ENGINEER's request, subcontractors shall submit a Final Waiver of Lien and Release effective through the completion date, appropriately completed, fully executed by and properly acknowledged for each person and attached to the CONTRACTOR's Affidavit of Bills Paid and Conditional Waiver for Final Payment. CONTRACTOR must also submit all bonds, manuals, and warranties (accompanied with a written assignment of CONTRACTOR's rights thereunder), if requested, for any materials or equipment installed or furnished.

d. Work must be completed for the ENGINEER to consider recommending payment of an item.

1) No payment will be made for materials at the site which have not been incorporated into the Work unless otherwise agreed to in writing in advance.

2) If OWNER has agreed in advance to pay for materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location, 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.

e. CONTRACTOR is notified that its late, incorrect, or incomplete submission will delay any payment due for that draw period, and may delay payment until the next scheduled draw payment at no expense to the OWNER or ENGINEER.

f. The amount of retainage with respect to progress payments will be as stipulated in the Agreement. Retainage will be released in accordance with and per the terms of the Contract and governing law. Completion of punch list items is required along with the issuance of appropriate "completion" and acceptance" letters and certificates, and the execution and delivery of such other affidavits and lien waivers, and upon acceptance of the Project by the OWNER, ENGINEER, and as applicable by the Developer. Partial release of retainage shall be only with the consent of surety.

g. Upon ENGINEER's request CONTRACTOR shall also submit an affidavit of account or any documentation reasonably requested to verify contract accounting and payments. Upon ENGINEER's request, subcontractors shall submit Partial Waiver of Lien and Release.

h. Before the CONTRACTOR receives a progress payment, the CONTRACTOR must certify that the quantities and prices of Work and materials shown on the estimate are correct, and that all Work has been performed and materials supplied in full accordance with the terms and conditions of the construction documents.

i. If OWNER and CONTRACTOR have a payment dispute, OWNER shall pay, in accordance with the Contract, all undisputed amounts, and each Party will reserve the right to resolve the disputed amounts at a later date.

j. Final pay estimates will not be approved by the ENGINEER until all acceptances have been made by the OWNER and governmental bodies having jurisdiction. Partial payment to the CONTRACTOR of the final progress payment does not constitute final acceptance of the Project by the OWNER/ENGINEER.

PAYMENT BECOMES DUE

Standard General Condition 15.01D shall be deleted in its entirety and replaced with the following:

Thirty (30) days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will become due, and when due will be paid by Owner to Contractor via the method determined by Owner.

PUNCH LIST

Standard General Condition 15.03 C shall be modified by adding the following:

CONTRACTOR shall start work on any punch lists immediately and shall require all subcontractors to begin punch list work within 48 hours of receipt of the punch list and to pursue diligently until deemed complete by OWNER and ENGINEER. If CONTRACTOR fails to comply with this requirement, OWNER may, after one day written notice, hire another CONTRACTOR(s) to complete the work and deduct the cost of completion and any repair from any money due CONTRACTOR.

ECONOMIC DISINCENTIVE FOR LATE COMPLETION OF WORK

Standard General Condition 15.06 shall be modified by adding the following as 15.06 E:

The CONTRACTOR and the OWNER agree that time is of the essence of this Contract. The CONTRACTOR and the OWNER agree that the Contract requires completion of the Work by CONTRACTOR within a specified time. The CONTRACTOR and the OWNER agree that a breach of this Contract by failure to complete the Work in the specified time will cause harm to the OWNER and further agree that the harm the OWNER would sustain and the actual measure of damages the OWNER would

incur from the breach are incapable or very difficult of ascertainment.

CONTRACTOR and the OWNER agree that for each and every calendar day the Work or any portion thereof shall remain uncompleted after the expiration of the time limit set in the Contract, or as extended under the provisions for Extension of Time in this Contract, CONTRACTOR shall be liable to OWNER for an economic disincentive in the amount for such calendar days as stated in the Special Conditions.

The Parties agree this sum is a reasonable forecast of the damages the OWNER will sustain per day that the Work remains uncompleted and in no way constitutes a penalty. The OWNER shall have the option to deduct and withhold the amount of any economic disincentive from any monies that the OWNER owes the CONTRACTOR or to recover such amount from the CONTRACTOR or the Sureties on the CONTRACTOR's bond.

The OWNER shall have the option to deduct and withhold said amount from any monies that the OWNER owes the CONTRACTOR or the Sureties on the CONTRACTOR's bond.

SUSPENSION OF WORK AND TERMINATION

Standard General Condition 16.01 shall be deleted in its entirety and replaced with:

At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall receive a time extension in working days equivalent to the working days lost. The OWNER will compensate CONTRACTOR for demobilization and remobilization charges deemed reasonable by ENGINEER.

TERMINATION FOR CAUSE

Standard General Condition 16.02B shall be deleted and replaced with the following, Standard General Condition 16.02B (1) and 16.02B (2) shall remain unchanged.

OWNER's written notice to CONTRACTOR and, if necessary, CONTRACTOR's surety, of default and intent to terminate shall identify the grounds of default with sufficient particularity that CONTRACTOR may attempt to cure the default. If CONTRACTOR fails to cure within 2 working days, or if cure is not possible in 2 working days, if CONTRACTOR fails to make significant effort to cure within 2 days and to continuously and effectively pursue the cure, then OWNER may, without further notice, terminate CONTRACTOR.

TERMINATION FOR CONVENIENCE OF OWNER

Standard General Condition 16.03 shall be modified by adding the following:

16.03C OWNER may terminate CONTRACTOR's performance under the Contract for OWNER's convenience at any time upon written notice to CONTRACTOR, whether or not CONTRACTOR is in default and, in such event, OWNER's only liability will be to pay CONTRACTOR the following amounts:

a. The unpaid balance due CONTRACTOR for the Work actually performed and accepted based on the Unit Prices and lump sums enumerated in the CONTRACTOR's bid;

b. All expenditures made and costs incurred by CONTRACTOR for the materials ordered by CONTRACTOR for the Work prior to the date of termination and not incorporated in the Work, provided such materials conform to the plans and specifications included within the Contract Documents, and provided also that OWNER has not directed CONTRACTOR to return the materials to the appropriate vendor and for labor performed on any such materials prior to the date of termination and associated labor insurance and labor payroll taxes; and

c. From the total of the items enumerated in Items a & b above inclusive, there shall be deducted all claims of OWNER against CONTRACTOR, including, without limitation, claims on account of delay or defects in materials and/or workmanship.

d. For the sake of clarity, OWNER shall not be liable for lost profits on unperformed work.

The amount payable under the provisions of this Section, plus the sum of all amounts previously paid under the Contract, shall in no event exceed the total Contract Price.

CONTRACTOR shall transfer and assign to OWNER in accordance with OWNER's instructions, all materials, supplies, Work in process, and other things for which CONTRACTOR is entitled to receive reimbursement hereunder, and all plans, drawings, working drawings, sketches, specifications, and information in connection with the Work, and shall take such action as may be necessary to secure to OWNER, at its election, the rights of CONTRACTOR under any or all orders and subcontracts made in connection with the Work.

If requested by OWNER, CONTRACTOR shall endeavor to cancel or assign any or all of its outstanding orders or subcontracts upon such terms as may be approved by OWNER.

Should OWNER elect to terminate CONTRACTOR, all obligations of the respective Parties under the Contract shall be discharged, except such obligations as by their terms, express or implied, contemplate continued obligations after acceptance of the Work, including without limitation, warranties, dispute resolution, insurance and indemnity obligations.

The remedies provided herein shall be cumulative of and not in lieu of all other remedies available to OWNER hereunder, or at law or in equity.

DISPUTE RESOLUTION

Standard General Condition 17.01 is deleted in its entirety and replaced with the following.

CONTRACTOR is required to address any dispute regarding this Contract with the ENGINEER's Representative. If the dispute is not resolved, CONTRACTOR's Officer or Senior Manager shall discuss the dispute with the ENGINEER. CONTRACTOR shall present all facts it deems pertinent and identify the Contract provisions it relies on. ENGINEER shall consider and respond with facts and Contract provisions it deems pertinent. Both shall discuss the matter in good faith. If the dispute persists, either side may seek mediation if the other party consents thereto. CONTRACTOR understands and agrees that mediation is a condition precedent to CONTRACTOR filing any lawsuit or, if specified by this Contract, demanding any Arbitration. The Party seeking mediation must give a written demand for mediation to the other Party. The Parties may select a mediator by mutual agreement. If the Parties do not agree to a mediator within 30 days of the demand for mediation, then the mediator shall be selected from the Construction Industry Rules of the Arbitration Association of America's mediation panel consistent with the Construction Industry Rules of the Arbitration Association of America rules.

Absent written agreement by the Parties to extend the deadline for mediation, the Parties shall mediate within 90 days of the date that the mediation is consented to. Absent written agreement to extend, a condition for selection of any mediator is the mediator's availability on a date agreeable to the Parties which is within 90 days of the demand.

The above may be modified by written agreement of all Parties.

<u>If Arbitration is required for this Contract, it will be stated in the Special Conditions.</u>

If not settled voluntarily through mediation or arbitration, then any dispute, if pursued, will be resolved in the State District court in the county where Project is located.

CONTRACTOR's sureties shall be bound by any award rendered in a court of competent jurisdiction or in any Arbitration. The CONTRACTOR's surety consents to joinder in any arbitration proceeding involving their principal.

CORPORATE AUTHORIZATION

Standard General Condition 18.01 shall be modified by adding the following:

18.01B If requested by Engineer, the CONTRACTOR shall provide a corporate resolution certifying the authorized agent of the corporation to sign all documents for this Project, and shall give written notice of any change.

EXAMINATION OF THE PROJECT SITE AND PHYSICAL CONDITIONS

CONTRACTOR, prior to submitting a Proposal, shall make a careful examination of the Project site to determine and evaluate site conditions. All proposals shall consider conditions including without limitation, soil and water conditions to be encountered, improvements to be protected, disposal sites for surplus materials not designated to be salvaged materials, a method of providing ingress and egress to private properties, methods of handling traffic during construction of the entire Project, and other factors that may affect the Work.

INSOLVENCY OF CONTRACTOR

If a petition in bankruptcy is filed by or against CONTRACTOR, or if CONTRACTOR makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of the insolvency of CONTRACTOR, or if facts exist to reasonably indicate that CONTRACTOR lacks the finances to perform the Work, then CONTRACTOR shall be in default under the Contract Documents. Unless precluded by any bankruptcy Court, OWNER may terminate the Contract for cause.

CONTRACTOR shall submit to the personal jurisdiction of the State or Federal courts having subject matter jurisdiction and in the county where the Contract is executed, for the adjudication of any suit brought to enforce OWNER's rights and remedies under the Contract.

NON-WAIVER OF RIGHTS

Any failure by the OWNER or ENGINEER to enforce the strict compliance and performance of any of the terms or conditions of the Contract Documents shall not constitute a waiver of the right to enforce the subsequent strict compliance with such terms or conditions. Further, such failure shall not affect or impair the right of OWNER to avail itself of such remedies as it may have for any subsequent breach or breaches of any such term or condition of the Contract Documents, including, without limitation, the right to suspend and the right to terminate.

In the event of termination by OWNER of CONTRACTOR's performance under the Contract for convenience, on account of Force Majeure, or by reason of CONTRACTOR's default, no rights or remedies of OWNER shall thereby be waived, nor shall any breach by CONTRACTOR of the material covenants in the Contract Documents which has occurred and is continuing at the time of such termination be waived, regardless of whether or not default has been declared.

Neither the making of final payment by OWNER nor any provision in the CONTRACT DOCUMENTS, shall relieve CONTRACTOR of: (i) the obligation for fulfillment of any warranty that may be required in the Contract Documents and plans and technical specifications; (ii) the obligation to repair defective Work or materials; (iii) CONTRACTOR's indemnification obligations under this Agreement; or (iv) any of CONTRACTOR's continuing obligations.

SPECIAL CONDITIONS

ADDITIONAL INSUREDS

Standard General Condition 2.01 B shall be modified by adding the following:

In addition to additional insured requirements in the Supplementary Conditions, CONTRACTOR shall list the following as Additional Insureds for all required policies except Worker's Compensation. CONTRACTOR shall obtain the Additional Insured endorsement form CG 2026 1185 or equivalent and shall state that the liability insurance is primary as to the additional insured.

Fort Bend County Levee Improvement District No. 14; LJA Engineering, Inc.

NOTICE TO PROCEED

Standard General Condition 4.02 shall be deleted in its entirety and replaced with:

CONTRACTOR shall mobilize and begin Work in earnest within ten (10) days of the date indicated in the Notice to Proceed. Failure of CONTRACTOR to begin work in earnest decreases the ability of CONTRACTOR to complete in time and for OWNER to take possession. OWNER may assess $1,000.00/day in damages for each day that CONTRACTOR fails to pursue the work. If CONTRACTOR completes on time, such amounts shall be refunded at Final Completion.

BONDS

Standard General Conditions 6.01C is modified by adding the following:

Payment and Performance Bonds

CONTRACTOR shall provide performance and payment bonds meeting the following requirements. The CONTRACTOR shall provide performance and maintenance and payment bonds from a surety company holding a permit from the State of Texas to act as surety. Unless otherwise specified, the cost of providing such Bonds shall be included in the bidders total bid amount. The surety company must have a minimum Best Key Rating of "B+" or better. The surety company, the agency and agent issuing the Bonds must be authorized to issue Bonds in Texas (in accordance with Surety Bonds and Related Instruments, Chapter 3503 of the Insurance Code) in an amount equal to the total Contract Price and such authorization must be recorded in the files of the Texas Department of Insurance. The Bonds must be executed by a duly appointed representative of the surety company licensed by the State of Texas as a General Lines Agent and such licensing must be recorded in the files of the Texas Department of Insurance. If the surety company does not have such a rating due to the length of time it has existed, the surety company must be eligible to participate in the surety bond guarantee program of the Small Business Administration and must be an approved surety listed in the current U.S. Department of Treasury Circular 570, and must meet all of the rules and regulations of the Treasury Department with respect to performance and payment bonds for federal jobs, including specifically the rules related to underwriting limitation. For contracts over $100,000, the surety must also hold a certificate of authority from the United States Secretary of Treasury to qualify as a surety on obligations permitted or required under federal law, or have obtained reinsurance for any liability in excess of $1,000,000 from a reinsurer that is authorized and admitted as a reinsurer in the State of Texas and is the holder of a certificate of authority from the United States Secretary of Treasury to qualify as a surety or reinsurer on obligations permitted or required under federal law. If bidder's proposed surety company, agency or agents do not meet the aforementioned requirements, then Owner may refrain from considering the bidder for Contract award and Owner may require bidder to forfeit the Bid Security.

Neither OWNER's receipt of non-compliant bonds or non-compliant insurance certificates nor OWNER's allowance of CONTRACTOR to proceed with the Work, shall be construed to relieve CONTRACTOR of its obligation to provide bonds and insurance according to the requirements of these CONTRACT DOCUMENTS. Additionally, failure to provide compliant bonds shall be a material breach justifying immediate termination for

cause.

The OWNER adopts these criteria as the minimum standards for the acceptability of surety companies issuing payment and performance bonds for the construction of all OWNER's facilities; however, the OWNER reserves the right to adopt more stringent criteria depending upon the conditions and circumstances affecting a specific Project.

Maintenance Bond

CONTRACTOR shall supply a maintenance bond in the amount of 100% the total Contract price which shall remain in effect for one year(s), the Guarantee Period.

INDEMNIFIED PARTIES

Standard General Conditions 7.01, 7.10, 5.02, and 7.18 shall be modified by adding the following:

CONTRACTOR's indemnification obligations shall include indemnification of all entities identified in the Supplementary Conditions and the following:

Fort Bend County Levee Improvement District No. 14; LJA Engineering, Inc.

SHOP DRAWINGS

Standard General Condition 7.16 B and 7.16 D shall be modified by adding the following:

The CONTRACTOR shall submit 1 copies of shop drawings. The submission schedule shall allow ENGINEER 7 days for review, or if 7 days will delay Work, within such time so as not to delay Work. If the Project is delayed due to late submission or due to the submission of nonconforming shop drawings, CONTRACTOR shall not

OPERATIONS & MAINTENANCE MANUALS

Standard General Conditions 15.06 A shall be modified as follows.

CONTRACTOR shall provide O&M manuals to ENGINEER. CONTRACTOR shall provide 3 copies of O&M manuals, unless otherwise agreed upon with the ENGINEER, prior to the final payment.

RETAINAGE

Standard General Conditions 15.01 B3 shall be modified by adding the following:

The retainage on this Project is ten percent (10%).

ECONOMIC DISINCENTIVE

Standard General Condition 15.01 E shall be modified by adding the following:

The CONTRACTOR shall be liable to OWNER in the amount of $1,000.00/day for each day the CONTRACTOR is late in meeting the contract Substantial Completion, as adjusted by any time extensions.

ALTERNATE(S)

The Proposal includes Alternates. OWNER retains the right to evaluate the bid based on the base bid alone, considering one Alternate, or more than one Alternate, whichever is deemed most advantageous to the OWNER.

STORM WATER POLLUTION PREVENTION PLAN

CONTRACTOR is required to fully comply with all applicable requirements including without limitation TCEQ requirements.

TWDB SUPPLEMENTAL CONDITIONS

1. SUPERSESSION

The Owner and the Contractor agree that the TWDB Supplemental Conditions apply to the work eligible for Texas Water Development Board assistance to be performed under this contract.

2. PRIVITY OF CONTRACT

Funding for this project is expected to be provided in part by a loan or grant from the Texas Water Development Board. Neither the state of Texas, nor any of its departments, agencies or employees is, or will be, a party to this contract or any lower tier contract. This contract is subject to applicable provisions in 31 TAC Chapter 363 in effect on the date of the assistance award for this project.

3. DEFINITIONS

(a) The term “Owner” means the local entity contracting for the construction services.

(b) The term "TWDB" means the Executive Administrator of the Texas Water Development Board, or other person who may be at the time acting in the capacity or authorized to perform the functions of such Executive Administrator, or the authorized representative thereof.

(c) The term “Engineer” means the Owner’s authorized consulting engineer for the project.

4. LAWS TO BE OBSERVED

In the execution of the contract, the Contractor must comply with all applicable local, state and federal laws, including but not limited to laws concerned with labor, safety, minimum wages, and the environment. The Contractor shall be familiar with and at all times shall observe and comply with all federal, state, and local laws, ordinances and regulations which in any manner affect the conduct of the work, and shall indemnify and save harmless the Owner, Texas Water Development Board, and their representatives against any claim arising from violation of any such law, ordinance or regulation by the Contractor, their Subcontractor or their employees.

5. REVIEW BY OWNER AND TWDB

(a) The Owner, authorized representatives and agents of the Owner, and the TWDB shall, at all times have access to and be permitted to observe and review all work, materials, equipment, payrolls, personnel records, employment conditions, material invoices, and other relevant data and records pertaining to this contract, provided, however that all instructions and approval with respect to the work will be given to the Contractor only by the Owner through authorized representatives or agents.

(b) Any such inspection or review by the TWDB shall not subject the state of Texas, or its representatives, to any action for damages.

6. PERFORMANCE AND PAYMENT BONDS

Each Contractor awarded a construction contract must furnish performance and payment bonds:

(a) the performance bond shall include without limitation guarantees that work done under the contract will be completed and performed according to approved plans and specifications and in accordance with sound construction principles and practices;

(b) the performance and payment bonds shall be in a penal sum of not less than 100 percent of the contract price and remain in effect for one year beyond the date of approval by the Engineer of the political subdivision; and

(c) the Contractor shall utilize a surety company that is authorized to do business in Texas in accordance with Surety Bonds and Related Instruments, Chapter 3503 of the Insurance Code.

7. PAYMENTS SCHEDULE AND COST BREAKDOWN

(a) The Contractor shall submit for approval immediately after execution of the Agreement, a carefully prepared Progress Schedule, showing the proposed dates of starting and completing each of the various sections of the work, the anticipated monthly payments to become due to the Contractor, and the accumulated percent of progress each month.

(b) The following paragraph applies only to contracts awarded on a lump sum contract price:

COST BREAKDOWN - The Contractor shall submit to the Owner a detailed breakdown of the estimated cost of all work to be accomplished under the contract, so arranged and itemized as to meet the approval of the Owner or funding agencies. This breakdown shall be submitted promptly after execution of the agreement and before any payment is made to the Contractor for the work performed under the contract. After approval by the Owner the unit prices established in the breakdown shall be used in estimating the amount of partial payments to be made to the Contractor.

8. WORKERS' COMPENSATION INSURANCE COVERAGE (AS APPLICABLE, CONSISTENT WITH TEXAS LABOR CODE § 406.096)

(a) The Contractor shall certify in writing that they provide workers' compensation insurance coverage for each employee of the Contractor employed on the public project.

(b) Each Subcontractor on the public project shall provide such a certificate relating to coverage of the Subcontractor's employees to the general Contractor, who shall provide the Subcontractor's certificate to the governmental entity.

(c) A Contractor who has a contract that requires workers' compensation insurance coverage may provide the coverage through a group plan or other method satisfactory to the governing body of the governmental entity.

(d) The employment of a maintenance employee by an employer who is not engaging in building or construction as the employer's primary business does not constitute engaging in building or construction.

(e) In this section:

(1) "Building or construction" includes:

i. erecting or preparing to erect a structure, including a building, bridge, roadway, public utility facility, or related appurtenance;
ii. remodeling, extending, repairing, or demolishing a structure; or
iii. otherwise improving real property or an appurtenance to real property through similar activities.

(2) "Governmental entity" means this state or a political subdivision of this state. The term includes a municipality.

9. U.S. IRON AND STEEL (DOES NOT APPLY TO SWIFT PROJECTS FUNDED PRIOR TO MAY 1, 2019)

The following statement must be completed by the Contractor and made a part of the agreement between the Owner and the Contractor.

The Contractor acknowledges to and for the benefit of the Applicant ("Purchaser") and the Texas Water Development Board ("TWDB") that it understands the goods and services under this Agreement are being funded with monies made available by the Water Development Fund, Rural Water Assistance Fund, Economically Distressed Areas, State Participation Fund and/or Agricultural Water Conservation Fund. That these funds have statutory requirements commonly known as "United States Iron and Steel" that requires all of the iron and steel products used in the project to be produced in the United States ("United States Iron and Steel Requirement") including iron and steel products provided by the Contactor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the TWDB that (a) the Contractor has reviewed and understands the United States Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the United States Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the United States Iron and Steel Requirement, as may be requested by the Purchaser or the TWDB. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser to enforce this Agreement and recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the TWDB or any damages owed to the TWDB by the Purchaser). Neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the TWDB.

In the execution of the Contract, the Contractor shall be familiar with and at all times shall observe and comply with all applicable federal, state, and local laws, ordinances and regulations concerned with the use of iron and steel made in the United States which in any manner affect the conduct of the work, and shall indemnify and save harmless the Texas Water Development Board against any claim arising from violation of any such law, ordinance or regulation by the Contractor or by their Subcontractor or their employees.

Additional information on the United States Iron and Steel (US I&S) and its applicability to this contract can be found in the TWDB-11005 guidance.

It is recommended the Owner receive and maintain files documenting the Contractor's use of US I&S. Compliance with US I&S will be verified by the Owner through the submittal of the TWDB form TWDB-1105-A.

10. PREVAILING WAGE RATES

This contract is subject to Government Code Chapter 2258 concerning payment of Prevailing Wage Rates. The Owner will determine what the general prevailing rates are in accordance with the statute. The applicable provisions include, but are not limited to the following:

§2258.021. Right to be Paid Prevailing Wage Rates

(a) A worker employed on a public work by or on behalf of the state or a political subdivision of the state shall be paid:

(1) not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the work is performed; and

(2) not less than the general prevailing rate of per diem wages for legal holiday and overtime work.

(b) Subsection (a) does not apply to maintenance work.

(c) A worker is employed on a public work for the purposes of this section if the worker is employed by a Contractor or Subcontractor in the execution of a contract for the public work with the state, a political subdivision of the state, or any officer or public body of the state or a political subdivision of the state.

§**2258.023. Prevailing Wage Rates to be Paid by Contractor and Subcontractor; Penalty**

(a) The Contractor who is awarded a contract by a public body or a Subcontractor of the Contractor shall pay not less than the rates determined under Section 2258.022 to a worker employed by it in the execution of the contract.

(b) A Contractor or Subcontractor who violates this section shall pay to the state or a political subdivision of the state on whose behalf the contract is made, $60 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the contract. A public body awarding a contract shall specify this penalty in the contract.

(c) A Contractor or Subcontractor does not violate this section if a public body awarding a contract does not determine the prevailing wage rates and specify the rates in the contract as provided by Section 2258.022.

(d) The public body shall use any money collected under this section to offset the costs incurred in the administration of this chapter.

(e) A municipality is entitled to collect a penalty under this section only if the municipality has a population of more than 10,000.

§2258. 024. Records

(a) A Contractor and Subcontractor shall keep a record showing:

(1) the name and occupation of each worker employed by the Contractor or Subcontractor in the construction of the public work; and

(2) the actual per diem wages paid to each worker.

(b) The record shall be open at all reasonable hours to inspection by the officers and agents of the public body.

§2258. 025. Payment Greater Than Prevailing Rate Not Prohibited

This chapter does not prohibit the payment to a worker employed on a public work an amount greater than the general prevailing rate of per diem wages.

11. PAYMENTS

(a) Progress Payments:

(1) The Contractor shall prepare their requisition for progress payment as of the last day of the month and submit it, with the required number of copies, to the Engineer for review. Except as provided in paragraph (3) of this subsection, the amount of the payment due the Contractor shall be determined by adding to the total value of work completed to date, the value of materials properly stored on the site and deducting: (1) five percent (5%) minimum of the total amount, as a retainage and (2) the amount of all previous payments. The total value of work completed to date shall be based on the actual or estimated quantities of work completed and on the unit prices contained in the agreement (or cost breakdown approved pursuant to section 7b relating to lump sum bids) and adjusted by approved change orders.

(2) This clause applies to contracts when the Owner is a District or Authority. The retainage shall be ten percent of the amount otherwise due until at least fifty percent of the work has been completed. After the project is fifty percent completed, and if the District or Authority's Board

finds that satisfactory progress is being made, then the District may authorize any of the remaining progress payments to be made in full. The District is not obligated to pay interest earned on the first 50% of work completed (Texas Water Code Sec. 49.276(d)).

(3) The five percent (5%) retainage of the progress payments due to the Contractor may not be reduced until the building of the project is substantially complete and a reduction in the retainage has been authorized by the TWDB.

(b) Withholding Payments. The Owner may withhold from any payment otherwise due the Contractor so much as may be necessary to protect the Owner and if so elects may also withhold any amounts due from the Contractor to any Subcontractors or material dealers, for work performed or material furnished by them. The foregoing provisions shall be construed solely for the benefit of the Owner and will not require the Owner to determine or adjust any claims or disputes between the Contractor and their Subcontractors or Material dealers, or to withhold any monies for their protection unless the Owner elects to do so. The failure or refusal of the Owner to withhold any monies from the Contractor shall in no way impair the obligations of any surety or sureties under any bond or bonds furnished under this contract.

(c) Payments Subject to Submission of Certificates. Each payment to the Contractor by the Owner shall be made subject to submission by the Contractor of all written certifications required of the Contractor, their Subcontractors and other general and special conditions elsewhere in this contract.

(d) Final Payment.

(1) Upon satisfactory completion of the work performed under this contract, as a condition before final payment under this contract or as a termination settlement under this contract the Contractor shall execute and deliver to the Owner a release of all claims against the Owner arising under, or by virtue of, this contract, except claims which are specifically exempted by the Contractor to be set forth therein. Unless otherwise provided in this contract, by state law or otherwise expressly agreed to by the parties to this contract, final payment under this contract or settlement upon termination of this contract shall not constitute a waiver of the Owner' s claims against the Contractor or their sureties under this contract or applicable performance and payment bonds.

(2) After final inspection and acceptance by the Owner of all work under the Contract, the Contractor shall prepare their requisition for final payment which shall be based upon the carefully measured or computed quantity of each item of work at the applicable unit prices stipulated in the Agreement or cost breakdown (if lump sum), as adjusted by approved change orders. The total amount of the final payment due to the Contractor under this contract shall be the amount computed as described above less all previous payments.

(3) The retainage and its interest earnings, if any, shall not be paid to the Contractor until the TWDB has authorized a reduction in, or release of, retainage on the contract work.

(4) Withholding of any amount due to the Owner, under general and/or special conditions regarding "Liquidated Damages" shall be deducted from the final payment due the Contractor.

12. ARCHAEOLOGICAL DISCOVERIES AND CULTURAL RESOURCES

No activity which may affect properties listed or properties eligible for listing in the National Register of Historic Places or eligible for designation as a State Archeological Landmark is authorized until the Owner has complied with the provisions of the National Historic Preservation Act and the Antiquities Code of Texas. The Owner has previously coordinated with the appropriate agencies and impacts to known cultural or archeological deposits

have been avoided or mitigated. However, the Contractor may encounter unanticipated cultural or archeological deposits during construction.

If archeological sites or historic structures which may qualify for designation as a State Archeological Landmark according to the criteria in 13 TAC Chapter 26, or that may be eligible for listing on the National Register of Historic Places in accordance with 36 CFR Part 800, are discovered after construction operations are begun, the Contractor shall immediately cease operations in that particular area and notify the Owner, the TWDB, and the Texas Historical Commission, 1511 N. Colorado St. , P. O. Box 12276, Capitol Station, Austin, Texas 78711-2276. The Contractor shall take reasonable steps to protect and preserve the discoveries until they have been inspected by the Owner's representative and the TWDB. The Owner will promptly coordinate with the State Historic Preservation Officer and any other appropriate agencies to obtain any necessary approvals or permits to enable the work to continue. The Contractor shall not resume work in the area of the discovery until authorized to do so by the Owner.

13. ENDANGERED SPECIES

No activity is authorized that is likely to jeopardize the continued existence of a threatened or endangered species as listed or proposed for listing under the Federal Endangered Species Act (ESA), and/or the State of Texas Parks and Wildlife Code on Endangered Species, or to destroy or adversely modify the habitat of such species.

If a threatened or endangered species is encountered during construction, the Contractor shall immediately cease work in the area of the encounter and notify the Owner, who will immediately implement actions in accordance with the ESA and applicable State statutes. These actions shall include reporting the encounter to the TWDB, the U.S. Fish and Wildlife Service, and the Texas Parks and Wildlife Department, obtaining any necessary approvals or permits to enable the work to continue, or implement other mitigation actions. The Contractor shall not resume construction in the area of the encounter until authorized to do so by the Owner.

14. HAZARDOUS MATERIALS

Materials utilized in the project shall be free of any hazardous materials, except as may be specifically provided for in the specifications.

If the Contractor encounters existing material on sites owned or controlled by the Owner or in material sources that are suspected by visual observation or smell to contain hazardous materials, the Contractor shall immediately notify the Engineer and the Owner. The Owner will be responsible for the testing and removal or disposal of hazardous materials on sites owned or controlled by the Owner. The Owner may suspend the work, wholly or in part during the testing, removal or disposal of hazardous materials on sites owned or controlled by the Owner.

15. CHANGES

*Provisions identified with an asterisk below are consistent with Local Government Code 271.060. Counties and Municipalities may modify the identified provisions, when applicable, to conform to Local Government Code 262.031 (Counties) or 252.048 (Municipalities).

(a) The Owner may at any time, without notice to any surety, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including but not limited to changes:

(1) In the specifications (including drawings and designs);

(2) In the time, method or manner of performance of the work;

(3) To decrease or increase the quantity of work to be performed or materials, equipment or supplies to be furnished;

(b) *The total price of a contract may not be increased by a change order unless provision has been made for the payment of the added cost by the appropriation of current funds or bond funds for that purpose, by the authorization of the issuance of certificates, or by a combination of those procedures.

(c) *A contract with an original contract price of $1 million or more may not be increased by more than 25 percent. If a change order for a contract, with an original contract price of less than $1 million, increases the contract amount to $1 million or more, subsequent change orders may not increase the revised contract amount by more than 25 percent.

(d) *A governing body may grant authority to an official or employee responsible for purchasing or for administering a contract to approve a change order that involves an increase or decrease of $50,000 or less.

(e) Changes that involve an increase in price will be supported by documentation of the cost components. For projects funded through the EDAP program, or with grant proceeds, TWDB staff may request this information to be provided in a format equivalent to the Cost and Pricing Information form (No. WRD-277).

(f) Any change orders involving a change in the project requiring a relocation of project components, sizing, or process may require additional environmental approval. A map and description of the proposed changes should be sent to the TWDB Environmental Reviewer for coordination and approval as soon as possible to avoid any delay.

16. OPERATION AND MAINTENANCE MANUALS AND TRAINING

(a) The Contractor shall obtain installation, operation, and maintenance manuals from manufacturers and suppliers for equipment furnished under the contract. The Contractor shall submit three copies of each complete manual to the Engineer within 90 days after approval of shop drawings, product data, and samples, and not later than the date of shipment of each item of equipment to the project site or storage location.

(b) The Owner shall require the Engineer to promptly review each manual submitted, noting necessary corrections and revisions. If the Engineer rejects the manual, the Contractor shall correct and resubmit the manual until it is acceptable to the Engineer as being in conformance with the design concept of the project and for compliance with information given in the contract documents. Owner may assess Contractor a charge for reviews of same items in excess of three (3) times. Such procedure shall not be considered cause for delay.

(c) Acceptance of manuals by Engineer does not relieve Contractor of any requirements of terms of Contract.

(d) The Contractor shall provide the services of trained, qualified technicians to check final equipment installation, to assist as required in placing same in operation, and to instruct operating personnel in the proper manner of performing routine operation and maintenance of the equipment.

(e) Operations and maintenance manuals specified hereinafter are in addition to any operation, maintenance, or installation instructions required by the Contractor to install, test, and start-up the equipment.

(f) Each manual is to be bound in a folder and labeled to identify the contents and project to which it applies. The manual shall contain the following applicable items:

(1) A listing of the manufacturer's identification, including order number, model, serial number, and location of parts and service centers.

(2) A list of recommended stock of parts, including part number and quantity.

(3) Complete replacement parts list.

(4) Performance data and rating tables.

(5) Specific instructions for installation, operation, adjustment, and maintenance.

(6) Exploded view drawings for major equipment items.

(7) Lubrication requirements.

(8) Complete equipment wiring diagrams and control schematics with terminal identification.

17. AS-BUILT DIMENSIONS AND DRAWINGS

(a) Contractor shall make appropriate daily measurements of facilities constructed and keep accurate records of location (horizontal and vertical) of all facilities.

(b) Upon completion of each facility, the Contractor shall furnish the Owner with one set of direct prints, marked with red pencil, to show as-built dimensions and locations of all work constructed. As a minimum, the final drawings shall include the following:

(1) Horizontal and vertical locations of work.

(2) Changes in equipment and dimensions due to substitutions.

(3) "Nameplate" data on all installed equipment.

(4) Deletions, additions, and changes to scope of work.

(5) Any other changes made.

18. CLOSE-OUT PROCEDURES

To close-out the contract and release final retainage, the following steps must be completed:

(a) TWDB Staff must conduct a construction contract final inspection (CCFI).

(b) The following submittals must be received, reviewed, and accepted by TWDB:

(1) The final change order, adjustment of quantities, or a statement that all change orders have previously been submitted and there will be no more change orders;

(2) The final pay request from the Contractor;

(3) An affidavit by the Contractor that all bills have been paid;

(4) Certification by the consulting Engineer that the work has been completed and was constructed in accordance with the approved plans and specifications and sound engineering principles and construction practices;

(5) Acceptance of the project by the Owner in the form of a written resolution or other formal action;

(6) Notification of the beginning date of the warranty period for the contract; and

(7) Confirmation that the Owner has received as-built drawings from the Contractor.

(8) Certificate of Compliance with U.S. Iron and Steel Requirements (TWDB-1105A)

(c) TWDB will issue a Certificate of Approval allowing the release of retainage.

PERFORMANCE BOND

THE STATE OF TEXAS §

§ KNOW ALL MEN BY THESE PRESENTS:

THE COUNTY OF_____ §

THAT WE, _____, as Principal, hereinafter called "Contractor" and the other subscriber hereto_____, as Surety, do hereby acknowledge ourselves to be held and firmly bound to Fort Bend County Levee Improvement District No. 14 "Owner", in the sum of _____ _____ /100th Dollars ($_____) for the payment of which sum, well and truly to be made to Owner and its successors, the said Contractor and Surety do bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, the Contractor has on or about this day executed a Contract in writing with Owner for construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14, Fort Bend County Levee Improvement District No. 14, City of Sugar Land ETJ, Fort Bend County, Texas all of such work to be done as set out in full in said Contract Documents therein referred to and adopted by the Owner, all of which are made a part of this instrument as fully and completely as if set out in full herein.

NOW THEREFORE, if the said Contractor shall faithfully and strictly perform Contract in all its terms, provisions, and stipulations in accordance with its true meaning and effect, and in accordance with the Contract Documents referred to therein and shall comply strictly with each and every provision of Contract and with this bond, then this obligation shall become null and void and shall have no further force and effect; otherwise the same is to remain in full force and effect. This bond is to remain in effect for one year beyond the date of approval by the Engineer.

Should the Contractor fail to faithfully and strictly perform the Contract in all its terms, including but not limited to the indemnifications thereunder, the Surety shall be liable for all damages, losses, expenses and liabilities that the Owner may suffer in consequence thereof, as more fully set forth herein. It is further understood and agreed that the Owner or its representatives shall exercise reasonable diligence in securing compliance on the part of the Contractor with the terms of the Contract. The Surety hereby waives any notice to it of any default, or delay, by the Contractor in the performance of his Contract, except to the extent that such notice is required in anticipation of or in connection with a claim on this bond. The Surety understands and agrees that the provision in the Contract that Owner shall retain certain amounts due the Contractor until the expiration of thirty days from the acceptance of the Work is intended for the Owner's benefit.

It is further expressly agreed by Surety that Owner or its representatives are at liberty at any time, without notice to the Surety, to make any change in the Contract Documents and in the Work to be done thereunder, as provided in the Contract, and in the terms and conditions thereof, or to make any change in, addition to, or deduction from the work to be done thereunder; and that such changes, if made, shall not in any way vitiate the obligation in this bond and undertaking or release the Surety therefrom.

It is further expressly agreed and understood that the Contractor and Surety will fully indemnify and save harmless Owner from any liability, loss, cost, expense, or damage arising out of or in connection with the failure of the Contractor to perform work as required under the Contract. In the event that Owner shall bring any suit or other proceeding at law on the Contract or this bond or both, the Contractor and Surety agree to pay to Owner the sum

of 10 percent of whatever amount may be recovered by Owner in suit or legal proceeding, which sum of 10 percent is agreed by all parties to be indemnity to Owner for the expense of or time consumed by its Attorney, his assistants, and office force, and other cost and damage occasioned to Owner. This amount of 10 percent is fixed and liquidated by the parties, it being agreed by them that the exact damage to Owner would be difficult to ascertain.

This bond and all obligations created hereunder shall be performable in Fort Bend County, Texas. This bond is given in compliance with the provisions of Chapter 2253 of the Texas Government Code, as amended, which is incorporated herein by this reference. However, all of the express provisions hereof shall be applicable whether or not within the scope of said statute.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United State Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other party at the address prescribed in the Contract Documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

IN WITNESS THEREOF, the said Contractor and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached current Power of Attorney.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

_____
(Name of Contractor)

Attested By: _____
Name:
Title:

By: _____
Name:
Title:
Date:

ATTEST/WITNESS (SEAL)

_____
(Full Name of Surety)

Attested By: _____
Name:
Title:
Date:

By: _____
Name:
Title:
Date:

(Address of Surety for Notice)

_____

_____

Local Recording Agent Personal Identification Number: _____

The name and address of the Resident Agent of Surety is: _____

_____

TEXAS STATUTORY PAYMENT BOND

THE STATE OF TEXAS §

§ KNOW ALL MEN BY THESE PRESENTS:

THE COUNTY OF_____ §

THAT WE, _____, as Principal, hereinafter called "Principal" and the other subscriber hereto _____, a corporation organized and existing under the laws of the State of_____, licensed to business in the State of Texas and admitted to write bonds, as Surety, herein after called "Surety", do hereby acknowledge ourselves to be held and firmly bound to Fort Bend County Levee Improvement District No. 14 "Owner", in the sum of _____ /100th Dollars ($_____) for payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns jointly and severally.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:

WHEREAS, Principal has entered into a certain contract with Owner, dated the _____ day of _____ _____, 20___, for construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14, Fort Bend County Levee Improvement District No. 14, City of Sugar Land ETJ, Fort Bend County, Texas, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW THEREFORE, the condition of this obligation is such that if Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said contract, then, this obligation shall be null and void; otherwise to remain in full force and effect; This bond is to remain in effect for one year beyond the date of approval by the Engineer.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of said Code to the same extent as if it were copied at length herein.

IN WITNESS THEREOF, the said Principal and Surety have signed and sealed this instrument on the respective dates written below their signatures.

ATTEST, SEAL: (if a corporation)
WITNESS: (if not a corporation)

_____
(Name of Contractor)

Attested By: _____
Name:
Title:

By: _____
Name:
Title:
Date:

ATTEST/WITNESS (SEAL)

_____
(Full Name of Surety)

Attested By: _____
Name:
Title:
Date:

By: _____
Name:
Title:
Date:

(Address of Surety for Notice)

_____

_____

Local Recording Agent Personal Identification Number: _____

The name and address of the Resident Agent of Surety is: _____

_____

STANDARD SPECIFICATIONS
CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS

TABLE OF CONTENTS

DIVISION 1 – GENERAL REQUIREMENTS

SUMMARY
01110 Summary of Work
01181 Private Utilities

PRICE AND PAYMENT PROCEDURES
01270 Measurement and Payment
01292 Schedule of Values and Material on Hand

ADMINISTRATIVE REQUIREMENTS
01325 Construction Schedules and Monthly Progress Meetings
01328 Construction Surveying
01330 Submittal Procedures

QUALITY REQUIREMENTS
01422 Reference Technical Standards
01457 Construction Tests and Inspection

TEMPORARY FACILITIES AND CONTROLS
01520 Temporary Facilities for Engineer
01562 Construction Fence
01565 General Source Controls
01566 Tree and Plant Protection
01580 Project Signs

EXECUTION REQUIREMENTS
01785 Project Record Documents

DIVISION 2 – SITE CONSTRUCTION

SITE PREPARATION
02120 Material Disposal
02200 Site Preparation and Restoration
02232 Selective Clearing
02233 Clearing and Grubbing
02241 Care and Control of Water
02269 Trench Safety System

EARTHWORK
02314 Fill Material
02315 Excavating and Backfilling
02316 Structural Excavating and Backfilling
02321 Cement Stabilized Sand
02322 Flowable Fill

STANDARD SPECIFICATIONS
CONSTRUCTION OF THE
PUMP STATION UPGRADE AND REPLACEMENT
TO SERVE
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 14
CITY OF SUGAR LAND ETJ
FORT BEND COUNTY, TEXAS

TABLE OF CONTENTS

02361 Reinforced Silt Fence
02364 Filter Dams
02365 Stabilized Construction Access

FOUNDATION AND LOAD-BEARING ELEMENTS
02462 Steel Sheet Piling
02464 Timber Bents

DRAINAGE AND CONTAINMENT
02505 High Density Polyethylene Pipe
02611 Reinforced Concrete Pipe
02612 Precast Reinforced Concrete Box
02630 Concrete Manholes
02631 Storm Sewers and Outfalls
02632 Inlets, Headwalls and Wingwalls
02642 Corrugated Metal Pipe

PLANTING
02911 Topsoil
02921 Turf Planting Zone Preparation
02922 Sod
02923 Broadcast Seeding
02925 Hydromulch-Hydroseeding
02936 Fertilizer and Soil Amendments
02938 Non-Cyclical Mowing
02940 Irrigation
02941 Herbicide Application

DIVISION 3 – CONCRETE

CAST-IN-PLACE CONCRETE
03310 Concrete

DIVISION 15 – MECHANICAL

15073 Ductile Iron Piping and Fittings

All structural construction for this project shall be performed in accordance with the 2014 edition of the Texas Department of Transportation (TxDOT) “STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES”

The items contained in this section set forth clarifications to, or enlargement upon, the TxDOT Specifications and are made a part thereof by their reference in this Section. In the event of a conflict between these amendments and the TxDOT Specifications, these amendments control.

SECTION 01110

SUMMARY OF WORK

PART 1 – GENERAL

1.1 SUMMARY

A. Summary of the Work including work by the District, work sequence, Contractor use of Premises, special conditions for substantial completion.

1.2 PROJECT DESCRIPTION

A. The project primarily consists of purchasing and installation of all materials and equipment, the construction of site paving and driveways, additional pumps, outfall modifications, electrical upgrades, and piping for the Levee Improvement District 14 Pump Station, general site restoration and turf establishment.

1.3 CONTRACT DOCUMENTS

A. Bid Book including but not limited to the Bid Proposal, Agreement, General Conditions, Special Conditions.
   Technical Specifications included in the Bid Book in addition to those for the City of Sugar Land.
B. Construction Plans titled *Pump Station Upgrade and Replacement* by LJA Engineering.

1.4 WORK SEQUENCE

A. Obtain all necessary permits.
B. Long Lead Time Submittals, including but not limited to pumps, generator, and various drainage gates.
C. Establish Control, Construction Entrances and SWPPP within project areas.
D. Site Preparation
E. Demolition of existing site to be completed in phases based on planned construction work.
F. Electrical Service Modifications
G. Site Work, including structural concrete
H. Pump Installation
I. Levee Conduit
   1. Start Downstream with Coffer Dam / Sheetpile Installation for temporary levee protection. This includes the flap gate at outfall end.
   2. Once Downstream segment complete, start upstream portion working toward sheetpile.

3. Remove Coffer Dam / Sheetpile and complete final segment of outfall.
4. Reconstruct levee to existing height and replace concrete access.

J. All other electrical equipment, including but not limited to generator, MCC, and SCADA programing.
K. Site Restoration, including all final concrete driveway construction and turf establishment

1.5 COORDINATION OF WORK

A. Prior to commencement of construction, notify the Engineer to ensure all necessary and appropriate permits have been obtained.
B. Coordinate scheduling, site access and construction sequencing with the District.

1.6 CONTRACTOR USE OF PREMISES

A. Contractor can utilize the Fort Bend County LID 2 right-of-way for construction; however, sites must be maintained and kept clean.
B. All construction equipment and material shall be kept in such a manner to maintain access to the pump station and levee and keep a clean site. All construction debris (i.e. pallets, unused pipe joints, etc.) shall be removed from the site weekly.
C. Contractor shall not use any property outside of Fort Bend County LID 2 right-of-way without approval by the District. The Contractor shall include any permits, agreements, or temporary construction easements obtain for using private or other public property.
D. The existing pump station must remain operational during construction. Primary Power, permanent or temporary, must be available throughout project. Short duration outages will be acceptable during construction, but these shall be no longer than 48 hours at a time.

1.7 WORKING HOURS

A. Work hours acceptable to the Owner will be from 7:00 am to 7:00 pm, Monday through Saturday unless approved otherwise by the Owner at least 24 hours in advance. The City of Sugar Land nuisance noise ordinances are in effect and may be enforced upon complaints from adjacent residences.
B. Delivery of equipment and materials to the site is limited to the hours between 9:00 am and 3:00 pm on days in which school is in session to minimize the disruption to traffic in the area.

1.8 SPECIAL CONDITIONS FOR SUBSTANTIAL COMPLETION

A. In addition to requirements outlined in the General Conditions, for Contractor to be substantially complete with the Work and call for

inspection by Project Manager to confirm, the following conditions must be met or completed in accordance with Contract Documents:

1. All excavation and material disposal shall be complete,
2. Pumps Shall be Operational for District use.
3. All outfalls and erosion protection
4. Quality turf shall be established over 90% of all disturbed areas.

B. No special condition described in Paragraph 1.8 may be included in Contractor's punch list.

1.9 INTERPRETATION OF CONFLICTS

A. Should conflicts occur in Contract Documents, request interpretation before proceeding with work by submitting a Request For Information (RFI). Such requests shall first be preceded by a diligent investigation into Contract Documents. Provide evidence of such investigation in requests for interpretation.

B. Unless otherwise approved by District, work shall not continue at locations where a conflict has been encountered.

1.10 ALTERNATE CONSTRUCTION METHODS

A. Alternate construction methods will be allowed in accordance with applicable details and specifications in Contract Documents at no additional cost to the District provided the District will receive substantial benefit from alternate construction method(s). Contractor accepts responsibility for all additional cost of geotechnical investigations and incidental items, including any re-design that may be necessary. Submit following for review by Engineer prior to commencement of any construction activity if such alternate construction methods are to be considered. All modifications as listed below must be signed and sealed by a Licensed Professional Engineer registered in State of Texas prior to submittal to Engineer.

1. Revisions to horizontal or vertical alignment.
2. Revisions to manhole, outfall, or inlets details, if applicable.
3. Proposed construction method and detailed plan of approach.
4. Proposed haul routes.
5. Revisions to material specifications.

Failure of agreement between Contractor and District over proposed alternate construction methods would require construction to vertical and horizontal alignment, and details as per original contract documents.

END OF SECTION

SECTION 01181

PRIVATE UTILITIES

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for areas of work involving private utility companies including, but not limited to the following:
   1. Telephone Companies
   2. Gas Companies
   3. Power (Electric) Companies
   4. Telecommunication and Fiber providers
   5. Pipeline Companies

1.2 NOTIFICATIONS

A. Notify private utilities of proposed work at least 48 hours prior to starting work at site or as stated in the plans.
B. The following organizations provide construction notification services for member companies, unless stated otherwise in the plans:

   Lone Star Notification Center
   713-432-0365 (in Houston)
   1-800-669-8344 (outside of Houston)
   Texas 811
   1-800-344-8377

1.3 UTILITY RELOCATIONS

A. Where relocation of utility work is necessary for construction purposes, coordinate the relocations with the District's Project Manager.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for measurement and payment procedures, conditions for nonconformance assessment and nonpayment for rejected products.

1.2 MEASUREMENT

A. Measurement methods delineated in individual Sections are intended to complement the criteria of this Section. In the event of conflict, the requirements of the individual Section governs.
B. Take measurements and compute quantities accordingly.
C. Provide equipment, workers and survey personnel as necessary to perform the measurement.

1.3 UNIT QUANTITIES

A. Quantity and measurement estimates stated on the Unit Price Schedule are for contract purposes only.
B. If greater or lesser quantities are required than those quantities indicated in the Unit Price Schedule, provide the required quantities at the unit prices contracted.
C. Measurement by Volume: Measure by cubic dimension.
D. Measurement by Area: Measure by square dimension. (Area calculated using slope distance where applicable)
E. Linear Measurement: Measure by linear dimension, at the item centerline or mean chord. (Length measured using slope distance where applicable)
F. Unit Price Measurement: Measure by unit designated on the Unit Price Schedule.

1.4 PAYMENT

A. Payment includes: Full compensation for required supervision, labor, products, tools, equipment, plant, transportation, services and appurtenances; erection, application or installation of an item of the work; and Contractor's overhead and profit.
B. Total compensation for required work shall be included in the unit price bid on the Unit Price Schedule. Claims for payment of work not specifically covered in the list of unit prices contained in the Unit Price Schedule will not be accepted.

C. Progress payments will be based on the Engineer's observations and evaluations of quantities incorporated in the work multiplied by the unit price.
D. Final payment for pay items governed by unit prices will be made on the basis of actual measurements and quantities, up to the lines and levels of the required work, as determined by the Engineer, multiplied by the unit price for the pay item which is incorporated in or made necessary by the work.
E. Prepare and submit an Application for Payment for work completed and not previously paid. The application at a minimum shall include the following:
    1. Application for Payment: The application will be in a form acceptable to the Engineer. A sample form will be provided to the Contractor.
    2. Construction Schedule: See Section 01325 - Construction Schedules, Paragraph 1.3 General Form and Contents of Schedules.
    3. Contractor Payroll Certificate: See Prevailing Wage Rates.
    4. Pollution Prevention Plan (PPP) Reports: See Storm Water Pollution Prevention Plan (if applicable). Inspection & Maintenance reports for either SWPPP or BMP.
    5. Quantity supporting documents include: plotted and tabulated cross-sections, quantity calculations or suppliers' invoices, etc.
    6. Application supporting documents and submittal items are provided to verify products, regulations and contract requirements are being met. Application supporting documents include: signed daily work reports, field obtained data, truck volume tickets, truck weight tickets, seed and fertilizer tags, pesticide use records, etc. and other supporting documents as they may be necessary or required by Contract Documents.
    7. When the project requires a Notice of Intent (NOI), a copy of the submitted contractor's Notice of Termination (NOT) to TCEQ is required as support documentation for approval of final payment.
    8. Progress Meetings: Meet with the Engineer 1 week prior to each scheduled Application for Payment to discuss progress and corrective action. Meetings are required, unless approved otherwise by the Engineer
F. Incomplete Applications for Payment will not be processed and will be returned to the Contractor.

1.5 NONCONFORMANCE OF WORK

A. Remove and replace the work, or portions of the work, not conforming to the Contract Documents.
B. If, in the opinion of the Engineer, it is not practical to remove and replace the work, the Engineer will direct one of the following remedies:
    1. The nonconforming work will remain as is, but the unit price will be adjusted to a lower price at the discretion of the Engineer.

2. The nonconforming work will be modified as authorized by the Engineer, and the unit price will be adjusted to a lower price at the discretion of the Engineer, if the modified work is deemed to be less suitable than originally specified.

C. Individual Sections may modify these options or may identify a specific formula or percentage price reduction.

D. The authority of the Engineer to assess the nonconforming work and identify payment adjustment is final.

1.6 NONPAYMENT

A. Payment will not be made for any of the following:
   1. Products wasted or disposed of in a manner that is not acceptable to Engineer.
   2. Products determined as nonconforming before or after placement.
   3. Products placed beyond the lines and levels of the required work.
   4. Products remaining on hand after completion of the work, unless specified to remain.
   5. Loading, hauling and disposing of nonconforming products.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 01292

SCHEDULE OF VALUES AND

MATERIAL ON HAND

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes the requirements for requesting approval of partial payment on a Schedule of Values including a Material on Hand basis for specific pay items.
B. Refer to Section 01270 - Measurement and Payment.

1.2 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit the Schedule of Values or Material on Hand submittals to the Engineer for review and approval.
C. After review by the Engineer, revise and resubmit the submittals, if required. The initial Application for Payment on a Schedule of Values or a Material on Hand basis will not be processed until the submittals are approved.
D. During review, the Engineer may request additional documentation to support the data on the submittals.

1.3 REQUIREMENTS AND CONDITIONS

A. Schedule of Values:
    1. Contractor must make a separate request for each major pay item that they would like to be paid for on a Schedule of Values basis.
B. Material on Hand:
    1. District does not guarantee payment for materials on hand but can be discussed on a case-by-case basis. If agreed, no more than 75% of vendor's / supplier's invoice will be paid. Agreeing to payments for material on hand does not release the contractor from responsibility of replacing damage and/or loss of material before installation.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 01325

CONSTRUCTION SCHEDULES AND

MONTHLY PROGRESS MEETINGS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for preparation, submittal and associated revisions of a construction schedule and the monthly submittal of an updated progress schedule.

1.2 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is made under this Section. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and Payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.
D. Payment for the submission of construction schedules are incidental to site preparation and restoration. The monthly updating of the construction schedule is a required part of the process upon which progress payments will be made to the Contractor Applications for Payment will not be processed without the revised construction schedule.

1.3 GENERAL FORM AND CONTENTS OF SCHEDULES

A. Provide an initial baseline schedule and subsequent progress schedules as required under this specification, in the form of a Critical Path Method (CPM) schedule. The schedule should illustrate logical ties for each predecessor and successor work item/work activity, and include any scheduling sequence of work detailed in Specification 01110 - Summary of Work. Contractor should show use of the entire contract duration in the schedule.
B. For smaller projects, a horizontal bar chart (Gantt chart) may be provided if requested and approved by the Engineer.
C. Baseline and project progress schedules should include, but are not limited to the following activities: notice to proceed date, submittal reviews, product or material fabrication, impacts or restrictions on public and private facilities or roadways, traffic closures and opening dates, overall work duration, interim milestone restrictions, allowable weather days per contract, substantial completion date, punch list work, project closeout.
D. When requested, contractor shall provide resource loading of manpower and equipment as well as projected production rates for each activity.

E. Limit individual work activities to a 15 calendar day duration. Work activities with duration longer than 15 calendar days should be segmented into 15 calendar day increments.

1.4 SUBMITTALS

A. Submit a baseline schedule to the Engineer for approval prior to beginning work. Failure to include any work item required for performance of the contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of District's acceptance of the schedule.
B. Submit revised construction schedules monthly showing current and estimated future progress.
C. Applications for Payment will not be processed without the revised construction schedule.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION

3.1 PROGRESS MEETINGS

A. Meet with the Engineer one week prior to each scheduled Application for Payment to discuss progress and corrective action. Meetings are required for contracts with 180 or more calendar days, if required by the Engineer, or if contracts are behind schedule as determined by the Engineer.

END OF SECTION

SECTION 01328

CONSTRUCTION SURVEYING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for construction surveying, construction staking and the coordination of the control with the Engineer.

1.2 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is made under this Section. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and Payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 STANDARDS

A. Utilize recognized survey practices as published by the Texas Board of Professional Land Surveying at http://txls.texas.gov/act-rules/.

1.4 CONTROL

A. Horizontal and vertical control and right-of-way monuments, as shown on the Plans, will be marked in the field by the Engineer.
B. Preserve control and right-of-way points. Where control points are in areas of construction, offsets or set supplemental control points will be established by the Contractor at no cost to the District. Notify the Engineer prior to performing work that will disturb project control.
C. Provide construction surveying and construction staking necessary to establish the line and grade of the proposed work from the control points, including labeled station markers every 100 feet.

1.5 ACCEPTANCE OF CONTROL

A. Notify the Engineer of any discrepancies discovered in the locations of survey control points prior to starting work.

1.6 DAMAGED MONUMENTS

A. Re-establish property corners and right-of-way monuments damaged or destroyed by the Contractor at no cost to the District. Perform the survey work to the tolerances of a “Category 1A - Land Title Survey” as set forth in the TSPS Manual of Practice for Land Surveying in Texas. All survey work shall adhere to the current Act and Rules of the Texas Board of Professional Land Surveying.
B. Report promptly to the Engineer the loss or destruction of any reference points or boundary monuments.
C. Reimburse the District for the cost to reestablish permanent reference points disturbed by Contractor’s operations.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes procedures for the submittals identified by the Contract Documents.

1.2 SUBMITTAL PROCEDURES

A. Deliver submittals to the Engineer at the Pre-Construction meeting. Allow no less than 14 calendar days for initial review of submittals by the Engineer. The Engineer will review and return submittals as expeditiously as possible, but the amount of time required for review will vary depending on the complexity and quantity of data submitted. This time for review shall in no way be justification for delays or additional compensation to the Contractor. Allow time to make delivery of material or equipment after the submittal is approved.
B. Submit 2 copies of documents unless otherwise specified. Electronic submittals are generally accepted unless specified otherwise.
C. The Engineer's review of submittals covers only general conformity to the Contract Documents. Quantities will not be reviewed or verified by the Engineer. Contractor is responsible for errors, omissions or deviations from Contract Documents. Review of submittals in no way relieves the Contractor from obligation to furnish required items according to the Contract Documents.
D. Revise and resubmit submittals as required. Identify all changes made since previous submittal. Resubmit entire submittal package rather than the amended portions.
E. The Contractor shall assume the risk for material or equipment that is fabricated or delivered prior to approval. No material or equipment shall be incorporated into the work or included in periodic progress payments until approval has been obtained in the specified manner.
F. Submittal Numbering:
    1. Transmit each submittal to the Engineer.
    2. Identify each submittal by project I.D., (unique) submittal number, section number and pay item number.
    3. Sequentially number each submittal beginning with the number 1. Resubmittals shall use the original number followed with an alphabetic suffix (i.e., 2A for the first resubmittal of Submittal 2 or 15C for the third resubmittal of Submittal 15). Each submittal shall only contain one type of work, material or equipment. Mixed submittals will not be accepted.

4. Identify variations from requirements of Contract Documents and identify product or system limitations.

G. Contractor's Certification: Contractor shall certify the items have been reviewed in detail and are correct and in accordance with Contract Documents, except as noted by any requested variance.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 01422

REFERENCE TECHNICAL STANDARDS

PART 1 – GENERAL

1.1 SUMMARY

A. Reference to various technical standards as published by technical societies, national and state associations or other authorities is made in the Contract Documents. The abbreviations along with the titles are listed below.

1.2 ABBREVIATIONS

A2LA - American Association of Laboratory Accreditation.
AASHTO - American Association of State Highway and Transportation Officials.
ACI - American Concrete Institute.
AISC - American Institute of Steel Construction.
ANSI - American National Standards Institute.
ASTM - American Society for Testing Materials International.
AWS - American Welding Society.
AWPA - American Wood-Preservers' Association.
CPMB - Concrete Plant Manufactures Bureau.
CRSI - Concrete Reinforcing Steel Institute.
OSHA - Occupational Safety and Health Administration.
SPIB - Southern Pine Inspection Bureau.
TSPS - Texas Society of Professional Surveyors.

1.3 GOVERNING VERSION

A. Most standards are the version included in the 2020 published volumes. If no date is stated, the current version on January 1, 2019 is applicable.

1.4 CONTRACTUAL OBLIGATIONS

A. The technical standards are referenced for technical specifications only. Certain technical standards contain or imply contractual obligations. If they conflict with the Contract Documents, the Contract Documents take precedence.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 01457

CONSTRUCTION TESTS AND INSPECTION

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for tests and inspection.

1.2 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is made under this Section. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and Payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 ACCESS TO WORK

A. The District, the Engineer, engineer's consultants, other representatives and personnel of the District, independent testing laboratories and governmental agencies with jurisdictional interests shall have access to the work for their observation, inspection and testing. Provide proper and safe conditions for such access and advice of site safety procedures and programs.
B. Provide Engineer 24 hour notice of readiness of the work for inspections, tests or approvals and cooperate with inspectors and testing personnel to facilitate required inspections or testing. Failure to provide 24 hour notice may result in the Work being removed and replaced at no cost to the District.

1.4 TESTS AND INSPECTIONS

A. Testing and Inspection includes, but is not limited to, services of a construction materials engineering laboratory or other agent employed by the District, to perform laboratory testing, field testing or examinations required in the Contract Documents.
B. The District will employ and pay for testing as noted above. Exceptions include, but are not limited to, the following:
    1. Arrange, obtain and pay for inspections, tests and approvals required by laws and regulations of other public bodies having jurisdiction. Transmit to the Engineer the required certificates of inspection or approval.
    2. Arrange, obtain and pay for inspections, tests or approvals required for submittals of materials or equipment. This includes expenses

surrounding materials, mix designs or equipment submitted for approval for incorporation in the work.

3. Perform retest or inspection of the corrected defective work at no cost to the District.

C. Retests that are required to verify the adequacy of reworked areas or work performed for the Contractor's convenience will be deducted from the Contractor's final payment for that work item.

D. Inspections and tests performed for either Engineer or Contractor shall be performed by an independent testing laboratory that is American Association for Laboratory Accreditation (A2LA) certified for the Work associated with the required inspections and tests.

E. Acceptance of tests or non-performance of tests or inspections, in no way relieves the Contractor of obligation to furnish required work in accordance with the Plans and Specifications.

F. Contractor may be required to remove and replace Work that is in non-conformance to inspections or tests at the discretion of the Engineer. Removal and replacement of non-conforming Work shall be done at the Contractors expense.

G. **Any inspection or test requested by the Contractor in addition to the standard minimum requirements shall be done at the Contractor's expense.**

1.5 SUBMITTALS

A. Submit testing laboratory or examination reports, as specified or required, dated, signed and sealed by a Licensed Professional Engineer in the State of Texas accepting technical responsibility for the report. The work performed by the laboratory shall be covered by a report that accurately, clearly and unambiguously presents the test or examination results and other relevant information in accordance with the criteria for accreditation used by A2LA.

1.6 LIMITS OF AUTHORITY

A. The testing laboratory is not authorized to:
   1. Release, revoke, alter or enlarge on requirements of the Contract Documents.
   2. Approve or reject any portion of the work.
   3. Perform any duties of the Contractor.
   4. Stop the work.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 01520

TEMPORARY FACILITIES FOR ENGINEER

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for providing and maintaining separate temporary facilities for the exclusive use of the Engineer and staff.

1.2 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is made under this Section. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and Payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 FACILITIES

A. Locate temporary facilities as approved by the Engineer.
B. Provide temporary facilities including office and sanitary facilities. Sanitary facilities shall comply with all local, State and Federal requirements and shall be for the exclusive use of the Engineer.
C. Provide temporary facilities, complete and ready for use, on or before the first day of construction.
D. Maintain temporary facilities in a clean condition throughout the contract period.
E. Provide an all weather access to and parking at the temporary facility.

1.4 OFFICE REQUIREMENTS

A. Provide a building approximately 200 square feet in size.
B. Provide weatherproof office with a lockable, secure door with a hasp for a padlock, a padlock and 3 keys. The office shall have electrical service, be properly heated and air conditioned and have adequate illumination.
C. Provide the following office furniture:
    1. One sloped top stand-up height table (minimum 30 inches by 60 inches) and stool.
    2. One kneehole desk (minimum 30 inches by 60 inches).
    3. Three chairs, one of which is a desk chair.
    4. One lockable two-drawer legal size file cabinet.
D. Provide a water cooler with bottled drinking water. Contractor shall maintain bottled water in a fresh and safe condition.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 01562

CONSTRUCTION FENCE

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for furnishing, installing, maintaining and removing construction fence.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

PART 2 – PRODUCTS

2.1 FENCE PROPERTIES

A. Provide construction fence comprised of extruded, high-density polypropylene, 4 foot tall minimum and orange in color unless shown otherwise on the Plans.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install the construction fence with posts of sufficient size and spacing to insure that the construction fence remains upright throughout its installed length and functions as an effective barrier for the areas designated for protection.
B. Maintain and repair the construction fence throughout the duration of the project, at no cost to the District, to insure that the barrier continuously performs its intended function.

3.2 REMOVAL AND DISPOSAL

A. Remove and dispose of the construction fence upon completion of the project. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 01565

GENERAL SOURCE CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for best management practices and care of the work area.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and Payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 DEFINITION

A. State Waters: The water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the stormwater, floodwater, and rainwater of every river, natural stream, and watercourse in the state. State Waters do not include percolating groundwater, diffuse surface rainfall runoff, groundwater seepage or springwater before it reaches the watercourse.

1.4 PROTECTION OF TREES

A. Heavy equipment, vehicular traffic and stockpiles of construction materials are not permitted within the dripline of any tree designated to remain. Contractor shall avoid all contact with trees to remain unless otherwise directed by the Engineer. For trees determined to have been damaged refer to Specification Section 01566 - Tree and Plant Protection.
B. Trees to remain will be shown on the Plans or marked onsite prior to construction. For Additional information, refer to Specification Section 01566 - Tree and Plant Protection.

1.5 DUST CONTROL

A. Control dust blowing and movement on construction sites and roads to prevent exposure of soil surfaces, to reduce on and offsite damage, to prevent health hazards and to improve traffic safety.

B. Control dust blowing by utilizing one or more of the following:
    1. Paper or wood mulches bound with natural or chemical binders.
    2. Temporary vegetative cover.
    3. Apply dust suppressants containing polyacrylamide (PAM) at manufacturer's recommended rate for duration required. Submit manufacturer's label identifying active ingredient.
    4. Irrigation by water sprinkling.
    5. Spreading hay.
C. Implement dust controls immediately whenever dust can be observed blowing on the site or as directed by the Engineer.
D. Provide copy of Water Rights Permit from the Texas Commission on Environmental Quality (TCEQ) prior to using State Water.

1.6 EQUIPMENT MAINTENANCE AND REPAIR

A. Confine maintenance and repair of construction machinery and equipment to areas specifically designated for that purpose. Locate and design designated areas so that oils, gasoline, grease, solvents and other potential pollutants cannot be allowed into soils, receiving streams or stormwater conveyance systems. Provide adequate waste disposal receptacles for liquid, as well as, solid waste. Inspect and clean maintenance areas daily.
B. On a site where designated equipment maintenance areas are not feasible, care must be taken during each individual repair or maintenance operation to prevent potential pollutants from becoming available to be washed into streams or stormwater conveyance systems. Provide and use temporary waste disposal receptacles.

1.7 WASTE COLLECTION AND DISPOSAL

A. Refer to Section 02120 - Material Disposal.
B. Provide a plan for the collection and disposal of waste materials on the site, at the request of the Engineer. Designate locations for trash and waste receptacles and establish a collection schedule. Specify and carry out methods for ultimate disposal of waste in accordance with applicable local, State and Federal rules and regulations. Make special provisions for the collection and disposal of liquid wastes and toxic or hazardous materials.
C. Keep receptacles and other waste collection areas neat and orderly. Do not allow waste to overflow its container or accumulate for excessively long periods of time. Locate trash collection points where they will least likely be affected by stormwater runoff.

1.8 PUBLIC ROAD MAINTENANCE

A. Remove soil spilled, dropped, washed or tracked on to public rights-of-way immediately.

1.9 WASHING AREAS

A. Wash vehicles and other construction equipment in accordance with current local, State and Federal rules and regulations and, as a minimum, vehicles such as concrete or dump trucks and other construction equipment shall not be washed at locations where runoff will flow directly into a watercourse or stormwater conveyance system. Special areas shall be designated for washing vehicles. These areas should be located where the wash water will spread out and evaporate or infiltrate directly into the ground, or where runoff can be collected in a temporary holding or seepage basin. Construct wash areas with gravel or rock bases to minimize mud generation.

1.10 CONCRETE WASH OUT AREAS

A. Wash concrete trucks only in a designated concrete truck wash out area. Contain washed out materials in such a manner as to prevent discharges directly into the receiving water(s). Excavated traps, earthen embankment traps, or filter fabric fences may be used for containment. Stabilize designated areas prior to project completion to prevent material from entering the receiving water. For projects including a formal Notice of Intent (NOI), refer to the SWPPP narrative for detailed information on concrete wash out activities.

1.11 STORAGE OF CONSTRUCTION MATERIALS, CHEMICALS, ETC.

A. Isolate sites where chemicals, cements, solvents, paints or other potential water pollutants are to be stored, so that they will not cause runoff pollution.
B. Store toxic chemicals, and materials such as fuels, lubricants, pesticides, paints, and acids in accordance with manufacturer's guidelines. Protect groundwater resources from leaching by placing a plastic liner or other containment system, as approved by the Engineer, on any areas where toxic liquids are to be opened and stored.

1.12 SANITARY FACILITIES

A. Provide construction site with adequate sanitary facilities for workers in accordance with applicable local, State and Federal rules and regulations.

1.13 INSPECTION REPORTS

A. Best Management Practices (BMP's) must be implemented and maintained for sediment control. Submit Weekly Texas Pollutant Discharge Elimination System (TPDES) Inspection and Maintenance Reports on a monthly basis, or as required by the Engineer.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 01566

TREE AND PLANT PROTECTION

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for:
   1. Standard Practice References
   2. Submittal Requirements
   3. Site Protection for Tree Protection Zones (TPZ).
   4. Best Management Practices (BMP) for TPZ.
   5. Post ground disturbance maintenance and fertilization of trees.
   6. Techniques for Root Protection (Root collar excavation, Air Spading, and Root Pruning Trenches).

1.2 MEASUREMENT AND PAYMENT

A. When there is not a separate item listed for work in this section, no separate measurement and payment is made. Include cost for work under this section in the related unit price work.
B. Measurement and Payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 – Measurement and Payment for unit price procedures.

1.3 REFERENCE

A. ANSI A300 - Part 1: Tree, Shrub, and Other Woody Plant Maintenance - Standard Practices (Pruning)
B. ANSI A300 – Part 2: Tree, Shrub and Other Woody Plant Maintenance – Standard Practices (Soil Management a. Modification, b. Fertilization, and c. Drainage)
C. ANSI A300 - Part 5: Tree, Shrub and Other Woody Plant Maintenance – Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development and Construction)
D. Best Management Practices – Managing Trees During Construction
E. Best Management Practices – Tree and Shrub Fertilization
F. Best Management Practices – Tree Pruning
G. Guide for Plant Appraisal, Latest Edition
H. Texas Supplement to the Guide for Plant Appraisal – Latest Edition

1.4 SUBMITTALS

A. Submit documentation showing successful completion of the requirements for one of the following:
   1. International Society of Arboriculture (ISA) Certified Arborist.

2. Proof of a degree in forestry from a Society of American Foresters (SAF) accredited university or college.

B. Submit a soil and foliar nutrient analysis report for each Project Site prior to the start of any work.

C. Submit a soil nutrient analysis report to determine nutrient needs for trees to be air spaded. The soil nutrient analysis report should be done by an accredited laboratory and should include findings on the following:
   1. Soil Fertility Testing portion of report to include; soil pH, organic matter, nitrogen, potassium, phosphorus, manganese, magnesium, sulfur, zinc, iron and Cation Exchange Capacity (CEC).
   2. Foliar Nutrient Testing portion of report to include; nitrogen, potassium, phosphorus, manganese, magnesium, sulfur, zinc and iron.

1.5 SITE PROTECTION

A. Preserve and protect all trees and plants located in identified TPZ to prevent foliage, branch, trunk, or root damage that could result from construction operations.

B. Review of the installed TPZ's, pruning work and any other tree care operations, on-site with a Forester prior to the start of any clearing, grubbing, or any other site prep or construction operations.

C. Provide 24-hour notice to Forester and Inspector for work that requires review/meeting on site.

D. For further information on the execution of site protection refer to Part 3 of this specification.

E. Prevent or minimize the following types of damage to trees and plants designated for preservation:
   1. Compaction of root zone by foot or vehicular traffic, or material storage.
   2. Trunk or branch damage from equipment operations, material storage, or from nailing or bolting.
   3. Trunk or branch damage caused by ropes or guy wires.
   4. Root poisoning from spilled solvents, gasoline, paint or other noxious materials.
   5. Branch damage due to improper pruning or trimming (See notes/details on plans for tree pruning).
   6. Alteration of soil pH factor caused by depositing lime, concrete, plaster or other base materials near roots.
   7. Cutting of roots larger than 1-1/2 inches in diameter without prior approval from the Forester.

1.6 METHODS TO PROTECT EXISTING TREES

A. Protect designated trees for preservation using one or more of the following methods:
   1. Root Collar excavation
   2. Air-Spading excavation

3. Root Pruning Trenches

B. Final grade adjacent to the tree shall be at the direction of the Forester and shall match the surrounding proposed grading.
C. Monitor and assist with field layout of the tree protection zones before demolition and construction operations begin. Ensure tree protection procedures and techniques are practiced as specified and address conditions specific to each site.

1.7 TREE PROTECTION ZONES

A. Install tree protection zones around designated trees to be preserved in accordance with best management practices. Refer to Part 3.6 Exhibits for additional details on best management practices for tree protection zones.
B. Implement the following best management practices when installing tree protection zones:
   1. Define Tree Protection Zones (TPZ)
   2. Protect soil and roots
   3. Follow TPZ fencing guidelines
   4. Provide Trunk protection
   5. Use TPZ Signage
   6. Follow root pruning guidelines
   7. Consider grade changes
   8. Consider fertilization
C. For additional information on TPZ BMP's, see Section 3.6 Exhibits, included in this Specification.

PART 2 – PRODUCTS – Not Used

PART 3 – EXECUTION

3.1 PROTECTION AND MAINTENANCE OF EXISTING TREES IN TREE PROTECTION

A. Install tree protection fencing for all trees to be preserved and as specified in the Best Management practices – Managing Trees During Construction.
B. Install tree protection fencing prior to site work or construction activity. Do not remove or relocate tree protection fencing without direct approval of the Forester.
C. Do not operate equipment within Tree Protection Zones (TPZ) or fenced areas without approval of the Forester.
D. Prevent damage to or compaction of TPZ by construction activities.
E. Do not store equipment, construction materials, vehicles, topsoil or fill dirt inside a fence or TPZ. Entryways and access into a protected area shall not be provided unless approved by the Forester.
F. Where a fence is closer than four (4) feet to a trunk, protect the trunk with a trunk protection structure.

G. Exercise caution when working near TPZ.
H. Repair damages to tree protection fencing at no additional cost to HCFCD.
I. Prevent scarring of trunks or limbs by equipment or other means.
J. Place six (6) to twelve (12) inches of mulch in the TPZ areas where construction access extends into the TPZ of a tree designated to remain.
K. Ensure that mulch does not cover root collar or trunk. Place mulch in a manner that does not compact the soil. Once access is no longer needed, mulch shall be spread around the tree to a depth of no more than three (3) inches.
L. Remove and dispose of tree protection fencing upon completion of all construction activities in each work zone.
M. For additional information on TPZ fence material, and etc., see Section 3.6 Exhibits, included in this Specification.

3.2 MAINTENANCE AND FERTILIZATION OF AIR SPADED OR ROOT PRUNED TREES

A. When a Root Stimulation Application is necessary, apply deep root fertilizer to air spaded trees according to Best Management Practices – Tree and Shrub Fertilization, as based on the findings of the report submitted.
B. Regularly water trees, which were air spaded or root pruned, to eliminate additional stress caused by lack of moisture. Water thoroughly to saturate the entire root zone area within the drip line of the tree.
C. Chemically treat trees with symptoms or signs of any pest or pathogen with the appropriate approved pesticide mixed and applied per the manufacturer's product application recommendations. Treat trees within 24 hours after observance of pest or pathogen. Forester has final approval on best product and method of application.
D. Regular watering is defined as no less than ten gallons of water per diameter inch per week for each condition listed above.

3.3 ROOT PROTECTION MEASURES

A. Root Collar Excavation: Use a pneumatic excavation tool to remove excessive soil from tree root systems within a three (3) foot radius of the trunk. Beyond the three (3) foot radius, additional hand equipment and light machinery may be used to remove excessive soil. Remove adventitious roots if they fall within the depth of excavation. Excavate soil around trees to a depth where root swell becomes visible in order to expose top of root ball and root flares and provide soil aeration within the Critical Root Zone. Perform work under the direct supervision of the Forester, unless otherwise directed by the Forester.
B. Air Spading Excavation: Use a pneumatic excavation tool with a rated operating pressure of 6.2-7.0 bar, air stream velocity at the cutting head of 2,200-2,500 km/hr. and an air displacement of 4,000-5,000 L/min. Use an air compressor adequately sized as required to power the pneumatic excavation

tool in accordance with the manufacturers recommendations for the pneumatic excavation tool.

C. Root Pruning Trenches: Install root pruning trenches prior to site work or construction activity. Cut all roots by chainsaw, handsaw or loppers. Cut roots cleanly, do not rip, tear, or chop roots. Backfill trench and compact immediately after inspection for cleanly cut roots has been completed by a Forester or an Inspector. (Refer to Damage Assessment, Section 3.5 of this document).
   1. Final grade adjacent to the tree shall be at the discretion of the Forester and shall match the surrounding proposed grading.
   2. Cover exposed roots to reduce damage caused by desiccation. Cover roots with soil or mulch and water to help protect them from drying as a result of the excavation process.
   3. Use extreme care to prevent excessive damage to root systems.

3.4 DAMAGE ASSESSMENT

A. Reparable Damage: The contractor shall be assessed a penalty of $1,000.00 per occurrence for each tree damaged as a result of construction operations or by other means, defined in General Section 1.5 within a designated TPZ. Correct any damage to the tree as directed by the Forester. This may include but is not limited to corrective pruning, root pruning, deep root fertilization and soil de-compaction.

B. Irreparable Damage: Trees determined to be damaged beyond repair will be removed by the contractor at no additional cost to HCFCD. A penalty will be assessed by the Forester using the Trunk Formula Method for valuing each tree (Refer to Guide for Plant Appraisal).

3.5 Exhibits

A. Tree Protection Fencing (See Attached Detail)
B. Trench Excavation Requirements (See Attached Detail)
C. Root Pruning Detail (See Attached Detail)
D. Access Road Tree Protection (See Attached Detail)
E. Tree Island Detail (See Attached Detail)
F. Tree Well Detail (See Attached Detail)

END OF SECTION

SECTION 01580

PROJECT SIGNS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for installation, maintenance and removal of the project identification sign and for the Construction Site Notice (CSN) holder.

1.2 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is made under this Section. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

PART 2 – PRODUCTS

2.1 PROJECT SIGNS

A. Project identification sign(s) will be provided by the Engineer.
B. CSN Holder(s):
    1. Place laminated Construction Site Notice on front of notice holder.

2.2 SUPPORTS

A. Project Identification Sign:
    1. Provide (0.4) pressure treated 12 feet long, 4 inch by 4 inch posts with appropriate hardware. Paint posts white.
B. Construction Site Notice Holder(s):
    1. Provide (0.4) pressure treated 4 feet long 2 inch by 4 inch lumber to secure notice holder. Paint posts white.

PART 3 – EXECUTION

3.1 CONSTRUCTION

A. CSN Holder(s):
    1. Construct notice CSN holder from 1.5 foot by 1.5 foot by ¾ inch thick exterior grade (EXT BC) plywood. Paint white.
    2. Bolt notice holder to 2 by 4 inch posts with 2 hot-dipped galvanized screws per post. Paint posts white.

3. Staple laminated Construction Site Notice to front of notice holder.
4. Place CSN holder at each entrance to the construction site.

3.2 INSTALLATION (WHEN REQUIRED)

A. Project Sign(s):
   1. Install Project Identification sign(s) and Construction Site Notice holder(s) prior to construction start.
   2. Install, relocate when required, and maintain all project signs for duration of Project.
B. Install sign(s) at location(s) designated by the Engineer or where shown on the Plans. Position the sign(s) in such a manner as to be fully visible and readable by the general public.
C. Install sign(s) level and plumb.
D. Project Identification Sign(s):
   1. Mount each Project Identification sign on two 12 feet long 4 inch by 4 inch posts; Install in the ground a minimum of 30 inches.
E. CSN Holder(s):
   1. Drive supports a minimum of 1 foot into ground.

3.3 MAINTENANCE

A. Maintain signs and supports.
B. Report deterioration or damage to the Project Identification sign(s) immediately. At the Engineer's discretion, the Engineer will provide new Project Identification sign(s). If required, install new sign(s) at no cost to the District.
C. Maintenance and replacement of the CSN holder(s) are the Contractor's responsibility at no additional cost to the District.

3.4 REMOVAL

A. Upon completion of project, remove Project Identification sign(s) and supports. Transport sign and supports to designated location, as directed by the Engineer. Restore the area prior to final payment.
B. Remove and dispose of non-reusable foundation material. Refer to Section 02120 - Material Disposal.
C. CSN holder(s) are to remain in place after final payment, unless directed otherwise by the Engineer.

END OF SECTION

SECTION 01785

PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for preparing and maintaining record documents for the project to reflect the construction as built conditions.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 MAINTENANCE OF RECORD DOCUMENTS

A. Maintain at the job site, one hard copy of the following items.
   1. Contract Documents to include a project manual and one complete issued for construction set of plans with any issued revisions or addendums to the contract.
   2. Approved Shop Drawings.
   3. Written directive for any changes in scope.
   4. Contractor obtained permissions to perform the work. (i.e. access agreements, temporary construction easement, parking, etc.)
   5. TCEQ Notice of Intent (NOI) if applicable.
   6. Construction Site Notice.
   7. TPDES Stormwater Construction Permit.
   8. Stormwater Pollution Prevention Plan (SWPPP)
   9. TCEQ Notice of Termination (NOT) if applicable, as they are filed.
   10. Other Environmental Permits, as required.
B. Store record documents apart from documents used for construction. Do not use record documents for construction purposes. Maintain documents in clean, dry, legible and orderly condition. Make documents and samples available at all times for inspection by the Engineer.
C. For all projects, final deliverable record documents shall include:
   1. Set of plans marked with field changes for use to create final Record Drawings.
   2. Notice of Termination (NOT) as required.
   3. Warranty and Guaranty Affidavits

4. Any Contractor obtained permits as required for the Work
5. Acceptance of any part of the Work done outside of District ROW.

1.4 RECORDING

A. Label each document “PROJECT RECORD” in neat, large, printed letters.
B. Mark changes legibly in red pencil or red ink.
C. Keep record documents current.
D. Do not conceal work until required information is recorded.
E. Legibly mark and date the plan set with field changes for final Record Drawing submittal.
    1. Alignment and profile of the project, location and elevation of appurtenances.
    2. Horizontal and vertical location of underground utilities and appurtenances.
    3. Location of internal utilities and appurtenances referenced to permanent surface improvements.
    4. Field changes of dimension and detail.
    5. Changes made by change in contract
    6. Details not on original Plans.
F. Legibly annotate, mark and date Shop Drawings to record any changes made after approval.

1.5 SUBMITTALS

A. At project completion, deliver record documents to the Engineer. Place letter-sized material in a 3-ring binder, neatly indexed. Bind Plans and Shop Drawings in rolls of convenient size for ease of handling.
B. Accompany submittals with a transmittal letter containing:
    1. Date.
    2. Project title and number.
    3. Contractor’s name and address.
    4. Title and number of each record document.
    5. Certification that each document as submitted is complete and accurate.
    6. Signature of Contractor.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 02120

MATERIAL DISPOSAL

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for removal and proper disposal of unusable, objectionable or excess material.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 – Measurement and Payment for unit price procedures.

1.3 SUBMITTALS

A. Submittals shall be as indicated in Section 01330 – Submittal Procedures.
B. Submit prior to start of work:
    1. For disposal of material required to be taken to a landfill submit:
        a. Copy of TCEQ license
        b. HCFCD project number and pay item number.
        c. Flood Insurance Rate Map (FIRM) page with boundary of fill location identified.
        d. Aerial map with boundary of fill location identified.
        e. Physical address of the disposal location.
        f. Estimated total number of cubic yards of excavated material to be disposed at the location.
    2. For disposal of excavated material submit:
        a. Fill permit, or demonstration of compliance with any local jurisdictional requirements for material disposal.
        b. Disposal agreement signed by the property owner to include access for HCFCD personnel to verify suitability of the site to receive fill.
        c. HCFCD project number and pay item number.
        d. Flood Insurance Rate Map (FIRM) page with boundary of fill location identified.

e. Aerial map with boundary of fill location identified.
f. Physical address of the disposal location.
g. Estimated total number of cubic yards of excavated material to be disposed at the location.

3. For disposal or recycling of concrete rubble, pipe or debris submit:
   a. HCFCD project number and pay item number.
   b. Physical address of disposal location.
   c. Intended use of the material if not taken to a landfill or recycling facility.
   d. Estimated total quantity of material to be disposed at the location.
4. For disposal of tires submit:
   a. HCFCD project number and pay item number.
   b. Name and physical address of disposal or recycling location.
   c. Estimated total quantity of material to be disposed at the location.
5. For burning of cleared vegetation submit:
   a. HCFCD project number and pay item number.
   b. Material intended to be burned.
   c. Intended location of burn pit.
   d. Copy of TCEQ burn permit.
   e. List of notified local agencies and contact phone numbers.
6. Demonstration of compliance with any local jurisdictional requirements for material disposal.

C. During construction, for material disposed in a landfill or at a recycling facility submit the following pay application support documents. At the direction of the Engineer provide one of the following;
   1. One copy of the landfill operator's ticket or receipt clearly showing the truck load weight and/or cubic yards accepted by the landfill or recycling facility.
   2. Summary including the amount of material and disposal location for all material removed from the site on a daily basis.
      a. For disposal or recycling of concrete rubble, pipe or debris submit:
         1. HCFCD project number and pay item number.
         2. Physical address of disposal location.
         3. Intended use of the material if not taken to a landfill or recycling facility.
         4. Estimated total quantity of material to be disposed at the location.
      b. For disposal of tires submit:
         1. HCFCD project number and pay item number.
         2. Name and physical address of disposal or recycling location.
         3. Estimated total quantity of material to be disposed at the location.

c. For burning of cleared vegetation submit:
    1. HCFCD project number and pay item number.
    2. Material intended to be burned.
    3. Intended location of burn pit.
    4. Copy of TCEQ burn permit.
    5. List of notified local agencies and contact phone numbers.
d. Demonstration of compliance with any local jurisdictional requirements for material disposal.

D. During construction, for material disposed in a landfill or at a recycling facility submit the following pay application support documents. At the direction of the Engineer provide one of the following;
    1. One copy of the landfill operator's ticket or receipt clearly showing the truck load weight and/or cubic yards accepted by the landfill or recycling facility.
    2. Summary including the amount of material and disposal location for all material removed from the site on a daily basis.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION

3.1 GENERAL

A. Remove unusable, objectionable or excess material from the construction work area and properly dispose of such material.
B. Disposal of material in wetlands or other environmentally sensitive areas without permits is prohibited.
C. Disposal of material in the base flood elevation (BFE) or the 500-year flood plain as determined by the latest FEMA approved FIRM maps is prohibited. If a disposal site is rejected on these grounds, the Contractor, at their discretion, can submit a variance request with an explanation why the disposal of material is not considered fill in the flood plain. The Engineer will consider the request and respond accordingly. The decision of the Engineer shall be final.
D. Material disposed of without permits shall be removed and properly disposed of at no cost to the District. Restore the site at no cost to the District.
E. Cleared and grubbed material may be burned on the right-of-way, provided the following items are adhered to:
    1. Obtain permits required for burning including, but not limited to, permit(s) authorizing operation of the trench burner.
    2. Notify appropriate State and local governmental agencies and adhere to the requirements of these agencies.
    3. Obtain approval for location of the burn pit from the appropriate government agency and the Engineer.

4. Perform burning with a permitted trench burner.
5. Constantly supervise burning until extinguished. When burning is complete, remove ash, stumps and other objectionable material from the pit and dispose of in accordance with this Section.
6. Backfill burn pit in accordance with Section 02315 – Excavating and Backfilling.

F. Cleared and grubbed material may be chipped on-site and chips disposed of in areas approved by the Engineer, under the following conditions:
1. Scatter chips evenly on berm or slopes in a thickness not to exceed 3 inches to prevent killing turfgrass or other desirable vegetation.
2. Dispose of excess chips in accordance with this Section.
3. Avoid discharge of chipped material into waterways.

END OF SECTION

SECTION 02200

SITE PREPARATION AND RESTORATION

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for construction preparation, and final site cleanup/restoration.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item(s) listed on the Unit Price Schedule.
B. Payment will be on the following schedule:
   1. Payment of 70 percent of bid amount: When mobilization is complete, including move-in of major equipment, installation of project signs, sanitary facilities and, if required, accepted initial Construction Schedule, temporary office and sanitary facilities for Engineer.
   2. Payment of 30 percent of bid amount: When clean up/restoration of project site is complete, including removal of construction debris, temporary facilities, signs, any other related project appurtenances, and delivery of final Project Record Documents.
C. Measurement and payment is as noted on the Unit Price Schedule.
D. Refer to Section 01270 - Measurement and Payment for unit price procedures.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION

3.1 GENERAL

A. Establish and maintain access to the site.
B. Install, remove, relocate, replace and reinstall fences, barricades, guard rails or barriers required to secure the site.
C. Secure the site as necessary to perform the Work.
D. Maintain all-weather access to adjacent facilities that have driveways.
E. Maintain access and drainage continuously for duration of the project.
F. Protect items designated for preservation from abuse, marring or damage during construction operations.
G. At no cost to the District, remove temporary items restricting the use of District facilities for their intended purpose when Project is under a

National Weather Service Flood Watch or when directed by the Engineer when needed to protect the public and public infrastructure.

H. Remove structures, abandoned utility lines and related obstructions to a depth of 2 feet below the finished grade.
I. Collect tires, batteries, paint cans, oil cans and related items found on the right-of-way in a location approved by the Engineer, for disposal by others. Inform the Engineer of possibly hazardous material found on site for assessment and handling/disposal by others.
J. Remove structures, outfall pipes, drainage facilities and other items that may interfere with the construction work or as designated on the Plans.
K. Clean up and restore the site.
L. When Work is finished, remove existing District signs and reinstall in an approved location or deliver the sign to an District facility when directed by the Engineer.

3.2 ABANDONED UTILITY LINES

A. Refer to Section 02120 - Material Disposal.
B. Notify the utility owner prior to work on such abandoned lines.
C. Remove abandoned utility lines that may interfere with the construction work or as designated on the Plans.
D. Plug and abandon utility lines left in place as approved by the Engineer.

3.3 ENCROACHMENTS

A. Fences and/or other encroachments in the District right-of-way are not to be removed unless otherwise stated on the plans.
B. Encroachments identified for removal must be removed prior to any other work on the site.
C. Coordinate with property owners at least 24 hours prior to any work on such encroachments.
D. Place the removed encroachment neatly on the property owner’s property.

3.4 PROJECT SIGNS

A. Refer to Section 01580 - Project Signs.

3.5 TEMPORARY FACILITIES FOR ENGINEER

A. Provide temporary facilities as required on the Unit Price Schedule. Refer to Section 01520 - Temporary Facilities for Engineer.

3.6 Construction Schedules

A. Provide Construction Schedules as required for payment applications. Refer to Section 01325 - Construction Schedules.

3.7 BACKFILLING

A. Refer to Section 02315 - Excavating and Backfilling.

3.8 DISPOSAL

A. Refer to Section 02120 - Material Disposal.

3.9 RECORD DOCUMENTS

A. Provide Record Documents as required for payment applications. Refer to Section 01785 - Project Record Documents.

3.10 SURVEYING

A. Refer to Section 01328 - Construction Surveying

END OF SECTION

SECTION 02232

SELECTIVE CLEARING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for selective removal of targeted trees, brush and other vegetation, located amongst other vegetation meant to be preserved.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCE

A. ANSI A300 - Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices (includes supplements).

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION

3.1 GENERAL

A. Remove vegetation designated for selective clearing, as shown on the Plans, or as physically marked for removal on site. If the Plans do not provide specific instructions on the species type, main trunk size range targeted for removal, and location limits of vegetation to be removed, or if there is no physical marking on vegetation for its removal, the selective clearing zone must be reviewed with a Forester prior to the start of work.
B. Provide 48-Hour notice to Forester and Inspector for selective clearing work which requires their review.
C. Cut selected vegetation flush with or within 2 inches of the surrounding ground surface. Leave the stump and root system in place.
    1. Mulching or chipping cut material in place is preferred.
    2. Exercise care to avoid damage to adjacent vegetation.

3. Chips larger than 6 inches are not permitted. Spread chips in a uniform layer in a depth not to exceed 3 inches. Avoid placing chips into waterways.
4. Tree limb and root pruning shall comply with ANSI A300.
5. Active Selective Clearing work limits shall not exceed 1,500 linear feet at any given time, or as directed by the Engineer.

3.2 HERBICIDE APPLICATION

A. Apply herbicide to stumps as directed by Engineer. Refer to Section 02941 - Herbicide Application.

3.3 DISPOSAL

A. Dispose according to Section 02120 - Material Disposal or stack tree logs and brush when directed by Engineer.

END OF SECTION

SECTION 02233

CLEARING AND GRUBBING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for clearing and grubbing of trees, woody vegetation, stumps, roots and buried logs.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION

3.1 CLEARING AND GRUBBING

A. Remove trees, woody vegetation and stumps from construction work limits necessary for access, staging, excavation, fill, or other earthen work activities from the work site.
B. Clearing and grubbing beyond construction limits for the Contractor's convenience is not to be permitted unless approved by the Engineer, and shall be done at no cost to the District.
C. For clearing and grubbing on private property where the Contractor has agreements, transmit written evidence to the Engineer that permission has been obtained from the property owner prior to beginning work.
D. For linear projects, clearing and grubbing shall not exceed more than 1,500 linear feet ahead of the work completed and accepted by the District and/or Engineer for turf establishment.
E. Engineer will designate and clearly mark trees to be saved. Protect designated trees in accordance with Section 01565 - General Source Controls, or Section 01566 - Tree and Plant Protection as they apply to the contract.
F. Tree limbs extending over the project may be trimmed for access purposes, or for execution of Work. Trim with a sharp saw or by-pass pruner to produce a smooth cut, and execute evenly as not to harm the structural stability of the tree.

G. For adjacent vegetation extending into the project site, refer to Section 01566 - Tree and Plant Protection.
H. Remove stumps, roots and buried logs in areas of excavation or fill to a depth of 1 foot below design or existing ground surface.
I. Grub trees and brush 2 feet below adjacent grades, in areas where excavation or fill will not be performed, in a manner which permits smooth grading.

3.2 HERBICIDE APPLICATION

A. Apply herbicide to stumps as directed by the Engineer. Refer to Section 02941 - Herbicide Application.

3.3 DISPOSAL

A. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 02241

CARE AND CONTROL OF WATER

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for the care and control of ground and surface water.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.
D. Where paid for separately, payment is in accordance with Section 01292 - Schedule of Values.

1.3 SUBMITTALS

A. Submittals shall be as indicated in Section 01330 - Submittal Procedures.
B. Submit a Plan to the Engineer prior to the start of construction or with bid, when required, where care and control of water is paid for separately.
C. Plan shall include drawings and descriptions of how to implement the care and control of ground and surface water. Plan shall cover the protection of existing facilities and proposed work against normal flow, high flow and potential flooding conditions.
D. Submit a Schedule of Values for Engineer’s approval when care and control of water is paid for separately or when requested by the Engineer.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION

3.1 GENERAL

A. Select the means, methods and techniques to control ground water and surface water.
B. Maintain the work reasonably free of water. Control shall be accomplished in a manner that will preserve the strength of the subgrade and backfill,

not cause instability of slopes, will protect the proposed work and not result in damage to existing facilities or contamination of water.

C. Lower the groundwater in advance of excavation utilizing wells, wellpoints or similar methods, as necessary.
   1. Open pumping with sumps and ditches is not permitted if it results in boils, loss of fines, softening of the ground or instability, or erosion of slopes.
   2. Install wells and wellpoints with suitable screens and filters so that continuous pumping of fines does not occur.
   3. Arrange the discharge to facilitate collection of samples by the Engineer and to prevent erosion at the outfall.
D. Remove care and control of water facilities in a manner as not to contaminate water and restore channel area to a condition satisfactory to the Engineer, after the work is complete.

3.2 REPAIR

A. Repair or replace damage caused by water at no cost to the District.
B. Remediate contamination of water resulting from construction activities on the Project at no cost to the District.

END OF SECTION

SECTION 02269

TRENCH SAFETY SYSTEM

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for the installation and maintenance of a Trench Safety System.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. Implement the Trench Safety System requirements of the Federal, State and local Safety and Health Regulations and the Occupational Safety and Health Administration (OSHA), 29 CFR, Part 1926 Subpart P - Excavation.
B. Texas Health and Safety Code Ann., Chapter 756. Miscellaneous Hazardous Conditions. Subchapter C. Trench Safety § 756.023. Trench Excavation for Political Subdivision.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit a safety plan specifically for the construction of trench excavation. Design the trench safety plan to be in accordance with OSHA regulations, referenced above, that govern the presence and activities of individuals working in and around trench excavations.
C. Construction and Shop Drawings containing deviations from OSHA regulations or special designs shall be sealed by a licensed Texas Professional Engineer retained and paid by the Contractor.
D. Review of the safety plan or Trench Safety System by the Engineer will only be in regard to compliance with this Section and will not constitute approval by the Engineer or relieve the Contractor of obligations under State and Federal trench safety laws.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION – Not used

END OF SECTION

SECTION 02314

FILL MATERIAL

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for the acceptance and use of fill.

1.2 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is made under this Section. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 – Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. ASTM D 1140 - Amount of Material in Soil Finer Than the No. 200 (75 µm) Sieve.
B. ASTM D 2487 - Classification of Soils for Engineering Purposes Unified Soil Classification System.
C. ASTM D 4647 - Identification and Classification of Dispersive Clay Soils by the Pinhole Test.
D. ASTM D 4318 - Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.4 SUBMITTALS

A. Refer to Section 01330 – Submittal Procedures.
   1. Submit sample source identifying information including sample identification,
   2. Provide one copy of an aerial map (including map's scale) identifying the physical address and boundaries of the designated source site
   3. Source sketch, Show the borrow site or pit and the proposed excavation location, sample location and approximate material depth(s) on the source sketch.
   4. Provide supplier contact information.
   5. Provide grab sample of material proposed for use.
B. Submit test report based on:
   1. Laboratory determination of amount of material finer than the No. 200 (0.075 mm) sieve (ASTM D 1140).
   2. Liquid limit, plastic limit and plasticity index (ASTM D 4318).
   3. Pinhole test (ASTM D 4647, Method A).

4. Classification shall be reported in accordance with ASTM D 2487 and include (as a minimum):
   a. Group name.
   b. Group symbol.
   c. Soil color(s).
   d. Results of the laboratory tests.

1.5 CONSTRUCTION TESTS AND INSPECTION

A. Refer to Section 01457 – Construction Tests and Inspection.

PART 2 – PRODUCTS

2.1 IMPORTED SELECT FILL MATERIAL

A. Use an approved material, free from roots, trash, organic matter and other objectionable material where imported select fill material is shown on the Plans or specified.
B. Where the imported select fill material is not specified elsewhere, the material shall be a fine-grained lean clay with sand (CL) or sandy lean clay (CL) soil material when classified in accordance with ASTM D 2487 and conforming to the following criteria:

TEST DESCRIPTION	ASTM TEST	UNIT	VALUE
Maximum Liquid Limit	D 4318	%	45
Plasticity Index Range	D 4318	%	15 – 30
Passing No. 200 Sieve	D 1140	%	60 – 85
Dispersion Potential	D 4647	-	ND1 – ND2

2.2 FILL MATERIAL EXCAVATION FROM ON-SITE

A. Where no other fill material is specified or shown, use inorganic soils from the on-site excavation that are free from roots, trash, organic matter and other objectionable material and classified by their group name and symbol in accordance with ASTM D 2487 as follows:

GROUP NAME	GROUP SYMBOL
Lean Clay	CL
Lean Clay with Sand	CL
Sandy Lean Clay	CL

B. Do not use peat or other organic matter, muck, debris or similar materials. The inorganic soils listed below may be used only with the approval of the Engineer:

GROUP NAME	GROUP SYMBOL
Fat Clay	CH
Sand	SW, SP, SC or SM

PART 3 – EXECUTION

A. Refer to Section 02315 – Excavating and Backfilling.
B. Refer to Section 02316 – Structural Excavating and Backfilling.

END OF SECTION

SECTION 02315

EXCAVATING AND BACKFILLING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for removing, stockpiling and replacing on-site vegetation and topsoil, excavating, repairing slopes, backfilling, grading the berms, backslope swales and related work. This Section does not include excavating and backfilling for structures.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 – Measurement and Payment for unit price procedures.
D. Measurement shall be based upon Registered Professional Land Surveyor (RPLS) surveyed cross-sections or a digital terrain model, as required and approved by the Engineer. See Paragraph 1.4 Definitions in this Section.
    1. Cross sections or survey data obtained by Contractor shall be tied to the base line and, as a minimum, at the same locations and limits as the design points/break points or every 100 Linear Feet (LF) whichever is shorter.
    2. Cross-sections or survey data obtained by Contractor shall be plotted at the same scale as design cross-sections where available or to the same horizontal and vertical scale where design cross-sections are not available.
    3. Plots of cross-sections or survey data shall include the pre-construction, intermediate, final and design information.
E. Cross-sections in areas of buried riprap or protective linings, such as riprap and concrete channel lining, shall be to the top of these materials. Excavation required for placement of such protective lining is considered structural excavation and incidental to the cost of related protective lining. See Section 02316 – Structural Excavating and Backfilling.
F. For small areas or other areas where limits can readily be determined visually, measurement may be by conventional taping and/or measuring techniques, as approved by the Engineer. Measurement shall be witnessed by the District's site representative.
G. Where paid for separately, backslope swales shall be measured as noted

on the Unit Price Schedule.

H. Contractor shall perform all quantity calculations for approval by Engineer.
I. No payment will be made for over-excavation or over-filling beyond the design cross-sections, except as directed by the Engineer.
J. Support partial pay application quantities with pre-construction and intermediate cross-sections, Plan quantity calculations to-date or quantity calculations determined from field measurement techniques previously approved by the Engineer. **Partial payment documented by field measurement techniques other than approved survey submittals will be limited to 90% of the plan quantity until a survey submittal is approved.**
K. Support final pay request quantities by using pre-construction, intermediate and final cross-sections or final field measured quantity calculations, as approved by the Engineer.

1.3 REFERENCES

A. ASTM D 698 – Laboratory Compaction Characteristics of Soils Using Standard Effort (12,400 ft-lbf/ft^3 (600kN-m/m^3).

1.4 DEFINITIONS

A. Existing Cross-Sections or Survey Data: Information obtained by design engineer to prepare Plans and bid documents.
B. Pre-Construction Cross-Sections or Survey Data: Information obtained by Contractor prior to construction to establish pre-construction conditions. Contractor may accept existing cross-sections as pre-construction cross-sections.
C. Intermediate Cross-Sections or Survey Data: Information obtained by Contractor to establish extent of work, such as to remove disturbed soil and to repair slope failures, and/or periodic surveys completed prior to Final Cross-Sections.
D. Final Cross-Sections or Survey Data: Information obtained by Contractor at completion of excavation and/or fill.
E. Design Cross-Section or Survey Data: Proposed channel section shown on Plans showing final grades.

1.5 SUBMITTALS

A. Refer to Section 01330 – Submittal Procedures.
B. Submit written acceptance of Existing Cross-Sections or Survey Data, or submit Pre-Construction Cross-Sections or Survey Data for review and approval by the Engineer prior to the start of any excavation activities on site.
C. Submit plotted cross-sections and earthwork quantity calculations in tabular form. For electronic survey data submittals, include all electronic

files and report data used to calculate final quantities.

D. Survey information submittal shall include at a minimum: plan view showing points taken with elevations, 1-ft contour lines, and baseline corresponding with the design plan benchmark information, north arrow and scale.

1.6 CONSTRUCTION TESTS AND INSPECTION

A. Refer to Section 01457 – Construction Tests and Inspection.

PART 2 – PRODUCTS

2.1 FILL MATERIAL

A. Refer to Section 02314 – Fill Material.

PART 3 – EXECUTION

3.1 SITE PREPARATION

A. Prepare the site for construction in accordance with Section 02200 – Site Preparation and Restoration and Section 02233 – Clearing and Grubbing.
B. Remove grass and other vegetative cover from areas to be excavated or filled.
C. Remove material that may interfere with the proposed work, including unusable materials, disturbed soils and/or objectionable material as directed by Engineer.
D. Engineer will inspect and approve foundation soil prior to placement of fill.

3.2 TOPSOIL

A. Refer to Section 02911 – Topsoil.

3.3 CARE AND CONTROL OF WATER

A. Refer to Section 02241 – Care and Control of Water.

3.4 CONSTRUCTION

A. Construct to lines, grades and dimensions shown on the Plans.
B. Return over-excavation beyond the specified limits to grade at no cost to the District in accordance with Paragraph 3.5 of this Section.
C. Do not cast or place material, either temporarily or permanently, on top of bank without approval of Engineer.
D. Do not cut temporary shelves into side slopes without approval of Engineer.
E. Correct grading resulting in standing water at no cost to the District.

F. Grade side slopes as required by the Engineer to smoothly transition the lateral into the main channel at locations where lateral ditches enter the channel.

3.5 FILL

A. Level soil surface prior to placing first layer of fill.
B. Compaction of foundation soil surface shall be considered satisfactory when the Contractor is capable of achieving specified compaction for the first layer of fill.
C. Protect foundation soils and/or fill soils from detrimental drying.
D. Scarify surfaces to receive fill to ensure proper bonding. When the surface can be penetrated by tamping roller feet, additional scarification is usually not necessary.
E. In areas that are shown to receive fill material, cut into existing (undisturbed) material in a “benching” or “stair step” fashion. Each bench shall form a horizontal surface and corresponding nearly vertical surface. The height difference between adjacent horizontal surfaces shall be a minimum of 3 feet.
F. Mechanically compact backfill provided under Section 02314 – Fill Material in 8-inch maximum layers, loose measure, to not less than 95 percent of maximum standard dry density (ASTM D 698) within plus or minus 3 percent of optimum moisture content. Where approved for use by the Engineer, fat clay (CH) soil shall be mechanically compacted to not less than 95 percent or more than 98 percent of maximum standard dry density (ASTM D 698) at or within plus 3 percent of optimum moisture content.
G. Refer to Section 02316 – Structural Excavating and Backfilling for backfilling behind retaining structures, unless shown otherwise on the Plans.

3.6 BACKSLOPE DRAINAGE SYSTEMS

A. Backslope swale and interceptor structure elevations and locations shown on the Plans are approximate. Final elevations and locations shall be field verified by the Engineer prior to installation. Minor changes in location and grade shall be considered incidental and no extra payment will be made for such adjustments.

3.7 MAINTENANCE OF DRAINAGE

A. Maintain constant flow and drainage in the main and lateral channels, backslope swales and off-site swales.

3.8 EROSION AND SEDIMENT CONTROL

A. Use means, methods, sequences and scheduling to minimize erosion and

sedimentation and other damage to the project site and facilities, including the following:

1. Limit work in this Section to no more than 1,500 feet of channel at any time unless approved by the engineer.
2. Construct backslope drainage system, silt fences and vegetate each reach of the channel as soon as practical. Refer to Section 02361 – Silt Fences and Section 02921 – Turf Establishment.
3. Failure to construct erosion control facilities in a timely manner may result in a directive to do so. Engineer may stop construction on the project if, in the opinion of the Engineer, conditions warrant such action.
4. Remove sediment and debris prior to final acceptance of the Work by the Engineer at no additional cost to the District. The removal of sediment includes reaches of channel downstream of the project where sedimentation occurred due to construction of this Project.
5. Comply with terms and conditions of the Texas Pollutant Discharge Elimination System (TPDES) permit, the Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMPs) for this Project, if applicable.

3.9 MATERIAL DISPOSAL

A. Refer to Section 02120 – Material Disposal.

END OF SECTION

SECTION 02316

STRUCTURAL EXCAVATING AND BACKFILLING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for excavating and backfilling under, above and adjacent to structures, including riprap and buried riprap.

1.2 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is made under this Section. Include the cost for the work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. ASTM D 698 - Laboratory Compaction Characteristics of Soils Using Standard Effort (12,400 ft-lbf/ft^3 (600kN-m/m^3)).

1.4 CONSTRUCTION TESTS AND INSPECTION

A. Refer to Section 01457 - Construction Tests and Inspection.

PART 2 – PRODUCTS

2.1 FILL MATERIAL

A. Refer to Section 02314 - Fill Material.

2.2 CEMENT STABILIZED SAND

A. Refer to Section 02321 - Cement Stabilized Sand.

2.3 CONCRETE BACKFILL

A. Refer to Section 03310 - Concrete, Non-structural.

2.4 FLOWABLE FILL

A. Refer to Section 02322 – Flowable Fill.

2.5 SUBGRADE STABILIZATION

A. Provide stabilized subgrade or stabilized soil backfill as indicated in the Specifications, as noted on the Unit Price Schedule or as noted in the Plans.
B. Unless shown otherwise on the Plans, provide 12 inches of Cement Stabilized Sand below precast inlets, manholes, headwalls and wingwalls, junction boxes, and any other miscellaneous catchment structures.

2.6 SAND OR GRAVEL BACKFILL

A. Provide sand or gravel backfill in accordance with the material and gradation requirements as noted on the Plans.

2.7 GRANULAR FILL

A. Refer to Section 02378 - Riprap and Granular Fill.

2.8 TOPSOIL

A. Refer to Section 02911 - Topsoil.

PART 3 – EXECUTION

3.1 SITE PREPARATION, INCLUDING REMOVING VEGETATION

A. Refer to Section 02200 - Site Preparation and Restoration and Section 02233 - Clearing and Grubbing.
B. Remove grass and other vegetative cover from areas to be excavated or to receive fill.

3.2 EXCAVATION

A. Determine the size, shape and dimensions of the excavation necessary to accomplish the Work within the project site. This includes selecting the means, methods and techniques of excavation and other related matters. Extend the excavation a sufficient distance from walls and edges of the structure to allow for placing and removing of forms and trench safety systems, for inspection and installing ancillary items. Complete excavations within the following tolerances:
    1. Perform structural excavation to the grade necessary to provide the minimum design thickness as shown on the Plans and to allow the top to be no higher than the design grade.
    2. Cut vertical planes for footing excavations to neat lines with a tolerance of minus 1/2 inch to plus 3 inches.
    3. Excavate to the elevations required forming a relatively level undisturbed subgrade surface free of mud or other soft material.

Excavation extending deeper than required is considered unauthorized excavation unless it meets the criteria defined in Paragraph 3.2.B. Fill unauthorized excessive excavation as directed by the Engineer at no cost to the District.

B. When the bottom of the excavation is unsuitable for foundation bearing, remove pockets of soft or otherwise unstable soils and replace with satisfactory material as directed by the Engineer compacted to match adjacent stable soil or as directed by the Engineer.
C. Protect open excavation from rainfall, freezing or excessive drying to maintain the foundation subgrade or backfill in a satisfactory condition. Subgrade soils which become soft, loose or otherwise unsatisfactory for support of the foundation resulting from inadequate excavation protection, dewatering or other construction methods, shall be removed and replaced with satisfactory material, as directed by the Engineer, at no cost to the District.

3.3 SHEETING, SHORING AND BRACING

A. Perform sheeting, shoring and bracing of excavations as required to properly and safely complete the work as shown on the Plans. Install sheeting, shoring and bracing to prevent the excavation from extending beyond specified or indicated limits and to protect adjacent structures or improvements.
B. Protect workmen and the public with sheeting, shoring and bracing that is in strict conformity with Section 02269 - Trench Safety System.
C. Care shall be taken to prevent voids during the installation, use and removal of sheeting. Immediately fill voids with satisfactory material as directed by the Engineer and compact.
D. Remove sheeting, shoring and bracing after completion of the structure unless approval has been granted by the Engineer, in writing, to leave members in place.

3.4 CARE AND CONTROL OF WATER

A. Refer to Section 02241 - Care and Control of Water.

3.5 PLACING BACKFILL

A. Place backfill in 8 inch maximum layers (loose measure) to the elevation of surrounding natural ground or to the lines and grades shown on Plans.
B. Place backfill as promptly as practicable after completion of the structure or portion of a structure.
C. Placing operations shall be performed in such a manner as not to impair safety or serviceability of the structure. Do not place backfill against concrete walls or similar structures until all affected concrete has attained at least 85 percent of the design compressive strength, unless otherwise

shown on the Plans. A plan for early placement of backfill must be submitted by the Contractor and approved by the Engineer. Any additional material testing required for early placement of backfill will be the responsibility of the Contractor.

D. Do not backfill where the top of walls are supported by slabs or intermediate walls until the slab or intermediate walls have been placed and cured. Do not backfill until the minimum curing requirement and minimum design compressive strength have been met unless otherwise shown on the Plans.
E. Prevent any wedging action of backfill against the structure. Step cut (bench) the slopes bounding the excavation, as required, to prevent wedging.
F. Use sand or gravel backfill for backfilling behind sheet pile walls, wingwalls, retaining walls, rectangular concrete channel walls or other retaining structures. Backfill in the zone for a distance of 3 feet from the wall to 1.5 foot below the top of the wall, unless shown otherwise on the Plans. Backfill the 1.5 foot zone with 1 foot of clay soil conforming to Part 2 of this Section and backfill the top 6 inches with topsoil conforming to Section 02911 - Topsoil.
G. Excavate a minimum of 3 feet around abutment backwalls, inlets, junction boxes, and manholes and fill with cement stabilized sand, unless shown otherwise on the Plans.

3.6 COMPACTING BACKFILL

A. Mechanically compact soil backfill as follows:
    1. Compact to not less than 95 percent of maximum standard dry density (ASTM D 698) within plus or minus 3 percent of the optimum moisture content.
    2. Where approved for use by the Engineer, fat clay (CH) soil shall be mechanically compacted to not less than 95 percent or more than 98 percent of maximum standard dry density (ASTM D 698) at or within plus 3 percent of the optimum moisture content.
    3. Compact sand and/or gravel backfill behind retaining walls including the top 1 foot of backfill material utilizing hand operated tamping or vibratory plate type of compaction equipment. Compact to no less than 90 percent of maximum standard dry density (ASTM D 698) within plus or minus 3 percent of the optimum moisture content.
    4. Compact cement stabilized sand to produce a minimum unconfined compressive strength of 200 psi in 48 hours when compacted to at least 95 percent maximum standard dry density (ASTM D 698) and in accordance with Section 02321 - Cement Stabilized Sand.
    5. Install flowable fill according to Section 02322 - Flowable Fill.
    6. Compact stabilized subgrade or stabilized soil backfill in accordance with the Plans and Specifications.

7. Consolidate concrete backfill in accordance with Section 03310 - Concrete.

B. Prevent damage to structures caused by backfilling or other construction operations.

3.7 MATERIAL DISPOSAL

A. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 02321

CEMENT STABILIZED SAND

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for supplying and installing cement stabilized sand for backfill, bedding and free formed structures.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. ASTM C 40 - Organic Impurities in Fine Aggregates for Concrete.
B. ASTM C 94 - Ready-Mixed Concrete.
C. ASTM C 123 - Lightweight Pieces in Aggregate.
D. ASTM C 142 - Clay Lumps and Friable Particles in Aggregates.
E. ASTM C 150 - Portland Cement.
F. ASTM D 558 - Moisture-Density Relations of Soil-Cement-Mixtures.
G. ASTM D698 - Laboratory Compaction Characteristics of Soils Using Standard Effort (12,400 ft-lb/ft^3 (600kN-m/m^3)).
H. ASTM D 1633 - Compressive Strength of Molded Soil-Cement Cylinders.
I. ASTM D 2487 - Classification of Soils for Engineering Purposes (Unified Soil Classification System).
J. ASTM D 4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit proposed design mix, test data for sand/cement mixture and sample batch ticket for Engineer review and approval.
C. Submit supplier’s batch ticket indicating cement content per cubic yard or per ton of product, batch date and time and weight of load to Engineer at time of delivery.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Provide material conforming to:
   1. Cement - ASTM C 150, Type I.
   2. Sand - Clean, durable sand:
      a. ASTM D 2487, classified as SW, SP, SC or SM by the Unified Soils Classification System.
      b. Deleterious materials:
         (1) Clay lumps - ASTM C 142, less than 0.5 percent.
         (2) Lightweight pieces - ASTM C 123, less than 5.0 percent.
         (3) Organic impurities - ASTM C 40, color no darker than the standard color.
         (4) Plasticity index - ASTM D 4318, of 4 or less.
   3. Water - ASTM C 94.

2.2 MIX DESIGN

A. Use sand/cement mixture containing a minimum of 2 sacks of cement per cubic yard (1-1/2 sacks of cement per ton). Design sand/cement mixture to produce a minimum unconfined compressive strength of 200 psi in 48 hours when compacted to 95 percent maximum standard dry density in accordance with ASTM D 558. Perform molding, curing and compression testing in accordance with ASTM D 1633 - Method A.

2.3 MIXING MATERIALS

A. Add required amount of water and mix it thoroughly in pugmill-type mixer.
B. Stamp batch ticket at plant with time of loading. Material not placed and compacted within 4 hours after mixing will be considered nonconforming.

PART 3 – EXECUTION

3.1 EXCAVATING FOR FREE FORMED STRUCTURES

A. Refer to Section 02316 - Structural Excavating and Backfilling.

3.2 PLACEMENT

A. Place sand/cement mixture for free formed structures in 8-inch-thick loose layers and compact to not less than 95 percent maximum standard dry density (ASTM D 698) unless otherwise specified. The moisture content during compaction shall be on the dry side of optimum but sufficient for hydration.

B. Perform and complete compaction of sand/cement mixture within 4 hours after addition of water to mix at the plant.
C. Do not place or compact sand/cement mixture in standing or free water.

3.3 TESTING AND INSPECTION

A. Refer to Section 01457 - Construction Tests and Inspection.

3.4 ACCEPTANCE

A. Strength level of material will be considered satisfactory if:
   1. The average 48-hour strength is greater than 200 psi with no individual strength test below 140 psi.
   2. All 7-day individual strength tests (average of two specimens) are greater than or equal to 200 psi.
B. Material will be considered deficient when 7-day individual strength test (average of two specimens) is less than 200 psi but greater than 140 psi. See Paragraph 3.5 Adjustment for Deficient Strength.
C. The material will be considered unacceptable and subject to removal and replacement at Contractor's expense when individual strength tests (average of two specimens) have 7-day strength less than 140 psi.
D. When moving average of three daily 48-hour averages falls below 200 psi, discontinue shipment to project until plant is capable of producing material, which exceeds 200 psi at 48 hours. At no cost to the District, five 48-hour strength tests shall be made in this determination with no individual strength tests less than 200 psi. Testing laboratory shall notify Contractor, Project Manager, and material supplier of tests indicating results falling below specified strength requirements within 24 hours.
E. If any strength test of laboratory cured specimens falls below the specified strength, Contractor may, at his own expense and with Engineer approval, request test of cores drilled from the area in question in accordance with ASTM C42. In such cases, three (3) cores shall be taken for each strength test that falls below the values given in 3.4.A.
F. Cement stabilized sand in an area represented by core tests shall be considered satisfactory if the average of three (3) cores is equal to at least 200 psi and if no single core is less than 140 psi. Additional testing of cores extracted from locations represented by erratic core strength results will not be permitted.

3.5 ADJUSTMENT FOR DEFICIENT STRENGTH

A. When mixture produces 7-day compressive strength greater than or equal to 200 psi, then material will be considered satisfactory and bid price will be paid in full.

B. When mixture produces 7-day compressive strength less than 200 psi and greater than or equal to 140 psi, material shall be accepted contingent on credit in payment. Compute credit by the following formula:

Credit per Pay Item = $(Bid Amount) x [(2 (200 psi - actual psi at 48 hours)) / 200]

1. To use this formula, Bid Amount refers to the unit price of the related Pay Item (CMP, RCP, RCB, etc.)
2. Credit per Pay Item refer to the amount to be deducted, per unit from the unit price of the related Pay Item.

C. When mixture produces 2-day compressive strength less than 140 pounds per square inch, then remove and replace cement-sand mixture and paving and other necessary work at no cost to the District.

END OF SECTION

SECTION 02322

FLOWABLE FILL

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for furnishing, mixing, transporting and placing flowable fill.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. ASTM C 31 - Making and Curing Concrete Test Specimens in the Field.
B. ASTM C 39 - Compressive Strength of Cylindrical Concrete Specimens.
C. ASTM C 40 - Organic Impurities in Fine Aggregates for Concrete.
D. ASTM C 94 - Ready-Mixed Concrete.
E. ASTM C 150 - Portland Cement.
F. ASTM C 192 - Making and Curing Concrete Test Specimens in the Laboratory.
G. ASTM C 260 - Air-Entraining Admixtures for Concrete.
H. ASTM C 494 - Chemical Admixtures for Concrete.
I. ASTM C 618 - Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
J. ASTM D 4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit proposed mix design.
C. Submit a copy of delivery tickets accompanied by batch tickets, providing the information required by ASTM C 94 to Engineer in the field at time of delivery.
D. Submit underwater placement plan, if required.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Provide material conforming to:
   1. Cement - ASTM C 150, Type I.
   2. Fly Ash - ASTM C 618, Class C or F, with a minimum CaO content of 20 percent.
   3. Water - ASTM C 94.
   4. Fine Aggregate - Natural or manufactured fine aggregate, or a combination thereof, free from deleterious amounts of salt, alkali, vegetable matter or other objectionable material. The plasticity index shall be 4 or less when tested in accordance with ASTM D 4318. Organic impurities, when tested in accordance with ASTM C 40, shall not show a color darker than the standard color. It is intended that the fine aggregate be fine enough to stay in suspension in the mortar to the extent required for proper flow. The fine aggregate shall conform to the following gradation:

Sieve Size	Percent Passing
3/8 inch	100
No. 200	0-10

      If flowable mixture cannot be produced, the fine aggregate may not be approved.
   5. Admixtures - ASTM C 260 and/or C 494.

2.2 MIX DESIGN

A. Mix designs shall state the following information:
   1. Mix design number or code designation to order the concrete from the Supplier.
   2. Design strength at 7 days (unless otherwise noted on the Plans).
   3. Cement type and brand.
   4. Fly ash type and brand.
   5. Admixtures type and brand.
   6. Proportions of each material used.

B. Minimum strength requirement is 100 psi in 7 days unless otherwise noted on the Plans.

PART 3 – EXECUTION

3.1 BATCHING, MIXING AND TRANSPORTATION

A. Batch, mix and transport flowable fill in accordance with ASTM C 94, except when directed otherwise by the Engineer.

B. Mix flowable fill in quantities required for immediate use. Do not use portions which have developed initial set or which are not in place within 90 minutes after the initial water has been added.
C. Do not mix flowable fill while the air temperature is at or below 35 degrees F. without prior approval of the Engineer.

3.2 PLACEMENT

A. Seal off the area to be repaired.
B. Monitor and control the fluid pressure during placement of flowable fill prior to set. Take appropriate measures to avoid excessive pressures that may damage or displace structures or cause flotation. Cease operations if flowable fill is observed leaking from the repair area. Repair or replace damaged or displaced structures at no cost to the District.
C. Do not place flowable fill under water without authorization from the Engineer.

3.3 TESTING AND INSPECTION

A. Refer to Section 01457 - Construction Tests and Inspection.

3.4 CLEAN UP

A. Clean up excess flowable fill discharged from the work area and remove excess flowable fill from pipes at no cost to the District.
B. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 02361

REINFORCED SILT FENCE

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for furnishing, installing, maintaining and removing temporary reinforced silt fence.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.
C. No separate measurement and payment will be made for maintenance or removal of accumulated sediment. Removal of the reinforced silt fence is incidental to the cost of the reinforced silt fence.

1.3 REFERENCES

A. AASHTO M 288 - Geotextile Specification for Highway Applications.
B. ASTM D 4355 - Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon-Arc Type Apparatus.
C. ASTM D 4491 - Water Permeability of Geotextiles by Permittivity.
D. ASTM D 4632 - Grab Breaking Load and Elongation of Geotextiles.
E. ASTM D 4751 - Determining Apparent Opening Size of a Geotextile.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit catalog data and mill certificate for the reinforced silt fence geotextile and catalog data for welded wire fabric mesh or plastic grid mesh reinforcement to be used.

PART 2 – PRODUCTS

2.1 GEOTEXTILE FABRIC

A. Geotextile fabric shall consist of long-chain synthetic polymers composed of at least 95 percent by weight of polyolefins in a woven fabric.
B. Geotextile fabric shall contain stabilizers and/or inhibitors to make the fibers resistant to deterioration resulting from exposure to sunlight or heat. The geotextile fabric shall be resistant to commonly encountered soil chemicals, mildew, rot and insects.

C. Geotextile fabric shall be free of defects or flaws that affect its physical properties.
D. Provide a geotextile fabric with a minimum grab strength of 100 lbs (ASTM D 4632).
E. Provide reinforced silt fence with properties in accordance with AASHTO M 288 *Geotextile Specification for Highway Applications* Table 6.

2.2 SUPPORTS

A. Provide wooden stakes or steel fence supports having a minimum length of 4 feet.
B. Provide mesh reinforcement of galvanized 2 inch by 4 inch welded wire fabric mesh.

PART 3 – EXECUTION

3.1 GENERAL

A. Install reinforced silt fences at locations shown on Plans or as approved by the Engineer.
B. Place reinforced silt fences in a continuous manner and transverse to the runoff. Place the reinforced silt fence to follow the contours of the site. Do not allow water to flow around the end of the fence.
C. Provide continuous rolls of the reinforced silt fence fabric and cut to length to minimize the use of fabric joints. When joints are necessary, the fabric shall be spliced together only at a support with a minimum 6 inch overlap.

3.2 MAINTENANCE

A. Inspect reinforced silt fence after each rainfall, daily during periods of daily rainfall, and, at a minimum, once every week. Repair and/or replace any component of the reinforced silt fence that becomes defective from intended use.
B. Remove sediment deposits when the deposit reaches 1/3 the height of the fence. Dispose of sediment properly.
C. Remove reinforced silt fence and dispose of any sediment accumulations promptly when directed by Engineer.

3.3 DAMAGED MATERIAL

A. Repair damage to reinforced silt fence and supports immediately.

3.4 DISPOSAL

A. Refer to Section 02120 – Material Disposal.

END OF SECTION

SECTION 02364

FILTER DAMS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for furnishing, installing, maintaining and removing filter dams.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.
C. Geotextile, excavation and disposal, granular fill and reinforcing wire will not be measured separately.
D. No separate payment shall be made for removal of accumulated sediment. Maintenance and removal and subsequent reinstallation, if required, of the filter dam are incidental to the cost of the filter dam.

1.3 REFERENCES

A. ASTM A 975 - Double-Twisted Hexagonal Mesh Gabions and Revet Mattresses (Metallic-Coated Steel Wire or Metallic-Coated Steel Wire with Poly (Vinyl Chloride) (PVC) Coating).

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit catalog data and mill certificate for geotextile and catalog data for wire to be used.
C. Submit gradation for granular fill shown on the Plans.

PART 2 – PRODUCTS

2.1 GRANULAR FILL

A. Provide granular fill as noted on the Plans.
B. Refer to Section 02378 - Riprap and Granular Fill.

2.2 WIRE COATING

A. Style 1 - zinc coated prior to being double twisted into mesh in accordance with ASTM A 975.

2.3 WIRE MESH FOR REINFORCEMENT

A. Provide 20 gauge galvanized double-twisted hexagonal wire mesh and tie wires or as shown on the Plans.

2.4 CONNECTION WIRES AND STIFFENERS

A. Provide spiral binders, lacing wire and stiffeners made of wire having the same coating material and same wire size as the wire mesh for reinforcement.

2.5 GEOTEXTILE SEPARATION FABRIC

A. Provide a geotextile of woven or spunbond nonwoven fibers consisting of long-chain synthetic polymers composed of at least 95 percent by weight of polyolefins. Provide geotextile fabric equal to the following average roll values or as directed by the Engineer:
   1. Minimum average roll value.
      a. Elongation **<** 50 percent.
      b. Grab Strength ≥ 200 pounds.
      c. Puncture Strength ≥ 75 pounds.
      d. UV Stability (retained strength) ≥ 50 percent after 500 hours of exposure.
   2. Maximum average roll value.
      a. Apparent Opening Size (AOS) - 0.212 to 0.6 mm (#70 to #30 US sieve).

B. Refer to Section 02379 - Geotextiles for Erosion Control Systems for storage and handling precautions and requirements.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install in accordance with the Plans.

3.2 MAINTENANCE

A. Sediment Accumulation.
   1. Remove accumulated sediment as needed or when directed by the Engineer.
   2. Reshape the filter dam as needed or when directed by the Engineer.

3.3 REMOVAL

A. Maintain the filter dam, in place, throughout the duration of the Project. Remove when directed by the Engineer. Sod the exposed earth beneath the filter dam and areas damaged by the removal process in accordance with Section 02921 - Turf Establishment.

3.4 SEDIMENT DISPOSAL

A. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 02365

STABILIZED CONSTRUCTION ACCESS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for construction, maintenance and removal of stabilized construction access.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.
C. No separate measurement and payment will be made for maintenance or removal.

1.3 SUBMITTALS

A. Refer to Section 01330 - Submittals.
B. Refer to Section 02379 - Geotextiles for Erosion Control Systems.
C. Submit gradation for 3 inch to 5 inch granular fill. Refer to Section 02378 - Riprap and Granular Fill.

PART 2 – PRODUCTS

2.1 GEOTEXTILE SEPARATION FABRIC

A. Provide a geotextile of woven or spunbond nonwoven fibers consisting of long-chain synthetic polymers composed of at least 95 percent by weight of polyolefins. Provide geotextile fabric equal to the following average roll values or as directed by the Engineer:
    1. Minimum average roll value.
        a. Elongation **<** 50 percent.
        b. Grab Strength ≥ 200 pounds.
        c. Puncture Strength ≥ 75 pounds.
        d. UV Stability (retained strength) ≥ 50 percent after 500 hours of exposure.
    2. Maximum average roll value.
        a. Apparent Opening Size (AOS) - 0.212 to 0.6 mm (#70 to #30 US sieve).

2.2 GRANULAR FILL

A. Refer to Section 02378 - Riprap and Granular Fill.

PART 3 – EXECUTION

3.1 GENERAL

A. Provide stabilized access, washing areas and parking areas at locations shown on the Plans or as approved by the Engineer.
B. Furnish and place geotextile fabric as a permeable separator to prevent mixing of granular fill with underlying soil.
C. Place 3 inch to 5 inch granular fill to dimensions and depths shown on the Plans, or as directed by the Engineer. The minimum thickness shall be 8 inches.
D. Granular Fill being reused shall be free of sediment, and meet the requirements of Specification 02378 - Riprap and Granular Fill.
E. Roads and parking areas shall be graded to provide sufficient drainage away from stabilized areas. Use sandbags, gravel, boards or similar methods to prevent sediment from entering public rights-of-way, storm drains, ditches and watercourses.

3.2 MAINTENANCE

A. Inspect and maintain stabilized areas daily. Provide periodic top dressing with additional granular fill as necessary.
B. Repair or replace components of stabilized access areas that become defective from intended use.
C. Maintain stabilized access areas until acceptance of the Project or as directed by Engineer.
D. Remove stabilized access promptly when directed by Engineer. Restore areas where stabilized construction access was removed to final project grade in preparation of turf establishment by others.

3.3 DISPOSAL

A. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 02462

STEEL SHEET PILING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for installing steel sheet piling and accessories, such as walers, tie rods, anchor walls and tie backs.

1.2 MEASUREMENT AND PAYMENT

A. Refer to Section 01270 - Measurement and Payment for unit price procedures.
B. Where anchored wall systems are used, separate bid items will be listed for the retaining wall and the anchor wall.
   1. Include costs of the tie rods and accessories in the bid price for the anchor wall.
   2. Include costs of walers in the bid price for the associated wall.
C. Measurement and payment is based on the horizontal linear foot piling after installation.

1.3 REFERENCES

A. AISC - Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings.
B. AISC - Code of Standard Practice for Steel Buildings and Bridges.
C. ASTM A 36 - Carbon Structural Steel.
D. ASTM A 307 - Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
E. ASTM A 325 - Structural Bolts, Steel, Heat Treated 120-105 ksi Minimum Tensile Strength.
F. ASTM A 328 - Steel Sheet Piling.
G. ASTM A 572 - High-Strength Low-Alloy Columbium-Vanadium Structural Steel.
H. ASTM A 588 - High-Strength Low-Alloy Structural Steel with 50 ksi [345 Mpa] Minimum Yield Point to 4 in. [100 mm] Thick.
I. ASTM A 615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
J. ASTM A 668 - Steel Forgings, Carbon and Alloy, for General Industrial Use.
K. ASTM A 690 - High-Strength Low Alloy Steel H-Piles and Sheet Piling for Use in Marine Environments.
L. AWS D1.1 - Structural Welding Code – Steel.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit Shop Drawings:
   1. Shop Drawings shall show the layout pattern, type of piling, details of special fabricated shapes, and accessories, and other pertinent details and information. Show the location, type, and size of welds and fastenings and welding process. Indicate type of material for each item. Show special fittings and method of manufacturing (prefabricated or built up). Show splice locations and supplemental reinforcement at splices.
   2. Shop Drawings shall show walers, tie rods, anchor walls and accessories, where these items are part of the retaining wall system.
C. Product information is required. Submit catalog data (cut sheets) on material. On tables, clearly indicate material to be used. Include structural properties, dimensions, laying length, details of the sheet pile and the interlock joint and correct interlocking methods.
D. Where the strength of the interlock joint is specified, submit certified test reports indicating that the specified minimum interlock joint strength has been met.
E. A certified statement from the protective coating applicator that the sheet piling, walers, tie rods and other miscellaneous steel hardware items have been coated as specified.
F. Nondestructive examinations: Submit test reports required by this Section including, but not limited to, the AWS Standard listed.

1.5 DELIVERY, STORAGE AND HANDLING

A. Store sheet piles and accessories in an area free of standing water and elevated off the ground.
B. Keep pile interlocks clean and free of sand, gravel, mud and other potential obstructions.
C. Prevent damage to sheet piling, protective coating and accessories during handling.

1.6 PROTECTION OF ADJACENT FACILITIES

A. Existing Facilities.
   1. Before the start of construction, adequately protect any existing structures from damage. Repair damage to permanent facilities due to negligence or lack of adequate protection at no cost to the District. Prior to beginning of the project, a joint inspection will be made by the Contractor and Engineer to determine the condition of the existing structures.

B. New Concrete Work.
   1. Schedule concrete placement operations so that pile driving will be complete before any concrete is placed within 50 feet of sheet piling.

1.7 COORDINATION

A. Notify the Engineer at least 48 hours prior to beginning pile driving operations.

PART 2 – PRODUCTS

2.1 STEEL SHEET PILES

A. Provide hot rolled steel sheet piling which meets the requirements of ASTM A 328, ASTM A 572 or ASTM A 690. ASTM A 690 sheet piling, or piling with protective coating, is required in marine environments or as shown on the Plans.
B. Structural property requirements are shown on the Plans. Select the grade of steel and sheet pile section that meets or exceeds these requirements.
C. Provide steel sheet piles and special fabricated shapes having a continuous jaw interlock joint throughout the entire length of the sheet.
D. Provide handling holes located in the sheet pile web.
E. Provide sheet piles and interlocks free of excessive kinks, camber or twist that would interfere with reasonably free sliding in the joint.
F. Provide square and blunt shaped pile ends.
G. Provide new sheet piles. Used sheet piling will not be accepted.
H. Provide steel sheet piling products from a single manufacturer.

2.2 ACCESSORIES

A. Provide walers, beams, struts, angles and other miscellaneous metal accessories in accordance with ASTM A 36, unless noted otherwise on the Plans.
B. Provide bolts in accordance with ASTM A 325.

2.3 FABRICATION

A. Fabricate items such as wale beams, struts, closure sections and special sections in accordance with the requirements of the AISC Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings.
B. Perform welding in accordance with the requirements of AWS D1.1 Structural Welding Code - Steel.

2.4 FABRICATED CONNECTIONS

A. Provide connections for junction points and special angles. The connections shall be prefabricated by the sheet pile manufacturer or shop fabricated from split sheets. Cutting and welding to produce special fabricated connections in the field will be considered nonconforming.
B. Match fabricated connections for ASTM A 328 and ASTM A 572 sheet piles with material used in the sheet pile.
C. ASTM A 690 sheet pile connections shall be furnished with angles or plates made from ASTM A 588 steel and with ASTM A 325 Type 3 bolts.
D. Provide fabricated connections having handling holes located 4 inches to 6 inches from the top.

2.5 TIE RODS

A. Where tie rods are required for an anchored wall system, use either ASTM A 36 or ASTM A 615 tie rods, as noted on the Plans. The ASTM A 615 tie rods shall be equal to the grade 60 Dywidag Threadbar Reinforcing System.

2.6 PROTECTIVE COATING

A. Provide steel sheet piles, components and accessories having protective coating as noted on the Plans.
B. Notify the Engineer at least 48 hours prior to applying the protective coating. The coating applicator shall allow the Engineer access to these facilities to observe the protective coating preparation and application.

PART 3 – EXECUTION

3.1 INSTALLING STEEL SHEET PILES

A. Install sheet piling in strict accordance with the manufacturer's recommendations. Select means, methods, equipment and procedures for installing the piles, and for templates and bracing required to install the piles within the tolerances specified.
B. Location and Tolerances.
    1. Drive sheet piling at locations and to the lines, grades and depths as shown on the Plans.
    2. Vertical Tolerances.
        a. In general, drive sheet pile to within 3 inches of the elevations shown on the Plans, except as noted below for hydraulic structures. Trim sheet piles tops as follows:
            1) Where the sheet pile tops will be embedded in a concrete cap, trimming sheet piling is not required. Embed handling holes completely in the concrete cap.

2) Where a steel cap will be placed on the top of the wall, trim sheet piling as necessary to have level bearing of the cap on the sheet pile.
3) Where the sheet pile tops will be exposed, trim the tops of piling as necessary to the same level to provide a uniform appearance.
4) Where the sheet pile wall functions in a hydraulic structure, such as a drop structure or weir structure, all sheet pile tops shall be accurately driven to or cut off at the design elevation.

b. Variation from vertical (plumb) shall not exceed 1 inch in 10 feet.

3. Horizontal Tolerances.
   a. Walls shall be straight and uniform in appearance. Maintain a tolerance of 2 inches from the Plan layout. In sheet pile lined channels, the face to face distance between the walls shown on the Plans shall be maintained, as a minimum.

C. Setting Sheet Piling.
1. If necessary to comply with the above tolerances, use a guide frame or template to start piling.
2. Set and drive ball and socket joint piling with the ball end leading. When the socket joint must lead, place a bolt or similar object in the bottom end to minimize socket clogging.
3. Guide each sheet pile into the interlocking joint of the previously placed pile.
4. Gradually lower pile after being threaded. Do not drop the pile into place.
5. Interlock piles in accordance with the manufacturer's printed literature. Incorrect interlocking to make angles or bends will not be acceptable.

D. Pile Driving.
1. Drive piles vertically and in correct alignment so that the tops of the piles lie on a straight line and to insure a proper interlocking of joints throughout the pile length.
2. Drive piles with a hammer of a size and weight appropriate for the pile and conditions encountered. A drop hammer will not be allowed. However, a hairpin stabbing hammer will be permitted to start the sheet pile, provided the piling is protected from damage.
3. Drive piles to required full Plan penetration using only the hammer.
4. Drive the piles in an acceptable manner to prevent the pile bottom from drifting, becoming misaligned or loosing interlocking of sheets. Remove and replace any pile ruptured at the interlock or damaged in any other way at no additional cost to the District.
5. Water jetting is not permitted.
6. Do not overdrive piles, lift driven piles or jack driven piles.

3.2 FIELD CUTTING AND CONNECTING

A. Comply with the AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings in the fabrication and erection of such items as wale beams, tie rods and special sections.
B. Drill bolt holes in order to obtain smooth, uniform holes of the proper diameter. Making bolt holes with a cutting torch is not permitted.
C. Splices.
    1. Avoid splices of sheet piles and obtain approval of the Engineer prior to using.
        a. Where allowed, the number of splices per pile shall be limited to 2 splices.
    2. The piling to be spliced shall be ordered full length from the mill. Match-mark and cut the pile at splice locations. As pile driving proceeds, splice the match-marked pieces to reconstruct the original sheet pile shipped from the mill. Splicing randomly selected sections is not permitted.
    3. Provide splice plates on the flanges to compensate for not welding the interlocks where full section modulus is required in the region of the splice.
    4. Stagger splices on adjacent piles by at least 2 feet.
D. Cut off and replace, using full strength welds, the damaged portion of the top of the piling if it is appreciably damaged during driving or by other means.
E. Perform welding in accordance with the requirements of AWS D1.1 Structural Welding Code - Steel.

3.3 EXCAVATION AND FILL

A. Operate machinery and equipment carefully around sheet piles to prevent damage to the piles.
B. Where required, refer to Section 02316 - Structural Excavating and Backfilling.

3.4 WEEP HOLES

A. Place weep holes, where shown on the Plans, in the web of the sheet pile, not in the flange.
B. Provide weep holes with a filtration system of graded gravel and geotextile, as shown on the Plans.

3.5 SEALING HOLES

A. Seal handling holes and holes for structural items such as bolts and tie rods with similar materials. Similar materials shall be welded in place.

3.6 TIE RODS

A. Tighten anchor rod nuts to remove all slack in the system before backfilling and installing the retaining wall cap.

3.7 PROTECTIVE COATING

A. Repair protective coating that is damaged during handling or installation in accordance with the coating manufacturer's recommendations before backfilling.

END OF SECTION

SECTION 02464

TIMBER BENTS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for installing timber bents on outfall pipes.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. ASTM A 153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
B. ASTM A 307 - Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
C. AWPA C2 - Lumber, Timbers, Bridge Ties and Mine Ties - Preservative Treatment by Pressure Processes.
D. AWPA C4 - Poles - Preservative Treatment by Pressure Processes.
E. AWPA P1/P13 - Standard for Coal Tar Creosote for Land, Fresh Water and Marine (Coastal Water) Use.
F. ANSI O5.1 - American National Standard for Wood Poles - Specifications and Dimensions.
G. SPIB Section 300 - National Grading Rule (NGR) for Dimension Lumber.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Provide manufacturer’s product specifications and certification that timber members meet or exceed the standards referenced in this Section.

PART 2 – PRODUCTS

2.1 TIMBER PILES

A. Provide southern pine wood poles for use as timber bent piles that meet the requirements of ANSI O5.1.
   1. Provide minimum diameter of 8 inches at the pile tip.
B. Provide southern pine wood poles that are pressure preservative treated in accordance with AWPA C4 using one of the following methods:

1. Creosote conforming to AWPA P1/P13 to 9.0 pounds per cubic foot (pcf) by assay.
2. Chromated copper arsenate (CCA - Type C) oxide preservative to produce a retention assay of 0.6 pounds per cubic foot.

2.2 TIMBER MEMBERS

A. Provide southern pine timber members meeting SPIB Section 300 - National Grading Rule for Dimension Lumber, Select Structural (SEL STR) Grade No. 2 or better.
B. Provide pressure preservative members treated per AWPA C2 for Soil and Fresh Water Use with one of the following methods:
   1. Creosote conforming to AWPA P1/P13 to 10.0 pounds per cubic foot by assay.
   2. Chromated copper arsenate (CCA - Type C) oxide preservative to produce a retention assay of 0.6 pounds per cubic foot.

2.3 HARDWARE

A. Provide bolts conforming to ASTM A 307.
B. Provide hot dipped galvanized hardware in accordance with ASTM A 153.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Drive piles to the depth shown on the Plans.
B. Bolts:
   1. Drill holes no more than 3/16 inch larger in diameter than the bolts being used. Drill holes straight and true. Drill bolt holes in center of the pile and timber member.
   2. Use washers under bolt head and nut to prevent direct bearing of head or nut on wood.

END OF SECTION

SECTION 02505

HIGH DENSITY POLYETHYLENE PIPE

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for high density corrugated polyethylene (HDPE) smooth lined (open profile) pipe for gravity sewers and drains, including fittings and appurtenances.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. ASTM D 3212 - Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
B. ASTM D 3350 - Polyethylene Plastics Pipe and Fittings Materials.
C. ASTM D 4976 - Polyethylene Plastics Molding and Extrusion Materials.
D. ASTM F 477 - Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
E. AASTO M294 - Corrugated Polyethylene Pipe, 300- to 1500-mm Diameter.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Provide manufacturer's product specification and certification that pipe was manufactured in compliance with standards referenced in this Section.

PART 2 – PRODUCTS

2.1 PIPE AND FITTINGS

A. Provide HDPE pipe which conform to the requirements of ASTM D 3350.
B. Furnish corrugated HDPE smooth lined gravity sewer pipe with integral bell and "o"-ring gasketed spigot (bell-n-spigot). The bell shall overlap a minimum of two corrugations of the spigot end when fully engaged. Join two straight cut pipe (not tapered) ends by either a double "o"-ring gasketed bell-bell coupler or approved equal.
C. Do not use HDPE pipe in applications requiring auguring of sewer pipe.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install pipe in accordance with the manufacturer's recommended installation procedures.
B. Install bedding and backfilling in accordance with Section 02631 - Storm Sewers and Outfalls.

END OF SECTION

SECTION 02611

REINFORCED CONCRETE PIPE

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for reinforced concrete pipe.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. ASTM A 506 - Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe.
B. ASTM A 507 - Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe.
C. ASTM C 76 - Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
D. ASTM C 443 - Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
E. ASTM C 655 - Reinforced Concrete D-Load Culvert, Storm Drain, and Sewer Pipe.
F. ASTM C 877 - External Sealing Bands for Non-circular Concrete Sewer, Storm Drain, and Culvert Pipe.
G. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
H. ASTM C1619 - Standard Specification for Elastomeric Seals for Joining Concrete Structures

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit for approval, Shop Drawings and data on piping, fittings, gaskets and appurtenances. Indicate conformance to appropriate reference standards using Certificate of Compliance.
C. Submit manufacturer's literature for product specified including materials, sizes, and installation procedures.

PART 2 – PRODUCTS

2.1 REINFORCED CONCRETE PIPE

A. Provide circular reinforced concrete pipe in accordance with the requirements of ASTM C 76 for Class III wall thickness. Provide joints comprised of rubber gaskets conforming to ASTM C 443.
B. Provide reinforced concrete arch pipe in accordance with the requirements of ASTM C 506 for Class A-III. Provide joints comprised of preformed flexible joint sealants conforming to C990
C. Provide reinforced concrete elliptical pipe, either vertical or horizontal, in accordance with the requirements of ASTM C 507 for Class VE-III for vertical or Class HE-III for horizontal. Provide joints comprised of preformed flexible joint sealants conforming to C990.
D. Provide reinforced concrete D-load pipe in accordance with the requirements of ASTM C 655.

PART 3 – EXECUTION

3.1 EXCAVATION AND INSTALLATION

A. Excavate in accordance with the requirements of Section 02316 - Structural Excavating and Backfilling.
B. Install as shown on the Plans or in accordance with the requirements of Section 02631 - Storm Sewers and Outfalls.

END OF SECTION

SECTION 02612

PRECAST REINFORCED CONCRETE BOX

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for precast reinforced concrete boxes.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCE

A. ASTM C 1577 - Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers.
B. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.
C. ASTM C877 - Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit for approval, field layout drawings, shop drawings and data on box section, fittings, gaskets, joint wrap material, and appurtenances. Indicate conformance to appropriate reference standards using certificate of compliance.
C. Submit manufacturer's literature for product specifications including materials, sizes, and installation procedures.

PART 2 – PRODUCTS

2.1 PRECAST REINFORCED CONCRETE BOX SEWERS

A. Box sections shall conform to ASTM C 1577 in which design is based on amount of earth cover, as indicated on the Plans.
B. Provide boxes manufactured by a process that provides for uniform placement of concrete in forms and consolidation by mechanical devices.
C. Provide box sections cured in accordance with ASTM C 1577 that have cured a minimum of seven (7) days and have reached the design strength prior to being shipped to the project site.

D. Provide joints comprised of preformed flexible joints sealants conforming to ASTM C990.

PART 3 – EXECUTION

3.1 EXCAVATION AND INSTALLATION

A. Excavate in accordance with the requirements of Section 02316 - Structural Excavating and Backfilling.
B. Install as shown on the Plans or in accordance with the requirements of Section 02631 - Storm Sewers and Outfalls.

END OF SECTION

SECTION 02630

CONCRETE MANHOLES

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for storm sewer cast-in-place and precast concrete manholes.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.
C. Frames, grates, rings, covers, pipe connections, stubs and stub plugs and sealant materials are incidental to the structure and shall not be measured separately.

1.3 REFERENCES

A. AASHTO - Standard Specifications for Highway Bridges.
B. ASTM C 270. - Mortar for Unit Masonry.
C. ASTM C 443 - Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
D. ASTM C 478 - Precast Reinforced Concrete Manhole Sections.
E. ASTM C 1107 - Packaged Dry, Hydraulic - Cement Grout (Non-shrink).
F. City of Houston Department of Public Works and Engineering (City Drawings) - Standard Construction Details for Wastewater Collection Systems, Water Lines, Storm Drainage and Street Paving.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit for approval, Shop Drawings and data on manhole sections, base units and construction details, including reinforcement, jointing methods, frames, grates, rings, and covers, materials and dimensions. Indicate conformance to appropriate reference standards using Certificate of Compliance.
C. Submit manufacturer’s literature for product specifications including materials, dimensions and installation procedures.

PART 2 – PRODUCTS

2.1 PRECAST CONCRETE MANHOLES

A. Precast concrete manhole sections shall conform to ASTM C 478 in which design is based on AASHTO HS 20 vehicle loading unless otherwise indicated on the Plans.
B. Provide joints between sections with “o”-ring gaskets conforming to ASTM C 443.
C. When base is cast monolithic with portion of vertical section, extend reinforcing in vertical section into base.
D. Precast Concrete Base: Provide suitable cutouts or holes to receive pipe and connections.

2.2 CONCRETE

A. Refer to Section 03310 - Concrete.
B. Precast Manholes.
   1. Channel Inverts: Use structural concrete for inverts not integrally formed with manhole base.
   2. Cement Stabilized Sand Foundation: Provide cement stabilized sand foundation under base section. Refer to Section 02321 - Cement Stabilized Sand.
   3. Concrete Foundation: Provide structural concrete for concrete foundation slab under manhole base section where indicated on Plans.
C. Cast-in-Place and Concrete Brick Manholes.
   1. Use concrete conforming to the requirements of Section 03310 - Concrete unless otherwise shown on the Plans or approved by the Engineer.

2.3 REINFORCING STEEL

A. Refer to Section 03310 - Concrete.

2.4 MORTAR

A. Conform to requirements of ASTM C 270, Type S using Portland cement.

2.5 MISCELLANEOUS METALS

A. Provide cast-iron frames, grates, rings and covers as shown on the Plans. Refer to City of Houston Department of Public Works and Engineering - Standard Construction Details and Section 02084 -Frames, Grates, Rings and Covers.

2.6 PIPE CONNECTIONS TO MANHOLES

A. Storm sewer pipe connection should meet ASTM C923 and ASTM F2510 for flexible CMP and HDPE pipe. Rigid (concrete) pipe connections to manholes do not have to comply with ASTM C923, and may be grouted instead.

2.7 SEALANT MATERIALS

A. Provide sealing materials between precast concrete adjustment ring and manhole cover frame, such as Adeka Ultraseal P201 or approved equal.
B. Provide butyl sealant, such as Press-Seal EZ Stick or approved equal, for HDPE rings.
C. Provide non-shrink cement based grout requiring only addition of water conforming to ASTM C 1107.

2.8 BACKFILL MATERIALS

A. Refer to Section 02316 - Structural Excavating and Backfilling.

PART 3 – EXECUTION

3.1 EXCAVATION AND INSTALLATION

A. Excavate in accordance with the requirements of Section 02316 - Structural Excavating and Backfilling.
B. Install as shown on the Plans or in accordance with the requirements of Section 02631 - Storm Sewers and Outfalls.

END OF SECTION

SECTION 02631

STORM SEWERS AND OUTFALLS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes installation and testing requirements for storm sewers, manholes, outfalls and appurtenances.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCE

A. AASHTO Section 26 - Corrugated Metal Pipe
B. AASHTO Section 27 - Concrete Pipe
C. AASHTO Section 30 - Polyethylene and PVC Pipe.
D. ASTM C1479 - Standard Practice for Installation of Precast Concrete Sewer, Storm Drain, and Culvert Pipe Using Standard Installations.
E. ASTM C 1675 - Standard Practice for Installation of Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers.
F. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit manufacturer's literature for product specifications including materials, sizes, flow carrying capacity and installation procedures.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Comply with the manufacturer's recommendations.

B. Handle pipe, box, precast manholes, fittings and accessories carefully with approved handling devices. Materials cracked, gouged, chipped, dented or otherwise damaged will be considered nonconforming.
C. Store pipe, box, precast manholes and fittings on heavy timbers or platforms to avoid contact with the ground.
D. Unload pipe and box, precast manholes, fittings and accessories as close as practical to the location of installation to avoid unnecessary handling.
E. Keep interiors of pipe, box, precast manholes and fittings free of dirt and foreign matter.
F. Rotate HDPE pipe in storage during periods of extreme heat to prevent deflection.

PART 2 – PRODUCTS

2.1 PIPE AND BOX

A. Reinforced Concrete Pipe: Refer to Section 02611 - Reinforced Concrete Pipe.
B. Precast Reinforced Concrete Box Sewers: Refer to Section 02612 - Precast Reinforced Concrete Box.
C. Corrugated Metal Pipe: Refer to Section 02642 - Corrugated Metal Pipe.
D. High Density Polyethylene Pipe: Refer to Section 02505 - High Density Polyethylene Pipe.
E. Concrete Manholes: Refer to Section 02630 - Concrete Manholes.

2.2 BEDDING, BACKFILL AND TOPSOIL

A. Bedding and Backfill Material: Refer to Section 02316 - Structural Excavating and Backfilling.
B. Cement Stabilized Sand: Refer to Section 02321 - Cement Stabilized Sand.
C. Topsoil: Refer to Section 02911 - Topsoil.

PART 3 – EXECUTION

3.1 EXCAVATING AND BACKFILLING

A. Earthwork: Refer to Section 02316 - Structural Excavating and Backfilling or as shown on Plans.
B. Lines and Grade: Establish proper line and grade in trenches.
C. When the trench bottom is unstable due to wet conditions, refer to Specification 02241 - Care and Control of Water.
D. When the trench bottom is unstable, remove unstable soils and replace with satisfactory material and compacted to match adjacent stable soil or as approved by the Engineer.

3.2 HIGH DENSITY POLYETHYLENE (HDPE) PIPES

A. Refer to Section 02505 - High Density Polyethylene Pipe.
B. Install and backfill HDPE pipe in accordance with AASHTO Section 30, ASTM D2321, the manufacturer's recommendation, and as specified in this Section. Where these standards conflict, the more stringent standard shall govern.
C. Install cement stabilized sand bed, in accordance with Section 02321 - Cement Stabilized Sand, for a minimum depth of 6 inches below the pipe, unless otherwise shown on the Plans.
D. Backfill trench with cement stabilized sand to a minimum of 12 inches above the top of the pipe, unless otherwise shown on the Plans.
E. Avoid unequal pressure on pipe while backfilling.
F. Use cement stabilized sand for backfill for storm sewers being constructed under roadways from the top of the pipe to the underside of the subgrade, unless otherwise shown on the Plans.

3.3 CORRUGATED METAL PIPES

A. Refer to Section 02642 - Corrugated Metal Pipe.
B. Install and backfill Corrugated Metal Pipe in accordance with AASHTO Section 26, the manufacturer's recommendation, and as specified in this Section.
C. Install cement stabilized sand bed, in accordance with Section 02321 - Cement Stabilized Sand, for a minimum depth of 6 inches below the pipe, unless otherwise shown on Plans.
D. Backfill trench with cement stabilized sand to a minimum of 12 inches above the top of the pipe, unless otherwise shown on Plans.
E. Avoid unequal pressure on pipe while backfilling.
F. Use cement stabilized sand for backfill for storm sewers being constructed under roadways from the top of the pipe to the underside of the subgrade, unless otherwise shown on the Plans.

3.4 REINFORCED CONCRETE PIPES AND BOXES

A. Install concrete pipe per ASTM C1479 and concrete box per ASTM C1675 and in accordance with AASHTO Section 27, the manufacturer's recommendations and as specified in this Section. Where these standards conflict, the more stringent standard shall govern.
B. Install pipe and box only after excavation is completed, the bottom of the trench is shaped, bedding material is installed and all are approved by the Engineer.
C. Install pipe and box to the line and grade indicated on the Plans. Place pipe and box so that they have continuous bearing of barrel-bottom on bedding material and the pipe is laid in the trench so the interior surfaces of the pipe follow the grades and alignments indicated.

D. Use cement stabilized sand for backfill for storm sewers being constructed under roadways from the top of the pipe to the underside of the subgrade, unless otherwise shown on the Plans.

3.5 MANHOLES

A. Cast-in-place Concrete Manholes.
   1. Construct manholes to dimensions shown on the Plans. Commence construction as soon as possible after pipes are laid. On monolithic sewers, construct manholes at same time sewer is being constructed.
   2. Cast manhole foundations and walls monolithically. A cold joint with approved waterstop will be allowed when the manhole flow line depth exceeds 12 feet. No other joints will be allowed unless shown on the Plans or approved by Engineer.
   3. Refer to Section 03310 - Concrete to place, finish and cure concrete for manholes.
   4. The walls for brick manholes shall be a minimum of 8 inches thick.

B. Precast Concrete Manholes.
   1. Place precast base on 12 inch thick (minimum) foundation of cement stabilized sand. Refer to Section 02321 - Cement Stabilized Sand.
   2. Precast Manhole Sections.
      a. Install sections, joints and gaskets in accordance with manufacturer's instructions.
      b. Install precast adjustment rings above tops of cones or flat-top sections as required to adjust finished elevation and to support manhole frame.
      c. Seal any lifting holes with non-shrink grout.
      d. Place at least two precast concrete grade rings with thickness of 12 inches or less under casting.

C. Pipe Connections at Manholes.
   1. Grout storm sewer connections to manhole unless otherwise shown on Plans. Grout pipe penetration in place on both inside and outside of manhole. When using dissimilar pipe material use a flexible, leak-resistant connector or gasket, which is mechanically attached or cast into a structure; also referred to as a boot. Install the boot per manufacturer specification. Rigid (concrete) pipe connections to manholes do not have to have to comply with ASTM C923, and may be grouted instead.

D. Inverts for Storm Sewers.
   1. Construct invert channels to provide smooth flow transition waterway with no disruption of flow at pipe-manhole connections. Conform to the following criteria:
      a. Slope of invert bench: 1 inch per foot minimum; 1.5 inches per foot maximum.
      b. Depth of bench to invert:
         1. Pipes smaller than 15 inches: one-half of largest pipe diameter.

2. Pipes 15 to 24 inches: three-fourths of largest pipe diameter.
3. Pipes larger than 24 inches: equal to largest pipe diameter.

c. Invert slope through manhole: 0.10 foot drop across manhole with smooth transition of invert through manhole unless otherwise shown on Plans.

2. Form invert channels with structural concrete if not integral with manhole base section. Provide curves for side inlets and smooth invert fillets for flow transition between pipe inverts. Refer to Section 03310 - Concrete.

E. Manhole Frame and Adjustment Rings.
1. Combine precast concrete or HDPE adjustment rings so elevation of installed casting cover matches pavement surface. Seal between concrete adjustment ring and precast top section with non-shrink grout; do not use mortar between adjustment rings. Apply latex-based bonding agent to precast concrete surfaces joined with non-shrink grout. Set cast iron frame on adjustment ring in bed of approved sealant material. Install sealant bed consisting of two beads of sealant, each bead at least 0.5 inch high and 0.5 inch wide.
2. For manholes in unpaved areas, set top ring of frame a minimum of 6 inches above existing ground unless shown otherwise on Plans. In unpaved areas, encase manhole frame in mortar or non-shrink grout placed flush with face of manhole ring and top edge of frame. Provide rounded corner around perimeter.

F. Where rigid joints are used for connecting existing sewers to the manhole, backfill under the existing sewer up to the springline of the pipe with nonstructural concrete or flowable fill.

G. In unpaved areas, provide positive drainage away from manhole frame to natural grade.

3.5 APPURTENANCES

A. Construct manholes and install frames, grates, rings and covers. Refer to Section 02630 - Concrete Manholes.

B. Plaster brick inlets with 1/2 inch mortar on the inside. The walls for brick inlets shall be a minimum of 8 inches thick.

C. Provide forms for both the outside and inside faces of concrete inlet walls. If the material excavated for the inlet can be hand trimmed to a smooth vertical face, the outside forms may be omitted with approval of Engineer.

D. Connect inlet leads to the inlet.

E. Cut off inlet leads neatly at the inside face of inlet wall. Point up with mortar.

F. When the box section of the inlet has been completed, shape the floor of the inlet to drain.

G. Finish concrete surfaces. Refer to Section 03310 - Concrete.

3.6 PROTECTION

A. Protect manholes, pipes and boxes from damage during construction. Repair or replace damaged materials at no cost to the District as directed by the Engineer.

3.7 INSPECTION

A. Leakage Inspection.
   1. Visually inspect for leaks and repair in a manner approved by the Engineer.

B. CMP and HDPE Pipe Deflection Inspection.
   1. The internal diameter of the barrel shall not be reduced more than 7.5% for CMP and 5% for HDPE of its base diameter when measured no less than days following completion of installation.
   2. Check pipes for deflection using a mandrel, as directed by the Engineer.
   3. Provide odd numbered mandrel with no less than 9 arms. Provide properly sized proving ring to allow verification of the mandrel's accuracy.
   4. Replace the pipe where pipe deflection exceeds 7.5 percent of the inside diameter.

3.8 DISPOSAL

A. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 02632

INLETS, HEADWALLS AND WINGWALLS

PART 1 – GENERAL

1.1. SUMMARY

A. Section includes requirements for inlets for storm sewers or outfalls, including all appurtenances, and headwalls and wingwalls.

1.2. MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.
C. Handrails are incidental to the structure and shall not be measured separately, unless a unit item for handrails is included in the Unit Price Schedule (UPS).

1.3. REFERENCE

A. ASTM C 270 - Mortar for Unit Masonry.

1.4. SUBMITTALS

A. Refer to Section 01330 – Submittal Procedures.
B. Submit Sealed Shop Drawing for approval of design and construction details for cast-in-place or precast units which differ from the Plans.
C. Submit manufacturer's data and details for frames, grates, rings, covers, handrails, precast inlets, and appurtenances.
D. Submit manufacturer's data and Certificate of Compliance for concrete brick.

PART 2 – PRODUCTS

2.1 PRECAST CONCRETE INLETS

A. Precast concrete manhole sections shall conform to ASTM C 478 in which design is based on AASHTO HS 20 vehicle loading unless otherwise indicated on the Plans.
B. Provide joints between sections with "o"-ring gaskets conforming to ASTM C 443.
C. When base is cast monolithic with portion of vertical section, extend reinforcing in vertical section into base.

D. Precast Concrete Base: Provide suitable cutouts or holes to receive pipe and connections.

2.2 CONCRETE

A. Use concrete conforming to the requirements of Section 03310 – Concrete unless otherwise shown on the Plans or approved by the Engineer.
B. Precast Manholes.
   1. Channel Inverts: Use structural concrete for inverts not integrally formed with manhole base.
   2. Cement Stabilized Sand Foundation: Provide cement stabilized sand foundation under base section. Refer to Section 02321 – Cement Stabilized Sand.
   3. Concrete Foundation: Provide structural concrete for concrete foundation slab under manhole base section where indicated on Plans.

2.3 PIPE CONNECTIONS TO MANHOLES

A. Storm sewer pipe connection should meet ASTM C923 and ASTM F2510 for flexible CMP and HDPE pipe. Rigid (concrete) pipe connections to manholes do not have to comply with ASTM C923, and may be grouted instead.

2.4 SEALANT MATERIALS

A. Provide sealing materials between precast concrete adjustment ring and manhole cover frame, such as Adeka Ultraseal P201 or approved equal.
B. Provide butyl sealant, such as Press-Seal EZ Stick or approved equal, for HDPE rings.
C. Provide non-shrink cement based grout requiring only addition of water conforming to ASTM C 1107.

2.5 CONCRETE

A. Cast-in-Place Concrete or Concrete Brick: structural concrete conforming to requirements of Section 03310 – Concrete, unless otherwise indicated on the Plans or approved by Engineer.

2.6 REINFORCING STEEL

A. Refer to Section 03310 – Concrete.

2.7 MORTAR

A. Provide mortar conforming to requirements of ASTM C 270, TYPE S using Portland cement or as shown on the Plans.

2.8 MISCELLANEOUS METALS

A. Provide cast iron frames, grates, rings, covers and handrails conforming to the Plans.

PART 3 – EXECUTION

3.1 EXCAVATION AND INSTALLATION

A. Excavate in accordance with the requirements of Section 02316 – Structural Excavating and Backfilling.
B. Install as shown on the Plans or in accordance with the requirements of Section 02631 – Storm Sewers and Outfalls.

END OF SECTION

SECTION 02642

CORRUGATED METAL PIPE

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for corrugated metal pipe (CMP) for gravity sewers and drains, including fittings and appurtenances.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCE

A. AASHTO M 36 - Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains.
B. AASHTO M 218 - Steel Sheet, Zinc Coated (Galvanized) for Corrugated Pipe.
C. AASHTO M 232 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
D. AASHTO M 245 - Corrugated Steel Pipe, Polymer Precoated, for Sewers and Drains.
E. AASHTO M 246 - Steel Sheet, Aluminum-Coated and Polymer Precoated for Corrugated Steel Pipe.
F. ASTM A 760 - Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains.
G. ASTM B 633 - Electrodeposited Coatings of Zinc on Iron and Steel.
H. TT-P-641G - Federal Specification: Primer Coating; Zinc Dust-Zinc Oxide (For Galvanized Surfaces).
I. ASTM 742 - Standard Specification for Steel Sheet, Metallic Coated and Polymer Precoated for Corrugated Steel Pipe

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Provide manufacturer’s product specifications and certification that pipe, couplings and appurtenances were manufactured in compliance with standards referenced in this Section.

PART 2 – PRODUCTS

2.1 PIPE AND FITTINGS

A. Corrugated metal pipe shall be galvanized steel, polymer precoated galvanized steel or as shown on the Plans.
B. Coupling bands and other hardware for corrugated metal pipe:
   1. Coupling bands shall be not more than 3 nominal sheet thicknesses lighter than the thicknesses of the pipe to be connected and in no case lighter than 0.064 inch.
   2. Provide 24 inch wide coupling bands with annular corrugations. Base metal, corrugation, diameter and coating of the coupling band shall match the pipe.
   3. Bolts for coupling bands shall be 1/2 inch diameter. Bands shall have a minimum of 3 bolts at each connection.
   4. Galvanized bolts may be hot dip galvanized, mechanically galvanized or electrogalvanized.
C. Polymer precoated pipe or pipe arch shall be coated inside and out with a polymer precoating.
   1. The pipe shall be uniformly coated inside and out to a minimum thickness of 10 mils measured on the crests of the corrugations.
   2. The polymer precoating shall adhere to the metal so that it will not chip, crack or peel during handling and placement. Coating shall protect the pipe from corrosion and deterioration.
   3. Where a paved invert is shown on the Plans, the pipe or pipe arch, in addition to the fully coated treatment described above, shall receive additional coating material applied to the bottom quarter of the circumference to form a smooth pavement. Apply a minimum thickness of 10 mils above the crests of the corrugations.
D. Furnish all fittings and accessories required for bends, end sections, branches, access manholes and connections to other fittings. Fittings and accessories are subject to the same internal and external loads as straight pipe.

2.2 PIPE FABRICATION

A. Steel Pipe:
   1. Galvanized pipe conforming to AASHTO M 36 shall be full circle Type I, Type IA or Type IR; or pipe arch Type II or Type IIR.
   2. Fabrication with circumferential corrugations, lap joint construction with riveted or spot welded seams, helical corrugations with continuous helical lock seam or ultra-high frequency resistance butt-welded seams are acceptable.
B. Polymer Precoated Galvanized Steel Pipe:
   1. Pipe conforming to the requirements of AASHTO M 245 shall be full circle Type I, Type IA or Type IR; or pipe arch Type II or Type IIR.

2. Fabrication with circumferential corrugations, lap joint construction with riveted seams or helical lock seams is acceptable.
3. Inside and outside coating shall be a minimum of 10 mils.

PART 3 – EXECUTION

3.1 PREPARATION

A. Damaged galvanized coating shall be repaired by thoroughly wire brushing the damaged area and removing all loose, cracked or weld-burned galvanized coating. Paint the cleaned area with a zinc dust-zinc oxide primer paint conforming to Federal Specification TT-P-641g.
B. Damaged polymer coating shall be repaired in accordance with the manufacturer's recommendations.

3.2 INSTALLATION

A. Install in accordance with the requirements of Section 02631 - Storm Sewers and Outfalls unless shown otherwise on the Plans.

END OF SECTION

SECTION 02911

TOPSOIL

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for topsoil in support of turf establishment.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. When there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.
D. For topsoil generated on-site, no separate measurement and payment shall be made.

1.3 REFERENCES

A. AASHTO T 194 - Determination of Organic Matter in Soils by Wet Combustion.
B. ASTM D 422 - Particle-Size Analysis of Soils.
C. ASTM D 4972 - pH of Soils.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Imported topsoil Submittals shall include:
    1. Submit (2) copies of the load/delivery ticket showing:
        a. Quantity of material.
        b. Origin or location of the soil yard including physical address, contact information for the soil yard operator.
        c. The date the material was ordered and delivered or picked up.
    2. Submit a report including the topsoil analysis and recommendations for any fertilizer and/or soil amendments from a certified soil testing laboratory for approval. Analysis shall include:
        a. The laboratory report will be based on the following information:
            i. type of vegetation to be grown, ie: Bermuda grass
            ii. if the site will be irrigated, ie: Typically Not

iii. if the source site was previously fertilized
b. Routine Analysis (Macronutrients) - N, P, K, Ca, Mg, Na, pH and conductivity (Ec).
c. Micronutrients - S, Zn, Fe, Cu, B, Mo and Mn.
d. Organic matter.
e. Textural analysis.

C. Imported topsoil samples.
1. When requested by the Engineer, submit sufficient samples of topsoil for additional testing by the District.
2. When additional samples are required, submit samples at least 60 days prior to delivery or placement of topsoil.
3. Supply samples from the same source and stockpile as the topsoil for the project.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Import topsoil or provide topsoil generated on-site. Topsoil shall be easily cultivated, free from objectionable material including, gravel, large roots, stumps, wood, brush, debris, hard clods, clay balls, hardpan, refuse or other deleterious materials and be of reasonably uniform quality.
B. In the case of on-site or nearby source, topsoil is the surface layer of material containing decaying vegetable matter and fine hair-like roots.

PART 3 – EXECUTION

3.1 TOPSOIL DELIVERY, STORAGE AND HANDLING

A. Deliver, stockpile and handle topsoil in such a way as to not contaminate the material with other soils or objectionable materials.
B. Do not cast or place material, either temporarily or permanently, on top of bank without approval from the Engineer.

3.2 TOPSOIL GENERATED ON-SITE

A. Stripped topsoil generated on-site shall include fine roots and herbaceous vegetation as specified on the Plans or as directed by the Engineer. Stockpile topsoil generated on-site for use on the side slopes, berms, dry bottoms, wetland shelves and any other area directed by the Engineer.

3.3 TOPSOIL PLACEMENT

A. Prior to placing topsoil, disk or harrow the subgrade to a minimum depth of 4 inches until it is loose and uncompacted.
B. Place top elevation of topsoil at the design finish grade elevation shown on the Plans.

C. Do not spread topsoil when it is excessively wet or dry.

3.4 DISPOSAL

A. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 02921

TURF PLANTING ZONE PREPARATION

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for preparation of the seedbed.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. When there is not a separate item listed for work in this Section, no Separate measurement and payment is made. Include cost for work under this Section in the related unit price work.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.
D. Areas with existing turfgrass cover not disturbed under this Contract, channel bottoms and areas not requiring turf establishment will not be paid.
E. Areas beyond limits of the construction work which are disturbed due to the Contractor's techniques, access and related activities are not included in the measurement and are incidental.
F. No separate measurement and payment for irrigation of the turf establishment shall be made. Include the cost for irrigation in the related sodding or seeding item listed on the Unit Price Schedule.
G. Sod rolls greater than 24 inches wide will be paid for as 24 inch wide sod unless shown otherwise on the Plans.

PART 2 – PRODUCTS

2.1 Topsoil

A. Refer to Section 02911 - Topsoil.

2.2 SOD

A. Refer to Section 02922 - Sod.

2.3 SEED

A. Refer to Section 02923 - Seed.

2.4 HYDROMULCH-HYDROSEEDING

A. Refer to Section 0295 - Hydromulch-Hydroseeding.

2.5 FERTILIZER AND SOIL AMENDMENTS

A. Refer to Section 02936 - Fertilizer and Soil Amendments.

PART 3 – EXECUTION

3.1 GENERAL

A. Contractor requests the Engineer or his designee have turf establishment be performed as soon as practical after construction activities, but not later than 14 calendar days upon completion of a channel segment. Long term exposure of bare earth will not be permitted. Engineer may stop work on the project until exposed areas receive the designated turf establishment.

B. The District will notify the Turf Establishment Contractor of work to be performed via a work order identifying project site location(s), fertilizer and mulch rates, and required seed plan as the site(s) are available for turf establishment. Initiate turf establishment within three (3) working days after contractor receives notification from the District.
   1. Working days are considered Monday through Friday between the hours of 7:00 a.m. and 4:00 p.m.
   2. Complete all work identified in the work order before mobilizing to additional site(s).
   3. Cease work in wet areas if equipment causes rutting or soil compaction.
   4. Prevent tracking of soil onto roadways.

3.2 SEEDBED PREPARATION

A. Prepare the seedbed to support turf grass and/or sod placement prior to broadcast seeding or sodding activities.
B. Seedbed preparation will include soil cultivation throughout a minimum of four (4) inches of the final graded surface or as directed by the District representative.
C. Apply fertilizer or soil amendment to seedbed as directed by a District representative. The District representative will determine which soil amendment will be used.
   1. Refer to Fertilizer and Soil Amendment Specification.
D. Remove all roots and woody plants over three (3) inches in diameter.
E. Seedbed must be uniform in tilth and free of clods larger than two (2) inches. The use of a penetrometer may be used as a gauge to determine seedbed depth and tilth.

F. Disk, harrow, or rake seedbed to loosen soil surface if rainfall or compaction occur prior to seeding.
G. Grade seedbed(s) adjacent to turfed areas or pavement to permit the sod to be placed flush with adjacent surfaces.
H. Lightly compact the seedbed(s) with a roller such as a Culti-packer.
I. Protect prepared seedbed(s) from damage by pedestrians or vehicular traffic until final inspection and acceptance by the District representative.
J. Correct irregularities in finished seedbed surfaces to eliminate depressions.

3.3 SEED PLAN

A. Refer to Section 02923 - Seed.
B. Refer to Section 02936 - Fertilizer and Soil Amendments.

3.4 PLANTING METHODS

A. Method of planting is as noted on the Unit Price Schedule, on the Plans or as directed by the Engineer.

3.5 HYDROMULCH-HYDROSEEDING

A. Refer to Section 02925 - Hydromulch/Hydroseeding.
B. Refer to Section 02936 - Fertilizer and Soil Amendments.

3.6 SODDING

A. Place sod in areas as shown on the Plans or as directed by the Engineer.
B. Refer to Section 02922 - Sod.

3.7 ACCEPTANCE AND CONTRACTOR'S RESPONSIBLITIES

A. Engineer will approve turf establishment when specified planting method is complete.

3.8 DISPOSAL

A. Refer to Section 02120 - Material Disposal.

3.9 FIELD QUALITY CONTROL

A. Schedule an inspection of the seedbed to obtain District acceptance prior to applying seed.

3.10 PENALTIES

A. Turf Establishment Contractor
   1. Once the District representative issues a work order, Contractor will have three (3) working days to begin turf establishment activities. Turf establishment activities are defined in Paragraph 3.2 Seedbed Preparation, of this specification.
   2. Contractor's failure to begin turf establishment activities within three (3) working days will result in liquidated damages of $300 per day until work begins.

END OF SECTION

SECTION 02922

SOD

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for the placement of sod to establish and promote vegetation.

1.2 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is made under this Section. Include the cost for the work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 SUBMITTALS

A. Refer to Section 01330 - Submittals.
B. At the time of delivery, submit delivery tickets showing the quantity of sod delivered to each project site, and the type and quantity of sod staples delivered to each project site.
C. Submit letter from sod supplier attesting to the growing site, and provenance, and that the sod meets the requirements of the District's specifications.

PART 2 – PRODUCTS

2.1 SOD

A. Provide Bermuda grass, or St. Augustine Grass unless otherwise directed by the Engineer or designee.
B. Provide live, green and growing sod, as required by the District.
C. Grass sod shall be delivered and installed with a healthy and vigorous system of dense, thickly matted roots throughout the soil for a minimum depth of five-eighths (5/8) inch (+/- ¼ inch), excluding top growth thatch.
D. Sod shall contain no more than five (5) percent noxious weeds and other crop and weed contaminations and be free of disease and harmful insects.
E. Sod shall be cut in uniform panels; broken panels or panels with torn or uneven ends will not be accepted.
F. Sod panels shall be strong enough to support their own weight and retain size and shape when suspended vertically from a firm grasp on the upper ten (10) percent of the panel.

2.2 STAPLES

A. Staples used for anchored sod shall be 4 X 1/8 inch or 11 gauge steel staples.

PART 3 – EXECUTION

3.1 GENERAL

A. Harvest, deliver, and install sod within a 36 hour period. Sod not planted within this time period will be inspected and approved by the District prior to installation.
B. Sod that has been allowed to dry out by exposure to the sun and air is unacceptable and will be rejected.
C. Sod shall be placed in areas as shown on the site plans or as directed by the District.
D. The District reserves the right to reject any unacceptable sod.

3.2 SOD PLACEMENT

A. Spread fertilizer evenly and uniformly and incorporate by disking, harrowing or raking into the seedbed prior to placing sod. Refer to Section 02936 - Fertilizer and Soil Amendments.
B. Lightly water prepared seedbed immediately prior to placing sod.
C. Sod Panels
    1. Place sod panels tightly against each other in rows.
    2. Stagger lateral joints. Exercise care to ensure the sod is not stretched or overlapped and joints are butted tightly with no spaces between strips.
    3. Place a minimum of 2 staples, at diagonal corners, of each sod panel.
D. Sod Rolls
    1. Provide rolls 24 inches wide. Sod roll is equivalent to two rows of sod panels. Do not provide rolls wider than 24 inches unless shown otherwise on the Plans. For sod rolls greater than 24 wide, provide a staple plan for approval.
    2. Exercise care to ensure the sod rolls are not stretched and joints are butted tightly with no spaces between roll ends.
    3. Lay sod by use of a sod roller, placed with tractor equipment, at the discretion of a District representative.
    4. Place staples every 48 inches along each side. Stagger staples on opposing sides by 24 inches. Place 3 additional staples in corners and center of roll ends.
    5. Cut ends of sod rolls at 45 degree angle before placing adjacent rolls together.
E. Tamp or roll the sod after placement to ensure good contact with the seedbed.

F. Lightly water sod during placement to prevent excessive moisture loss.
G. Immediately after installation of sod, remove extraneous clumps of sod or plant remnants from adjacent pavement and the finished sod surface.

END OF SECTION

SECTION 02923

BROADCAST SEEDING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for seed in support of turf establishment.

1.2 MEASUREMENT AND PAYMENT

A. When there is not a separate item listed for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related unit price work.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. Texas Seed and Plant Certification Act and Standards, Section 62.
B. U.S. Department of Agriculture Rules and Regulations - Federal Seed Act.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. When requested, submit seed tags showing name of seed, location and year of harvest, percentage of purity, germination and dormant seed, and noxious weed content with the monthly invoice.
C. When requested, submit delivery ticket showing total quantity of seed delivered for each project site.

PART 2 – PRODUCTS

2.1 MATERIAL

A. Provide seed in clean, unopened and undamaged containers/bags.
B. Provide seed containers/bags with tags affixed for inspection in the field and tested and certified by a state laboratory not more than nine (9) months prior to the date of planting. Containers/bags without tags will be rejected.
C. Provide seed with no objectionable material such as sticks, stems and unthrashed seed heads, which will hinder proper distribution.
D. See that is wet, moldy, starting to germinate or otherwise damaged will not be accepted by the District.

E. Provide Certified Bermuda grass tested by an accredited seed testing lab. Only bags with blue tags affixed will be accepted.

PART 3 – EXECUTION

3.1 SEED BED PREPARATION

A. Refer to Section 02921 - Turf Planting Zone Preparation.

3.2 SEED PLAN

A. The District may not require all of the species listed in each of the seed plans, some species may be excluded based on site conditions or other factors.
B. Seed shall be applied in accordance with the following seed plan:

Seed Plan	Planting Dates	Species	Planting Rate Per Acre
1	Oct. 1- March 31 When soil temperatures fall below 75F, or as directed.	Unhulled Bermuda Grass Tall Fescue And Durana Clover Crimson Clover	50 lbs. 100 lbs. and 5 lbs. 5 lbs.
2	April 1-Sept. 30 When soil temperatures rise above 65F, or as directed	Certified Bermuda Grass Or Common Bermuda Grass, minimum purity/ germination of 95/85	65 lbs. or 60 lbs. PLS
3	As directed	Certified Bermuda Grass Or Common Bermuda Grass minimum purity/ germination 95/85 and Pensacola Bahia Grass	65 lbs. or 60 lbs. PLS and 20 lbs.
5	As directed	Annual Ryegrass and Fescue Or Millet	100 lbs. each 100 lbs.
6	As directed	Improved Bermuda Grass Cultivars	60 lbs.
7	As directed	Legume or Grain	20 lbs.

C. Planting dates are approximate, the District will determine which seed to use prior to start of seeding.
D. Seeding rate for Pure Live Seed (PLS) is used to determine the actual application rate of bulk seed to apply.
E. To determine PLS- (% germination X % purity/100) ex. 95 X 85 /100= 80.75% PLS

F. To determine quantity of PLS needed per acre (seeding rate / %PLS) = lbs. of seed needed for application. Ex. 60 lbs. /0.807PLS = 74.34 lbs. of seed needed per acre.

END OF SECTION

SECTION 02925

HYDROMULCH-HYDROSEEDING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for hydromulch and hydroseeding applications to establish and promote vegetation.

1.2 MEASUREMENT AND PAYMENT

A. When there is not a separate item listed in the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related unit price work.
B. Measurement and Payment is as noted on the Unit Price Schedule.

1.3 SUBMITTALS

A. Submit, prior to the start of work, the product and manufacturer's name of hydro-mulch/soil binder/tackifier to be used.
B. Submit a delivery ticket showing quantity of hydro-mulch/soil binder/tackifier delivered to each turf establishment project site.

PART 2 - PRODUCTS

2.1 HYDROMULCH

A. Provide mulch that is an Engineered Fiber Matrix (EFM) and conforms to the following property values when uniformly applied at a rate of 3500 pounds per acre under laboratory conditions.

Property (physical)	Test Method	Req. Value (English)	Req. Value (SI)
Mass Per Unit	ASTM D6566[a]	11.6 oz./yd² (min.)	393 g/m² (min.)
Thickness	ASTM D6525[a]	0.16 inch (min.)	4 mm (min.)
Ground Cover	ASTM D6567[a]	98% (min.)	98% (min.)
Water Holding	ASTM D7367	1100% (min.)	1100% (min.)
Material Color	Observed	Green	Green
Cover Factor[b]	Large Scale	0.05 (max.)	0.05 (max.)
% Effectiveness[c]	Large Scale	95% (min.)	95% (min)
Cure Time	Observed	24-48 hrs.	24-48 hrs.
Vegetation	ASTM D7322	600% (min)	600% (min)
Yield	Calculated	1.82 (min.)	1541 (min.)
Functional	Observed	Up to 12 months	Up to 12 months
Ecotoxicity	EPA 2021.0	96-hr. LC50 > 100%	96- hr. LC50> 100%
Biodegradability	ASTM D5338	100% (min.)	100% (min.)

1. ASTM test methods developed for Rolled Erosion Control Products and have been modified to accommodate Hydraulically-Applied Erosion Control Products.
2. Cover Factor is calculated as soil loss ratio of treated surface versus an untreated control surface.
3. % Effectiveness= One minus Cover Factor multiplied by 100%.

B. All components of the EFM shall be pre-packaged by the manufacturer to assure both material performance and compliance with the following values.
   1. Thermally processed wood fiber (within a pressure vessel). Wood fiber 77% (heated to a temperature greater than 380 degrees Fahrenheit (193 degrees Celsius) for 5 minutes at a pressure greater than 50 psi (345 kPa).
   2. Wetting agents 18%
   3. Crimped, man–made biodegradable interlocking fibers, 2.5%
   4. Proprietary mineral activator, 2.5%

END OF SECTION

SECTION 02936

FERTILIZER AND SOIL AMENDMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for application of fertilizer and soil amendments to establish or promote vegetation.

1.2 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is made under this Section. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCES

A. Texas Department of Agriculture - Fertilizer Laws.
B. Association of Official Analytical Chemists - Fertilizer Content Analytical Methods.
C. 40 *CFR* Part 503.

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. When requested submit results of an agronomic soil testing to Engineer for approval**.**
C. Submit prior to the start of work, a manufacturers label showing ingredients of product(s) and manufacture date for fertilizer and any soil amendments to be used.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver fertilizer in bags or containers clearly labeled with name and address of the manufacturer, weight and guaranteed analysis. Bulk fertilizer, if approved by the Engineer, must be accompanied by an invoice or label with the name and address of the manufacturer and guaranteed analysis and appropriate means to accurately measure and record weight of fertilizer used.

B. Deliver fertilizer in clean, unopened and undamaged bags.

PART 2 – PRODUCTS

2.1 FERTILIZER

A. Fertilizer shall be granulated and must meet the following minimum specifications as well as conform to the fertilizer laws in effect as regulated by the Texas Department of Agriculture.
   1. Contain a minimum NPK formula with a ratio of 1:2:1 with 70% stabilized Nitrogen for establishment and 3:1:2 with 50% stabilized Nitrogen for promotion.
B. The District will reject fertilizer containing objectionable materials that may hinder proper distribution as well as caked fertilizer.

2.2 SOIL AMENDMENTS

A. Soil amendments will be granulated Lime ($CaCO_3$), Sulfur (S), or Gypsum ($CaSO_4$).
   1. Soil amendments/conditioners will be delivered to the job site(s) in clean, unopened and undamaged bags.
   2. Bulk deliveries directly to the job site will be allowed at the direction of a District representative.
B. Refer to Hydromulch/Hydroseeding or Overseeding Specification.

PART 3 – EXECUTION

3.1 GENERAL

A. Uniformly broadcast fertilizer and soil amendments at the rate determined by the Engineer or his designee.

3.2 FERTILIZER

A. Apply fertilizer at the rate of 44-88 pounds of Nitrogen per acre as directed by the Engineer or his designee.
B. To determine amount of bulk fertilizer needed per acre use the following formula. (Rate/(% Nitrogen/100))=Lbs. of bulk fertilizer to apply. Ex. (88/ (12/100)) =733lbs. of 12-24-12 per acre.

3.3 SOIL AMENDMENTS

A. Apply soil amendments to seedbed prior to seeding or as part of a hydroseeding or broadcast seeding application or as directed by the Engineer or the District representative.

B. Apply soil amendments/conditioners at the maximum rates listed below for each product.
   1. Gypsum - 2,500 lbs. per acre
   2. Sulfur - 300 lbs. per acre
   3. Lime - 2,500 lbs. per acre

END OF SECTION

SECTION 02938

NON-CYCLICAL MOWING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for mowing operations in support of turf establishment.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work of this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION

3.1 GENERAL

A. Mow areas including the top of berm, from right-of-way to top of slope, channel side slopes and channel bottom.
B. Cut grass to a minimum of two (2) inches and not greater than four (4) inches in height.
C. For mowing prior to seeding, mowers shall be adjusted to the minimum cutting height of the equipment.
D. Cutting of heavy brush with stems up to three (3) inches in diameter may be required in areas of dense vegetation.
E. Establish a cutting path to traverse 100 percent of the designated area. Mowing of any site will not be considered complete for payment until the entire area has been uniformly cut, including all handwork. It is strongly recommended that all handwork be completed within three (3) days of mowing. Recut missed strands of vegetation or areas not uniformly cut at no additional cost.
F. Cut all vegetation in the bottom of the channel or basin in dry conditions. Cut vegetation adjacent to wet areas from the toe line extending a minimum of two (2) feet into the channel or basin bottom, as determined by the Engineer or his designee. Cut only vegetation growing above the water surface level.

G. Do not mow when soil conditions cannot support the weight of the equipment and mowing causes rutting of the soil or slope instability.
H. To avoid damage caused by mowers, leave a six (6) inch vegetated buffer zone along fence lines and around trees. Use hand trimmers to clear buffer zones of all undesirable vegetation along fence lines, drainage interceptor structures, and outfall pipes, adjacent to bridge guardrails, pilings and other obstructions where mowers are unable to cut.
I. Use mowing equipment in good operating condition and maintained to provide a clean cut of vegetation.
J. Equip mower decks with safety chains to prevent damage to property from flying debris.
K. Do not store equipment within 30 feet of streets during non-working hours. Store materials and/or equipment on-site in an orderly manner.
L. Repair damage caused by the mowing operation at no additional cost to the District.

3.2 FIELD QUALITY CONTROL

A. Notify the Engineer or his designee, in writing, five (5) working days prior to the starting of mowing.
B. Notify the Engineer or his designee at the completion of each mowing activity for an inspection of the finished site.
C. Repair damage caused by mowing operations at no additional cost to the District.

3.3 CITIZEN COMPLAINTS

A. Citizen's claims of damage to private property will require Contractor to provide a written response to the District describing their contact with the complainant and resolution regarding the claimed damages. The District will require the Contractor to submit their response by e-mail within 24 hours of notification.

3.4 CLEANUP

A. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 02940

IRRIGATION

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary irrigation in support of turf establishment.

1.2 MEASUREMENT AND PAYMENT

A. Measurement and payment is as noted on the Unit Price Schedule.
B. Refer to Section 01270 – Measurement and Payment for unit price procedures.
C. The minimum time period for irrigation payment is one (1) month.

1.3 SUBMITTALS

A. Refer to Section 01330 – Submittal Procedures.
B. Submit an irrigation plan prior to the start of work. As a minimum the irrigation plan shall include:
    1. Proposed method of irrigation.
    2. Layout of irrigation pipes, sprinkler heads, related equipment and location of irrigation water supply.
    3. Source of irrigation water supply.
    4. Evidence of approval from local water authorities to connect to potable water system.
    5. Pressure versus flowrate plotted curves for each field source of irrigation water including, but not limited to, fire hydrant statistics.
    6. Irrigation system information including supplier, backflow prevention device and related attached devices.
    7. Proposed watering schedule.
    8. Planned vehicular access route.
C. Submit water meter logs and/or water invoices to support each application for payment.

PART 2 – PRODUCTS – Not used

PART 3 – EXECUTION

3.1 GENERAL

A. Utilize watering equipment that provides a uniform water distribution and a controllable rate of water application.

B. Install the irrigation system per manufacturer's recommendations.
C. For projects less than five (5) acres, the use of a water truck or hydromulching equipment, rather than a temporary stationary irrigation system, is acceptable when approved by the Engineer.
D. Irrigate at intervals to promote and sustain vegetation. Prevent wilting of vegetation through proper water application frequency and quantity.
E. Implement frequent, shorter applications of water immediately following seeding and germination to ensure growth.
F. Distribute irrigation water evenly across the irrigated area.
G. Utilize sprinkler heads that apply a fine, even spray over irrigated area.
H. Avoid watering impervious surfaces, including but not limited to, concrete paving, roadways and buildings.
I. Avoid irrigation practices that create run-off, build-up of hydrostatic pressures behind structures or ponding of water.

3.2 SITE ACCESS

A. Maintain vehicular access throughout the site during progress of the work. Protect irrigation pipes crossing top of berms and access roads.

3.3 TERMINATION OF IRRIGATION

A. Once irrigation commences, continue irrigation according to this Section for a minimum of 60 days or until instructed by the Engineer to discontinue and remove the irrigation system.

3.4 DAMAGE REPAIR

A. Repair damage caused by the irrigation operation at no cost to the District.

END OF SECTION

SECTION 02941

HERBICIDE APPLICATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for application of herbicide to control undesirable vegetation.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures.
B. Submit the following prior to the start of work:
    1. Herbicide Application Plan clearly stating:
        a. Product (herbicide) and related Chemicals.
        b. Scheduling Information.
        c. Application Equipment.
        d. Mixing Rates.
        e. Application Rates.
        f. Method of Application, including calibration records of equipment.
        g. Record of Pest Control Application (Include Permit Number TXG87003).
    2. Copies of manufacturer’s labels, product data and Material Safety Data Sheets (MSDS) for all products to be used.
    3. Applicator qualifications, as follows:
        a. A copy of the applicator company’s state business license.
        b. A copy of each current Certified Commercial Applicators License, showing effective date of license.
C. Submit a copy of the Pest Control Use Record for herbicide applications, with each monthly estimate. The Record of Pest Control Application must meet or exceed current requirements of the Texas Department of Agriculture and Harris County and/or Fort Bend County General Use Permit.

1.4 APPLICATOR QUALIFICATIONS

A. Utilize spray applicators that hold a current Certified Commercial Applicators License and are qualified in required categories for applying herbicides in the State of Texas and Harris and/or Fort Bend County.

1.5 HERBICIDE SPILLS

A. Report spills immediately to the District and agencies as required by law. Use responsible care and means in cleanup of spills.
B. Refer to Section 02120 - Material Disposal.

PART 2 – PRODUCTS

2.1 MATERIAL

A. Provide herbicide, labeled for the required control of targeted pests, and is in compliance with all Federal, State and local requirements.
B. Provide a marker dye in the herbicide solution so that treated areas can be readily identified and inspected.

PART 3 – EXECUTION

3.1 GENERAL

A. Notify the District, in writing or via e-mail two (2) business days prior to applying herbicides.
B. Apply herbicide in accordance with requirements established by:
   1. Texas Department of Agriculture
   2. United States Environmental Protection Agency (EPA)
   3. Harris and/or Fort Bend County General Use Permit requirements
   4. In accordance with manufacturer's label.
C. Follow safety procedures and use safety equipment required by regulatory agencies and as stated on manufacturer's product label.
D. Apply herbicide only to areas as shown on the Plans or designated by the District to control undesirable vegetation, including aquatic areas. Areas of application may include parts or all the Right-of-Way.
E. Prepare herbicide mixtures with clean, potable water. Do not use water from channel or basins.
F. Undesirable vegetation will be defined by the District representative and may include but is not limited to, Alligator weed, Willow, Cattail, Chinese Tallow, McCartney Rose, Johnson grass, Ragweed, Baccharis, Torpedo grass, and or other native, invasive species.
G. Make broadcast applications over the top of targeted vegetation per the manufacturer's recommended rate needed to provide proper coverage of treatment area.

H. Do not apply herbicide if rain is imminent within two (2) hours of application.
I. Avoid applications of herbicide to areas where desirable vegetation is established where applicable. Replace desirable vegetation killed by misapplication or overspray of herbicide at no cost to the District.
J. When clearing sites, achieve 100 percent control of target species, and re-cut and re-treat target species if new growth appears within 60 days of first application at no additional cost to the District.
K. For general herbicide applications achieve at least 90 percent control of target species.
L. Control of target species shall be visible within 14 days after application. If control has not been achieved, make additional application within 14 days of notification, or based on manufacturer's label recommendations. Additional applications will be made at no additional cost to the District.
M. When clearing sites, or for cut stump applications, apply herbicide within two (2) hours of cutting tree and brush stumps. Re-cut stumps if application of herbicide is more than two (2) hours after initial cutting.
    1. Treat each stump individually to ensure proper application and dosage to control the target plant.
    2. General area spraying of herbicides is not permitted.

3.2 EQUIPMENT

A. Use properly calibrated and maintained spray equipment free of leaks, improperly adjusted, or clogged nozzles.
B. Use of aerial spray equipment is not permitted.

3.3 APPLICATION TYPE

A. Woody Species
    1. Category 1 (HD, LG). High Density, Primarily Large Trees - Areas with an undesirable species density greater than 60% vegetative cover with more than 50% of those species being large trees that require the cut stump method of treatment. Large trees are defined as those greater than five (5) inches diameter at breast height (dbh). Although these areas contain primarily large trees, all undesirable species present in the area shall be treated with appropriate methods as described in Part 3.1, General Execution of this Specification.
    2. Category 2 (HD,SM). High Density, Primarily Smaller Trees and Saplings - Areas with an undesirable species density greater than 60% vegetative cover with more than 50% of those species being less than five inches dbh. Although these areas contain primarily smaller trees and saplings, all undesirable species present in the area shall be treated with appropriate methods as described in Part 3.1, General Execution of this Specification.

3. Category 3 (MD, LG). Medium Density, Primarily Large Trees - Areas with an undesirable species density greater than 25%, but less than 60%, vegetative cover with more than 50% of those species present being mature trees. Although these areas contain primarily large trees, all undesirable species present in the area shall be treated with appropriate methods as described in Part 3.1, General Execution of this Specification.
4. Category 4 (MD, SM). Medium Density, Primarily Smaller Trees and Saplings - Areas with an undesirable species density greater than 25%, but less than 60%, vegetative cover with more than 50% of those species present being saplings. Although these areas contain primarily smaller trees and saplings, all undesirable species present in the area shall be treated with appropriate methods as described in Part 3.1, General Execution of this Specification.
5. Category 5 (LD, LG). Low Density, Primarily Large Trees - Areas with an undesirable species density greater than 5%, but less than 25%, vegetative cover with more than 50% of those species present being mature trees. Although these areas contain primarily large trees, all undesirable species present in the area shall be treated with appropriate methods as described in Part 3.1, General Execution of this Specification.
6. Category 6 (LD, SM). Low Density, Primarily Smaller Trees and Saplings - Areas with an undesirable species density greater than 5%, but less than 25%, vegetative cover with more than 50% of those species present being saplings. Although these areas contain primarily smaller trees and saplings, all undesirable species present in the area shall be treated with appropriate methods as described in Part 3.1, General Execution of this Specification.
7. Category 7 (Water-based) Areas with undesirable woody species in standing water or submerged conditions.
8. Category 8 (Tree-Planting Sites) Areas where seedlings have been planted and require ongoing suppression of competing vegetation during the tree establishment period.

B. Grass Species Applications
   1. Category 1 (Broadcast applications) Open right-of-way with good access; can be covered with wheeled vehicles for application.
   2. Category 2 (Spot applications) Locations with limited access and right-of-way where wheeled vehicles cannot safely traverse will be treated by hand applicators.

C. Aquatic Applications
   1. Category 1 (Water Based) are applications applied from watercraft purposed for herbicide applications.
   2. Category 2 (Land Based) are applications applied from the bank to vegetation on the water surface.

3.4 CLEAN UP AND DISPOSAL

A. Store or dispose of unused herbicide mixtures in accordance with current regulations and manufacturer's recommendations.
B. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 03310

CONCRETE

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for cast-in-place concrete.

1.2 MEASUREMENT AND PAYMENT

A. Where there is not a separate item listed on the Unit Price Schedule for work in this Section, no separate measurement and payment is made. Include cost for work under this Section in the related item listed on the Unit Price Schedule.
B. Measurement and payment is as noted on the Unit Price Schedule.
C. Refer to Section 01270 - Measurement and Payment for unit price procedures.

1.3 REFERENCE

A. ACI 117 - Tolerances for Concrete Construction and Materials.
B. ACI 211.1 - Selecting Proportions for Normal, Heavyweight and Mass Concrete.
C. ACI 214.3R - Simplified Version of the Recommended Practice for Evaluation of Strength Test Results of Concrete.
D. ACI 302.1R - Concrete Floor and Slab Construction.
E. ACI 304R - Measuring, Mixing, Transporting, and Placing Concrete.
F. ACI 305R - Hot Weather Concreting.
G. ACI 306R - Cold Weather Concreting.
H. ACI 308 - Curing Concrete.
I. ACI 309R - Consolidation of Concrete.
J. ACI 315 - Detailing Reinforced Concrete Structures.
K. ACI 318 - Building Code Requirements for Reinforced Concrete.
L. ASTM A 82 - Steel Wire, Plain, for Concrete Reinforcement.
M. ASTM A 185 - Steel Welded Wire Reinforcement, Plain, for Concrete.
N. ASTM A 615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
O. ASTM A 767 - Zinc-coated (Galvanized) Bars for Concrete Reinforcement.
P. ASTM A 775 - Epoxy-Coated Steel Reinforcing Bars.
Q. ASTM A 884 - Epoxy-Coated Steel Wire and Welded Wire Reinforcement.
R. ASTM C 33 - Concrete Aggregates.

S. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
T. ASTM C 94 - Ready-Mixed Concrete.
U. ASTM C 138 - Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.
V. ASTM C 143 - Slump of Hydraulic-Cement Concrete.
W. ASTM C 150 - Portland Cement.
X. ASTM C 172 - Sampling Freshly Mixed Concrete.
Y. ASTM C 173 - Air Content of Freshly Mixed Concrete by Volumetric Method.
Z. ASTM C 231 - Air Content of Freshly Mixed Concrete by Pressure Method.
AA. ASTM C 260 - Air-Entraining Admixtures for Concrete.
BB. ASTM C 309 - Liquid Membrane-Forming Compounds for Curing Concrete.
CC. ASTM C 494 - Chemical Admixtures for Concrete.
DD. ASTM C 595 - Blended Hydraulic Cements.
EE. ASTM C 618 - Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
FF. ASTM C 685 - Concrete Made by Volumetric Batching and Continuous Mixing.
GG. ASTM C 1077 - Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
HH. CPMB-100 - Concrete Plant Standards, Part 2 – Plant Control Systems.
II. CRSI - Placing Reinforcing Bars.
JJ. CRSI MSP-1 - Manual of Standard Practice.

1.4 SUBMITTALS

A. Refer to Section 01330 – Submittal Procedures.
B. Submit proposed mix design and strength test data for each type and strength of concrete used.
C. Submit laboratory reports prepared by an independent testing laboratory verifying that materials used comply with the requirements of this Section.
D. Provide manufacturer's mill certificates for reinforcing steel for inspection in the field. Steel not accompanied by manufacturer's mill certificates will not be approved. Provide specimens for testing when required by Engineer.
E. Provide batch tickets showing mix design number and the information required by ASTM C 94 for ready-mixed concrete delivered to the site. Provide batch tickets showing the information required by ASTM C 685 for concrete produced by continuous mixing.

F. If requested submit certification from concrete supplier that materials and equipment used to produce and deliver concrete comply with this Section.
G. Submit Shop Drawings in accordance with ACI 315 and ACI 318, when required, showing reinforcement type, quantity, size, length, location, spacing, bending, splicing, support, fabrication details and other pertinent information.
H. For waterstops, submit product information, including manufacturer's description literature, installation instructions and specifications.
I. Submit curing procedures including materials and equipment to be used.

1.5 HANDLING AND STORAGE

A. Reinforcing Steel: Store reinforcing steel to protect it from damage and formation of excessive rust. Protect epoxy-coated steel from damage to the coating.

PART 2 – PRODUCTS

2.1 CONCRETE MATERIALS

A. Cementitious Material:
   1. Portland Cement: ASTM C 150, Type I/II or II, unless the use of Type III is authorized by Engineer; or ASTM C 595, Type IP. For concrete in contact with sewage, use Type II cement.
   2. When aggregates are potentially reactive with alkalis in cement, use cement not exceeding 0.6 percent alkali content in the form of Na_2O + 0.658 K_2O.
   3. Type "F" fly ash meeting requirements of ASTM C 618 may be used as mineral admixture in concrete mixture. When fly ash mineral filler is used, store and inspect in accordance with ASTM C 618. Do not use fly ash in amounts to exceed 25 percent by weight of cementitious material in mix design. Cement content may be reduced when strength requirements can be met. When fly ash is used, "cement" is defined as cement plus fly ash.
B. Water: Clean, free from harmful amounts of oils, acids, alkalis or other deleterious substances and meeting requirements of ASTM C 94.
C. Aggregate:
   1. Coarse Aggregate: ASTM C 33. Unless otherwise indicated, use the following ASTM standard sizes: No. 357 or No. 467; No. 57 or No. 67, No. 7. Maximum size: Not larger than 1/5 of the minimum dimension between sides of forms nor larger than 3/4 of minimum clear spacing between reinforcing bars.
   2. Fine Aggregate: ASTM C 33.
   3. Determine the potential reactivity of fine and coarse aggregate in accordance with the Appendix to ASTM C 33.

D. Air Entraining Admixtures: ASTM C 260.
E. Chemical Admixtures:
   1. Water Reducers: ASTM C 494, Type A.
   2. Water Reducer and Retarder: ASTM C 494, Type D.
   3. High Range Water Reducer (Superplasticizer): ASTM C 494, Types F and G.
F. Prohibited Admixtures: Admixtures containing calcium chloride, thiocyanate, or materials that contribute free chlorine ions in excess of 0.1 percent by weight of cement.
G. Reinforcing Steel:
   1. Use new billet steel bars conforming to ASTM A 615, ASTM A 767, or ASTM A 775, grade 60 unless otherwise shown on Plans. Use deformed bars except where smooth bars are specified. When placed in work, keep steel free of dirt, scale, loose or flaky rust, paint, oil or other harmful materials.
   2. Tie Wire: ASTM A 82. Use 16-1/2 gauge minimum for tie wire unless otherwise shown on the Plans.
H. Curing Compounds: Liquid membrane-forming compounds conforming to ASTM C 309, with white or other heat reflecting pigment.

2.2 FORMWORK MATERIALS

A. Lumber and Plywood: Seasoned and of good quality, free from loose or unsound knots, knot holes, twists, shakes, decay and other imperfections, which would affect strength or impair the finished surface of concrete. Use S4S lumber for facing and sheathing.
B. Formwork: For exposed concrete indicated to receive rubbed finish, provide form or form- lining surfaces free of irregularities.
C. Form Ties: Metal or fiberglass of approved type with tie holes not larger than 7/8 inch in diameter.
D. Metal Forms: Clean and in good condition, free from dents and rust, grease or other foreign material that tend to mar or discolor concrete, in a gauge and condition capable of supporting concrete and construction loads without significant distortion. Countersink bolt and rivet heads on facing sides. Use only metal forms which present a smooth surface and which line up properly.

2.3 PRODUCTION METHODS

A. Use either ready-mixed concrete conforming to requirements of ASTM C 94 or concrete produced by volumetric batching and continuous mixing in accordance with ASTM C 685.

2.4 MEASUREMENT OF MATERIALS

A. Measure dry materials by weight, except volumetric proportioning may be used when concrete is batched and mixed in accordance with ASTM C 685.
B. Measure water and liquid admixtures by volume.

2.5 DESIGN MIX

A. Use design mixes prepared by a certified testing laboratory in accordance with ASTM C 1077 and conforming to requirements of this Section.
B. Proportion concrete materials based on ACI 211.1 to comply with durability and strength requirements of ACI 318, Chapters 4 and 5, and this Section.
C. Proportioning on the basis of field experience or trial mixtures in accordance with the requirements of Section 5.3 of ACI 318 may be used, if approved by Engineer.
D. Classification:

Type	Minimum 28-Day Compressive Strength (Lbs./sq.in.)	Maximum W/C Ratio	Air Content (Percent)	Consistency Range in Slump (Inches)	Minimum Cementitious Content (Lbs./cy)
Structural	3600	0.45	3-5	2 to 4	470
Non-Structural	1500	0.60	3-5	5 to 7	329

E. Determine air content in accordance with ASTM C 138, ASTM C 173 or ASTM C 231.
F. Use of Concrete Types: Use types of concrete as indicated on the Plans. Unless indicated otherwise on the Plans or Specifications, use non-structural, unreinforced concrete for pipe plugs, seal slabs, thrust blocks, trench dams and concrete fill; use structural, reinforced concrete for all other applications.

PART 3 – EXECUTION

3.1 FORMS AND SHORING

A. Install forms in accordance with ACI 304R.
B. Provide mortar-tight forms sufficient in strength to prevent bulging between supports. Set and maintain forms to lines designated such that finished dimensions of structures are within the tolerances specified in ACI 117. Construction forms to permit removal without damage to

concrete. Provide adequate cleanout openings. Before placing concrete, remove extraneous matter from within forms.

C. Unless otherwise indicated, form outside corners and edges with triangular 3/4 inch chamfer strips (measured on sides).
D. Remove metal form ties to depth of at least 3/4 inch from surface of concrete. Do not use pipe spreaders. Remove spreaders which are separate from forms as concrete is being placed.
E. Immediately before the concrete is placed, wet surface of forms which will come in contact with concrete.

3.2 PLACING REINFORCEMENT

A. Place reinforcing steel as shown on the Plans. Secure steel in position in forms to prevent misalignment. Welding of reinforcing steel is not permitted unless noted on the Plans. Maintain reinforcing steel in place using approved concrete, hot-dip galvanized metal or plastic chairs and spacers. Place reinforcing steel in accordance with CRSI Publication “Placing Reinforcing Bars.” Request inspection of reinforcing steel by Engineer before concrete is placed.
B. Minimum spacing center-to-center of parallel bars: 2-1/2 times nominal bar diameter. Minimum cover measured from surface of concrete to face of reinforcing bar unless shown otherwise on the Plans: 2 inches.
C. Detail bars in accordance with ACI 315. Provide reinforcing steel fabricated in accordance with CRSI Publication MSP-1, “Manual of Standard Practice.” Bend reinforcing steel to required shape while steel is cold. Do not over bend steel.
D. Provide splice and development length of bars as shown on Plans. Stagger splices or locate at points of low tensile stress.

3.3 EMBEDDED ITEMS

A. Install conduit and piping as shown on the Plans. Locate and fasten conduit, piping and other embedded items in forms.

3.4 BATCHING, MIXING AND DELIVERY OF CONCRETE

A. Measure, batch, mix and deliver ready-mixed concrete in accordance with ASTM C 94 and ACI 304R. Produce ready-mixed concrete using an automatic batching system as described in CPMB-100 Concrete Plant Standards, Part 2 - Plant Control Systems.
B. Measure, mix and deliver concrete produced by volumetric batching and continuous mixing in accordance with ASTM C 685.
C. Maintain concrete workability without segregation of material and excessive bleeding. Obtain approval of Engineer before adjustment and change of mix proportions.

D. Do not exceed the maximum water-cement ratio of the approved mix design. If all water allowed by the water cement ratio has not been added at the start of mixing the remaining water may be added no later than the time of delivery. Addition of water should be in accordance with ASTM C 94.
E. Do not mix concrete when the air temperature is at or below 40 degrees F and falling. Concrete may be mixed when temperature is 35 degrees F and rising. Take temperature readings in the shade, away from artificial heat. Protect concrete from temperatures below 32 degrees F until the concrete has cured for a minimum of three (3) days at 70 degrees F or five (5) days at 50 degrees F.
F. Conform to ACI 305R for batching concrete when air temperature is above 90 degrees F.
G. Clean, maintain and operate equipment so that it thoroughly mixes material.
H. Mixing methods other than as described above shall be used only when approved by Engineer.

3.5 PLACING CONCRETE

A. Place and consolidate in accordance with ACI 304R and ACI 309R.
B. Give at least 24 hours advance notice to Engineer to permit inspection of forms, reinforcing steel, embedded items and other preparations for placing concrete. Place no concrete prior to Engineer's inspection.
C. Schedule concrete placing to permit completion of finishing operations in daylight hours. However, if necessary to continue after daylight hours, light the site as required. If rainfall occurs after placing operations are started, provide covering to protect the work.
D. Use troughs, pipes and chutes lined with approved metal or synthetic material. Place concrete without allowing segregation. Keep chutes, troughs and pipes clean and free from coatings of hardened concrete. Do not allow aluminum material to be in contact with concrete.
E. Limit free fall of concrete to prevent segregation. Do not deposit large quantities of concrete at one location so that running or working concrete along forms is required. Do not jar forms after concrete has taken on initial set; do not place any strain on projecting reinforcement or anchor bolts.
F. Use tremies for placing concrete in walls and similar narrow or restricted locations. Use tremies made in sections, provide in several lengths, so that outlet may be adjusted to proper height during placement operations.
G. When the weather is hot enough to cause the concrete temperature to exceed 90 degrees F, employ means, such as pre-cooling aggregates and mixing water, using ice or placing at night, to maintain concrete temperature below 90 degrees F.
H. Consolidate each layer of concrete with concrete spading implements and mechanical vibrators of type and adequate number for the size of placement. Apply vibrators to concrete immediately after depositing. Do

not use vibrators to aid lateral flow of concrete. Do not over-consolidate concrete.

I. When placement of concrete flatwork is stopped unexpectedly, install a rigid transverse bulkhead, accurately notched for the reinforcing steel and shaped accurately to the cross section.

J. Handling and Placing Concrete: Conform to ACI 302.1R, ACI 304R and ACI 309R.

3.6 CURING AND REMOVAL OF FORMS AND SHORING

A. Comply with ACI 308. Cure by preventing loss of moisture and rapid temperature change for a period of seven (7) days when Type I/II, II or IP cement has been used and for three (3) curing days when Type III cement has been used.

B. Start curing as soon as free water has disappeared from the concrete surface after placing and finishing.

C. A curing day is any calendar day in which the temperature is above 50 degrees F for at least 19 hours. Colder days may be counted if air temperature adjacent to concrete is maintained above 50 degrees F. In continued cold weather, when artificial heat is not provided, removal of forms and shoring may be permitted at the end of calendar days equal to twice the required number of curing days.

D. Formed surfaces not requiring rubbed-finished surface:
   1. Cure by leaving forms in place for the full cure period or forms may be removed after two (2) days and curing compound applied. Keep wood forms wet during the curing period. Add water as needed for other types of forms.
   2. Soffit Forms: Leave soffit forms and shores in place until concrete has reached the specified design strength unless a plan for early removal of forms is submitted by the Contractor and approved by the Engineer. Any additional material testing required for the early removal of forms will be responsibility of the Contractor.

E. Rubbed Finish:
   1. At formed surfaces requiring rubbed finish, remove forms as soon as practicable without damaging the surface. Remove forms from surfaces requiring rubbing only as rapidly as rubbing operation progresses.
   2. After rubbed-finish operations are complete, continue curing formed surfaces by using either approved curing/sealing compounds or moist cotton mats until normal curing period is complete.

F. Unformed Surfaces: Cure with approved membrane curing compound method in accordance with ASTM C 309.
   1. After concrete has received a final finish and surplus water sheen has disappeared, immediately seal surface with a uniform coating of approved curing compound, applied at the rate of coverage recommended by manufacturer or as directed by Engineer. Provide

uniform coverage at a minimum rate of one (1) gallon per 180 square feet of area.

2. Thoroughly agitate the compound during use and apply by means of approved mechanical power pressure sprayers equipped with atomizing nozzles. For application on small miscellaneous items, hand-powered spray equipment may be used. Prevent loss of compound between nozzle and concrete surface during spraying operations.
3. Do not apply compound to a dry surface. If concrete surface has become dry, thoroughly moisten surface immediately prior to application. At locations where coating shows discontinuities, pinholes or other defects, or if rain falls on a newly coated surface before film has dried sufficiently to resist damage, apply an additional coat of compound at the specified rate of coverage.

3.7 FINISHING

A. Patch honeycomb, minor defects and form tie holes in concrete surfaces with cement mortar mixed one (1) part cement to two (2) parts fine aggregate. Repair defects by removing unsatisfactory material and replacing with new concrete, keyed and bonded to existing concrete. Finish to provide a uniform surface between patches and existing concrete.

B. Apply a broomed finish to all exposed surfaces of interceptor structure inlets and channel lining. Apply broomed finish in a single, continuous stroke perpendicular to the channel flow to produce a uniform surface Apply a rubbed finish to all other exposed surfaces unless directed otherwise on the Plans or by the Engineer. After pointing has set sufficiently, wet the surface and perform first surface rubbing with No. 16 carborundum stone or approved equal. Do not add cement to form surface paste. Rub sufficiently to bring surface to paste; to remove form marks and projections; and to produce a smooth, dense surface. Spread or brush material, which has been ground to paste, uniformly over surface and allow to reset. In preparation for final acceptance, clean surfaces and perform final finish rubbing with No. 30 carborundum stone or approved equal. After rubbing, allow paste on the surface to re-set; then wash surface with clean water. Leave structure with a clean, neat and uniform finish.

3.8 DEFECTIVE WORK

A. Remove and repair defective work at no cost to the District.
B. If concrete surface is bulged, uneven, or shows honeycombing or form marks, which cannot be repaired satisfactorily through patching, remove and replace the defective work as directed by the Engineer.
C. Replace or submit a repair plan for pitted or washed concrete to be

approved by the Engineer.

3.9 TESTING AND INSPECTION

A. Refer to Section 01457 - Construction Tests and Inspection.

3.10 PROTECTION

A. Refer to Section 02316 - Structural Excavating and Backfilling.
B. Provide for protection of freshly placed concrete against damage from precipitation by having sufficient material on-site to protect finished surface.

3.11 MATERIAL DISPOSAL

A. Refer to Section 02120 - Material Disposal.

END OF SECTION

SECTION 15073
DUCTILE IRON PIPING AND FITTINGS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Detailed requirements for various ductile iron piping products. Some products specified in this Section may not be required for this Contract. Refer to piping system specification section(s) and Drawings to determine particular ductile iron piping products to be provided under this Contract.

1.02 REFERENCES

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

1. ASTM A307-90 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
2. ASTM C283-54 - Standard Test Method for Resistance of Porcelain Enameled Utensils to Boiling Acid.
3. ASTM D1248-84 - Standard Specification for Polyethylene Plastics Molding and Extrusion Materials.

B. American Water Works Association (AWWA):

1. AWWA C104-90 - Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water.
2. AWWA C110-87 - Ductile-Iron and Gray-Iron Fittings, 3 in. Through 48 in., for Water and other Liquids.
3. AWWA C105-88 - Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids.
4. AWWA C111-85 - Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
5. AWWA C115-88 - Flanged Ductile-Iron Pipe with Threaded Flanges.
6. AWWA C151-91 - Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
7. AWWA C153-88 - Ductile Iron Compact Fittings.
8. AWWA C606-87 - Grooved and Shouldered Joints.

C. American National Standards Institute (ANSI):

1. ANSI A21.14-79 - Ductile Iron Fittings 3-in. Through 24-in., for Gas.
2. ANSI A21.52-86 - Ductile Iron Pipe, Centrifugally Cast, In Metal Molds or Sand Lined Molds for Gas.
3. ANSI B18.2.1-81 - Square and Hex Bolts and Screws Inch Series.
4. ANSI B18.2.2-87 - Square and Hex Nuts.

D. American Welding Society (AWS):

1. AWS A5.6-84 - Specification for Covered Copper and Copper Alloy Arc Welding Electrodes.
2. AWS A5.15-90 - Specification for Welding Electrodes and Rods for Cast Iron.

1.03 SUBMITTALS

A. Product Data:

1. Manufacturer's specifications, catalog cuts, and literature:

a. Pipe.
b. Inside linings.
c. Mechanical and push-on joints.
d. Flanged joints.
e. Grooved joints.
f. Standard fittings.
g. Special fittings.
h. Wall pipe and floor pipe.
i. Polyethylene encasement.

B. Submit outside coating system for buried, interior, exterior, and submerged piping locations. Include submittal information specified in Section 09900.

C. Submit all product data and coating system information specified above in one complete submittal.

D. Submit in accordance with Section 01300.

E. Shop drawings showing layout for ductile iron piping systems shall be submitted in accordance with and transmitted under appropriate piping system specification section.

PART 2 PRODUCTS

2.01 PIPE

A. Liquid and air service pipe: AWWA C151, ductile iron.

B. Gas service pipe: ANSI A21.52, ductile iron. In addition to pipe marking required by ANSI A21.52, conspicuously stamp each pipe with words "AIR TESTED".

C. Minimum Thickness Class:

1. Mechanical and push-on joint pipe: Thickness Class 51, unless specified otherwise in piping system specification section.
2. Flanged joint pipe: Thickness Class 53.

3. Grooved joint pipe:

Pipe Size (in.)	Thickness Class
4 to 16	53
18	54
20	55
24 - 36	56

2.02 INSIDE LINING

A. Pipe and fittings shall be provided with inside lining as specified in this section.

B. Proposed lining shall be resistant to the composition of the actual fluid to be carried by the lined piping.

C. Cement lining shall be in accordance with AWWA C104. (To be used on water lines and stormwater pump discharges. Not to be used in water or wastewater treatment process piping.)

D. Polyethylene Lining:

1. Manufacturers:

a. American Cast Iron Pipe Company.
b. U.S. Pipe and Foundry Company.
c. Or equal.

E. Polyurethane Lining:

1. Manufacturers:

a. Corropipe II TX-15.
b. Or equal.

F. Ceramic Epoxy Lining:

1. Manufacturers:

a. Protecto 401.
b. Or equal.

G. Pipe and fittings for air and gas service shall be unlined.

2.03 JOINTS

A. Joint Type:

1. Liquid and air services in buried locations shall be mechanical or push-on joint.

2. Gas service in buried locations shall be mechanical joint.
3. Gas service in locations other than buried shall be flanged joint.
4. Liquid and air service in locations other than buried shall be flanged or grooved end joint.
5. As shown on Drawings or as specified in system Specification if different than specified above for services and locations.

B. Mechanical and Push-on Joints:

1. AWWA C111.
2. Gasket material:

    a. Suitable for service and maximum operating temperature of piping system as specified in piping system specification section.
    b. Selected by pipe manufacturer.

3. Restrained Joints:

    a. Manufacturers:

        1) American Cast Iron Pipe Company, Flex-Ring, and Lok-Ring.
        2) U.S. Pipe and Foundry Company, TR-Flex.
        3) Or equal.

    b. Provide restrained joints for buried piping systems specifically identified to have restrained joints and for buried piping systems where use of concrete thrust blocks is not practical.
    c. Mechanical locking type to provide positive restraint from joint separation without use of restraining rods, straps, clamps, or setscrew retainer glands.
    d. Minimum pressure rating: 250 psi.

C. Flanged Joints:

1. Flanged pipe for liquid and air service shall be in accordance with AWWA C115.
2. Flanged pipe for gas service shall be in accordance with AWWA C115 and ANSI A21.52. In addition to pipe marking specified in AWWA C115 and ANSI A21.52, conspicuously stamp each flanged pipe with words "AIR TESTED".
3. Fabrication of flanged pipe, including assembly of flange on pipe shall be performed by pipe manufacturer in accordance with AWWA C115. Assembly of flange on pipe outside of manufacturer's shop is unacceptable.
4. Flange material for flanged pipe shall be ductile iron. Flanged pipe with gray iron flanges is not acceptable.
5. Gasket material shall be suitable for service and maximum operating temperature of piping system as specified in piping system specification section. Torque requirement of gaskets shall be less than torque rating of flange, bolt, and nuts.
6. Gaskets shall be ring or full face, 1/8-in. thick, and conform to dimensions shown in Appendices to AWWA C110 and AWWA C115.
7. Bolts:

    a. Size, length, and number as shown in AWWA C110 and AWWA C115.
    b. Material: Stainless Steel for corrosive environments, including inside wet wells; otherwise, carbon steel, ASTM A307, Grade B
    c. Dimensions: ANSI B18.2.1, heavy hex.

8. Nuts:

    a. Size, length, and number as shown in AWWA C110 and AWWA C115.
    b. Material: Stainless Steel for corrosive environments, including inside wet wells; otherwise, carbon steel, ASTM A307, Grade B
    c. Dimensions: ANSI B18.2.2, heavy hex.

D. Grooved Joints:

1. AWWA C606.
2. Rigid joint. Pipe ends radius cut grooved to rigid groove specifications.
3. Grooved couplings shall be Victaulic Style 31, or equal.
4. Grooved joint adapter flanges shall be Victaulic Styles 341 or 342, or equal.
5. Gasket material:

    a. Suitable for service and maximum operating temperature of piping system as specified in piping system specification section.
    b. Selected by grooved coupling manufacturer.

6. Coatings for grooved couplings and adapter flanges shall be same product as coatings for pipe.

2.04 FITTINGS

A. Pressure rating shall be 250 psi, minimum.

B. Standard fittings for liquid and air service:

1. Mechanical and push-on joint fittings:

    a. Ductile iron.
    b. AWWA C110 or AWWA C153.

2. Flanged joint fittings:

    a. Ductile iron.
    b. AWWA C110.
    c. Flange dimensions in accordance with AWWA C115.

3. Grooved joint fittings:

    a. Ductile iron.
    b. AWWA C110 except end preparation and wall thickness.
    c. End preparation in accordance with AWWA C606, rigid radius groove.
    d. Minimum wall thickness in accordance with AWWA C153.

C. Special fittings for liquid and air service, not included in AWWA standards, shall be manufacturer's standard, based on AWWA design principles, and in compliance with applicable requirements of AWWA standards.

D. Standard fittings for gas service:

1. Mechanical joint fittings: ANSI A21.14, ductile iron.
2. Flanged joint:

    a. ANSI A21.14, ductile iron.
    b. Flange dimensions in accordance with AWWA C115.

E. Special fittings for gas service, not included in ANSI standard, shall be manufacturer's standard, based on ANSI design principles, and in accordance with applicable requirements of ANSI standard.

F. Wall Pipe and Floor Pipe:

1. Ductile iron.
2. Wall thickness of body equal to or greater than wall thickness of connecting pipe.
3. Flanges set flush with face of concrete shall be tapped for stud bolts.
4. Collar dimensions as shown on Drawings.
5. Collar cast integral with pipe or fabricated by welded attachment of collar to pipe.
6. Fabricated wall pipe and floor pipe shall be as follows:

    a. Rated for dead end thrust due to 250 psi internal pressure.
    b. Ductile iron collar welded continuously around pipe on both sides of collar.
    c. Weld in pipe manufacturer's shop by qualified welder.
    d. Electrodes: AWS A5.15, Class ENiFe-CI or AWS 5.6, Class ECuAl-2.
    e. Manufacturer: American Cast Iron Pipe Company, or equal.

G. Miscellaneous Fittings:

1. Provide miscellaneous fittings, such as cutting in sleeves, tapping sleeves, caps, plugs, and other fittings, as required for a complete system.
2. Manufacturer of miscellaneous fittings shall be same manufacturer as pipe.
3. Miscellaneous fittings shall be suitable for service.

2.05 OUTSIDE COATING

A. Provide buried piping with asphaltic coating in accordance with applicable AWWA and ANSI standards.

B. Surface preparation, priming, and finish coating of non-buried piping shall be compatible and in accordance with Section 09900.

C. Coating for piping embedded in concrete is not required.

2.06 POLYETHYLENE ENCASEMENT

A. Provide polyethylene encasement for buried piping in accordance with AWWA C105.

PART 3 EXECUTION

3.01 INSTALLATION

A. In accordance with piping system Specification section.

3.02 JOINT ASSEMBLY

A. Push-on, mechanical, and grooved joint in accordance with manufacturer's written instructions.

B. Flanged joint in accordance with piping system specification section, flanged pipe manufacturer's written instructions, and gasket manufacturer's written instructions.

3.03 WALL PIPE

A. Support by formwork to prevent contact with reinforcing steel.

B. Install in accordance with Section 03300A.

3.04 TAPPING

A. Do not tap polyethylene-lined and glass-lined pipe.

B. Taps for cement-lined and unlined pipe shall be in accordance with pipe manufacturer's instructions.

C. Provide service saddles for tap sizes greater than 1-in. Service saddles are not required for tap sizes 1-in. and smaller.

END OF SECTION

Attachment 2:1105-A
Certificate of Compliance with U.S. Iron and Steel Requirements

Certificate of Compliance with U.S. Iron and Steel Requirements

Compliance Submittal by Owner

TWDB Project: _____
Contract Name and ID: _____
TWDB Commitment Number: _____

This executed certificate must be submitted after the completion of construction and prior to the issuance of a Certificate of Approval.

I, _____ (Full Name Printed) swear or affirm under penalty of law that I am _____(Title) of the _____(Name of Entity) and to the best of my knowledge and in reliance of the certifications provided by manufacturers, vendors, contractors and consultants, hereby certify that the above-mentioned entity is in full compliance with the U.S. Iron and Steel requirements of Texas Water Code Section 17.183 and/or Texas Government Code Chapter 2252, Subchapter G, as applicable and subject to any waivers granted by the Texas Water Development Board (TWDB).

I understand that a false statement herein may subject me and/or the Entity to any and all civil and criminal penalties available pursuant to applicable federal and state laws.

EXECUTED this _____ day of _____, 20_____.

_____
(Signature)

_____
(Printed Name)

_____
(Title)

Sworn to and subscribed before me by _____ on this _____ day of _____, 20_____.

_____
(Notary Public in and for the State of Texas)

(SEAL)

STATE OF TEXAS §
§
COUNTY OF _____ §

SITE
CERTIFICATE

Before me, the undersigned notary, on this day personally appeared _____, a person whose identity is known to me or who has presented to me a satisfactory proof of identity. After I administered an oath, this person swore to the following:

(1) My name is_____. I am over 18 years of age and I am of sound mind, and capable of swearing to the facts contained in this Site Certificate. The facts stated in this certificate are within my personal knowledge and are true and correct.

(2) I am an authorized representative of _____, an entity that has filed an application for financial assistance with the Texas Water Development Board for a (water) (wastewater) project.

Please complete only those sections that apply to your project:

LEGAL CERTIFICATION – LEASE/CONTRACT

I certify that: _____
(Legal Name of Applicant, i.e., City, District, etc.)

has executed a written lease or other contractual agreement to use the property needed for this (water)(wastewater) project that extends through _____(date), the life of the Texas Water Development Board loan or grant that will be used to finance this project, either in whole or in part. A copy of this lease or agreement is attached hereto.

LEGAL CERTIFICATION – PROPERTY EASEMENT

I certify that: _____
(Legal Name of Applicant, i.e., City, District, etc.)

has executed an express easement to use the property needed for this (water) (wastewater) project that extends through the life of the Texas Water Development Board loan or grant that will be used to finance this project, either in whole or in part. The express easement to use the property needed for this (water) (wastewater) project extends through _____ (date). A copy of the express easement agreement is attached hereto.

LEGAL CERTIFICATION – OWNERSHIP INTEREST

I certify that_____
(Legal Name of Applicant, e.g. City, District, etc.)

◯ Option A: has acquired the necessary real property interest, as evidenced by fee simple purchase, deed, fully executed earnest money contracts, or completion of eminent domain proceedings; that such acquisition will guarantee access and egress; and such interest will contain the necessary easements, rights of way, or unrestricted use as is required for the project being financed by the Texas Water Development Board. The legal description is referenced below.

◯ Option B: is in the process of acquiring the necessary real property interest, as evidenced by earnest money contracts, contracts for sale, firm option agreements to purchase the subject property, or the initiation of eminent domain procedures; that such acquisition will guarantee access and egress; and such interest will contain the necessary easements, rights of way, or unrestricted use as is required for the project being financed by the Texas Water Development Board. The legal description is referenced below. The anticipated date of acquisition is: _____.

The property has been/will be acquired with the use of eminent domain: ◯ True ◯ False

Location and Description of Property Interests acquired for Project:

Any deeds or other instruments required to be recorded to protect the title(s) held by _____ (Legal Name of Applicant) have been recorded or filed for the record in the County deed records or other required location. The following documents are attached hereto:

Description of documents that were used or will be used to acquire the property:

EXECUTED this_____day of _____, 20_____.

_____ (Signature)

_____ (Print Name)

_____ (Title)

Sworn to and subscribed before me by _____ on this _____ day of_____,20_____.

_____(Notary Public in and for the State of Texas)

[SEAL]

CONTRACTOR'S ACT OF ASSURANCE

STATE OF TEXAS §
§
COUNTY OF_____§

BEFORE ME _____, a Notary Public duly commissioned and qualified in and for the County of _____ in the State of Texas came and appeared _____, as represented by _____, the Corporation's _____, who declares he/she is authorized to represent _____ pursuant to provisions of a resolution adopted by said Corporation on the _____ day of _____, 20_____(a duly certified copy of such resolution is attached to and is hereby made a part of this document).

_____, as the representative of, _____declares that _____ assures the Texas Water Development Board that it will construct _____ project at _____, Texas, in accordance with sound construction practice, all laws of the State of Texas, and the rules of the Texas Water Development Board.

GIVEN UNDER MY HAND and seal of office this _____ day of _____, 20_____.

_____ (Notary Public in and for the State of Texas)

_____ (Print Name)

[SEAL]

CONTRACTOR'S ACT OF ASSURANCE RESOLUTION

I hereby certify that it was RESOLVED by a quorum of the directors of the _____(Name of Corporation), meeting on the_____day of _____ 20_____, that:

Authorized Representative(s):

be, and hereby is/are authorized to act on behalf of _____ (Name of Corporation), as its representative in all business transactions conducted in the State of Texas, and;

That all above resolution was unanimously ratified by the Board of Directors at said meeting and that the resolution has not been rescinded or amended and is now in full forces and effect; and;

In authentication of the adoption of this resolution, I subscribe my name and affix the seal of the Corporation this _____ day of _____, 20_____.

_____(Secretary)

[SEAL]

STATEMENT OF QUALIFICATIONS

Bidder shall submit the Statement of Qualifications to the Engineer. All questions must be answered and the data given must be clear and comprehensive. This Statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit additional information.

1. Submitted By: _____

_____

2. Principal office, address and telephone number: _____

_____

_____

_____

3. How many years has your Organization been in business as a Contractor? _____

If less than five years, identify all principals or officers of your Organization that have been in business as a Contractor for five years, the name of the prior Organization for each principal or officer.

_____

_____

_____

4. How many years has your Organization been in business under its present name?

_____

5. If your Organization is a corporation, answer the following:

Date of incorporation: _____

State of incorporation: _____

President's name: _____

Vice President's name(s): _____

_____

Secretary's name: _____

Treasurer's name: _____

Other Officers: _____

6. If your Organization is a partnership, answer the following:

Date of Organization: _____

Type of partnership (if applicable): _____

Name(s) of general partners(s): _____

_____

_____

7. If your Organization is individually owned, answer the following:

Date of Organization: _____

Name of Owner: _____

8. Has your Organization ever failed to complete any work awarded to it? _____

If yes, submit details identifying the Project, the Owner and explaining fully the failure and the circumstances.

Has your Organization ever been awarded a bonus for early completion of work? _____Yes _____No. If yes, give details of job and incentives.

9. Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your Organization or its officers? _____ If yes, attach details for each.

10. Has your Organization ever filed any lawsuits or requested arbitration with regard to construction contracts within the last five years? _____ If yes, attach details for each.

11. Other than lawsuits or arbitrations explained in 9 or 10 above, has your Organization ever been a party to a lawsuit or arbitration with regard to construction contracts within the last five years? _____ If yes, attach details for each.

12. Within the last five years, has any officer or principal of your Organization ever been an officer or principal of another Organization when it failed to complete a construction contract or was a party to a lawsuit or arbitration? _____ If yes, please attach details for each.

13. Has your Organization ever been assessed liquidated damages or an economic disincentive on any project? _____ Provide explanation of contract, circumstances and manner addressed by your Organization.

14. On a separate sheet, list the major contracts your Organization has completed in the past two years, giving the name of the project, owner, engineer, contract amount, date of completion and percentage of work performed by your Organization.

15. On a separate sheet, list the major contracts (over $1,000,000) your Organization has in progress, giving the name of the project, owner, engineer, contract amount, percent complete, start date and scheduled completion date.

16. State the average annual dollar amount of work performed by your Organization during the last five years.

_____

17. Attach statements of background and experience of the principle members of your Organization, including the officers and the person who may be the superintendent and project manager for this Contract.

18. Identify recent projects similar in type and size to this Contract. List the names and phone numbers of references for each if not previously noted above. _____

_____

_____

_____

19. List all projects completed or started by your Organization within the last two (2) years listing the owner, a contact reference, superintendent in charge and indicate whether you were the general or a sub contractor. State what jurisdictions provided and/or required inspections and observed the work performed. _____

_____

_____

20. Attach a list of equipment your Organization owns which is available for this contract.

21. Bonding Capacity: _____

Name of bonding company: _____

Name of principal being bonded: _____

Name, address and telephone number of agent/broker: _____

_____

_____

22. If requested by Engineer or Owner, attach a financial statement, the name of the Organization preparing the statement and whether the statement is audited.

23. Is the attached financial statement for the identical Organization named on page five?

_____

24. If not, explain the relationship and financial responsibility of the Organization whose financial statement is provided (e.g., parent-subsidiary). _____

_____

_____

25. Attach copies of Certificates of Good Standing from the Secretary of State's Office for the company, corporation or entity.

[EXECUTION PAGE TO FOLLOW]

The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the ENGINEER, (Fort Bend County Levee Improvement District No. 14) The Owner, or their agents, collectively, in verification of the recitals comprising this Statement of Bidders Qualifications.

Dated this _____ day of _____, 2024.

Bidder _____

By _____

Title _____

STATE OF _____

COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____, 2024, did appear _____ of _____ and affix the above noted signature.

Notary Public: _____

Printed Name: _____

My Commission Expires: _____ (Seal)

_____, being duly sworn, deposes and says that the answers to the foregoing questions and all statements therein contained are true and correct and sufficiently complete so as not to be misleading.

_____ _____

Signature Date

_____

Title

Subscribed and sworn to before me this _____ day of _____, 2024

(Seal)

Notary Public: _____

Printed Name: _____

My Commission Expires: _____

HOLD HARMLESS AGREEMENT

Date: _____

To: LJA Engineering, Inc.

Re: Construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14

LJA Job No: 1301-1413

Hold harmless agreement: We have requested and are receiving electronic media containing intermediate survey and design information, not intended for construction or design. We agree to hold LJA Engineering, Inc. harmless for any defects in this data, including all assumptions made from or using this preliminary data. We agree that it shall be our responsibility to reconcile this electronic data with the construction plans, recorded plats, and specifications, and that only the construction plans, recorded plats, and specifications shall be regarded as the contract documentation for this project. In addition, we agree not to modify this information in any way and we agree not to release this information to any other parties.

The undersigned acknowledges his/her receipt of the electronic information, concurrence with the above statement and that he/she is an officer of _____ with authority to sign this document.

Accepted by: _____

Name: _____

Title: _____

Company: _____

Date: _____

PROGRESS ESTIMATE

Project: Construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14 City of Sugar Land ETJ Fort Bend County, Texas

LJA Job No. 1301-1413 Estimate No. _____
For Period From _____ to _____
Contract Completion Date:_____
Notice to Proceed Date:_____
Approved Time Extensions:_____
Revised Contract Completion Date:_____

Contract Date:_____

Original Contract Amount: $_____

Revised Contract Amount: $_____

Final Contract Amount: $_____

TOTAL AMOUNT WORK:
DONE TO DATE: $_____

Less Late Start Amount:($_____)

Less Amount Retained:($_____)

Less Previous Payments:($_____)

Less Economic Disincentives:($_____)

AMOUNT DUE
CONTRACTOR:$_____

Owner: Fort Bend County Levee Improvement District No. 14

Contractor:

CERTIFICATE OF THE CONTRACTOR OR HIS DULY AUTHORIZED REPRESENTATIVE

To the best of my knowledge, I certify that all items, quantities and prices of work and materials shown on the face of this estimate are correct; that all work has been performed and materials supplied in full accordance with the terms and conditions of the corresponding construction contractual documents between the Owner and the Contractor, including all changes authorized thereto; that the foregoing is a true and correct statement of the contract amount up to and including the last day of the period covered by this estimate and that no part of the "AMOUNT DUE CONTRACTOR" has been received.

I further certify that all just and lawful bills against the below named Contractor, for labor, material and expendable equipment employed in the performance of said contract have been paid in full accordance with the Contract requirements.

_____ _____
Contractor Signature

_____ _____
Date Title

CERTIFICATE OF ENGINEER'S REPRESENTATIVE

I certify that a qualified project representative was present on the project on a periodic basis to observe construction and that all materials and work included in this statement have been performed in general accordance with the construction plans and specifications and authorized changes thereto. I further certify that I have verified this estimate and that, to the best of my knowledge and belief, it is a true and correct statement of work performed and materials supplied by the Contractor, that the amount due him is correct and just.

PROJECT MANAGER:_____ DATE:_____

OWNER'S ACCEPTANCE:_____ DATE:_____

REQUEST FOR EXTENSION OF TIME

Project: Construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14

Owner: Fort Bend County Levee Improvement District No. 14

Attention: _____ Date: _____

LJA Job No: 1301-1413

Gentlemen:

We request extension of completion time on our Contract in the amount of _____ Calendar/Working Days specified as follows: (Please circle day of the month)

Month: _____ Year _____

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Reasons for Request: _____

_____

_____

Contractor

_____

Signature

_____ Recommend approval for extension of _____ calendar/working days.

_____ Recommend disapproval. (See following comments)

_____

_____

_____

Reviewed By: _____ Date: _____
Project Representative

Approved By: _____ Date: _____
Project Manager

FORM I: CONDITIONAL WAIVER FOR PROGRESS PAYMENTS

* * * * * * *

CONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

Project: Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14

Job No.: 1301-1413

On receipt by the signer of this document of a check from Fort Bend County Levee Improvement District No. 14 (maker of check) in the sum of $_____ payable to _____ _____ (payee or payees of check) and when the check has been properly endorsed and has been paid by the bank on which it is drawn, this document becomes effective to release any mechanic's lien right, any right arising from a payment bond that complies with a state or federal statute, any common law payment bond right, any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or payment rights for persons in the signer's position that the signer has on the property of Fort Bend County Levee Improvement District No. 14 (owner) located at Fort Bend County, Texas (location) to the following extent: Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14 (job description).

This release covers a progress payment for all labor, services, equipment, or materials furnished to the property or to Fort Bend County Levee Improvement District No. 14 (person with whom signer contracted) as indicated in the attached statement(s) or progress payment request(s), except for unpaid retention, pending modifications and changes, or other items furnished.

Before any recipient of this document relies on this document, the recipient should verify evidence of payment to the signer.

The Signer warrants that the signer has already paid or will use the funds received from this progress payment to promptly pay in full all of the signer's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or services provided for or to the above referenced project in regard to the attached statement(s) or progress payment request(s).

_____
(Company Name)

By:_____
(Signature)

Title:_____

Date:_____

FORM 2: UNCONDITIONAL WAIVER FOR PROGRESS PAYMENTS

* * * * * * *

NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. IT IS PROHIBITED FOR A PERSON TO REQUIRE YOU TO SIGN THIS DOCUMENT IF YOU HAVE NOT BEEN PAID THE PAYMENT AMOUNT SET FORTH BELOW. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM.

UNCONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

Project: Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14

Job No.: 1301-1413

The signer of this document has been paid and has received a progress payment in the sum of $_____ for all labor, services, equipment, or materials furnished to the property or to Fort Bend County Levee Improvement District No. 14 (person with whom signer contracted) on the property of Fort Bend County Levee Improvement District No. 14 (owner) located at Fort Bend County, Texas (location) to the following extent: Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14 (job description). The signer therefore waives and releases any mechanic's lien right, any right arising from a payment bond that complies with a state or federal statute, any common law payment bond right, any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or payment rights for persons in the signer's position that the signer has on the above referenced project to the following extent: Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14 (job description).

This release covers a progress payment for all labor, services, equipment, or materials furnished to the property or to Fort Bend County Levee Improvement District No. 14 (person with whom signer contracted) as indicated in the attached statement(s) or progress payment request(s), except for unpaid retention, pending modifications and changes, or other items furnished.

The signer warrants that the signer has already paid or will use the funds received from this progress payment to promptly pay in full all of the signer’s laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or services provided for or to the above referenced project in regard to the attached statement(s) or progress payment request(s).

_____
(Company Name)

By:_____
(Signature)

Title:_____

Date:_____

FORM 3: CONDITIONAL WAIVER FOR FINAL PAYMENT

* * * * * * *

CONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

Project: Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14

Job No.: 1301-1413

On receipt by the signer of this document of a check from Fort Bend County Levee Improvement District No. 14 (maker of check) in the sum of $_____ payable to _____ _____ (payee or payees of check) and when the check has been properly endorsed and has been paid by the bank on which it is drawn, this document becomes effective to release any mechanic's lien right, any right arising from a payment bond that complies with a state or federal statute, any common law payment bond right, any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or payment rights for persons in the signer's position that the signer has on the property of Fort Bend County Levee Improvement District No. 14 (owner) located at Fort Bend County, Texas (location) to the following extent: Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14 (job description).

This release covers the final payment to the signer for all labor, services, equipment, or materials furnished to the property or to Fort Bend County Levee Improvement District No. 14 (person with whom signer contracted).

Before any recipient of this document relies on this document, the recipient should verify evidence of payment to the signer.

The signer warrants that the signer has already paid or will use the funds received from this final payment to promptly pay in full all of the signer's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or services provided for or to the above referenced project up to the date of this waiver and release.

_____
(Company Name)

By:_____
(Signature)

Title:_____

Date:_____

FORM 4: UNCONDITIONAL WAIVER FOR FINAL PAYMENT

* * * * * * *

NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. IT IS PROHIBITED FOR A PERSON TO REQUIRE YOU TO SIGN THIS DOCUMENT IF YOU HAVE NOT BEEN PAID THE PAYMENT AMOUNT SET FORTH BELOW. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM.

UNCONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

Project: Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14

Job No.: 1301-1413

The signer of this document has been paid in full for all labor, services, equipment, or materials furnished to the property or to Fort Bend County Levee Improvement District No. 14 (person with whom signer contracted) on the property of Fort Bend County Levee Improvement District No. 14 (owner) located at Fort Bend County, Texas (location) to the following extent: Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14 (job description). The signer therefore waives and releases any mechanic's lien right, any right arising from a payment bond that complies with a state or federal statute, any common law payment bond right, any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or payment rights for persons in the signer's position.

The signer warrants that the signer has already paid or will use the funds received from this final payment to promptly pay in full all of the signer's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or services provided for or to the above referenced project up to the date of this waiver and release.

_____
(Company Name)

By:_____
(Signature)

Title:_____

Date:_____

AFFIDAVIT OF BILLS PAID
(TO BE FILED WITH FINAL PAY ESTIMATE ONLY)

STATE OF TEXAS §

COUNTY OF _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____

_____

representing Contractor under the following Contract:

Owner: Fort Bend County Levee Improvement District No. 14

Contractor: _____

Date: _____

Project: Construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14

LJA Job No.: 1301-1413

The undersigned was by me duly sworn and now states upon oath:

1. The improvements required by the Contract have been erected and completed in full compliance with the Contract and the agreed plans and specifications for the Contract.

2. All bids and claims for materials furnished and labor performed on the Contract have been paid. There are no outstanding unpaid bills or legal claims for labor performed or materials furnished upon the job.

3. This Affidavit is being made by the undersigned realizing that it is in reliance upon the truthfulness of the statements contained in this Affidavit that final and full settlement of the balance due on the Contract is being made, and in consideration of the disbursement of funds by Owner, the undersigned expressly gives and releases all liens, claims and rights to assert a lien on said premises and agrees to indemnify and hold Owner safe and harmless from and against all losses, damages, costs, and expenses of any character whatsoever, specifically including court costs, bonding fees and attorney fees, arising out of, or in any way relating to, claims for unpaid labor or material used or associated with construction of improvements under the Contract.

By _____

Name _____

Title _____

Subscribed and sworn before me, the undersigned authority, on this the _____day of _____, 20_____.

_____
Notary Public in and for the State of Texas

CONTRACTOR'S AFFIDAVIT OF CONSTRUCTION COMPLIANCE

Name of Project: Construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14

Owner: Fort Bend County Levee Improvement District No. 14

Address of Owner: c/o Husch Blackwell, 600 Travis Street, Suite 2350, Houston, Texas 77002

Type of Facilities Constructed: Pump Station Improvements

Contractor: _____

Address of Contractor: _____

Consulting Engineer: LJA Engineering, Inc.

Address of Consulting Engineer: 1904 West Grand Parkway North, Suite 120, Katy, Texas 77449

LJA Job No: 1301-1413

I, _____, _____, of [contractor's company name] do hereby certify that the construction of this project complies with the construction documents and meets or exceeds the specifications and requirements of Fort Bend County.

_____
Signature

_____
Name

_____
Title

_____
Date

STAKING REQUEST FORM

Project Name: Construction of the Pump Station Upgrade and Replacement to Serve Fort Bend County Levee Improvement District No. 14

LJA Job No.: 1301-1413

Description of Control Staking Requested: _____

_____

_____

_____

_____

(Note: Please describe streets, stationing, limits, type of staking, etc.)

Date Requested: _____ Time Requested: _____

Requested By: _____ Phone No.: _____
(Name, Title)

Stakes Needed By: _____
(Date)

Staking Request Form must be submitted 3 working days in advance in order to assure adequate time for scheduling and staking of areas requested. All requests must be made in writing and a return phone number must be provided. Designated limits must be suitable for construction staking at time of request or request will be considered void and re-submittal will be required.

SEND ALL REQUESTS TO:

CRAIG KALKOMEY, PE - LJA ENGINEERING, INC.

Fax No. 713.953.5026 Phone No. 713.953.5276