



INVITATION TO BID

ITB #2017-003

"Webb County Roadway Improvements – Espejo Gates"

DUE OCTOBER 17, 2017 AT 2 PM OR BEFORE

NOTICE is hereby given that the County of Webb intends to award a contract with a successful bidder for Roadway Reconstruction Improvements – Construction Contractors for Labor and Materials for approximately 26,000 LF (4.9 miles) in length of street improvements located in Webb County. Scope of work consists but not limited to: roadway reconstruction, grading, lime treatment, reworking subgrade, addition of base material, hot-mixed asphalt concrete pavement, drainage structures, roadside swales, and pavement markings; in accordance with the Texas Government Code 2269.101; Sub-Chapter C. (Competitive Bids).

Project Location: US Highway 83 North approximately 49 miles north of Laredo and 2 miles south of the Webb/Dimmit County Line.

The accompanying Invitation to Bid (ITB) with its terms, conditions, attachments and all other forms in this ITB package are due by or before 2 pm (Central Time) on Tuesday, October 17, 2017. ITB packages received after the due date and time will not be accepted. All ITB meeting the required deadline will be read publicly at the following location in accordance with Webb County Purchasing Policies and Procedures:

Please Mail or Hand Deliver ITB Packages to:

Webb County Clerk's Office
1110 Victoria Street, 2nd Floor, Suite 201
Laredo, Texas 78040

Copies of the ITB package are available on our website:

<http://www.webbcountytx.gov/PurchasingAgent/PublicNoticeRFP/>

Please submit (1) original ITB package and five (5) copies in a sealed envelope clearly marked on the outer front lower left corner as follows:

ITB 2017-003 "WEBB COUNTY ROADWAY IMPROVEMENTS – ESPEJO GATES".

Webb County reserves the right to reject any and all ITB proposals, to waive informalities in the ITB process, or to terminate the ITB process at any time, if deemed in the best interest for Webb County.

THIS FORM MUST BE INCLUDED WITH RFP PACKAGE; PLEASE CHECK OFF EACH ITEM INCLUDED WITH RFP PACKAGE AND SIGN BELOW TO CONFIRM SUBMITTAL OF EACH REQUIRED ITEM.

ITB 2017-003

“Webb County Roadway Improvements – Espejo Gates”.

ITB Package w/all required forms (*Bid proposal, general conditions, Plans & Specs*)

General Terms & Conditions

Conflict of Interest form (Form CIQ)

Certification regarding Debarment (Form H2048)

Certification regarding Federal lobbying (Form 2049)

Proof of No Delinquent Tax Owed to Webb County

Signature of Bidder

Table of Contents

1. Introduction	Page 4
2. Bid Package Preparation Cost	Page 4
3. Term of Contract	Page 4
4. Instructions to Bidders	Page 4
5. General Conditions	Page 4
6. Questions Concerning this ITB	Page 4
7. Disqualification	Page 4
8. Conflict of Interest	Page 5
9. Texas Ethics Commission Requirement Notification	Page 5
10. ITB Schedule	Page 5
11. Technical Specifications	Page 6

1. Introduction

Webb County intends to award a contract with a successful bidder for Roadway Reconstruction Improvements – Construction Contractors for Labor and Materials for approximately 26,000 feet (4.9 miles) in length of street improvements located in Webb County. Scope of work consists but not limited to: roadway reconstruction, grading, lime treatment, reworking subgrade, addition of base material, hot-mixed asphalt concrete pavement, drainage structures, roadside swales, and pavement markings; in accordance with the Texas Government Code 2269.101; Sub-Chapter C. (Competitive Bids).

Project Location: US Highway 83 North approximately 49 miles north of Laredo and 2 miles south of the Webb/Dimmit County Line.

2. Bid Package Preparation Cost

The County will not reimburse any Bidder for any costs involved in the preparation and submission of bid packages, amendments or other relevant documents associated with the ITB.

3. Term of Agreement

- To be Determined after selection and award of the lowest and responsible bidder.

4. Instructions to Bidders

- a) Bidders are solely responsible to review **ALL** technical specifications and any other requirement listed in the Technical specification document. Bidders must adhere to the schedule listed in the ITB package referencing deadlines for submittal of any questions Bidders may have prior to submittal of Bid.
- b) Bidders must comply with the Bid Security and Contractor minimum qualification requirements listed in the technical specifications. Bid security must be included with sealed ITB package. Bidder must also provide a list of previous projects within the past 5 years of similar elevated tank construction and tank painting.
- c) Any interpretations, corrections or changes to this Request for Bid and specifications will be made by addenda. Sole issuing authority of addenda shall be vested in Webb County through the Purchasing Agent. Addenda will be posted to the Purchasing Agents website <http://www.webbcountytx.gov/PurchasingAgent/PublicNoticeRFP/>

It is the bidder's responsibility to check the website for any addenda.

5. General Conditions

Interested Bidders shall familiarize themselves with conditions relating to the scope, specifications, and restrictions regarding the execution of work to be performed under the contract. It is the Bidder's responsibility to obtain any additional information it deems necessary to submit in its ITB package, as well as in the performance of the contract. Information contained in this document should not be considered all-inclusive.

6. Question concerning this ITB

All questions or clarification regarding this ITB package must be submitted in writing to the Webb County Purchasing Department via email to Mr. Juan Guerrero, Purchasing Contract Administrator at juguerrero@webbcountytx.gov

Each question, along with the County's response will be provided in writing to all prospective Bidders and included as an addendum to ITB document. Any verbal communication regarding this ITB will be considered non-binding on either party.

7. Disqualification

Reasons for disqualification include, but are not limited to:

- Failure to provide any information requested in this document.

8. Conflict of Interest

Webb County requires that its consultants and sub consultants be able to work solely in Webb County's interest, without conflicting financial or personal incentives. Webb County reserves the right to disqualify any prime provider or sub providers, or to place contractual limits on work or on personnel, if there is a conflict of interest that might affect or might be seen to affect the prime provider's or sub providers' duty to act solely in the interest of Webb County.

A conflict of interest may involve conflicting incentives with regard to the firm as a whole, or any employee. The conflict may arise between the provider's work under a contract entered as a result of this solicitation and a relationship involving Webb County, a construction contractor, another engineering firm, a materials testing firm, a third party affected by the project, a sub provider for any other consultant or contractor, or any other entity with an interest in a project on which work is performed under a contract entered as a result of this solicitation.

9. Texas Ethics Commission Requirement Notification:

In 2015, the Texas Legislature adopted [House Bill 1295](#), which added section 2252.908 of the Government Code. The law states that a governmental entity or state agency may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the governmental entity or state agency at the time the business entity submits the signed contract to the governmental entity or state agency. The law applies only to a contract of a governmental entity or state agency that either (1) requires an action or vote by the governing body of the entity or agency before the contract may be signed or (2) has a value of at least \$1 million. The disclosure requirement applies to a contract entered into on or after January 1, 2016.

A signed and notarized Form 1295 shall be tendered to Webb County by providers selected to receive a contract prior to contract execution. Webb County will not evaluate the information provided, or respond to any questions on how to interpret the Texas Ethics Commission's rules.

For additional information, please reference the Texas Ethics Commission webpage at: <https://www.ethics.state.tx.us/tec/1295-Info.htm>

10. ITB SCHEDULE

Activity	Time	Date	Responsible Party
Public Notice/newspaper	n/a	Sept. 29 th , Oct. 8 th	Webb Co. Purchasing Dept.
Public Notice on website	n/a	Until award is completed	Webb Co. Purchasing Dept.
Pre-Bid Meeting (not mandatory)	10am	Oct. 5 th	Bidder/Purchasing/Engineer
Questions Due to County	No later than 5pm	Oct. 9 th	Bidder/Contractor
Posting of answers	By 5pm or before	Oct. 10 th	Webb Co. Purchasing Dept.
Sealed ITB packages due	2 pm	Oct. 17 th	Bidder/Contractor
Award of Contract	TBD	Oct. 23 rd or Nov. 13 th	Governing Body
Finalization of contract doc	TBD	TBD	Webb County/Contractor
Commencement of service	TBD	TBD	Webb County/Contractor

Footnote: County reserves the right to adjust time and dates on above projected schedule if it's in the best interest for Webb County. Pre-bid meeting will be held at the Webb County Purchasing Conference room; located at 1110 Washington St., Suite 101

11. Technical Specifications

TECHNICAL SPECIFICATIONS
(Bid Proposal, General Conditions, Plans & Specs)

WEBB COUNTY ROADWAY IMPROVEMENTS – ESPEJO GATES

FOR

WEBB COUNTY

WEBB COUNTY, TEXAS



ROADWAY IMPROVEMENTS ESPEJO GATES ROAD

PROPOSAL DOCUMENTS

COUNTY OFFICIALS

Tano E. Tijerina

County Judge

Jesse Gonzalez

County Commissioner Pct. 1

Rosaura “ Wawi” Tijerina

County Commissioner Pct. 2

John Galo

County Commissioner Pct. 3

Jaime Canales

County Commissioner Pct. 4

September 2017



TEXAS BOARD OF PROFESSIONAL ENGINEERS #: F-1582

WEBB COUNTY
 ESPEJO GATES ROADWAY IMPROVEMENTS PROJECT

TABLE OF CONTENTS

	Doc Pages
County of Webb Terms and Conditions of Invitations for Bids/Proposals.....	5
Texas Worker’s Compensation Attachment A.....	14
Instructions to Bidders	8
Certification Regarding Federal Lobbying	2
Certification Regarding Debarment, Suspension, Ineligibility & Voluntary Exclusion for Covered Contract.....	2
Proof of no Delinquent Taxes Owed to Webb County.....	1
Bid Form.....	5
Bid Bond.....	2
Notice of Award.....	1
Suggested Form of Agreement Between Owner and Contractor for Construction Contract (Stipulated Price).....	8
Payment Bond.....	4
Performance Bond.....	4
Notice to Proceed	1
Standard General Conditions of the Construction Contract	69
Supplementary Conditions	8
Contractor’s Application for Payment	4
Change Order	1
Request for Information	1
Work Change Directive	3

WEBB COUNTY
ESPEJO GATES ROADWAY IMPROVEMENTS PROJECT

Minor Change in the Work	1
Temporary Construction Sign.....	1
Governing Specifications	17
Special Specifications.....	2
Guide Schedule of Sampling and Testing	29
Geotechnical Engineering Report.....	74

Page intentionally left blank

COUNTY OF WEBB

Terms and Conditions of Invitation for Bids

1. **GENERAL CONDITIONS:**

Bidders are required to submit their bid proposals upon the following expressed conditions:

- (A) Bidders shall thoroughly examine the scope of work and layouts, instructions and all other contract documents.
- (B) Bidders shall make all investigations necessary to thoroughly inform themselves regarding plant and facilities for delivery of materials and equipment as required by the bid conditions. No plea of ignorance by the bidder of conditions that exist or that may hereafter exist as a result of failure to fulfill in every detail the requirements of the contract documents of the County or the compensation of the vendor.
- (C) Bidders are advised that all County contracts are subject to all legal requirements provided for in county, state and federal statutes and regulations.

2. **PREPARATION OF BIDS:**

Bids will be prepared in accordance with the following:

- (A) Unit prices shall be shown and where there is an error in extension of prices, the unit price shall govern.
- (B) Alternate bids will not be considered unless specifically requested within the proposal package.
- (C) Proposed Period of Performance (POP) must be shown and shall include Sundays and holidays.
- (D) Bidders will not include Federal taxes or State of Texas limited sales excise and use taxes in bid prices since the County of Webb is exempt from payment of such taxes. An exemption certificate will be signed where applicable upon request.

3. **DESCRIPTION OF SUPPLIES:**

Any catalog or manufacturer's reference used in describing an item is merely descriptive, and not restrictive, unless otherwise noted, and is used only to

indicate type and quality of material. Bidders are required to state exactly what they intend to furnish otherwise they shall be required to furnish the items as specified.

4. SUBMISSION OF BIDS:

- (A) Bids and any changes thereto shall be enclosed in sealed envelopes addressed to the Webb County Clerk. The name and address of the bidder, the date of the proposal opening and the material or service bid on shall be placed on the outside of the envelope.
- (B) Bids must be submitted in the forms furnished. Electronic bids/proposals will not be considered. Bids, however, may be modified by written notice provided such notice is received at the County Clerk's Office before the time and date set for the proposal opening.
- (C) Samples, when required, must be submitted within the time specified, at no expense to the County of Webb. If not destroyed or used up during testing, samples will be returned upon request at the proposer expense.

5. REJECTION OF BIDS:

- (A) The Purchasing Agent may reject a bid/proposal if it is deemed to be non responsive and/or provided by not responsible bidder/proposer.
- (B) No bid/ proposal submitted herein shall be considered if the proposer owes any delinquent taxes to the County of Webb at the time proposals are opened. In the event that the successful proposer herein subsequently becomes delinquent in the payment of his or its County taxes, such fact shall constitute grounds for cancellation of the contract.
- (C) No bid/proposal submitted herein shall be considered unless the bidder/proposer warrants that upon execution of a contract with the County of Webb, the bidder/ proposer will not engage in employment practices which have the effect of discriminating against employees or prospective employees because of race, color, sex, creed, disability, or national origin and will submit such report as the County may thereafter require to assure compliance.
- (D) The County may, however, reject all proposals whenever it is deemed in the best interest of the County to do so, and may reject any part of a bid. County may also waive any minor informalities or irregularities in any bid.

6. WITHDRAWAL OF BIDS:

Bids may not be withdraw after the closing time and date.

7. LATE BIDS OR MODIFICATIONS:

Bids/Proposals and modifications received after the time set for the bid proposal submission will not be considered.

8. CLARIFICATIN OR OBJECTION TO PROPOSAL SPECIFICATIONS:

If any person contemplating submitting a bid proposal for this contract is in doubt as to the true meaning of the specifications, or other bid/proposal documents or any part thereof, the bidder may submit to the Purchasing Agent request for information as per bid schedule question deadline(s). All such requests for information shall be made in writing and the person submitting the request will be responsible for its prompt delivery. Any interpretation of Webb County bid proposal package specification instructions, if made, will be made only by Addendum duly issued. A copy of such Addendum will be posted on the Webb County Purchasing Agent's web-site. The County will not be responsible for any other explanation or interpretation made or given prior to the award of the contract. Any objections to the specifications and requirements as set forth in this proposal must be filed in writing with the Purchasing Agent on or before five days prior to the scheduled opening.

Where there is a question that will not lead to an addendum, the questions will be made in writing to the Purchasing Department as per bid schedule deadlines listed in this bid document. The answer will be in writing posted on the website for everyone to receive the same response.

9. DELINQUENT TAXES:

All vendors seeking to do business with Webb County must owe no delinquent taxes to the County. Attestation of owing no delinquent taxes will be required. If a vendor owes taxes to Webb County, those taxes should be paid before submitting a proposal.

10. AWARD OF CONTRACT:

- (A) The contract will be awarded to the lowest and responsible bidder according to the bid criteria and a written award letter will be issue.
 - (1) Award of a bid/proposal requires formal approval by the Commissioners Court.
 - (2) Bid/Proposal contract must also be approved by the Commissioners Court.

- (3) The written notice to proceed will be for construction contracts provided after all contract documents are signed.
- (D) Prices must be quoted F.O.B. Webb County with all transportation charges prepaid, unless otherwise specified in the Invitation for Bids/Proposals.
- (E) Delivery time will be considered in breaking of tie proposals.
- (F) Period of Performance will commence with written Notice to Proceed.

11. BID BOND

A bid bond in the amount of 5% of the Bid/Proposal issued by an acceptable surety company shall be submitted with each bid. A certified check or Bank Draft payable to the Webb County may be submitted in lieu of the Bid Bond. All such bonds, cashier checks shall be drawn payable to Webb County.

12. PERFORMANCE AND PAYMENT BOND

A Performance Bond is require for **construction work** if the contract is in excess of \$100,000; and a Payment Bond is require if the **construction contract** is in excess of \$25,000. The requirement is for all prime contractors which enter into a formal contract with the State, any department, board, agency, municipality, county, school district or any division or subdivision. The failure of the successful bidder/proposer to execute the agreement and supply the required bonds within ten (10) days **after** the award or within such extended period as Webb County may grant, shall constitute a default and Webb County may, at its option either award the contract to next lowest responsible bidder, or re-advertise for bids/proposals. In either case, Webb County may charge against the bidder the difference between the amount of the bid, and the amount for which a contract is subsequently executed irrespective of whether this difference exceeds the amount of the bid bond. If a more favorable bid is received through re-advertisement, the defaulting bidder shall have no claim against Webb County for a refund.

13. WORKERS' COMPENSATION INSURANCE COVERAGE:

The Workers' Compensation Commission has adopted Rule 110.110 effective with all bids advertised after September 1, 1994. The TWCC has stated that it is aware that a statutory requirement for workers' compensation insurance coverage is not being met. Therefore, Rule 110.110 requires that all bidders be covered under workers' compensation insurance to achieve compliance from both contractor(s) and governmental entities. **Attachment A** is provided in accordance with the requirements on governmental entities. Please read carefully and prepare your bid in full compliance to TWCC Rule 110.110.

Failure to provide the required certificates upon submission of a bid could result in your bid being declared non-responsive.

14. REFERENCES:

Webb County requires bidder to supply with this proposal, a list of at least three (3) references where like services have been supplied by their firm. Include name of firm, address, telephone number, name of representative and project name.

15. STATEMENTS:

No oral statement of any person shall modify or otherwise change, or affect the terms conditions, plans and/or specifications stated in the bid/proposal packages.

16. ETHICS:

The proposer shall not accept or offer gifts or anything of value nor enter into any business arrangement with any employee of the Webb County Purchasing Department, any Purchasing Board member or any member of the Webb County Commissioners Court. Further bidders are not allowed to contact any member of the governing body during the active solicitation. All communication must be in writing and through the Webb County Purchasing Agent.

17. PROPRIETARY INFORMATION:

All materials submitted to the County become public property and are subject to the Texas Open Records Act upon receipt. If a proposer does not desire proprietary information in the proposal to be disclosed, each page must be identified and marked proprietary a time of submittal. The County will, to the extent allowed by law, endeavor to protect such information from disclosure. The final decision as to what information must be disclosed, however, lies with the Texas Attorney General. Failure to identify proprietary information will result in all unmarked sections being deemed non-proprietary and available upon public request.

Attachment A

NOTICE TO ALL BIDDERS

The Texas Workers' Compensation Commission has adopted Rule 110.110 effective with all bids advertised after September 1, 1994 and these changes affect your bid on this project.

The TWCC has stated that it is aware that statutory requirements provided for workers' compensation insurance coverage is not being met. Rule 110.110 is designed to achieve compliance from both contractors and governmental entities... This affects both of us on this project.

Providing false or misleading certificates of coverage, failing to provide or maintain required coverage, or failing to report any change that materially affects the coverage may subject the contractor(s) or other persons providing services on this project to legal penalties. This affects your subcontractors.

Therefore, the attached is provided in accordance with the requirements on governmental entities. Please read carefully and prepare your bid in full compliance to TWCC Rule 110.110. Failure to provide the required certificates upon submission of a bid could result in your bid being declared non-responsive.

According to TWCC, "This rule does not create any duty or burden on anyone which the law does not establish." Therefore, the county should not experience any increase in cost because of the need to comply with the Texas Worker's Compensation laws.

§110.110. Reporting Requirements for Building or Construction Projects for Governmental Entities.

- (a) The following words and terms, when used in this rule, shall have the following meanings, unless the context clearly indicates otherwise. Terms not defined in this rule shall have the meaning defined in the Texas Labor Code, if so defined.
- (1) Certificate of coverage (certificate) –A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or workers’ compensation 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 (including those subject to a coverage agreement) providing services on a project, for the duration of the project.
 - (2) Building or construction—Has the meaning defined in the Texas Labor Code, §406.09(e)(1).
 - (3) Contractor –A person bidding for or awarded a building or construction project by a governmental entity.
 - (4) Coverage—Workers’ compensation insurance meeting the statutory requirements of the Texas Labor Code, §401.011(44).
 - (5) Coverage agreement—A written agreement on form TWCC-81, form TWCC-82, form TWCC-83, or form TWCC-84, filed with the Texas Workers’ Compensation Commission which establishes a relationship between the parties for purposes of the Texas Workers’ Compensation Act, pursuant to the Texas Labor Code, Chapter 406, Subchapter F and G, as one of employer/employee and establishes who will be responsible for providing workers’ compensation coverage for persons providing services on the project.
 - (6) Duration of the project—Includes, the time from the beginning of work on the project until the work on the project has been completed and accepted by the governmental entity.
 - (7) Persons providing services on the project (“subcontractor” in §406.096 of the Act)—With the exception of persons excluded under subsection (h) and (i) of this section, 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 but is not limited to independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity furnishing persons to perform services on the project. "Services" includes but not limited to 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.

- (8) Project—Includes the provision of all services related to a building or construction contract for a governmental entity.

- (b) Providing or causing to be provided a certificate of coverage pursuant to this rule is a representation by the insured that all employees of the insured who are providing services on the project are covered by workers' compensation coverage, that the coverage is based on proper reporting of classification codes and payroll amounts, and that all coverage agreements have filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading certificates of coverage, or failing to provide or maintain required coverage, or failing to report any change that materially affects the provision of coverage may subject the contractor or other person providing services on the project to administrative penalties, criminal penalties, civil penalties, or other civil actions.

- (c) A governmental entity that enters into a building or construction contract on a project shall:
 - (1) include in the bid specifications, all the provisions of paragraph (7) of this subsection, using the language required by paragraph (7) of this subsection;
 - (2) as part of the contract, using the language required by paragraph (7) of this subsection, require the contractor to perform as required in subsection (d) of this section;
 - (3) obtain from the contractor a certificate of coverage for each person providing services on the project, prior to that person beginning work on the project;
 - (4) obtain from the contractor a new certificate of coverage showing extension of coverage:

- (A) before the end of the current coverage period, if the contractor's current certificate of coverage shows that the coverage period ends during the duration of the project; and
 - (B) no later than seven days after the expiration of the coverage for each other person providing services on the project whose current certificate shows that the coverage period ends during the duration of the project; and
- (5) retain certificates of coverage on file for the duration of the project and for three years thereafter,
 - (6) provide a copy of the certificates of coverage to the commission upon request and to any person entitled to them by law; and
 - (7) use the language contained in the following Figure 1 for bid specifications and contracts, without any additional words or changes, except those required to accommodate the specific document in which they are contained or to impose stricter standards of documentation:

Article _____ *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 commission, 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 §406.096) – 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 amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 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 governmental entity 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 governmental entity showing that coverage has been extended.*
- E. The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:*
- (1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity 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 for the duration of the project and for one year thereafter.*
- G. The contractor shall notify the governmental entity 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 Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.*
- I. *the contractor shall contractually require each person with whom it contracts to provide services 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, Section 401.011(44) for all of 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 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 coverage, 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 governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and*

(7) *contractually require each person with whom it contracts, to perform as required by paragraphs (1)-(7), with the certificates 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 governmental entity 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 commission'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 governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.*

(d) A contractor shall:

- (1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;
- (2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;
- (3) provide the governmental entity, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project;
- (4) obtain from each person providing services on a project, and provide to the governmental entity:

- (A) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - (B) 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;
- (5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - (6) notify the governmental entity in writing by certified mail or personal delivery, within ten 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;
 - (7) post a notice on each project site 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. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30 point bold type and text in at least 19 point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text provided by the commission on the sample notice, without any additional words or changes.

“REQUIRED WORKERS’ COMPENSATION COVERAGE”

“The law requires that each person working on this site or providing services related to this construction project must be covered by workers’ compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee.”

“Call the Texas Workers’ Compensation Commission at 512-440-3789 to receive information on the legal requirement for coverage, to verify whether your employer has provided the required coverage, or to report an employer’s failure to provide coverage.”

- (8) contractually require each person with whom it contracts to provide services on a project to:
- (A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;
 - (B) provide a certificate of coverage to the contractor prior to that person beginning work on the project;
 - (C) include in all contracts to provide services on the project the language in subsection (e)(3) of this section;
 - (D) 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;
 - (E) obtain from each other person with whom it contracts, and provide to the contractor:
 - (i) a certificate of coverage, prior to the other person beginning work on the project; and
 - (ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - (G) notify the governmental entity in writing by certified mail or personal delivery, within ten days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - (H) contractually require each other person with whom it contracts, to perform as required by subparagraph (A)-(H) of this paragraph, with the certificate of coverage to be provided to the person for whom they are providing services.

- (e) A person providing services on a project, other than a contractor, shall:
- (1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;
 - (2) provide a certificate of coverage as required by its contract to provide services on the project, prior to beginning work on the project;
 - (3) have the following language in its contract to provide services on the project: “By signing this contract or providing or causing to be provided a certificate of coverage, the person signing this contract is representing to the governmental entity that all employees of the person signing this contract 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 commission’s Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other actions.”
 - (4) provide the person for whom it is providing services on the project, prior to the end of the coverage period shown on its current certificate of coverage, a new certificate showing extensions of coverage, if the coverage period shown on the certificate of coverage ends during the duration of the project:
 - (5) obtain from each person providing services on a project under contract to it, and provide as required by its contract:
 - (A) a certificate of coverage, prior to the other person beginning work on the project; and
 - (B) prior to the end of the coverage period, a new certificate of coverage showing extensions of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

- (6) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- (7) notify the governmental entity in writing by certified mail or personal delivery, of any change that materially affects the provision of coverage of any person providing services on the project and send the notice within ten days after the person knew or should have known of the change; and
- (8) contractually require each other person with whom it contracts to:
 - (A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;
 - (B) provide a certificate of coverage to it prior to that other person beginning work on the project;
 - (C) include in all contracts to provide services on the project the language in paragraph (3) of this subsection;
 - (D) provide, prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (E) obtain from each other person under contract to it to provide services on the project, and provide as required by its contract;
 - (i) a certificate of coverage, prior to the other person beginning work on the project; and
 - (ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the contract;

- (F) retain all required certificates on file for the duration of the project and for one year thereafter;
 - (G) notify the governmental entity in writing by certified mail or personal delivery, within ten days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - (H) contractually require each person with whom it contracts, to perform as required by this subparagraph and subparagraphs (A)-(G) of this paragraph, with the certificates of coverage to be provided to the person for whom they are providing services.
- (f) If any provision of this rule or its application to any person or circumstance is held invalid, the invalidity does not affect other provisions or applications of this rule that can be given effect without the invalid provision or application, and to this end the provision of this rule declared to be severable.
 - (g) This rule is applicable for building or construction contracts advertised for bid by a governmental entity on or after September 1, 1994. This rule is also applicable for those building or construction contracts entered into on or after September 1, 1994, which are not required by law to be advertised for bid.
 - (h) The coverage requirement in this rule does not apply to motor carriers who are required pursuant to Texas Civil Statutes, Article 667c, to register with the Texas Department of Transportation and who provide accidental insurance coverage pursuant to Texas Civil Statutes 667c, §4(j).
 - (i) The coverage requirement in this rule does not apply to sole proprietors, partners, and corporate officers who meet the requirements of the Act, §406.097(c), and who are explicitly excluded from coverage in accordance with the Act, §406.097(a) (as added by House Bill 1089, 74th Legislature, 1995, §1.20). This subsection applies only to sole proprietors, partners, and corporate executive officers who are excluded from coverage in an insurance policy or certificate of authority to self-insure that is delivered, issued for delivery, or renewed on or after January 1, 1996.

The provisions of this §110.110 adopted to be effective September 1, 1994, 19 TexReg 5715; amended to be effective November 6, 1995, 20 TexReg 8609.

THIS PAGE INTENTIONALLY LEFT BLANK

Instructions to Bidders

TABLE OF ARTICLES

	Page
Article 1 .Defined Terms	1
Article 2 .Copies of Bidding Documents	1
Article 3 .Qualifications of Bidders	2
Article 4 .Examination of Bidding Documents, Other Related Data, and Site	2
Article 5 .Pre-Bid Conference	4
Article 6 .Site and Other Areas	4
Article 7 .Interpretations and Addenda	4
Article 8 .Bid Security	4
Article 9 .Contract Times	4
Article 10 .Liquidated Damages	5
Article 11 .Substitute and “Or-Equal” Items	5
Article 12 .Subcontractors, Suppliers, and Others	5
Article 13 .Preparation of Bid	6
Article 14 .Basis of Bid; Comparison of Bids	7
Article 15 .Submittal of Bid	7
Article 16 .Modification and Withdrawal of Bid (Removed from this Project)	8
Article 17 .Opening of Bids	8
Article 18 .Bids to Remain Subject to Acceptance	8
Article 19- Evaluation of Bids and Award of Contract	8
Article 20 .Contract Security and Insurance	9
Article 21 .Signing of Agreement	9
<i>(Article 22 .Sales and Use Taxes</i>	<i>9</i>
<i>Article 23 .Contracts to be Assigned</i>	<i>9</i>

ARTICLE 1- DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

- A. Issuing Office-The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2- COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents stated in the Advertisement for Bids may be obtained from the Issuing Office through the Webb County Purchasing Department’s website at Contractor’s expense.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3- QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder’s qualifications to perform the Work, within five days of Owner’s request, Bidder shall submit written evidence such as financial data; previous experience, present commitments, and such other data as may be called for below.

- A. Submit with bid proposal a completed and signed Statement of Bidder’s Qualifications and any/all other information as requested.

ARTICLE 4-EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 Subsurface and Physical Conditions

- A. The Supplementary Conditions identify:
 - 1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.
 - 2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.01.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.02 Underground Facilities

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.03 Hazardous Environmental Condition

- A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.05 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

4.06 Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

4.07 It is responsibility of each Bidder before submitting a Bid to:

- A. Examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;
- B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. Become familiar with and satisfy Bidder as to all Federal, State, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
- D. Carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;
- E. Obtain and carefully study (or accept consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- I. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
- J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5- PRE-BID CONFERENCE

5.01 A Pre-Bid conference will be held at **10:00 AM**, on **October 5, 2017**, at **Webb County Purchasing Department, 1110 Washington Street, Ste. 101, Laredo, Texas 78040**. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 6- SITE AND OTHER AREAS

6.01 The Site is identified in the Bidding Documents. Easement for permanent structures or permanent changes in existing facilities is to be obtained and paid for by Owner unless otherwise provided in the Bidding 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 Contractor.

ARTICLE 7-INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Webb County Purchasing Department in writing. Interpretations or clarifications considered necessary by Purchasing Agent in response to such questions will be issued by Addenda and posted on the website and email to the bidder's list that have received an email copy of the package. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner.

ARTICLE 8- BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 % of Bidder's maximum Bid price and in the form of a certified check or a Bid bond (EJCDC No. C-430, 2007 Edition) issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.

8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, 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 Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. 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 seven days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

8.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9- CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 -LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages are set forth in the Agreement.

ARTICLE 11- SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or "or-equal" materials and equipment as defined in paragraph 6.05 of the General Conditions, or those substitute materials and equipment approved by the Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or "or-equal" item. Request for Engineer's clarification of materials and equipment considered "or-equal" prior to the Effective Date of the Agreement must be received by the Engineer at least 5 days prior to the date for receipt of Bids. No item of material or equipment will be considered by Engineer as a substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each request shall conform to the requirements of paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon the Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed substitute item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

ARTICLE 12- SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.
- 12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest responsible Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner and Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.
- 12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.
- 12.04 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 6.10.

ARTICLE 13- PREPARATION OF BID

- 13.01 The Bid form is included with the Bidding Documents. Additional copies may be obtained from Engineer.
- 13.02 All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Section, Bid Item and Unit Price Item listed therein, or the words “No Bid,” “No Change,” or “Not Applicable” entered.
- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. If required by State where work is to be performed, the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporation business address and state of incorporation shall be provided on the Bid Form.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The business address of the partnership shall be provided on the Bid Form.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the business address of the firm must be provided on the Bid Form.
- 13.06 A Bid by an individual shall show the Bidder’s name and business address.
- 13.07 A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid form. The business address of the joint venture must be provided on the Bid Form.
- 13.08 All names shall be typed or printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers and dates of which shall be filled in on the Bid form.
- 13.10 The address and telephone number for communication regarding the Bid shall be shown.

13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number for the state of the Project, if any, shall also be shown on the Bid Form.

ARTICLE 14-BASIS OF BID; COMPARISON OF BIDS

14.01 Unit Price

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The total of all bid prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.
- C. 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. Discrepancies between words and figures will be resolved in favor of the words.

ARTICLE 15- SUBMITTAL OF BID

15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and the Bid bond form. The unbound copy of the Bid Form is to be completed and submitted with all the attachments outlined in Article 7 of the Bid Form.

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement for Bids and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." When using the mail or other delivery system, the Bidder is totally responsible for the mail or other delivery system delivering the Bid at the place and prior to the time indicated in the Advertisement for Bid. A mailed Bid shall be addressed to Owner at address in Article 1.01 of Bid Form.

~~**ARTICLE 16- MODIFICATION AND WITHDRAWAL OF BID (REMOVED)**~~

16.01 County of Webb Terms and Conditions of Invitations for Bids/Proposals Shall Govern.

ARTICLE 17- OPENING OF BIDS

17.01 Bids will be opened at the time and place indicated in the Advertisement for Bids and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18- BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form.

ARTICLE 19- EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the contract Documents.
- 19.06 If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder whose Bid, conforming with all the material terms and conditions of the Instructions to Bidders, is lowest, price and other factors considered.

ARTICLE 20- CONTRACT SECURITY AND INSURANCE

- 20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner’s requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by such bonds.

ARTICLE 21- SIGNING OF AGREEMENT

- 21.01 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 22- SALES AND USE TAXES

- 22.01 OWNER is exempt from Texas State sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Bid. Refer to paragraph 6.10 of the Supplementary Conditions for additional information.

ARTICLE 23- CONTRACTS TO BE ASSIGNED

- 23.01 Owner as “buyer” [has executed] [will execute] a contract with _____ as “seller” for the procurement of goods and special services for _____. The materials and

equipment provided for in the procurement contract are to be furnished and delivered to the Site [or other location for installation by Contractor. The said procurement contract will be assigned by Owner to Contractor as set forth in the Agreement. Contractor will accept the assignment and assume responsibility for the “seller”, who will become a Subcontractor to Contractor.

23.02 Bidders may examine the contract documents for the procurement of goods and special services for _____ at _____.

Webb County

Conflict of Interest Disclosure

Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that any vendor or person considering doing business with a local government entity disclose in the Questionnaire Form CIQ, the vendor or person's affiliation or business relationship that might cause a conflict of interest with a local government entity. By law, this questionnaire must be filled with the records administrator of Webb County no later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Local Government Code. A person commits an offense if the person violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor. The questionnaire may be viewed and printed by following the link before:

By submitting a response to this request, the vendor represents that it is in compliance with the requirements of Chapter 176 of the Texas Local Government Code.

The Webb County Officials who come within Chapter 176 of the Local Government Code relating to filing of Conflict of Interest Questionnaire (Form CIQ) include:

1. Webb County Judge Tano Tijerina
2. Commissioner Jesse Gonzalez
3. Commissioner Rosaura "Wawi" Tijerina
4. Commissioner John Galo
5. Commissioner Jaime Canales
6. Judge Joe Lopez, 49th Judicial District Court
7. Judge Becky Palomo, 341st Judicial District Court
8. Judge Oscar Hale 406th Judicial District Court

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

OFFICE USE ONLY

Date Received

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.

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

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.

CERTIFICATION REGARDING FEDERAL LOBBYING
(Certification for Contracts, Grants, Loans, and Cooperative Agreements)

PART A. PREAMBLE

Federal legislation, Section 319 of Public Law 101-121 generally prohibits entities from using federally appropriated funds to lobby the executive or legislative branches of the federal government. Section 319 specifically requires disclosure of certain lobbying activities. A federal government-wide rule, "New Restrictions on Lobbying", published in the Federal Register, February 26, 1990, requires certification and disclosure in specific instances.

PART B. CERTIFICATION

This certification applies only to the instant federal action for which the certification is being obtained and is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$100,000 for each such failure.

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

1. No federally appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
2. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with these federally funded contract, subcontract, subgrant, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions. (If needed, contact the Texas Department of Agriculture to obtain a copy of Standard Form-LLL.)

3. The undersigned shall require that the language of this certification be included in the award documents for all covered subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all covered subrecipients will certify and disclose accordingly.

Do you have or do you anticipate having covered subawards under this transaction?

- Yes
- No

Name of Contractor/Potential Contractor	Vendor ID No. or Social Security No.	Program No.

Name of Authorized Representative	Title

Signature – Authorized Representative

Date

CERTIFICATION
REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY
EXCLUSION FOR COVERED CONTRACTS

PART A.

Federal Executive Orders 12549 and 12689 require the Texas Department of Agriculture (TDA) to screen each covered potential contractor to determine whether each has a right to obtain a contract in accordance with federal regulations on debarment, suspension, ineligibility, and voluntary exclusion. Each covered contractor must also screen each of its covered subcontractors.

In this certification “contractor” refers to both contractor and subcontractor; “contract” refers to both contract and subcontract.

By signing and submitting this certification the potential contractor accepts the following terms:

1. The certification herein below is a material representation of fact upon which reliance was placed when this contract was entered into. If it is later determined that the potential contractor knowingly rendered an erroneous certification, in addition to other remedies available to the federal government, the Department of Health and Human Services, United States Department of Agriculture or other federal department or agency, or the TDA may pursue available remedies, including suspension and/or debarment.
2. The potential contractor will provide immediate written notice to the person to which this certification is submitted if at any time the potential contractor learns that the certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
3. The words “covered contract”, “debarred”, “suspended”, “ineligible”, “participant”, “person”, “principal”, “proposal”, and “voluntarily excluded”, as used in this certification have meanings based upon materials in the Definitions and Coverage sections of federal rules implementing Executive Order 12549. Usage is as defined in the attachment.
4. The potential contractor agrees by submitting this certification that, should the proposed covered contract be entered into, it will not knowingly enter into any subcontract with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Department of Health and Human Services, United States Department of Agriculture or other federal department or agency, and/or the TDA, as applicable.

Do you have or do you anticipate having subcontractors under this proposed contract?

Yes

No

5. The potential contractor further agrees by submitting this certification that it will include this certification titled "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion for Covered Contracts" without modification, in all covered subcontracts and in solicitations for all covered subcontracts.
6. A contractor may rely upon a certification of a potential subcontractor that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered contract, unless it knows that the certification is erroneous. A contractor must, at a minimum, obtain certifications from its covered subcontractors upon each subcontract's initiation and upon each renewal.
7. Nothing contained in all the foregoing will be construed to require establishment of a system of records in order to render in good faith the certification required by this certification document. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
8. Except for contracts authorized under paragraph 4 of these terms, if a contractor in a covered contract knowingly enters into a covered subcontract with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the federal government, Department of Health and Human Services, United States Department of Agriculture, or other federal department or agency, as applicable, and/or the TDA may pursue available remedies, including suspension and/or debarment.

PART B. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION FOR COVERED CONTRACTS

Indicate in the appropriate box which statement applies to the covered potential contractor:

- The potential contractor certifies, by submission of this certification, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this contract by any federal department or agency or by the State of Texas.
- The potential contractor is unable to certify to one or more of the terms in this certification. In this instance, the potential contractor must attach an explanation for each of the above terms to which he is unable to make certification. Attach the explanation(s) to this certification.

Name of Contractor	Vendor ID No. or Social Security No.	Program No.
--------------------	--------------------------------------	-------------

Signature of Authorized Representative

Date

Printed/Typed Name and Title of Authorized Representative

PROOF OF NO DELINQUENT TAXES OWED TO WEBB COUNTY

Name _____ owes no delinquent property taxes to Webb County.

_____ owes no property taxes as a business in Webb County.
(Business Name)

_____ owes no property taxes as a resident of Webb County.
(Business Owner)

Person who can attest to the above information

*** SIGNED NOTORIZED DOCUMENT AND PROOF OF NO DELINQUENT TAXES TO WEBB COUNTY.**

The State of Texas
County of Webb

Before me, a Notary Public, on this day personally appeared _____, know to me (or proved to me on the oath of _____ to be the person whose name is subscribed to the forgoing instrument and acknowledged to me that he executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this ____ day of _____ 2016.

Notary Public, State of Texas

(Print name of Notary Public here)

My commission expires the ____ day of _____ 20__.

Bid Form

Project Identification: Webb County Espejo Gates Roadway Improvements Project

Contract Identification and Number: Proposal # RFP: 2016-04

TABLE OF ARTICLES

	Page
Article 1 .Bid Recipient	1
Article 2 .Bidder's Acknowledgments	1
Article 3 .Bidder's Representations	1
Article 4 .Further Representations	2
Article 5 .Basis of Bid	3
Article 6 .Time of Completion	3
Article 7 .Attachments to Bid	4
Article 8 .Defined Terms	4
Article 9 .Bid Submittal	4

ARTICLE 1- BID RECIPIENT

1.01 This Bid Is Submitted To: Webb County Clerk's Office, 110 Victoria Street, Suite 201, Laredo TX, 78040

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in the Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2- BIDDER'S ACKNOWLEDGMENTS

2.01 Bidder accepts all of the terms and conditions of the Advertisement and Instructions to Bidders, including without limitations those dealing with the dispositions of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3- BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

- C. Bidder is familiar with and is satisfied as to all Federal, State, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in SC-4.02, and (2) reports and drawings of a Hazard Environmental Condition, if any, which have been identified in SC-4.06.
- E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by the Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of the Work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- K. Bidder will submit written evidence of its authority to do business in the State where the Project is located not later than the date of its execution of the Agreement.

ARTICLE 4-FURTHER REPRESENTATIONS

4.01 Bidder further represents that:

- A. This Bid is genuine and not made in the interest of or on the behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

ARTICLE 5- BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following

price(s):

BID SCHEDULE

PAGE 1 OF 9

ITEM NO.	ESTIMATED QUANTITY	ITEM DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
BASE PRICE ITEMS				
1.	260 STA	Right-Of-Way Prep, Mobilization, Clear Work Area and Make Ready For Construction, per TxDOT Item 100-6002, complete and prepared for	\$ _____	\$ _____
2.	75 LF	Remove and Dispose of Existing 18" CMP at App. Sta:36+00, per TxDOT Item 496-6007, complete and disposed of for	\$ _____	\$ _____
3.	41 LF	Remove and Dispose of Existing 30" CMP at App. Sta:229+50, per TxDOT Item 496-6007, complete and disposed of for	\$ _____	\$ _____
4.	40 LF	Remove and Dispose of Existing 24" CMP at App. Sta:269+00, per TxDOT Item 496-6007, complete and disposed of for	\$ _____	\$ _____
5.	20,000 CY	Excavation for Roadway, per TxDOT Item 110-6001, complete and prepared for	\$ _____	\$ _____
6.	55,000 CY	Embankment for Roadway, (Final)(Dens Cont)(TY C), per TxDOT Item 132-6006, Compacted, complete and in place for	\$ _____	\$ _____
7.	30 AC	Broadcast Seeding, (Perm)(Rural)(Sandy), per TxDOT Item 164-6034, complete and in place for	\$ _____	\$ _____

ITEM NO.	ESTIMATED QUANTITY	ITEM DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
8.	900 MG	Sprinkling for Dust Control, per TxDOT Item 204-6003, complete and in place for	\$ _____	\$ _____
9.	924 SY	9" Reinforced and Jointed Concrete Pavement at Espejo Gates and HWY 83 intersection, per TxDOT Item 360-6019, complete and in place for	\$ _____	\$ _____
10.	70 CY	4" Reinforced Concrete Rip-Rap, per TxDOT ITEM 432-6001 complete and in place for	\$ _____	\$ _____
11.	190 LF	5 – 3' x 3' Multiple Box Culverts at App. Sta: 40+70, Pre-Cast, per TxDOT Item 462-6002, include Excavation/Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____
12.	2 EA	Wingwalls for Multiple Box Culverts at App. Sta: 40+70, (PW-1) per TxDOT Item 466-6179, include Excavation/Embankment, Shoring, Connection to Culvert and Bedding, complete and in place for	\$ _____	\$ _____
13.	190 LF	5 – 3' x 3' Multiple Box Culverts at App. Sta: 45+15, Pre-Cast, per TxDOT Item 462-6002, include Excavation/Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____

ITEM NO.	ESTIMATED QUANTITY	ITEM DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
14.	2 EA	Wingwalls for Multiple Box Culverts at App. Sta: 45+15, (PW-1) per TxDOT Item 466-6179, include Excavation/Embankment, Shoring, Connection to Culvert and Bedding, complete and in place for	\$ _____	\$ _____
15.	228 LF	6 – 6' x 3' Multiple Box Culverts at App. Sta: 67+25, Pre-Cast, per TxDOT Item 462-6010, include Excavation/Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____
16.	2 EA	Wingwalls for Multiple Box Culverts at App. Sta: 67+25, (PW-1) per TxDOT Item 466-6179, include Excavation/Embankment, Shoring, Connection to Culvert and Bedding, complete and in place for	\$ _____	\$ _____
17.	304 LF	8 – 6' x 3' Multiple Box Culverts at App. Sta: 73+80, Pre-Cast, per TxDOT Item 462-6010, include Excavation/Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____
18.	2 EA	Wingwalls for Multiple Box Culverts at App. Sta: 73+80, (PW-1) per TxDOT Item 466-6179, include Excavation/Embankment, Shoring, Connection to Culvert and Bedding, complete and in place for	\$ _____	\$ _____
19.	114 LF	3 – 5' x 3' Multiple Box Culverts at App. Sta: 116+75, Pre-Cast, per TxDOT Item 462-6007, include Excavation/Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____

ITEM NO.	ESTIMATED QUANTITY	ITEM DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
20.	2 EA	Wingwalls for Multiple Box Culverts at App. Sta: 116+75, (PW-1) per TxDOT Item 466-6179, include Excavation/Embankment, Shoring, Connection to Culvert and Bedding, complete and in place for	\$ _____	\$ _____
21.	115 LF	4 – 4' x 3' Multiple Box Culverts at App. Sta: 160+50, Pre-Cast, per TxDOT Item 462-6004, include Excavation/Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____
22.	2 EA	Wingwalls for Multiple Box Culverts at App. Sta: 160+50, (PW-1) per TxDOT Item 466-6179, include Excavation/Embankment, Shoring, Connection to Culvert and Bedding, complete and in place for	\$ _____	\$ _____
23.	380 LF	10 – 6' x 3' Multiple Box Culverts at App. Sta: 229+50, Pre-Cast, per TxDOT Item 462-6010, include Excavation/Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____
24.	2 EA	Wingwalls for Multiple Box Culverts at App. Sta: 229+50, (PW-1) per TxDOT Item 466-6179, include Excavation/Embankment, Shoring, Connection to Culvert and Bedding, complete and in place for	\$ _____	\$ _____
25.	168 LF	4 – 36" Skew Pipe Culverts at App. Sta: 269+00, RCP Pipe (CL V), per TxDOT Item 464-6027, include Excavation/Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____

ITEM NO.	ESTIMATED QUANTITY	ITEM DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
26.	2 EA	Headwalls for Skew Pipe Culverts at App. Sta: 269+90, (CH-PW-S) per TxDOT Item 466-6134, include Excavation/Embankment, Shoring, Connection to Culvert and Bedding, complete and in place for	\$ _____	\$ _____
27.	168 LF	4 – 36” Pipe Culverts at App. Sta: 275+00, RCP Pipe (CL V), per TxDOT Item 464-6027, include Excavation/Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____
28.	2 EA	Headwalls for Pipe Culverts at App. Sta: 275+00, (CH-PW-0) per TxDOT Item 466-6101, include Excavation/Embankment, Shoring, Connection to Culvert and Bedding, complete and in place for	\$ _____	\$ _____
29.	250 LF	2 – 18” Pipe Culvert With Safety End Treatment at Intersection, RCP Pipe (CL V), per TxDOT Item 464-6025, include Excavation /Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____
30.	2 EA	Safety End Treatment at Intersection, 18” RCP 4:1, per TxDOT Item 467-6358, include Excavation /Embankment, Shoring and Bedding, complete and in place for	\$ _____	\$ _____
31.	1 LS	Mobilization, Establish and Remove Offices, Plants, Facilities, per TxDOT Item 500-6001, complete and in place for	\$ _____	\$ _____

ITEM NO.	ESTIMATED QUANTITY	ITEM DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
32.	10 MO	Traffic Control Measures as shown on Plans, Provide Barricades, Signs, And Traffic control, per TxDOT Item 502-6001, complete and in place for	\$ _____	\$ _____
33.	3,700 SF	Large Diameter Rock Rubble Dissipation, 6 in min, set as per plan, per TxDOT Item 508-6001, complete and in place for	\$ _____	\$ _____
34.	1,000 LF	Install or Replace Barbed Wire Fence with Metal Posts, pre TxDOT Item 552-6003, as shown on plan, complete and in place for	\$ _____	\$ _____
35.	400 LF	Metal Beam Guard Rails (Long-Span), Item 540-6017, complete and in place for	\$ _____	\$ _____
36.	1,080 LF	T 631 Guard Rails for Bridge Class Structures Item 450-6018, (720 LF Woolf post/ 360 LF Steel Post, complete and in place for	\$ _____	\$ _____
37.	38 EA	Furnish, fabricate and install small roadside sign assemblies, per TxDOT Item 644-6027, complete and in place for	\$ _____	\$ _____
38.	800 LF	Furnish, place and remove Rock Filter Dams as directed by Engineer, per TxDOT Items 506-6002, 506-6011, complete for	\$ _____	\$ _____

ITEM NO.	ESTIMATED QUANTITY	ITEM DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
39.	3,400 LF	Temp. Sediment Control Fence, Install and Remove Items 506-6038 and Item 506-6039, Complete and in place for	\$ _____	\$ _____
40.	1 EA	\$100,000.00 Contingency amount, to be approved for usage by Webb County Engineering Department and Webb County Purchasing Department. Complete and in place for	\$ <u>100,000.00</u>	\$ _____
41.	26,200 GAL	Prepare and Treat surface with Asphalt Binder, per TxDOT Item 310-6009, complete and in place for	\$ _____	\$ _____
42.	24,300 CY	10" Caliche Flexible Base, per TxDOT Item 247-6045, compacted, complete and in place for	\$ _____	\$ _____
43.	88,000 SY	Mix and Compact Lime, Water, with 10" of Base, per TxDOT Item 260-6054, compacted, complete and in place for	\$ _____	\$ _____
44.	1,680 TON	Lime (HYD, COM, OR QK (SLURRY)), per TxDOT Item 260-6016, compacted, complete and in place for	\$ _____	\$ _____
TOTAL PROJECT COST			\$ _____	

WRITTEN IN WORDS _____

ADDITIVE ALTERNATIVE

** NOTE: ITEMS 45, 46, 47, 48 AND 49 WILL REMOVE AND REPLACE THE QUANTITIES AND PRICES FOR LINE ITEMS 41, 42, 43 AND 44 **

PAGE 8 OF 9

ITEM NO.	ESTIMATED QUANTITY	ITEM DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
45.	26,200 GAL	Prepare and Treat surface with Asphalt Binder, per TxDOT Item 310-6009, complete and in place for	\$ _____	\$ _____
46.	12,500 TON	2.5" Hot-Mix Asphalt, Type C, per TxDOT Item 340-6034, complete and in place for	\$ _____	\$ _____
47.	30,300 CY	12.5" Caliche Flexible Base, per TxDOT Item 247-6045, compacted, complete and in place for	\$ _____	\$ _____
48.	88,000 SY	Mix and Compact Lime, Water, with 10" of Base, per TxDOT Item 260-6054, compacted, complete and in place for	\$ _____	\$ _____
49.	1,680 TON	Lime (HYD, COM, OR QK (SLURRY)), per TxDOT Item 260-6016, compacted, complete and in place for	\$ _____	\$ _____

TOTAL - ADDITIVE ALTERNATE \$ _____

WRITTEN IN WORD _____

PROJECT TOTAL – W/ADDITIVE ALTERNATE \$ _____

WRITTEN IN WORDS _____

CONTRACTOR: ESPEJO GATES ROAD IMPROVEMENTS

CONTRACTOR

SIGNATURE

TITLE

ADDRESS

CITY/STATE

ZIP CODE

()
TELEPHONE NUMBER

FAX NUMBER

NOTE:

ALL PROPOSED ITEMS WILL BE PAID FOR WHEN COMPLETE IN PLACE, TESTED, APPROVED BY THE ENGINEER AND ACCEPTED BY THE OWNER, AND WHEN ALL CONSTRUCTION DEBRIS AND OTHER CONSTRUCTION MATERIALS ARE CLEARED FROM SITE. ADHERENCE TO STORM WATER POLLUTION PREVENTION PRACTICES, CONSTRUCTION TRAFFIC CONTROLS (SIGNS, BARRICADES, CONES) AND ENVIROMENTAL PRACTICES AS REQUIRED, WHICH ARE SUBSIDIARY TO UNIT COSTS FOR THE ROADWAY/BRIDGE/CULVERT IMPROVEMENT PROJECT. ALL BID ITEMS SHALL INCLUDE ANY ADDITIONAL WORK REQUIRED FOR THE INSTALLION OF THE ITEMS IDENTIFIED AND DESIGN AS REPRESENTED ON THE PLANS. IT IS THE REPSONSIBILTY OF THE BIDDER TO REVIEW THE PLANS AND VISIT THE PROJECT SITE PRIOR TO SUBMITTING THEIR FINAL BID.

- A. Unit Prices have been computed in accordance with paragraph 11.03.A of the General Conditions.
- B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the contract Documents.

ARTICLE 6- TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidate damages in the event of failure to complete the work within the Contract Times.

ARTICLE 7- ATTACHMENTS TO THIS BID

7.01 The following documents are attached to and made a condition of the Bid:

- A. Required Bid security in the form of a Bid Bond (EJCDC No. C-430) or Certified Check (circle type of security provided);

ARTICLE 8 - DEFINED TERMS

8.01 The terms used in this Bid with the initial capitol letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 - BID SUBMITTAL

9.01 This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____

(Individual's signature)

SEAL if required by State

Doing business as: _____

A Partnership

Partnership Name: _____

By: _____

(Signature of general partner-- attach evidence of authority to sign)

SEAL if required by State

Name (typed or printed): _____

A Corporation

Corporation Name: _____

State of Incorporation: _____

Type (General Business, Profession, Service, Limited Liability): _____

By: _____
(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Attest _____
(Signature of Corporate Secretary)

CORPORATE
SEAL

if required by
State

Date of Qualification to do business in _____ [State where Project is located is ____/____/____]

A Joint Venture

Name of Joint Venture: _____

First Joint Venture Name: _____

By: _____
(Signature of joint venture partner - attach evidence of authority to sign)

SEAL
if required
by State

Name (typed or printed): _____

Title: _____

Second Joint Venture Name: _____

By: _____
(Signature of joint venture partner-- attach evidence of authority to sign)

SEAL
if required
by State

Name (typed or printed): _____

Title: _____

(Each joint venture must sign. The manner of signing for each individual, partnership, and corporation that is party to the venture should be in the manner indicated above.)

Bidder's Business address:

Business Phone No. (_____) _____

Business FAX No. (_____) _____

Business E-Mail Address _____

State Contractor License No. _____ (If applicable)

Employer's Tax ID No. _____

Phone and FAX Numbers, and Address for receipt of official communications, if different from Business contact information:

9.02 Bid submitted on _____, 20__.

Notice of Award

Date: _____

Project: **Webb County Espejo Gates Roadway Improvements Project**

Owner: **Webb County, Texas**

Owner's Contract No.:

Contract:

Engineer's Project No.: U2338

Bidder:

Bidder's Address: *[send Notice of Award Certified Mail, Return Receipt Requested]*

You are notified that your Bid dated _____ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for _____.

The Contract Price of your Contract is _____.

3 copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

1 set of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within [**20**] days of the date you receive this Notice of Award.

1. Deliver to the Owner [**3**] fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security [Bonds] as specified in the Instructions to Bidders (Article 20), General Conditions (Paragraph 5.01), and Supplementary Conditions (Paragraph SC-5.01).
3. Other conditions precedent:
None

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

Webb County
Owner
By: _____
Authorized Signature

Title

Copy to Engineer

**SUGGESTED FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between Webb County (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

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

The work consist of roadway reconstruction, grading, lime treatment, reworking subgrade, addition of base material, hot-mixed asphalt concrete pavement, drainage structures, roadside swales, and pavement marking.

ARTICLE 2 – THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Webb County Espejo Gates Roadway Improvements Project

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by S&B Infrastructure, LTD. (Engineer), which 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 the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Days to Achieve Substantial Completion and Final Payment*

- A. The Work will be substantially completed within **270** calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within **285** days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner **\$500.00** for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner **\$ 1,000.00** for each day that expires after the time specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.
- B. **(EJCDC C-520 HAS BEEN MODIFIED TO INCLUDE SECTION 4.03B)** The amount of liquidated damages, as specified in Section 4.03A, shall include cost to the Engineer for additional construction services.

ARTICLE 5 – CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A below:
 - A. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the actual quantity of that item:

<u>UNIT PRICE WORK</u>						
<u>Item No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Bid Unit Price</u>	<u>Bid Price</u>	

Total of all Bid Prices (Unit Price Work) \$ _____

The Bid prices for Unit Price Work set forth as of the Effective Date of the Agreement are based on estimated quantities. As provided in Paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer as provided in Paragraph 9.07 of the General Conditions.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress Payments; Retainage

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.
 - 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions.
 - a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

ARTICLE 7 – INTEREST

- 7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of 0.06 percent per annum.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
 - B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in Paragraph SC-4.02 of the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Paragraph SC-4.06 of the Supplementary Conditions as containing reliable "technical data."
 - E. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor’s safety precautions and programs.
 - F. Based on the information and observations referred to in Paragraph 8.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 8, inclusive).
 - 2. Performance bond (pages 1 to 4, inclusive).
 - 3. Payment bond (pages 1 to 4, inclusive).
 - 4. Other bonds (pages _____ to _____, inclusive).
 - a. _____ (pages _____ to _____, inclusive).
 - b. _____ (pages _____ to _____, inclusive).
 - c. _____ (pages _____ to _____, inclusive).
 - 5. General Conditions (pages 1 to 68, inclusive).
 - 6. Supplementary Conditions (pages 1 to 9, inclusive).
 - 7. Specifications as listed in the table of contents of the Project Manual.
 - 8. Drawings consisting of __ sheets with each sheet bearing the following general title: __.
 - 9. Addenda (numbers _____ to _____, inclusive).
 - 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor’s Bid (pages _____ to _____, inclusive).
 - b. Documentation submitted by Contractor prior to Notice of Award (pages _____ to _____, inclusive).
 - c. *[List other required attachments (if any), such as documents required by funding or lending agencies].*

11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

- a. Notice to Proceed (pages _____ to _____, inclusive).
 - b. Work Change Directives.
 - c. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

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

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

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

OWNER:

CONTRACTOR

By: _____

By: _____

Title: _____

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____

(Where applicable)

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

Agent for service of process:

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

_____ (Name of Contractor)

_____ (Address of Contractor)

a _____ hereinafter called **PRINCIPAL** and
(Corporation, Partnership or individual)

_____ (Name of Surety)

_____ (Mailing Address of Surety)

_____ (Physical Address of Surety)

_____ (Telephone Number, including area code, Of Surety)

hereinafter called **SURETY**, are held and firmly bound unto

Webb County

(Name of Owner)

1110 Washington Street, Laredo, Texas 78040

(Address of Owner)

hereinafter called **OWNER** and unto all persons, firms, and corporations who or which may furnish labor, or who furnish materials to perform as described under the contract and to their successors and assigns in the total aggregate penal sum of

DOLLARS

(\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONITION OF THIS OBLIGATION is such that whereas, the **PRINCIPAL** entered into a certain contract with the **OWNER**, dated the ___ day of _____, _____, a copy of which is hereto attached and made a part hereof for the construction of :

Webb County Espejo Gates Roadway Improvements Project

NOW, THEREFORE, if the **PRINCIPAL** shall promptly make payment to all persons, firms, and corporations furnishing materials for or performing labor in the prosecution of the **WORK** provided for in such contract, and any authorized extensions or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such **WORK**, and for all labor cost incurred in such **WORK** including that by a **SUBCONTRACTOR**, and to any laborer, mechanic or materialman lienholder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, that beneficiaries or claimants hereunder shall be limited to the **SUBCONTRACTORS**, and persons, firms, and corporations having a direct contract with the **PRINCIPAL** or its **SUBCONTRACTORS**.

PROVIDED, FURTHER, that the said **SURETY** for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the **WORK** to be performed thereunder or the **SPECIFICATIONS** accompanying the same shall in any way affect its obligation on this **BOND**, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of this contract or to the **WORK** or to the **SPECIFICATIONS**.

PROVIDED, FURTHER, that no suit or action shall be commenced hereunder by any claimant:

- (a) Unless claimant shall have given the notice or notices required by applicable state law, in the manner required by applicable state law and within the time limits prescribed by applicable state law; or
- (b) After the expiration of the minimum period of limitation permitted by applicable state law.

PROVIDED, FURTHER, that it is expressly agreed that this **BOND** shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the **PRINCIPAL** and the **SURETY** to the full and faithful performance of the Contract as so amended. The term "Amendment," wherever used in this **BOND** and whether referring to this **BOND**, the contract or the loan Documents shall include any alteration, addition, extension or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the **OWNER** and the **CONTRACTOR** shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

WITNESS WHEREOF, this instrument is executed in ___ counterparts, each of

which shall be deemed an original, this the day of

PRINCIPAL:

Name: _____

Address: _____

ATTEST:

Name: _____
Title: _____

By: _____
Name: _____
Title: _____

(SEAL)

Witness:

Name: _____
Address: _____

SURETY:

Name: _____
Address: _____

ATTEST:

Name: _____
Title: _____
(SEAL)

By: _____
Name: _____
Title: _____

OWNER APPROVAL:

The **OWNER** approves the form of this Payment Bond.

Date: _____

Name: _____
Address: _____

ATTEST:

Secretary
(SEAL)

By: _____
Name: _____
Title: _____

NOTES:

1. The date of the Bond must not be prior to the date of the Contract.
2. The amount of the Bond must not be less than the amount of the Contract.
3. If the contractor is a partnership, all partners should execute the Bond.

If the contractor is a corporation, the Bond must be executed by an authorized official of the corporation. Authorization should be evidenced by a corporate resolution.

4. The surety must:
 - (a) be a corporation which is authorized to conduct business in the State of Texas;
 - (b) be a corporation which is licensed by the State of Texas to execute bonds as a surety; and
 - (c) must appear on the Treasury Department's most current list (Circular 570 as amended). See the FMI.
5. The Bond must be executed by an authorized representative of the surety. Ordinarily, Bonds are signed by an attorney-in- fact or agent of the surety. The person signing the Bond for the surety should provide a copy of the power of attorney or other evidence of their authority to act on behalf of the surety.
6. The owner's attorney must review the construction contract, other contract documents and the payment and performance bonds. The attorney must certify in writing that these documents are adequate and that the persons signing these documents have been properly authorized to do so.

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called **PRINCIPAL**, and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Mailing Address of Surety)

(Physical Address of Surety)

(Telephone Number, including area code, of Surety)

hereinafter called **SURETY**, are held and firmly bound unto:

Webb County
(Name of Owner)

1110 Washington Street, Laredo, Texas 78040
(Address of Owner)

hereinafter called **OWNER** in the total aggregate penal sum of

_____ DOLLARS

(\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the **PRINCIPAL** entered into a certain contract with the **OWNER**, dated the _____ day of _____, _____, a copy of which is hereto attached and made a part hereof for the construction of:

Webb County Espejo Gates Roadway Improvements Project

NOW, THEREFORE, if the **PRINCIPAL** shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the **OWNER** with or without notice to the **SURETY** and during the one year guaranty period and if the **PRINCIPAL** shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the **OWNER** from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the **OWNER** all outlay and expense which the **OWNER** may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said **SURETY**, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to **WORK** to be performed thereunder or the **SPECIFICATIONS** accompanying same shall in any way affect its obligation on this **BOND**, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the **WORK** or to the **SPECIFICATIONS**.

PROVIDED, FURTHER, that it is expressly agreed that the **BOND** shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the **PRINCIPAL** and the **SURETY** to the full and faithful performance of the **CONTRACT** as so amended. The term "Amendment," wherever used in this **BOND**, and whether referring to this **BOND**, the Contract or the Loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the **OWNER** and the **PRINCIPAL** shall abridge the right of the other beneficiary hereunder, whose claim may be unsatisfied. The **OWNER** is the only beneficiary hereunder.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this the _____ day of _____, _____.

PRINCIPAL:

Name: _____
Address: _____

If a Corporation

ATTEST:

Name: _____
Title: _____

By: _____
Name: _____
Title: _____

(SEAL)

Witness:

Name: _____
Address: _____

SURETY:

Name: _____
Address: _____

ATTEST:

Name: _____
Title: _____

By: _____
Name: _____
Title: _____

(SEAL)

OWNER APPROVAL:

The OWNER approves the form of this Performance Bond.

Date: _____

Name: _____
Address: _____

ATTEST:

Secretary

By: _____
Name: _____
Title: _____

(SEAL)

NOTES:

1. The date of the Bond must not be prior to the date of the Contract.
2. The amount of the Bond must not be less than the amount of the Contract.
3. If the contractor is a partnership, all partners should execute the Bond.

If the contractor is a corporation, the Bond must be executed by an authorized official of the corporation. Authorization should be evidenced by a corporate resolution.

4. The surety must:

- (a) be a corporation which is authorized to conduct business in the State of Texas;
- (b) be a corporation which is licensed by the State of Texas to execute bonds as a surety; and
- (c) must appear on the Treasury Department's most current list (Circular 570 as amended). See the FMI.

5. The Bond must be executed by an authorized representative of the surety. Ordinarily, Bonds are signed by an attorney-in-fact or agent of the surety. The person signing the Bond for the surety should provide a copy of the power of attorney or other evidence of their authority to act on behalf of the surety.

6. [For public bodies only] The contractor may not be required to obtain a surety bond from any specific insurance or surety company.

CONTRACT TIME & LIQUIDATED DAMAGES

Project: Espejo Gates Roadway Improvements

The Contract Performance for this project shall be **two hundred eighty five (285) calendar days** defined in the Specifications.

The time set forth in the proposal for the completion of the work is an essential element of the Contract. For each day under the conditions described in the preceding Paragraph that any work shall remain uncompleted after the expiration of the days specified in the Contract, together with any additional days allowed, the amount per day given in the following schedule will be deducted from the money due or to become due the Contractor, as liquidated damages for late completion of the specified work.

FOR AMOUNT OF CONTRACT		
From More Than	To and Including	Amount of Penalty Per Day over Contract Time
\$0	\$100,000	\$200
100,000	500,000	400
500,000	1,000,000	550
1,000,000	2,000,000	700
2,000,000	5,000,000	850
5,000,000	10,000,000	1,200
10,000,000	15,000,000	1,500
15,000,000	20,000,000	1,700
20,000,000	Over 20,000,000	2,500

Notice to Proceed

Date: _____

Project: Webb County Espejo Gates Roadway Improvements Project

Owner: Webb County

Owner's Contract No.:

Contract:

Engineer's Project No.:

Contractor:

Contractor's Address: [send Certified Mail, Return Receipt Requested]

You are notified that the Contract Times under the above Contract will commence to run on _____. On or before that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement, the number of days to achieve Substantial Completion is 270, and the number of days to achieve readiness for final payment is 285.

Before you may start any Work at the Site, Paragraph 2.01.B of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds and loss payees) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must:

_____ *[add other requirements].*

Webb County

Owner

Given by:

Authorized Signature

Title

Date

Copy to Engineer

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

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
A Practice Division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

Copyright © 2007 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

Associated General Contractors of America
2300 Wilson Boulevard, Suite 400, Arlington, VA 22201-3308
(703) 548-3118
www.agc.org

The copyright for this EJCDC document is owned jointly by the four EJCDC sponsoring organizations and held in trust for their benefit by NSPE.

STANDARD GENERAL CONDITIONS OF THE DRAFT 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 Commencement of Contract Times; Notice to Proceed.....	6
2.04 Starting the Work	7
2.05 Before Starting Construction	7
2.06 Preconstruction Conference; Designation of Authorized Representatives	7
2.07 Initial Acceptance of Schedules	7
Article 3 – Contract Documents: Intent, Amending, Reuse	8
3.01 Intent.....	8
3.02 Reference Standards.....	8
3.03 Reporting and Resolving Discrepancies.....	9
3.04 Amending and Supplementing Contract Documents.....	9
3.05 Reuse of Documents	10
3.06 Electronic Data.....	10
Article 4 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions; Reference Points.....	11
4.01 Availability of Lands.....	11
4.02 Subsurface and Physical Conditions.....	11
4.03 Differing Subsurface or Physical Conditions	12
4.04 Underground Facilities.....	13
4.05 Reference Points.....	14
4.06 Hazardous Environmental Condition at Site	14
Article 5 – Bonds and Insurance.....	16
5.01 Performance, Payment, and Other Bonds.....	16
5.02 Licensed Sureties and Insurers.....	17
5.03 Certificates of Insurance	17
5.04 Contractor’s Insurance	17
5.05 Owner’s Liability Insurance.....	19
5.06 Property Insurance.....	19
5.07 Waiver of Rights	20
5.08 Receipt and Application of Insurance Proceeds	21

5.09	Acceptance of Bonds and Insurance; Option to Replace	21
5.10	Partial Utilization, Acknowledgment of Property Insurer.....	22
Article 6 – Contractor’s Responsibilities		22
6.01	Supervision and Superintendence.....	22
6.02	Labor; Working Hours	22
6.03	Services, Materials, and Equipment	23
6.04	Progress Schedule	23
6.05	Substitutes and “Or-Equals”	23
6.06	Concerning Subcontractors, Suppliers, and Others.....	26
6.07	Patent Fees and Royalties	27
6.08	Permits.....	28
6.09	Laws and Regulations	28
6.10	Taxes	28
6.11	Use of Site and Other Areas.....	28
6.12	Record Documents.....	29
6.13	Safety and Protection	29
6.14	Safety Representative.....	30
6.15	Hazard Communication Programs.....	30
6.16	Emergencies	31
6.17	Shop Drawings and Samples	31
6.18	Continuing the Work.....	33
6.19	Contractor’s General Warranty and Guarantee	33
6.20	Indemnification	33
6.21	Delegation of Professional Design Services.....	34
Article 7 – Other Work at the Site.....		35
7.01	Related Work at Site	35
7.02	Coordination.....	36
7.03	Legal Relationships.....	36
Article 8 – Owner’s Responsibilities.....		36
8.01	Communications to Contractor.....	36
8.02	Replacement of Engineer	36
8.03	Furnish Data	36
8.04	Pay When Due.....	36
8.05	Lands and Easements; Reports and Tests.....	37
8.06	Insurance.....	37
8.07	Change Orders.....	37
8.08	Inspections, Tests, and Approvals	37
8.09	Limitations on Owner’s Responsibilities	37
8.10	Undisclosed Hazardous Environmental Condition	37
8.11	Evidence of Financial Arrangements.....	37
8.12	Compliance with Safety Program.....	37
Article 9 – Engineer’s Status During Construction.....		38
9.01	Owner’s Representative	38

9.02	Visits to Site	38
9.03	Project Representative.....	38
9.04	Authorized Variations in Work	38
9.05	Rejecting Defective Work.....	39
9.06	Shop Drawings, Change Orders and Payments.....	39
9.07	Determinations for Unit Price Work	39
9.08	Decisions on Requirements of Contract Documents and Acceptability of Work.....	39
9.09	Limitations on Engineer’s Authority and Responsibilities	40
9.10	Compliance with Safety Program	40
Article 10 – Changes in the Work; Claims		41
10.01	Authorized Changes in the Work	41
10.02	Unauthorized Changes in the Work.....	41
10.03	Execution of Change Orders.....	41
10.04	Notification to Surety.....	41
10.05	Claims.....	42
Article 11 – Cost of the Work; Allowances; Unit Price Work.....		43
11.01	Cost of the Work.....	43
11.02	Allowances	45
11.03	Unit Price Work	46
Article 12 – Change of Contract Price; Change of Contract Times		46
12.01	Change of Contract Price	46
12.02	Change of Contract Times	47
12.03	Delays.....	48
Article 13 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work.....		49
13.01	Notice of Defects.....	49
13.02	Access to Work	49
13.03	Tests and Inspections	49
13.04	Uncovering Work.....	50
13.05	Owner May Stop the Work.....	50
13.06	Correction or Removal of Defective Work	50
13.07	Correction Period	51
13.08	Acceptance of Defective Work.....	52
13.09	Owner May Correct Defective Work	52
Article 14 – Payments to Contractor and Completion		53
14.01	Schedule of Values.....	53
14.02	Progress Payments	53
14.03	Contractor’s Warranty of Title.....	56
14.04	Substantial Completion.....	56
14.05	Partial Utilization	56
14.06	Final Inspection	57
14.07	Final Payment.....	57
14.08	Final Completion Delayed	58

14.09 Waiver of Claims	59
Article 15 – Suspension of Work and Termination	59
15.01 Owner May Suspend Work.....	59
15.02 Owner May Terminate for Cause	59
15.03 Owner May Terminate For Convenience	60
15.04 Contractor May Stop Work or Terminate.....	61
Article 16 – Dispute Resolution	61
16.01 Methods and Procedures	61
Article 17 – Miscellaneous	62
17.01 Giving Notice	62
17.02 Computation of Times	62
17.03 Cumulative Remedies	62
17.04 Survival of Obligations	62
17.05 Controlling Law	63
17.06 Headings.....	63

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. 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 which is evidence of the agreement between Owner and Contractor covering the Work.
 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. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order*—A document recommended by Engineer 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, issued on or after the Effective Date of the Agreement.
 10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; ~~(ii) achieve Substantial Completion;~~ and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to ~~Substantial~~ Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given 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 under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *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.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *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.

40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *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 for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *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 at the Site.
44. *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.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *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 Subcontractor.
48. *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 those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *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, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an

addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

A. The words and terms discussed in Paragraph 1.02.B through F 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 Paragraph 9.09 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
 - e. 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 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

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. 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 Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 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 Agreement 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 Agreement. 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 Agreement, whichever date is earlier.

2.04 *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 the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), 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 Documents;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *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 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, 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 instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *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 2.05.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 component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, 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. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 1. Reference to standards, specifications, manuals, 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, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement 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, 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 Contract Documents. 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 Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, 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) any standard, specification, manual, or code, or (c) 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 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
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 Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); 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 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier 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
 2. 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.
- 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.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

**ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS;
HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS**

4.01 *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. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- 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 the Work is to be performed 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.

4.02 *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 contiguous to the Site; and
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "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.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed 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 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; 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 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer’s Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner’s obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer’s findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition 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 meet any one or more of the categories described in Paragraph 4.03.A; and
 - 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 Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final 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

- b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
 3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

- A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous 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 shall not be responsible for 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 such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.
- B. *Not Shown or Indicated:*
 1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *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.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "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 any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
 - D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) 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 4.06.E.
 - E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. 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, either party may make a Claim therefor as provided in Paragraph 10.05.
 - F. 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. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 7.
 - G. 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: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the

scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- H. 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 a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, 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 Documents. 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 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds 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 each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, 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 requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which 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:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
 - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 5. 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; and
 6. 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.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and 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;
 2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
 3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
 4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
 5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

6. include completed operations coverage:
 - a. Such insurance shall remain in effect for two years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, 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.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full 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 interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
 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, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, 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.
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
 - C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
 - D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
 - E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies 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 of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their 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 Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (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 as trustee 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 utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.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, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party

shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, 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. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *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. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- 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.

6.02 *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. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *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.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 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 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "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 specification or description 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 or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
 - 1. "*Or-Equal*" Items: If in Engineer's sole discretion 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, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of

proposed substitute items. For the purposes of this Paragraph 6.05.A.1, 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; and
 - 3) it has a proven record of performance and availability of responsive service.
- 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.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. 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:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:

- a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial-Completion on time,
 - b) 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
 - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
- 3) will identify:
- a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services; and
- 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. 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.

- F. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. 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 any right of Owner or Engineer to reject defective Work.
- C. 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. 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 moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. 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.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (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 such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *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.

6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, 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 opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *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 knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear 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. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *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.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
 3. 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 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 by or based upon Contractor's performance of the Work.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other 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 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 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 property to stresses or pressures that will endanger it.

6.12 *Record Documents*

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

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, 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 owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
 - 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 6.13.A.2 or 6.13.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 (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 for protection of the Work 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 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *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.

6.15 *Hazard Communication Programs*

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

6.16 *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.

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

- a. Submit number of Samples specified in the Specifications.
- b. 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 6.17.D.

- B. 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. *Submittal Procedures:*

- 1. Before submitting each Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated each 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 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 and approval of that 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 both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

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 (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.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's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

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.

6.18 *Continuing the Work*

- A. 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, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *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 representation of 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 or the issuance of a notice of acceptability by Engineer;
 - 6. any inspection, test, or approval by others; or
 - 7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. 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 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 6.20.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 6.20.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.

6.21 *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 law.
- 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, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner

and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

- D. Pursuant to this Paragraph 6.21, 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 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
 - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
 - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. 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. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, 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.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
 - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 - 3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

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

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

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

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *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.

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *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.

8.12 *Compliance with Safety Program*

- 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 pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER’S STATUS DURING CONSTRUCTION

9.01 *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 Documents.

9.02 *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 9.09. Particularly, but without limitation, during or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. 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.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which 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. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If

Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with 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, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. 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 Paragraph 10.05.

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

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date

of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.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 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *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 by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *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 as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
 - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 - 2. 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; and
 - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *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.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
 2. approve the Claim; or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs 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 11.01.B, 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, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
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 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone 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 Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the

Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which 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 Paragraphs 11.01.A.
- C. *Contractor's Fee:* When all the Work 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 or when a Claim for an 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 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, 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.

11.02 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.
- B. *Cash Allowances:*
1. Contractor agrees that:
 - a. 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
 - b. 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:*

1. 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.

11.03 *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. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- 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. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 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; and
 2. there is no corresponding adjustment with respect to any other item of Work; and
 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for 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, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee*: 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 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 8 percent;
 - b. for costs incurred under Paragraph 11.01.A.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 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 8 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - 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 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to

the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, 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 Price or the Contract Times, or both. 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.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is 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 described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Notice of Defects

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 Access to Work

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests 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.

13.03 Tests and Inspections

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- 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 and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

- E. 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.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, 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, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, 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 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 Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. 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, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *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, 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.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. 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 removal (including but not limited to all costs of repair or replacement of work of others).

- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *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 land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. repair such defective land or areas; or
 - 2. correct such defective Work; or
 - 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 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. 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) will be paid by Contractor.
- 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 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. 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) 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 pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *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 in accordance with Paragraph 13.06.A, 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, 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 13.09, 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, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, 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 (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) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all

costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Schedule of Values

- A. The Schedule of Values established as provided in Paragraph 2.07.A 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.

14.02 Progress Payments

A. 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 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.

B. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, 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 Documents; 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 moneys 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 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment:

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. 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;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
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 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *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 (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- 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 tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. 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 tentative list.

14.05 *Partial Utilization*

- 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. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and 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 14.04.A through D for that part of the Work.
2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and 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 14.04 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 5.10 regarding property insurance.

14.06 *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 is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;

- b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) 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.

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 Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. 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 14.09. 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. Payment Becomes Due:

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of

the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *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 notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will 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 established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 3. Contractor's repeated disregard of the authority of Engineer; or
 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
 2. 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
 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.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 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) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed 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.
- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. 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. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *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;

3. 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) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) 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 15.03.
- 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 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
 2. agrees with the other party to submit the Claim to another dispute resolution process; or
 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 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 to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 Computation of Times

- A. When any period of time is referred to in the Contract Documents 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.

17.03 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 Documents. 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.

17.04 Survival of Obligations

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

17.05 *Controlling Law*

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

17.06 *Headings*

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

Supplementary Conditions

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC C-700 (2007 Edition). All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

SC-4.02 *Subsurface and Physical Conditions*

SC-4.02 Add the following new paragraphs immediately after Paragraph 4.02.B:

- C. The following reports of explorations and tests of subsurface conditions at or contiguous to the Site are known to Owner:
 - 1. Report prepared by Howland Engineering entitled: Roadway at Espejo Gates – County Line Road. The “technical data” contained in such report upon which Contractor may rely is geotechnical data.
- D. The reports and drawings identified above are not part of the Contract Documents, but the “technical data” contained therein upon which Contractor may rely, as expressly identified and established above, are incorporated in the Contract Documents by reference. Contractor is not entitled to rely upon any other information and data known to or identified by Owner or Engineer.
- E. Copies of reports and drawings identified in SC-4.02.C and SC-4.02.D that are not included with the Bidding Documents may be examined at S&B Infrastructure, Laredo office during regular business hours.

SC-5.04 *Contractor's Liability Insurance*

SC-5.04 Add the following new paragraph immediately after Paragraph 5.04.B:

- C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not

less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation Insurance Coverage:

Type of Insurance: Workers' Compensation

Limits of Liability: Not Less Than: Statutory - Texas

2. Commercial General Liability Insurance:

Type of Insurance: Commercial General Liability Insurance

Limits of Liability: Not Less Than \$600,000 each occurrence

3. Business Automobile Policy

Type of Insurance: Business Automobile Policy

Limits of Liability: Not Less Than \$600,000 combined single limit

SC-6.10 *Taxes*

SC-6.10 Add a new paragraph immediately after Paragraph 6.10.A:

B. Owner is exempt from payment of sales and compensating use taxes of the State of Texas and of cities and counties thereof on all materials to be incorporated into the Work.

- 1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.**
- 2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.**

SC-7.02 *Coordination*

GC-7.02 requires that if in addition to retaining Contractor, Owner will contract with others to perform work at the Site, Owner must provide to Contractor specified information. Use the following in that case:

SC-7.02 Delete Paragraph 7.02.A in its entirety and replace with the following:

- A. Owner intends to contract with others for the performance of other work on the Project at the Site.
1. The Contractor shall have authority and responsibility for coordination of the various contractors at the Site;
 2. The following specific matters are to be covered by such authority and responsibility: scheduling delivery of materials, storage of materials, sequencing of construction involving different crafts, resolving interface issues between crafts, scheduling testing, and all other aspects of the work that do not impact the design or function of the Work.
 3. The extent of such authority and responsibilities is within the limits of the project.

SC-7.04 *Claims Between Contractors*

SC-7.04 Add the following new paragraph immediately after paragraph GC-7.03:

SC-7.04 *Claims Between Contractors*

- A. Should Contractor cause damage to the work or property of any other contractor at the Site, or should any claim arising out of Contractor's performance of the Work at the Site be made by any other contractor against Contractor, Owner, Engineer, or the construction coordinator, then Contractor (without involving Owner, Engineer, or construction coordinator) shall either (1) remedy the damage, (2) agree to compensate the other contractor for remedy of the damage, or (3) remedy the damage and attempt to settle with such other contractor by agreement, or otherwise resolve the dispute by arbitration or at law.
- B. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner, Engineer, the construction coordinator and the officers, directors, partners, employees, agents and other consultants and subcontractors of each and any of them from and against all claims, costs, losses and damages (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any other contractor against Owner, Engineer, consultants, or the construction coordinator to the extent said claim is based on or arises out of Contractor's performance of the Work. Should

another contractor cause damage to the Work or property of Contractor or should the performance of work by any other contractor at the Site give rise to any other Claim, Contractor shall not institute any action, legal or equitable, against Owner, Engineer, or the construction coordinator or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner, Engineer, or the construction coordinator on account of any such damage or Claim.

- C. If Contractor is delayed at any time in performing or furnishing the Work by any act or neglect of another contractor, and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, Contractor may make a Claim for an extension of times in accordance with Article 12. An extension of the Contract Times shall be Contractor's exclusive remedy with respect to Owner, Engineer, and construction coordinator for any delay, disruption, interference, or hindrance caused by any other contractor. This paragraph does not prevent recovery from Owner, Engineer, or construction coordinator for activities that are their respective responsibilities.

SC-9.03 *Project Representative*

SC-9.03 Add the following new paragraphs immediately after Paragraph 9.03.A:

- B. The Resident Project Representative (RPR) will be Engineer's employee or agent at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions. RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall be through or with the full knowledge and approval of Contractor. The RPR shall:
1. *Schedules:* Review the progress schedule, schedule of Shop Drawing and Sample submittals, and schedule of values prepared by Contractor and consult with Engineer concerning acceptability.
 2. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related

meetings, and prepare and circulate copies of minutes thereof.

3. *Liaison:*

- a. Serve as Engineer's liaison with Contractor, working principally through Contractor's authorized representative, assist in providing information regarding the intent of the Contract Documents.
- b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
- c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.

4. *Interpretation of Contract Documents:* Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.

5. *Shop Drawings and Samples:*

- a. Record date of receipt of Samples and approved Shop Drawings.
- b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.

6. *Modifications:* Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.

7. *Review of Work and Rejection of Defective Work:*

- a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
- b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress will not produce a

completed Project that conforms generally to the Contract Documents or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

8. *Inspections, Tests, and System Startups:*

- a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
- b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

9. *Records:*

- a. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- b. Maintain records for use in preparing Project documentation.

10. *Reports:*

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, damage to property by fire or other causes, or

the discovery of any Hazardous Environmental Condition.

11. *Payment Requests:* Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
12. *Certificates, Operation and Maintenance Manuals:* During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Specifications to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.
13. *Completion:*
 - a. Participate in a Substantial Completion inspection, assist in the determination of Substantial Completion and the preparation of lists of items to be completed or corrected.
 - b. Participate in a final inspection in the company of Engineer, Owner, and Contractor and prepare a final list of items to be completed and deficiencies to be remedied.
 - c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the Notice of Acceptability of the Work.

C. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including “or-equal” items).
2. Exceed limitations of Engineer’s authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Contractor, Subcontractors, Suppliers, or Contractor's superintendent.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work unless such advice or directions are specifically required by the Contract Documents.
5. Advise on, issue directions regarding, or assume control over safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. Authorize Owner to occupy the Project in whole or in part.

SC-13.03 *Tests and Inspections*

SC-13.03 Add the following new paragraphs immediately after Paragraph 13.03.F:

- G. All test reports shall be submitted to the Engineer within 2 days upon completion of test.

Contractor's Application for Payment No.

	Application Period:	Application Date:
To (Owner):	From (Contractor):	Via (Engineer):
Project:	Contract:	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:

Application For Payment Change Order Summary

Approved Change Orders			
Number	Additions	Deductions	
			1. ORIGINAL CONTRACT PRICE..... \$ _____
			2. Net change by Change Orders..... \$ _____
			3. Current Contract Price (Line 1 ± 2)..... \$ _____
			4. TOTAL COMPLETED AND STORED TO DATE (Column F on Progress Estimate)..... \$ _____
			5. RETAINAGE:
			a. X _____ Work Completed..... \$ _____
			b. X _____ Stored Material..... \$ _____
			c. Total Retainage (Line 5a + Line 5b)..... \$ _____
			6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c)..... \$ _____
			7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)..... \$ _____
			8. AMOUNT DUE THIS APPLICATION..... \$ _____
			9. BALANCE TO FINISH, PLUS RETAINAGE (Column G on Progress Estimate + Line 5 above)..... \$ _____
TOTALS			
NET CHANGE BY CHANGE ORDERS			

Contractor's Certification

The undersigned Contractor certifies that to the best of its knowledge: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

By:	Date:
-----	-------

Payment of:	\$ _____	(Line 8 or other - attach explanation of the other amount)
is recommended by:	_____	_____
	(Engineer)	(Date)
Payment of:	\$ _____	(Line 8 or other - attach explanation of the other amount)
is approved by:	_____	_____
	(Owner)	(Date)
Approved by:	_____	_____
	Funding Agency (if applicable)	(Date)

Endorsed by the Construction Specifications Institute.

Change Order

No. _____

Date of Issuance: _____ Effective Date: _____

Project: Webb County Espejo Gates Roadway Improvements	Owner: Webb County	Owner's Contract No.:
Contract:	Date of Contract:	
Contractor:	Engineer's Project No.: <u>U2338</u>	

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

Description:

Attachments (list documents supporting change):

CHANGE IN CONTRACT PRICE:

Original Contract Price:

\$ _____

[Increase] [Decrease] from previously approved
Change Orders No. _____ to No. _____:

\$ _____

Contract Price prior to this Change Order:

\$ _____

[Increase] [Decrease] of this Change Order:

\$ _____

Contract Price incorporating this Change Order:

\$ _____

CHANGE IN CONTRACT TIMES:

Original Contract Times: Working days Calendar days

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

[Increase] [Decrease] from previously approved Change Orders
No. _____ to No. _____:

Substantial completion (days): _____

Ready for final payment (days): _____

Contract Times prior to this Change Order:

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

[Increase] [Decrease] of this Change Order:

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

Contract Times with all approved Change Orders:

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

RECOMMENDED:

By: _____

Engineer (Authorized Signature)

Date: _____

Approved by Funding Agency (if applicable):

ACCEPTED:

By: _____

Owner (Authorized Signature)

Date: _____

ACCEPTED:

By: _____

Contractor (Authorized Signature)

Date: _____

Date: _____

WORK CHANGE DIRECTIVE

Document 00940

WORK CHANGE DIRECTIVE / WCD No. _____

PROJECT: Webb County Espejo Gates Roadway Improvements Project

CONTRACT No.: _____ PROJECT No.: U2338

TO: [Contractor's Company Name]

Contractor and [Contractor's Address]

Address for Written Notice _____

REFERENCE RFIs/RFPs: _____

You are hereby directed to make the following changes in the Work, as described below and specified or shown on attachments, if applicable.

1.01 DESCRIPTION OF CHANGES

A. Brief description of changes in the Work:

B. Justification for change(s):

1.02 PROPOSED ADJUSTMENTS

A. Contract Price (Check one):

Lump sum [increase / decrease] of \$_____.

Unit Price of \$_____ per _____.

As provided in subparagraph _____ of General Conditions.

As follows:

B. Contract Time: Contract Time is proposed to [be adjusted / remain unchanged].

WORK CHANGE DIRECTIVE

Proposed adjustment, if any, is [an increase / a decrease] of _____ days.

1.03 NOTICE TO PROCEED BY THE ENGINEER

Signature by Engineer indicates notice to proceed to Contractor for the described work and outlines proposed method of adjustment in Contract Price and Contract Time.

Project Manager Date

[Intermediate Authority, if needed] Date

[Intermediate Authority, if needed] Date

City Engineer Date

1.04 ACCEPTANCE BY CONTRACTOR

Signature by Contractor indicates Contractor's agreement with the above proposed adjustments in Contract Price and Contract Time.

Contractor Signature and Title

Date

END OF DOCUMENT

cc: [Design Consultant], [Owning Dept. Director], [Other Copy Addrees], [File(s)]

WORK CHANGE DIRECTIVE

EXECUTIVE SUMMARY

WCD No. _____ Contract No.: _____ Proj. No.: _____

1.01	CONTRACT PRICE SUMMARY	DOLLAR AMOUNT	PERCENT
A.	Original Contract Price	\$0.00	100.00%
B.	Previous Change Orders	\$0.00	
C.	This Work Change Directive	\$0.00	
D.	Revised Contract Price	\$0.00	
E.	Projected Contract Modifications*		
F.	Projected Contract Price		

Date of Commencement of the Work:

1.02	CONTRACT TIME SUMMARY	DURATION	COMPLETION DATE
A.	Original Contract Time	Days	
B.	Previous Change Orders	0 Days	
C.	This Work Change Directive	0 Days	
D.	Revised Contract Time	0 Days	
E.	Projected Contract Modifications*		
F.	Projected Contract Time		

1.03 TOTAL VALUE OF INCREASES OUTSIDE OF GENERAL SCOPE OF WORK
 A. Including this Work Change Directive, the following table is provided to track conditions related to Paragraph 7.1.2.3 of Document 00700 - General Conditions.

<u>WCD & C.O. Nos.</u>	<u>AMOUNT ADDED</u>	<u>PERCENT OF ORIGINAL CONTRACT PRICE</u>
[1]	[\$0.00]	[0%]
<hr/>		
TOTALS	\$0.00	0.0%

* Based on approved WCDs not yet included in Change Orders and Change Orders not yet issued.

END OF SUMMARY

MINOR CHANGE IN THE WORK

Document 00942

MINOR CHANGE IN THE WORK / M.C.W. No.: _____

PROJECT: Webb County Espejo Gates Roadway Improvements Project

CONTRACT No.: _____ PROJECT No.: U2338

TO: [Contractor's Company Name]

Contractor and [Contractor's Address]

Address for Written Notice _____

1.01 DESCRIPTION OF CHANGES

1.02 JUSTIFICATION FOR CHANGES

1.03 ACCEPTANCE BY CONTRACTOR

A. Contractor agrees to perform change(s) included in this Minor Change in the Work and that it does not involve any adjustment in Contract Price or Contract Time.

Contractor Signature and Title Date

1.04 ACCEPTANCE BY THE ENGINEER

Project Manager Date

[Intermediate Authority] Date

City Engineer Date

TEMPORARY CONSTRUCTION SIGN



WEBB COUNTY, TEXAS **“Espejo Gates Roadway Improvements Project”**

Honorable Tano E. Tijerina, County Judge

Jesse Gonzalez County Commissioner Pct. 1
John Galo County Commissioner Pct. 3

Rosaura “Wawi” Tijerina County Commissioner Pct. 2
Jaime Canales County Commissioner Pct. 4

Luis Perez Garcia III, P.E., C.F.M., County Engineer
(956) 523-4055

S&B Infrastructure, Ltd.
2120 Blaine Street, Suite 100
Laredo, TX, 78043
956-568-2561

Contractor’s Name
Address
City, State, Zip Code
Telephone Number

NOTE: Signs are to be installed in ground on 4” x 4” posts
Blue borders
White background
Black letter
Two (2) project signs are required - 4’ x 8’ x ¾” thick
Plywood Panel (APA Rated A-B grade-exterior)

CONTRACTOR TO REMOVE SIGNS UPON COMPLETION OF PROJECT

ENGINEER SEAL

Project: Espejo Gates Roadway Improvements

County: Webb



FR
9/28/2017

The enclosed Texas Department of Transportation Specifications (2014), Special Specifications and Special Provisions in this document have been selected by me, or under my responsible supervision as being applicable to this project. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

WEBB COUNTY
ESPEJO GATES ROADWAY IMPROVEMENTS PROJECT

SPECIAL PROVISIONS

Preface:

The “Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges” of the Texas Department of Transportation, 2014, as amended and augmented by the Supplemental Specifications following, shall govern the performance of the Contract. These specifications hereby are made a part of the Contract as fully and with the same effect as if set forth at length herein. In case of conflict between the Suggested Form of Agreement, the Standard General Conditions of the Constructing Contract (including the Supplementary Conditions attached herein) and the Specifications, Special Provisions, and Specifications that follow, then the Terms of the Suggested Form of Agreement and the Standard General Conditions will supersede the language in the Specifications, the Special Provisions, and the Special Specifications.

Attention is directed to the fact that any other documents printed by the Texas Department of Transportation modifying or supplementing said “Standard Specifications”, such as Standard Supplemental Specifications, Special Provisions (by the Department), Notice to Bidders, etc. do not form a part of this Contract nor govern its performance, unless specifically so-stated in the Supplemental Specifications herein contained.

References to “Proposal” have been changed to “Bid” in the County’s documents for this contract, including many standard TxDOT terms such as “Examination of Site Work and Bid (Proposal)”. This shall be accounted for when working contract documents prepared by the County with those standards prepared by TxDOT.

References made to specific section numbers in these Special Provisions, or in any of the various documents which constitute the complete Contract Documents, shall, unless otherwise denoted, be construed as referenced to the corresponding section of the “Standard Specifications” issued by the Texas Department of Transportation in 2014.

WEBB COUNTY

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

**ALL SPECIFICATIONS AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT
ARE IDENTIFIED AS FOLLOWS:**

**STANDARD SPECIFICATIONS:
ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION
NOVEMBER 1, 2014
STANDARD SPECIFICATIONS
ARE INCORPORATED INTO THE CONTRACT BY REFERENCE**

- ITEM 1 ABBREVIATIONS AND DEFINITIONS
- ITEM 2 INSTRUCTIONS TO BIDDERS
- ITEM 3 AWARD AND EXECUTION OF CONTRACT
- ITEM 4 SCOPE OF WORK
- ITEM 5 CONTROL OF WORK
- ITEM 6 CONTROL OF MATERIALS
- ITEM 7 LEGAL RELATIONS AND RESPONSIBILITIES
- ITEM 8 PROSECUTION AND PROGRESS
- ITEM 9 MEASUREMENT AND PAYMENT
- ITEM 100 PREPARING RIGHT OF WAY (103)
- ITEM 110 EXCAVATION (132)
- ITEM 132 EMBANKMENT (100)(204)(210)(216)(400)
- ITEM 164 SEEDING FOR EROSION CONTROL (162)(166)(168)
- ITEM 204 SPRINKLING
- ITEM 247 FLEXIBLE BASE (105)(204)(210)(216)(520)
- ITEM 260 LIME TREATMENT (ROAD-MIXED) (105)(132)(204)(210)(216)(247)(300)(310)
(520)
- ITEM 310 PRIME COAT (300)(316)
- ITEM 340 DENSE-GRADED HOT-MIX ASPHALT (METHOD) (210)(300)(301)(320)(520)
(585)
- ITEM 360 CONCRETE PAVEMENT (300)(420)(421)(438)(440)(529)(585)
- ITEM 422 CONCRETE SUPERSTRUCTURES (420)(421)(440)
- ITEM 432 RIPRAP (420)(421)(427)(440)
- ITEM 450 RAILING
- ITEM 462 CONCRETE BOX CULVERTS AND STORM DRAINS (400)(424)(464)
- ITEM 464 REINFORCED CONCRETE PIPE (400)
- ITEM 466 HEADWALLS AND WINGWALLS (400)(420)(421)(440)(430)(464)
- ITEM 496 REMOVING STRUCTURES
- ITEM 500 MOBILIZATION
- ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING
- ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL
CONTROLS

ITEM 508 CONSTRUCTING DETOURS
ITEM 530 INTERSECTIONS, DRIVEWAYS, AND TURNOUTS (247) (260) (263) (275)
(276) (292) (316) (330) (334) (340) (360) (421) (440)
ITEM 540 METAL BEAM GUARD FENCE (421)(445)(529)(542)(544)
ITEM 552 WIRE FENCE (445)(492)
ITEM 644 SMALL ROADSIDE SIGN SUPPORTS AND ASSEMBLIES (421)(440)(441)(442)
(445)(634)(636)(643)(656)
ITEM 666 REFLECTORIZED PAVEMENT MARKINGS (316)(318)(662)(677)(678)
ITEM 668 PREFABRICATED PAVEMENT MARKINGS
ITEM 672 RAISED PAVEMENT MARKINGS (677)(678)

SPECIAL PROVISIONS:

SPECIAL PROVISIONS WILL GOVERN AND TAKE PRECEDENCE OVER THE SPECIFICATIONS ENUMERATED HEREON WHEREVER IN CONFLICT THEREWITH

SPECIAL PROVISION TO ITEM 1 (001-001-WC)
SPECIAL PROVISION TO ITEM 2 (002-001-WC)
SPECIAL PROVISION TO ITEM 3 (003-001-WC)
SPECIAL PROVISION TO ITEM 4 (004-001-WC)
SPECIAL PROVISION TO ITEM 5 (005-001-WC)
SPECIAL PROVISION TO ITEM 6 (006-001-WC)
SPECIAL PROVISION TO ITEM 7 (007-001-WC)
SPECIAL PROVISION TO ITEM 8 (008-001-WC)
SPECIAL PROVISION TO ITEM 9 (009-001-WC)
SPECIAL PROVISION TO ITEM 506 (506-003)

SPECIAL SPECIFICATIONS

ITEM 5001 GEOGRID BASE REINFORCEMENT

SPECIAL PROVISION
001-001-WC
Definition of Terms

For this project, Item 001, "Definition of Terms," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 1 is supplemented with the following:

1.0. General Statement:

For this Contract, the Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, November 1, 2014 (the "Texas Standard Specifications"), all documents referenced therein, and all manuals, bulletins, supplements, specifications, and similar materials issued by the Texas Department of Transportation ("TxDOT"), or any predecessor or successor thereto, which are applicable to this Contract, are hereby modified with respect to the terms cited below and no others are changed hereby.

The term "State", "State of Texas", "State Highway Agency", "State Highway Department Of Texas", "State Department of Highways and Public Transportation", "Texas State Department Of Highways and Public Transportation", "Texas Department of Transportation", "Department", "Texas Turnpike Authority", "State Department of Highways and Public Transportation Commission", "Commission", "Texas Department of Transportation Commission", "Texas Transportation Commission", or "State Highway Commission", shall, in the use of The Texas Standard Specifications, Special Provisions and Special Specifications and General Notes and Specification Data pertaining thereto, and required contract provisions for Federal-Aid construction contracts, for all work in connection with Webb County projects and all extensions, enlargements, expansions, improvements, and rehabilitations thereto, be deemed to mean Webb County, unless the context clearly indicates a contrary meaning.

Article 1.2 Abbreviations: is supplemented by the following:
WC Webb County

Article 3.14 Award is voided and replaced by the following:

3.14 Award. Webb County's acceptance of a Contractor's bid for a proposed contract that authorizes Webb County to enter into a Contract.

Article 3.28. Commission is voided and replaced by the following:

3.28. Commission. Webb County or authorized representative unless the context clearly indicates a contrary intent and meaning.

Article 3.31. Construction Contract is voided and replaced by the following:

3.31. Construction Contract. The agreement between Webb County and the Contractor establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract Documents.

Article 3.45. Debar (Debarment) is voided and replaced by the following:

3.45. Debar (Debarment). Action taken by Webb County or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or from participating as a subcontractor, or supplier of materials or equipment used in a highway improvement Contract as defined in Transportation Code, Chapter 223, Subchapter A.

Article 3.47. Department is voided and replaced by the following:

3.47. Department. Webb County, unless the context clearly indicates a contrary intent and meaning.

Article 3.48. Departmental Material Specifications (DMS) is voided and replaced by the following:

3.48. Departmental Material Specifications (DMS). Reference specifications for various materials published by the Texas Department of Transportation Construction Division.

Article 3.50, Disadvantaged Business Enterprise (DBE), is hereby deleted and replaced by the following:

3.50. Disadvantaged Business Enterprise (DBE). A small business certified by any of the Texas DBE Certifying Agencies included in the Texas Unified Certification Program that is 51 % or more owned by 1 or more minorities or women, or in the case of a publicly owned business, at least 51 % of the stock is owned by 1 or more minorities or women; and whose management and daily business operations are controlled by 1 or more of these individuals.

Article 3.54. Engineer is hereby deleted and replaced by the following:

3.54. Engineer. Webb County's Engineer or their duly authorized representative.

Article 3.73. "Letting Official" is hereby deleted and replaced by the following:

3.73. Letting Official. An employee, or authorized representative, of Webb County empowered by Webb County to officially receive bids and close the receipt of bids at a letting.

Article 3.79. Manual of Testing Procedures is voided and replaced by the following:

3.79. Manual of Testing Procedures. Texas Department of Transportation manual outlining test methods and procedures maintained by the Materials and Pavements Section of the Construction Division.

Article 3.98 Prequalification is voided and not replaced.

Article 3.99 Prequalification Statement is voided and not replaced.

Article 3.102. Proposal Form is voided and replaced by the following:

3.102. Proposal Form. The document issued by Webb County for a proposed Contract that includes:

- the specific locations (except for non -site-specific work) and description of the proposed work;
- an estimate of the various quantities and kinds of work to be performed or materials to be furnished;
- a schedule of items for which unit prices are requested;
- the number of working days within which the work is to be completed (or reference to the requirements); and
- the special provisions and special specifications applicable to the proposed Contract.

Article 3.108. Referee Tests is voided and replaced by the following:

3.108. Referee Tests. Tests requested to resolve differences between Contractor and Engineer test results. The referee laboratory is a mutually agreed to 3rd party commercial laboratory.

Article 3.127. Specifications is voided and replaced by the following:

3.127. Specifications. The general term comprising all the directions, provisions and requirements contained in the Texas Department of Transportation, " Standard Specifications For Construction and Maintenance Of Highways, Streets, And Bridges," 2014 Edition, the Department's or Webb County Special Specifications and Special Provisions, and in any Addenda and Change Orders or Supplemental Agreements that may be issued, all of which are necessary for the proper performance of the Contract.

Article 3.129. State is voided and replaced by the following:

3.129. State. Webb County.

SPECIAL PROVISION
002-001-WC
Instructions to Bidders

For this project, Item 002, "Instruction to Bidders," of the Standard Specifications, is voided and replaced with Document 1, Instructions to Bidders for Construction.

SPECIAL PROVISION
003-001-WC
Award and Execution of Contract

For this project, Item 003, "Award and Execution of Contract," of the Standard Specifications, is voided and replaced with applicable Articles of Document 1, Instructions to Bidders for Construction.

SPECIAL PROVISION
004-001-WC
Scope of Work

For this project, Item 4, “Scope of Work,” of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 4.1. Contract Intent is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 4.2. Changes in the Work is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 4.3. Differing Site Conditions is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 4.4. Requests and Claims for Additional Compensation is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

SPECIAL PROVISION
005-001-WC
Control of the Work

For this project, Item 005, "Control of the Work," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 5.1. Authority of Engineer is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 5.2. Plans and Working Drawings is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 5.3. Conformity with Plans, Specifications, and Special Provisions is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 5.4. Coordination of Plans, Specifications, and Special Provisions is deleted and replaced with the following:

Article 5.4. Coordination of Plans, Specifications, Special Provisions, and Standard General Condition. The specifications, standard general conditions, accompanying plans (including additional plans for non-site-specific work), special provisions, change orders, and supplemental agreements are intended to work together and be interpreted as a whole.

Numerical dimensions govern over scaled dimensions. Special provisions govern over plans (including general notes), which govern over standard specifications and special specifications. Job-specific plan sheets govern over standard plan sheets. Standard General Conditions govern over Standard Specification.

However, in the case of conflict between plans (including general notes) and specifications regarding responsibilities for hazardous materials and traffic control in Items 1 through 9 and Item 502, "Barricades, Signs, and Traffic Handling," special provisions govern over standard specifications and special specifications, which govern over the plans.

Notify the Engineer promptly of any omissions, errors, or discrepancies discovered so that necessary corrections and interpretations can be made. Failure to promptly notify the Engineer will constitute a waiver of all claims for misunderstandings or ambiguities that result from the errors, omissions, or discrepancies discovered.

Article 5.9. Construction Surveying is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 5.10. Inspections is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 5.12. Final Acceptance is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

SPECIAL PROVISION
006-001-WC
Control of Materials

For this project, Item 006, “Control of Materials,” of the Standard Specifications is amended hereby with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 6.1. Source Control is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 6.2. Material Quality is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 6.3. Manufacturer Warranties is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 6.4. Sampling, Testing, and Inspections is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 6.7. Department-Furnished Material is voided and not replaced.

Article 6.9. Recycled Materials is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Article 6.10. Hazardous Materials is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

SPECIAL PROVISION
007-001-WC
Legal Relations and Responsibilities

For this project, Item 7, “Legal Relations and Responsibilities” of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 7.16. Hauling and Loads on Roadways and Structures is supplemented by the following:

D. Stockpiling of Materials. Do not store or stockpile material on bridge structures without written permission. If required, submit a structural analysis and supporting documentation by a licensed professional engineer for review by the Engineer. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

Article 7.17. Contractor’s Responsibility for Work, Section B. Appurtenances is voided and replaced by the following:

B. Appurtenances.

1. Unreimbursed Repair. Except for destruction (not reusable) due to hurricanes, reimbursement will not be made for repair of damage to the following temporary appurtenances, regardless of cause:

- signs,
- barricades,
- changeable message signs, and
- other work zone traffic control devices.

Crash cushion attenuators and guardrail end treatments are the exception to the above listing and are to be reimbursed in accordance with Section 7.14.B.2, “Reimbursed Repair.”

For the devices listed in this section, reimbursement may be made for damage due to hurricanes. Where the contractor retains replaced appurtenances after completion of the project, the Department will limit the reimbursement to the cost that is above the salvage value at the end of the project.

2. Reimbursed Repair. Reimbursement will be made for repair of damage due to the causes listed in Section 7.14.A, “Reimbursable Repair,” to appurtenances (including temporary and permanent crash cushion attenuators and guardrail end treatments).

SPECIAL PROVISION
008-001-WC
Prosecution and Progress

For this project, Item 008, "Prosecution and Progress," of the Standard Specifications, is voided and replaced with applicable Articles of EJCDC C-700 document, Standard General Conditions of the Construction Contract.

Special Provision to Item 506

Temporary Erosion, Sedimentation, and Environmental Controls



Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 506.1., "Description." The second paragraph is voided and replaced by the following.

Contractor is considered primary operator to have day-to-day operational control as defined in TPDES GP TXR150000.

- 1.1. For projects with soil disturbance of less than 1 acre, no submittal to TCEQ will be required but Contractor will follow SWP3. For projects with soil disturbance of 1 acre to less than 5 acres a small site notice will be posted at the site. For projects with soil disturbance of 5 acres or more a notice of intent (NOI) is required and a large site notice posted at site. Postings will be in accordance with TPDES GP TXR150000. Postings not associated with project specific locations will be in same location as Department's postings.
- 1.2. **Notice of Intent (NOI).** Submit a NOI, if applicable, with the TCEQ under the TPDES GP TXR150000 at least 7 days prior to commencement of construction activities at the project site. Provide a signed copy to the Engineer and any other MS4 operators at the time of submittal. The Department will submit their NOI prior to contractor submission and will provide a copy for Contractor's use in completing the Contractor's NOI form.
- 1.3. **Notice of Change (NOC).** Upon concurrence of the Engineer, submit a NOC, if applicable, to the TCEQ within 14 days of discovery of a change or revision to the NOI as required by the TPDES GP TXR150000. Provide a signed copy of the NOC to the Engineer and any other MS4 operators at the time of submittal.
- 1.4. **Notice of Termination (NOT).** Upon concurrence of the Engineer, submit a NOT, if applicable, to the TCEQ within 30 days of the Engineer's approval that 70% native background vegetative cover is met or equivalent permanent stabilization have been employed in accordance with the TPDES GP TXR 150000. Provide a signed copy of the NOT to the Engineer and any other MS4 operators at the time of submittal.

Section 506.3.3., "Training," is supplemented by the following:

Training is provided by the Department at no cost to the Contractor and is valid for 3 yr. from the date of completion. The Engineer may require the following training at a frequency less than 3 yr. based on environmental needs:

- "Environmental Management System: Awareness Training for the Contractor" (English and Spanish) (Approximate running time 20 min.), and
- "Storm Water: Environmental Requirements During Construction" (English and Spanish) (Approximate running time 20 min.)

The CRPE, alternate CRPE designated for emergencies, Contractor's superintendent, Contractor, and subcontractor lead personnel involved in soil disturbing or SWP3 activities must enroll in and complete the training listed below and provide the certificate of completion to the Engineer before performing soil disturbing or SWP3 activities on the project. Coordinate enrollment as prescribed by the Department and pay associated fees for the following training:

- "Revegetation During Construction"
- "Construction General Permit Compliance," and

- "Construction Stage Gate Checklist (CSGC)."

Training and associated fee will not be measure or paid for directly but are subsidiary to this Item.

Special Specification 5001

Geogrid Base Reinforcement



1. DESCRIPTION

Furnish and place geogrid base reinforcement in accordance with the lines and grades shown on the plans or as directed.

2. MATERIALS

Provide geogrid base reinforcement, of the type shown on the plans, meeting the requirements of DMS-6240 "Geogrid for Base/Embankment Reinforcement." Use roll widths and lengths shown on the plans or as approved.

3. CONSTRUCTION

Prepare the subgrade as indicated on the plans or as directed. Set string lines for alignment if directed. Install geogrid in accordance with the lines and grades as shown on the plans. Place base material in lift thicknesses and compact as shown on the plans or as directed. Do not operate tracked construction equipment on the geogrid until a minimum fill cover of 6 in. is achieved. Rubber tire construction equipment may operate directly on the geogrid at speeds of less than 5 mph if the underlying material will support the loads. Where excessive substructure deformation is apparent, correct grid placement operations as recommended by the manufacturer or as directed.

3.1. **Geogrid Placement.** Orient the geogrid length as unrolled parallel to the direction of roadway. Overlap geogrid sections as shown on the plans or as directed. Use plastic ties at overlap joints or as directed. Placement of geogrid around corners may require cutting and diagonal lapping. Pin geogrid at the beginning of the backfill section as directed. Keep geogrid taut at the beginning of the backfilling section but not restrained from stretching or flattening.

3.1.1. **Longitudinal Joints.** Overlap longitudinal joints by a minimum of 1 ft. Space longitudinal ties 10 ft. to 20 ft. or as directed.

3.1.2. **Transverse Joints.** Overlap transverse joints by a minimum of 1 ft. Space transverse ties 4 ft. to 5 ft. or as directed.

3.2. **Damage Repair.** As directed, remove and replace contractor damaged or excessively deformed areas without additional compensation. Lap repair areas a minimum of 3 ft in all directions. Tie each side of repair grid in at least 3 locations but do not exceed normal construction spacing; tie spacing for odd shapes will be as directed. Repair excessively deformed materials underlying the grid as directed.

4. MEASUREMENT

Geogrid base reinforcement will be measured by the square yard of roadway placement as shown in the plans with no allowance for overlapping at transverse and longitudinal joints.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" are paid for at the unit bid price for "Geogrid Base Reinforcement" of the type specified. This

price is full compensation for furnishing, preparing, hauling and placing materials including labor, materials, freight, tools, equipment and incidentals.

GUIDE SCHEDULE OF SAMPLING & TESTING

MAY 2016



Using the Guide Schedule

Research of sampling and testing rates listed for project tests in the following Guide Schedule show that the Department's and the Contractor's risk of either rejecting "good" material or accepting "bad" material range from 20% to 40%.

To reduce this risk, we recommend that the sampling rate be increased during initial production. A four-fold increase in testing frequency will generally reduce risk to approximately 5%. The intent of increasing testing at the start of production is to insure that the Contractor's processes are in control and to establish acceptability requirements early.

There is a need to increase the frequency of testing for high-variability materials and when testing results do not meet specifications. The Engineer may require the Contractor to reimburse the Department for costs resulting from failing test results, in accordance with the specifications.

Materials incorporated in TxDOT projects are subjected to various quality assurance procedures such as testing (as outlined in this document), certification, quality monitoring, approved lists, etc. The Engineer and testing staff should familiarize themselves with materials to be used before work begins by reviewing the specifications and this document. Discuss material testing requirements with the Contractor.

Other testing required by the specifications, but not shown in the Guide Schedule, should be performed at a frequency necessary to provide adequate confidence that materials meet specifications.

NOTE: For projects subject to FHWA construction oversight activities, use the "[Letter of Certification of Materials Used](#)" to document reasons for material acceptance when a test fails. For all other projects, document the justification and explanation for acceptance of materials that fail project tests in the project file.

Assuring the quality of the product and proper incorporation of materials into the project begins with proper sampling practices. Sampling, testing, and construction inspection must be performed collaboratively to assure the specific attributes of the finished product reflect quality workmanship. Sampling guidance for hot-mixed asphalt is contained in Tex-225-F, "Random Selection of Bituminous Mixture Samples," and the respective specification for that material. All remaining materials are covered by method and materials specifications, to which the following applies.

For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows:

- **Soils/flexible base:** Vary sampling between stockpiling operations, completed stockpile, windrow, and project site. Vary the time of day sampling is performed.
- **Aggregates:** Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, belt sampling, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed.
- **Concrete (structural and miscellaneous):** Always sample as near as practicable to the point of placement. For strength testing, vary the time of day or the number of truck from which the concrete is sampled. Tests for slump, air, and temperature should be done often to ensure the consistent control of the concrete production (not applicable to miscellaneous concrete).

This Guide Schedule is applicable to all contracts associated with the 2014 Standard Specifications.

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE I - EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES

			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS
EMBANKMENT (CUTS & FILLS)	Liquid Limit (A)	Tex-104-E	During stockpiling operations, from completed stockpile, or project site (B)	Materials with PI ≤ 15: 10,000 CY	For Type A embankment or when required by the plans. This test may be waived for embankment cuts as directed by the Engineer. Determine a new liquid limit and plasticity index for each different material or notable change in material. Sample in accordance with Tex-100-E.
	Plasticity Index (A)	Tex-106-E		Materials with PI > 15: 5,000 CY	
	Gradation	Tex-110-E		Each 10,000 CY	When shown on plans. This test may be waived for embankment cuts, as directed by the Engineer. Sample in accordance with Tex-100-E.
	Moisture/Density	Tex-114-E		As directed by the Engineer	Not required for ordinary compaction. Determine a new optimum moisture and maximum density for each different material or notable change in material. Sample in accordance with Tex-100-E.
	In-place Density (A)	Tex-115-E	As designated by the Engineer	Fill: each 5,000 CY min. 1 per lift.	Not required for ordinary compaction. Determine a new optimum moisture and maximum density according to Tex-114-E for each different material or notable change in material. Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material and adjust the density accordingly. Materials such as RAP, gypsum, lime, cement, and iron ore tend to bias the counts for nuclear density gauges.
			Cut: each 6,000 LF		
RETAINING WALL (NON-SELECT BACKFILL)	As shown above for Embankment (Cuts and Fills)		As shown above for Embankment (Cuts and Fills)	As shown above for Embankment (Cuts and Fills)	Sample in accordance with Tex-100-E.
RETAINING WALL (SELECT BACKFILL)	Gradation	Tex-110-E	During stockpiling operations, from completed stockpile, or project site (B)	Each 5,000 CY	Sample in accordance with Tex-400-A.
	Resistivity (A)	Tex-129-E	During stockpiling operations, from completed stockpile, or project site (B)	Each 5,000 CY	For material with resistivity between 1,500 and 3,000 ohm-cm, determine chloride and sulfate content, as specified in Item 423. Sample in accordance with Tex-400-A.
	pH (A)	Tex-128-E	During stockpiling operations, from completed stockpile, or project site (B)	Each 5,000 CY	Sample in accordance with Tex-400-A.

This is a guide for **minimum** sampling and testing.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE I - EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS
RETAINING WALL (SELECT BACKFILL) (continued)	Soundness	Tex-411-A	During stockpiling operations, or from completed stockpile	1 per source, per project	Test when backfill sources appear to contain particles such as shale, caliche, or other soft, poor-durability particles. Sample in accordance with Tex-400-A.
	In-place Density (A)	Tex-115-E	As designated by the Engineer.	1 per backfill lift, per wall	Not required for rock backfill. For walls greater than 500 ft. in length, perform one test per lift for every 500 ft. in length. (F) Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E for each different material or notable change in material and adjust the density accordingly.
UNTREATED BASE COURSES	Liquid Limit (A)	Tex-104-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	Sample in accordance with Tex-400-A.
	Plasticity Index (A)	Tex-106-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	
	Gradation (A)	Tex-110-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	Sample in accordance with Tex-400-A.
	Moisture/Density	Tex-113-E	From completed stockpile at the source (E)	Each 20,000 CY	Not required for ordinary compaction. Sample in accordance with Tex-400-A.
	Wet Ball Mill (A)	Tex-116-E	From completed stockpile at the source (E)	Each 20,000 CY	As required by the plans. Sample in accordance with Tex-400-A.
	Strength (A)	Tex-117-E	From completed stockpile at the source (E)	Each 20,000 CY	As required by the plans. When base material is from a source where the District has a record of satisfactory triaxial results, the frequency of testing may be reduced to one per 30,000 CY. If any one test falls below the minimum value required, the frequency of testing will return to the original frequency of 20,000 CY. Sample in accordance with Tex-400-A.

This is a guide for minimum sampling and testing.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES

			PROJECT TESTS			
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS	
UNTREATED BASE COURSES	In-place Density (A)	Tex-115-E	As designated by the Engineer	Each 3,000 CY, min. 1 per lift	Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material and adjust the density accordingly. Materials such as RAP, gypsum, lime, cement, and iron ore tend to bias the counts for nuclear density gauges.	
	Thickness (A)	Tex-140-E	As designated by the Engineer	Each 3,000 CY	Not required where survey grade control documents compliance.	
TREATED SUBGRADE AND BASE COURSES	SUBGRADE BEFORE TREATMENT	Organic Content	Tex-148-E	As designated by the Engineer	1 per 500 linear feet or 5,000 CY	Required for existing subgrade material and material imported from a borrow source. Soil survey and geologic maps may be used to determine sampling locations. Sample in accordance with Tex-100-E.
		Sulfate Content	Tex-145-E	As designated by the Engineer	1 per 500 linear feet or 5,000 CY	Required for existing subgrade material and material imported from a borrow source. Soil survey and geologic maps may be used to determine sampling locations. Sample in accordance with Tex-100-E.
	NEW BASE MATERIAL	Liquid Limit (A)	Tex-104-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	When central mix site or plant is used, windrow sampling may be waived. Sample in accordance with Tex-400-A.
		Plasticity Index (A)	Tex-106-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	
		Gradation (A)	Tex-110-E	During stockpiling operations, from completed stockpile, or windrow (B)	Each 5,000 CY	Sample in accordance with Tex-400-A.
		Wet Ball Mill (A)	Tex-116-E	From completed stockpile at the source (E)	Each 20,000 CY	As required by the plans. Sample in accordance with Tex-400-A.

This is a guide for **minimum** sampling and testing.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES

			PROJECT TESTS			
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS	
TREATED SUBGRADE AND BASE COURSES	NEW BASE MATERIAL	Strength (A)	Tex-117-E	From completed stockpile at the source (E)	Each 20,000 CY	As required by the plans. When base material is from a source where the District has a record of satisfactory triaxial results, the frequency of testing may be reduced to one per 30,000 CY. If any one test falls below the minimum value required, the frequency of testing will return to the original frequency of 20,000 CY.
	LIME	Compliance with DMS-6350	Tex-600-J	During delivery to project	Commercial Lime Slurry: each 200 tons of lime Carbide Lime Slurry: each 100 tons of lime	Sample in accordance with Tex-400-A. Verify the source is listed on the current Material Producer List for Lime . Only materials appearing on the Material Producer List will be accepted. Sample frequency for Carbide Lime Slurry may be increased as directed by the Engineer. For Hydrated Lime and Quick Lime project testing is not required but it is encouraged to sample and test the material at a rate of 1 per project as a best practice.
	CEMENT	Compliance with DMS-4600		Railroad car, truck, or cement bins		Verify the source is listed on the current Material Producer List for Cement. If not, sample and test in accordance with DMS-4600. (C)
	FLY ASH MATERIAL	Compliance with DMS-4615		Project samples at location designated by the Engineer		Verify the source is listed on the current Material Producer List for Fly Ash . Only materials from CST/M&P approved sources appearing on the Material Producer List for Fly Ash will be accepted. Project testing is not required but it is encouraged to sample and test the material at a rate of 1 per project as a best practice. (C)
	COMPLETE MIXTURE	Pulverization Gradation	Tex-101-E Part III	Roadway, after pulverization and mixing	As necessary for control	At the beginning of the project, one test must be made for each 4,500 CY or 6,000 tons until the Engineer is satisfied that acceptable pulverization results are being obtained. Sample in accordance with Tex-100-E.
		Soil-Cement Testing Soil-Lime Testing	Tex-120-E, Part II, or Tex-121-E, Part II	From roadway windrow after treatment (E)	Each 20,000 CY	Not required for ordinary compaction. Determine a new moisture/density curve for each different or notable change in material. Perform Tex-120-E, Part II, for Cement Treated Material, and Tex-121-E, Part II, for Lime, Lime-Fly Ash, or Fly Ash Treated Material. If Tex-120-E, Part I, Tex-121-E, Part I, or Tex-127-E is performed prior to the project, this test may be waived. Sample in accordance with Tex-100-E.

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES

			PROJECT TESTS			
MATERIAL OR PRODUCT		TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (F)	REMARKS
TREATED SUBGRADE AND BASE COURSES	COMPLETE MIXTURE	Soil-Cement Testing Soil-Lime Testing	Tex-120-E, Part I, Tex-121-E, Part I, or Tex-127-E	From roadway windrow after treatment	As necessary for control	Perform Tex-120-E, Part I, on cement treated material, and Tex-121-E, Part I, for lime-fly ash or fly ash treated material. Verifies the field strength by comparing results from the mix design. Performed at the discretion of Engineer. Sample in accordance with Tex-100-E.
		In-place Density (A)	Tex-115-E	As designated by the Engineer	Each 3,000 CY, min 1 per lift	Determine the appropriate moisture/density curve for each different material or notable change in material. Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material and adjust the density accordingly. Stabilizers and materials such as RAP, gypsum, and iron ore tend to bias the counts for nuclear density gauges.
		Thickness (A)	Tex-140-E	As designated by the Engineer	Each 3,000 CY	Not required where survey grade control documents are used for compliance
RECLAIMED ASPHALT PAVEMENT (RAP), CRUSHED CONCRETE, and RECYCLED MATERIALS		Sulfate Content	Tex-145-E	During stockpiling operations, from completed stockpile, or windrow	Each 5,000 CY	Required only for contractor furnished recycled material, including crushed concrete. Not required for RAP. Sample in accordance with Tex-400-A.
		Deleterious Material	Tex-413-A		Each 5,000 CY	Required only for contractor furnished recycled material, including crushed concrete. Sample in accordance with Tex-400-A.
		Decantation	Tex-406-A	During stockpiling operations, from completed stockpile, or windrow	Each 5,000 CY	Required only for contractor furnished RAP. Sample in accordance with Tex-400-A.

TABLE I – FOOTNOTES

A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field.
B	Engineer will select any of these locations or any combinations thereof with the provision that the initial sample will be obtained from the completed stockpile at the source and at least one out of ten consecutive samples will be taken at the project site (from the windrow for treated and untreated bases and embankments when possible).
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.

This is a guide for **minimum sampling and testing**.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

D	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: <ul style="list-style-type: none">• Soils/Flexible Base: For gradation, liquid limit, and plastic limit, vary sampling between stockpiling operations, completed stockpile, windrow, and project site. Vary the time of day sampling is performed.• Aggregates: Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, belt sampling, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed.
E	The Engineer will sample from the completed stockpile at the source and test prior to placement.
F	Each test performed that is based on a quantity of material is considered "or fraction thereof" for calculating number of tests.

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE IA – ASPHALT STABILIZED BASE (Plant Mix)

			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (C)	FREQUENCY OF SAMPLING (D)	REMARKS
AGGREGATE	Gradation (A)	Tex-200-F, Part I	During stockpiling operations, from completed stockpile, or prior to mixing	Each 5,000 CY	Sample in accordance with Tex-400-A.
	Liquid Limit (A)	Tex-104-E	During stockpiling operations, from completed stockpile, or prior to mixing	Each 5,000 CY	Sample in accordance with Tex-400-A.
	Plasticity Index (A)	Tex-106-E	During stockpiling operations, from completed stockpile, or prior to mixing	Each 5,000 CY	
	Wet Ball Mill or L. A. Abrasion (A)	Tex-116-E or Tex-410-A	During stockpiling operations, from completed stockpile, or prior to mixing	Each 20,000 CY	When L. A. Abrasion is specified, tests are not required when the published value of the source, as listed on the current Material Producer List for BRSQC , meets the project specifications. Sample in accordance with Tex-400-A. (B)
	Coarse Aggregate Angularity (A)	Tex-460-A, Part I	During stockpiling operations, from completed stockpile, or prior to mixing	1 per project, per source	Not required for crushed stone sources. Sample in accordance with Tex-400-A.
	Sand Equivalent	Tex-203-F	Hot aggregate bins, feeder belt, or stockpile	1 per project, per source	When designated by the Engineer, test may be run on combined aggregates when multiple sources are used. Sample in accordance with Tex-400-A.
LIME	Compliance with DMS-6350		During delivery to the project	Hydrated Lime: 1 per project Commercial Lime Slurry: each 200 tons of lime (D) Carbide Lime Slurry: each 100 tons of lime (D) Quick Lime: 1 per project	On projects requiring less than 50 tons, material from CST/M&P approved sources may be accepted on the basis of Producer's Certification without sampling.
RECLAIMED ASPHALT PAVEMENT (RAP), and RECYCLED AGGREGATE	Decantation	Tex-217-F, Part II	During stockpiling operations, from completed stockpile, or prior to mixing	Each 10,000 CY	Sample in accordance with Tex-400-A.

This is a guide for **minimum sampling and testing**.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE IA – ASPHALT STABILIZED BASE (Plant Mix)

			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (C)	FREQUENCY OF SAMPLING (D)	REMARKS
RECYCLED ASPHALT SHINGLES (RAS)	Decantation	Tex-217-F, Part III	During stockpiling operations, from completed stockpile, or prior to mixing	Each 10,000 CY	Sample in accordance with Tex-400-A.
ASPHALT BINDER	Compliance with Item 300 – Binder and Tack Coat		Sampled, tested and preapproved by CST/M&P. Take project samples when designated by the Engineer.	1 each for binder and tack coat per project, per grade, per source	Test at least one sample taken from the project. Sample tack coat at the distributor on the roadway in accordance with Tex-500-C, Part III. Sample binder at hot mix plant in accordance with Tex-500-C, Part II. Binder should arrive on the project pre-approved. If not pre-approved, sample binder before use.
COMPLETE MIXTURE	Laboratory Density (A)	Tex-126-E	Plant Mix (C)	20,000 CY (25,000 tons)	Sample in accordance with Tex-222-F.
	Percent Asphalt (A)	Tex-236-F	Plant Mix (C)	Each 1,500 CY (2,000 tons) or days production	Determine asphalt content correlation factors for ignition oven at a minimum of one per project. Sample in accordance with Tex-222-F.
	Indirect Tensile Strength – Dry	Tex-226-F	Plant Mix	1 per project, per design	Sample in accordance with Tex-222-F.
	Moisture Susceptibility	Tex-530-C	As designated by the Engineer	1 per project, per design	This test may be waived, when shown on the plans. Sample in accordance with Tex-222-F.
ROADWAY	In-Place Air Voids (A)	Tex-207-F	Roadway cores, as designated by the Engineer (C, D)	Each 2,500 CY (3,000 tons) or days production	Not required for ordinary compaction or when air void requirements are waived. Sample in accordance with Tex-222-F.

TABLE IA – FOOTNOTES

A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field.
B	Engineer will select any of these locations or any combinations thereof with the provision that at least one out of ten consecutive samples will be taken at the project site (from the windrow for treated and untreated bases and embankments when possible).
C	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: <ul style="list-style-type: none"> • Soils/flexible base: Vary sampling between stockpiling operations, completed stockpile, windrow, and project site. Vary the time of day sampling is performed. • Aggregates: Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, belt sampling, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed.
D	Each test performed that is based on a quantity of material is considered “or fraction thereof” for calculating number of tests.

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE II – SEAL COAT					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (C)	FREQUENCY OF SAMPLING (D)	REMARKS
AGGREGATE	Gradation (A)	Tex-200-F, Part I	Stockpile (At source or at point of delivery)	One each 1,000 CY	Rate may be reduced to one each 2,000 CY if the Engineer approves a contractor quality control plan. Sample in accordance with Tex-221-F.
	L. A. Abrasion (A)	Tex-410-A	Stockpile	1 per 20,000 CY	Verify the published value of the source, as listed on the current Material Producer List for BRSQC , meets the project specifications. If not, sample and test at 1 per 20,000 CY prior to use. Sample in accordance with Tex-221-F. (B)
	Magnesium Soundness (A)	Tex-411-A	Stockpile	1 per 20,000 CY	Verify the published value of the source, as listed on the current Material Producer List for BRSQC , meets the project specifications. If not, sample and test at 1 per 20,000 CY prior to use. Sample in accordance with Tex-221-F. (B)
	Surface Aggregate Classification (A)	Tex-612-J, Tex-411-A	Stockpile	1 per 20,000 CY	Verify the published value of the source, as listed on the current Material Producer List for BRSQC , meets the project specifications. If not, sample and test at 1 per 20,000 CY prior to use. Sample in accordance with Tex-221-F. (B)
	Pressure Slake (A)	Tex-431-A	Stockpile	1 per 20,000 CY	Same as above. Required only for lightweight aggregate. Sample in accordance with Tex-221-F.
	Freeze Thaw (A)	Tex-432-A	Stockpile	1 per 20,000 CY	Same as above. Required only for lightweight aggregate. Sample in accordance with Tex-221-F.
	Unit Weight	Tex-404-A	Stockpile	1 per 20,000 CY	Same as above. Required only for lightweight aggregate. Sample in accordance with Tex-221-F.
	24 hr Water Absorption (A)	Tex-433-A	Stockpile	1 per 20,000 CY	Same as above. Required only for lightweight aggregate. Sample in accordance with Tex-221-F.
	Coarse Aggregate Angularity	Tex-460-A	Stockpile	1 per 20,000 CY	Only required for crushed gravel. Sample in accordance with Tex-221-F.
	Deleterious Material (A)	Tex-217-F, Part I	Stockpile	1 per 10,000 CY	Not required for lightweight aggregate. Sample in accordance with Tex-221-F.
	Decantation (A)	Tex-406-A	Stockpile	1 per 10,000 CY	Sample in accordance with Tex-221-F.
	Flakiness Index	Tex-224-F	Stockpile	Frequency as directed by the Engineer	Sample in accordance with Tex-221-F.

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE IA – ASPHALT STABILIZED BASE (Plant Mix)

			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (C)	FREQUENCY OF SAMPLING (D)	REMARKS
	Micro Deval	Tex-461-A	Stockpile	1 per project or as necessary for control	Compare result to published value listed on the current Material Producer List for BRSQC . Submit sample to CST/M&P for Soundness and L.A. Abrasion testing when results differ by more than 3% points, unless otherwise directed by the Engineer. Sample in accordance with Tex-221-F.
	White Rock Count	Tex-220-F	Stockpile		Required only for Limestone Rock Asphalt. Not required when CST/M&P provides inspection at the plant. Sample in accordance with Tex-221-F.
	Naturally Impregnated Bitumen Content	Tex-236-F	Stockpile		Required only for Limestone Rock Asphalt. Not required when CST/M&P provides inspection at the plant. Sample in accordance with Tex-221-F.
PRECOATED AGGREGATE	Asphalt Content	Tex-236-F	Stockpile	Frequency as directed by the Engineer when a target value is specified	Sample in accordance with Tex-221-F.
ASPHALT	Compliance with Item 300		Sampled, tested, and preapproved by CST/M&P. Take project samples when designated by the Engineer from the distributor or transport.	1 per project, per grade, per source	Sample in accordance with Tex-500-C. Binder should arrive on the project pre-approved. If not pre-approved, sample binder before use.

TABLE II – FOOTNOTES

A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field.
B	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
C	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: <ul style="list-style-type: none"> • Aggregates: Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, belt sampling, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed.
D	Each test performed that is based on a quantity of material is considered “or fraction thereof” for calculating number of tests.

This is a guide for **minimum sampling and testing**.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS)						
			PROJECT TESTS			
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (E)	REMARKS	
MINERAL AGGREGATE	COARSE AGGREGATE	Decantation (B)	Tex-406-A	From stockpile at concrete plant	Each 20,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		Sieve Analysis (A) (B)	Tex-401-A		Each 1,000 CY of concrete (each source)	Sample in accordance with Tex-400-A. Test combined aggregate when used.
		Deleterious Materials (B)	Tex-413-A		1 per project or as necessary for control	Sample in accordance with Tex-400-A.
		Los Angeles Abrasion (A) (B)	Tex-410-A		Two, each source	Verify the value of the source, as listed on the current Material Producer list for CRSQC , meets the project specifications. If not, sample and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. Sample in accordance with Tex-400-A. (C)
		5-cycle Magnesium Sulfate Soundness (A) (B)	Tex-411-A		Two, each source	Verify the value of the source, as listed on the current CRSQC , meets the project specifications. (C)
	FINE AGGREGATE	Sand Equivalent (B)	Tex-203-F	From stockpile at concrete plant	1 per project or as necessary for control	Sample in accordance with Tex-400-A. Test combined aggregate when used.
		Organic Impurities (B)	Tex-408-A		1 per project, per source	Sample in accordance with Tex-400-A.
		Sieve Analysis (A) (B)	Tex-401-A		Each 1,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		Fineness Modulus (B)	Tex-402-A		1 per project or as necessary for control	Sample in accordance with Tex-400-A. Test combined aggregate when used. Test to confirm material variability when strength values are in question.
		Deleterious Material (B)	Tex-413-A		1 per project or as necessary for control	Sample in accordance with Tex-400-A. Test to confirm material variability when strength values are in question.
		Acid Insoluble Residue (A) (B)	Tex-612-J		Two, each source	Only for concrete subject to direct traffic. Verify the value of the source, as listed on the current CRSQC , meets the project specifications. If not, sample and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. Sample in accordance with Tex-400-A. (C)
SILICA FUME	Compliance with DMS-4630 (A)		Railroad car, truck, bags or silos	1 per project, per class of concrete (For each type and brand)	Sample in accordance with Tex-320-D.	

This is a guide for **minimum** sampling and testing.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (E)	REMARKS
METAKAOLIN	Compliance with DMS-4635 (A)		Railroad car, truck or silos	1 per project, per class of concrete (For each type and brand)	
MIX DESIGN	Compliance with Standard Specification Item 421.4.A		At source (if not approved)	Min. 1 design per class, per source	Verify if cement, fly ash, slag cement, and chemical admixture sources are listed on the Material Producer Lists. If not, sample and submit to CST/M&P for testing. Water testing is contracted by the concrete supplier (commercial lab report to be reviewed by TxDOT). Sample in accordance with Tex-300-D for cement and in accordance with Tex-733-I for fly ash.
JOINT MATERIAL	Compliance with DMS-6300				Sample in accordance with Tex-500-C. Verify the source is listed on the Material Producer List for Joint Sealers . If not, sample and test prior to use in accordance with DMS-6310. (C)
CURING COMPOUND	Compliance with DMS-4650		Sampled at jobsite; tested by CST/M&P. See remarks.	When requested by CST	Only products listed on the Material Producer List for Concrete Curing Compounds will be allowed. When sample is requested by CST, sample in accordance with Tex-718-I. Ensure container has been agitated and mixed prior to sampling. (C)
EVAPORATION RETARDANTS	Compliance with DMS-4650				Only products listed on the Material Producer list for Evaporation Retardants will be allowed. (C)
REINFORCING STEEL	Compliance with the Std. Specifications & Spec. Provisions	As Specified			Only materials from CST/M&P approved sources listed on the Material Producer Lists for Reinforcing Steel Mills and Seven Wire Steel Strand will be allowed. (C)
MECHANICAL COUPLERS	Compliance with DMS-4510	Tex-743-I	Sampled at jobsite; Tested by CST/M&P	3 couplers per lot (500 couplers) for each type, model, bar size and grade	Only materials from CST/M&P approved sources listed on the Material Producer List for Mechanical Couplers will be allowed. (C)
LATEX	Compliance with DMS-4640 for concrete chemical admixtures		Sampled at jobsite.	Min. of 1 test per project	Sample in accordance with Tex-321-E.
EPOXY	Compliance with DMS-6100, unless otherwise specified		Sampled at jobsite if not pre-approved by CST/M&P.	1 per batch or shipment	Verify the source is listed on the Material Producer List for Epoxies and Adhesives . If not, sample and test prior to use in accordance with DMS-6100. Sample in accordance with Tex-734-I. (C)

This is a guide for minimum sampling and testing.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE III - HYDRAULIC CEMENT CONCRETE - STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (D)	FREQUENCY OF SAMPLING (E)	REMARKS
CONCRETE	Compressive Strength (A)	Tex-418-A	At point of concrete placement	4 cylinders for each 60 CY per class, per day (For bridge railing and traffic railing, testing may be reduced to 4 cylinders per 180 CY per class regardless of days)	Sampling must be in accordance with Tex-407-A. Test two cylinders at 7 days, and if the average value is below the design strength as defined in Item 421 Table 8, test the remaining 2 cylinders at 28 days. If the average value of the 2 cylinders tested at 7 days meets the minimum design strength listed in Item 421 Table 8, the 2 remaining cylinders are not required to be tested.
CONCRETE	Slump	Tex-415-A		1 test per 4 strength specimens	Sample in accordance with Tex-407-A. Perform slump and temperature tests on the same load from which strength test specimens are made. Perform entrained air test only when entrained air concrete is specified in the plans. Check temperature of every load for bridge slabs and mass concrete placements. Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #.
	Entrained Air (A)	Tex-416-A or Tex-414-A			
	Temperature of Concrete (A)	Tex-422-A			
	Slab Thickness and Depth of Reinforcement	Tex-423-A, Part II	During dry run and during concrete placement (Bridge decks and direct traffic culverts)	1 per span	Min 6-Max 18 locations per span

TABLE III - FOOTNOTES	
A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field.
B	These Project Tests may be used for one or more projects being furnished concrete from the same plant during the same period.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: <ul style="list-style-type: none"> Aggregates: Sample aggregates nearest the point of incorporation into the work. Vary sampling between stockpiling operations, completed stockpile, and if deemed necessary, railroad cars/trucks. Vary the time of day sampling is performed. Concrete (structural): Always sample as near as practicable to the point of placement. For strength testing, vary the time of day or the number of truck from which the concrete is sampled. Test often for slump, air, and temperature to ensure the consistent control of the concrete production.
E	Each test performed that is based on a quantity of material is considered "or fraction thereof" for calculating number of tests.

This is a guide for **minimum sampling and testing**.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE IV – HYDRAULIC CEMENT CONCRETE – NON-STRUCTURAL CONCRETE (Classes: A, B, or E)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING (B)	FREQUENCY OF SAMPLING (C)	REMARKS
CONCRETE	Compressive Strength (A)	Tex-418-A	At point of concrete placement	2 cylinders per 180 CY, per class	Sampling must be in accordance with Tex-407-A. Strength will be determined by 7-day specimens.
MIX DESIGN	Compliance with the Standard Specification		At source if not approved.	Min. 1 design per class, per source	Verify if cement, fly ash, slag cement, and chemical admixture sources are listed on the Material Producer Lists. If not, sample and submit to CST/M&P for testing. Sample in accordance with Tex-300-D for cement and in accordance with Tex-733-I for fly ash. Water testing is contracted by the concrete supplier (commercial lab report to be reviewed by TxDOT).
SILICA FUME	Compliance with DMS-4630		Railroad car, truck, bags or silos	1 test per project, per class (for each type and brand)	Sample in accordance with Tex-320-D.
METAKAOLIN	Compliance with DMS-4635		Railroad car, truck or silos	1 test per project, per class (for each type and brand)	

TABLE IV – FOOTNOTES	
A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field.
B	For acceptance testing, especially that which directly determines payment for the Contractor, sampling personnel should provide randomness in sampling by avoiding patterned sampling routines. Examples of such sampling practices are as follows: <ul style="list-style-type: none"> • Concrete (miscellaneous): Always sample as near as practicable to the point of placement. For strength testing, vary the time of day or the number of truck from which the concrete is sampled.
C	Each test performed that is based on a quantity of material is considered “or fraction thereof” for calculating number of tests.

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE V – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES)

			PROJECT TESTS			
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING (D)	REMARKS	
MINERAL AGGREGATE	COARSE AGGREGATE	Decantation	Tex-406-A	From stockpile at concrete plant	Each 20,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		Sieve Analysis (A)	Tex-401-A		As necessary for control	Sample in accordance with Tex-400-A. Test combined aggregate when used.
		Deleterious Materials	Tex-413-A		Each 20,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		L.A. Abrasion (A)	Tex-410-A		Two, each source	Verify the value of the source, as listed on the current CRSQC, meets the project specifications. If not, sample and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. Sample in accordance with Tex-400-A. (C)
		5-Cycle Magnesium Sulfate Soundness (A)	Tex-411-A			
	FINE AGGREGATE	Sand Equivalent	Tex-203-F	From stockpile at concrete plant	Each 3,000 CY of concrete (Each source or combination of sources)	Sample in accordance with Tex-400-A. Test combined aggregate when used. No less than one per week's production.
		Organic Impurities	Tex-408-A		1 per project, per source	Sample in accordance with Tex-400-A.
		Sieve Analysis (A)	Tex-401-A		As necessary for control	Sample in accordance with Tex-400-A. Test combined aggregate when used.
		Fineness Modulus (B)	Tex-402-A			
		Deleterious Material (B)	Tex-413-A		Each 20,000 CY of concrete (each source)	Sample in accordance with Tex-400-A.
		Acid Insoluble (A)	Tex-612-J		1 per project, per source	Verify the value of the source, as listed on the current CRSQC, meets the project specifications. If not, sample and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. Sample in accordance with Tex-400-A. (C)
MIX DESIGN	Compliance with the Standard Specifications Item 421.4.A		At source, if not approved	Min. 1 design, per class, per source	Verify if cement, fly ash, ground granulated blast furnace slag, and admixture sources are listed on the Material Producer List. If not, sample and submit to CST/M&P for testing. Sample in accordance with Tex-300-D for cement and in accordance with Tex-733-I for fly ash. Water testing is contracted by the concrete supplier (commercial lab report to be reviewed by TxDOT).	

This is a guide for **minimum** sampling and testing.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE V – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING (D)	REMARKS
SILICA FUME	Compliance with DMS-4630		Railroad car, truck, bags or silos	1 per project per class of concrete (For each type and brand)	Sample in accordance with Tex-320-D.
METAKAOLIN	Compliance with DMS-4635		Railroad car, truck or silos	1 per project per class of concrete (For each type and brand)	Sample in accordance with Tex-320-D.
JOINT MATERIAL	Compliance with DMS-6310		Sampled at jobsite if not sampled at source by CST/M&P; tested by CST/M&P. See remarks.	1 per batch or shipment	Sample in accordance with Tex-500-C. Sampling may be waived when the source is listed on the Material Producer List for Joint Sealers . (C)
CURING COMPOUND	Compliance with DMS-4650		Sampled at jobsite; tested by CST/M&P. See remarks.	When requested by CST	Only products listed on the Material Producer List for Concrete Curing Compounds will be allowed. When sample is requested by CST, sample in accordance with Tex-718-I. Ensure container has been agitated and mixed prior to sampling. (C)
EVAPORATION RETARDANTS	Compliance with DMS-4650				Only products listed on the Material Producer List for Evaporation Retardants will be allowed. (C)
REINFORCING STEEL	Compliance with the Std. Specifications & Spec. Provisions	As Specified			Only materials from CST/M&P approved sources listed on the Material Producer List for Reinforcing Steel Mills and Seven Wire Steel Strand will be accepted. (C)
MULTIPLE PIECE TIE BARS	Compliance with DMS-4515	Tex-712-I	Sampled at jobsite if not sampled at source by CST/M&P; tested by CST/M&P. See remarks.	Refer to Tex-711-I for sampling rates	Only materials from CST/M&P approved sources listed on the Material Producer List for Multiple Piece Tie-bars for Concrete Pavements will be allowed. Sample in accordance with Tex-734-I.
EPOXY	Compliance with DMS-6100		Sampled at jobsite if not pre-approved by CST/M&P. See remarks.	1 batch per shipment	Verify the source is listed on the Material Producer List for Epoxyes and Adhesives . If not, sample and test prior to use in accordance with DMS-6100. Sample in accordance with Tex-734-I. (C)

This is a guide for **minimum sampling and testing**.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE V – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES)

			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING (D)	REMARKS
CONCRETE	Strength (A) (B)	Tex-448-A or Tex-418-A	At point of concrete placement	2 cylinders for every 10 contractor job control tests	<p>Sample in accordance with Tex-407-A.</p> <p>When the contract requires the project testing to be by the Engineer, the frequency and job control testing will be in accordance with the item of work.</p> <p>Split sample verification testing used when contractor performs job control testing.</p> <p>When job control testing by the contractor is waived by the plans, the frequency of sampling will be one test (2 specimens) for each 3,000 SY of concrete or fraction thereof or per day and split sample verification testing will be waived.</p> <p>Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #.</p>
	Slump	Tex-415-A	At time and location strength specimens are made	1 test for every 10 contractor job control tests.	<p>Sample in accordance with Tex-407-A.</p> <p>Slump is not required for slip-formed pavement.</p> <p>Perform slump and temperature tests on the same load from which the strength specimens are made.</p> <p>Perform entrained air test only when entrained air concrete is specified in the plans.</p> <p>Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #.</p>
	Entrained Air (A)	Tex-416-A or Tex-414-A			
	Temperature	Tex-422-A			
	Thickness	Tex-423-A	Center of paving machine	Every 500 feet	Methods other than Tex-423-A may be shown on the plans.
	Ride Quality Surface Test Type B (A)	Tex-1001-S	Final riding surface of travel lanes		<p>Engineer may verify contractor's results for surface test Type B. For traditional design-bid-build TxDOT projects, CST has contracted with TTI to perform random ride verification at 10% frequency.</p> <p>Results from surface test Type A are not required to be reported.</p>

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE V – FOOTNOTES	
A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field.
B	When a project test does not meet the specified strength requirements and a reduced pay factor is assigned, document the analysis on the Letter of Certification of Materials Used.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	Each test performed that is based on a quantity of material is considered “or fraction thereof” for calculating number of tests.

This is a guide for **minimum sampling and testing**.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE VI – ASPHALT CONCRETE PAVEMENT (Items 341, 342, 344, 346, 347 and 348) (All testing as noted in Table VI may be waived for exempt production as defined by specification.)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION (Per Design)	FREQUENCY OF SAMPLING (E)	REMARKS
COARSE AGGREGATE	L. A. Abrasion (A)	Tex-410-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer list for BRSQC , meets the project specifications. If not, sample in accordance with Tex-221-F and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. (C)
	Magnesium Sulfate Soundness (A)	Tex-411-A			
	Surface Aggregate Classification (A)	Tex-499-A		1 per project, per source	
	Micro Deval	Tex-461-A		1 per project, per aggregate source	
COMBINED AGGREGATE	Sand Equivalent	Tex-203-F	Stockpiles, hot bins or feeder belts	1 per project, per source, per design	Does not apply to Item 342. Sample in accordance with Tex-221-F. The timing of when the test is performed is at the discretion of the Engineer.
ASPHALT BINDER	Compliance with Item 300 Binder & Tack Coat (A)		Sampled, tested and pre-approved by CST/M&P. Project test sampled at the Plant for Binder & Road for Tack Coat	1 each for binder and tack coat per project, per grade, per source	Test a minimum of one sample taken from the project. Sample tack coat at the distributor on the roadway in accordance with Tex-500C, Part III. Sample binder at hot mix plant in accordance with Tex-500-C, Part II. Binder should arrive on the project pre-approved. If not pre-approved, sample binder before use.
MIX DESIGN	Compliance with applicable specification	Tex-204-F	At source (if not approved)	Min 1 design per Mix Type and Asphalt Grade	Verify that aggregates, recycled asphalt pavement, recycled asphalt shingles, mineral filler, asphalt binder, anti-stripping additives, and warm mix systems are on the Material Producer List where applicable and that they meet project specification requirements. Project sampling and testing may be conducted on individual materials as necessary for control.

This is a guide for **minimum** sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE VI – ASPHALT CONCRETE PAVEMENT (Items 341, 342, 344, 346, 347 and 348)
(All testing as noted in Table VI may be waived for exempt production as defined by specification.)

			PROJECT TESTS		PROJECT INDEPENDENT ASSURANCE TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY (Per Design)	LOCATION	FREQUENCY	REMARKS
COMPLETE MIXTURE	Asphalt Content (%) (A)	Tex-236-F	Engineer Truck Sample (D)	Minimum 1 per Lot			Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Voids in Mineral Aggregates (VMA)	Tex-207-F	Truck Sample Plant Produced (D)	1 per Sublot	Truck	1 per 10 Lots only if compactor is shared by Contractor and State	Sample in accordance with Tex-222-F. Does not apply to Item 342, "Permeable Friction Course." Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #.
	Gradation (A)	Tex-236-F	Engineer Truck Sample (D)	Minimum 1 per 12 Sublots (E)			Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Boil Test	Tex-530-C	Truck Sample	1 per project			Sample in accordance with Tex-222-F. Unless waived by the Engineer.
	Indirect Tensile Strength – Dry	Tex-226-F					Sample in accordance with Tex-222-F. Unless waived by the Engineer. Does not apply to Items 342, 346, and 348.
	Moisture Content	Tex-212-F, Part II	Engineer Truck Sample				Sample in accordance with Tex-222-F.
	Lab Molded Density (A)	Tex-207-F	Truck Sample (D)	1 per Sublot 1 per Lot for Item 347	Truck	1 per 10 Lots only if compactor is shared by Contractor and State	Sample in accordance with Tex-222-F. Contractor's required testing will be in accordance with specification requirements for the appropriate specification Item #.
	Drain Down Test (A)	Tex-235-F	Engineer Truck Sample	1 per project 1 per Lot for Item 342			Sample in accordance with Tex-222-F. Not required for Item 341 and Item 344.
	Hamburg Wheel Test (A)	Tex-242-F	Engineer Truck Sample	1 per project			Sample in accordance with Tex-222-F. Sample during production. Does not apply to Item 348.
	Overlay Test	Tex-248-F	Engineer Truck Sample	1 per project			Sample in accordance with Tex-222-F. Does not apply to Items 341, 344, and 348.

This is a guide for minimum sampling and testing.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE VI – ASPHALT CONCRETE PAVEMENT (Items 341, 342, 344, 346, 347, and 348) (All testing as noted in Table VI may be waived for exempt production as defined by specification.)					
			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY (Per Design)	REMARKS
ROADWAY	In-Place Air Voids (A)	Tex-207-F	Roadway (D)	2 cores per Sublot	Two cores taken per Sublot and averaged. Sample in accordance with Tex-222-F. Does not apply to Items 342, 347, and 348.
ROADWAY	Segregation Profile (A)	Tex-207-F, Part V	Roadway	1 per project	Not required when Contractor uses thermal imaging system. Does not apply to Items 342, 347, and 348.
	Joint Density (A)	Tex-207-F, Part VII	Roadway	1 per project	
	Thermal Profile	Tex-244-F	Immediately behind paver	1 per project	Not required when Contractor uses thermal imaging system.
	Ride Quality Test Type B (A)	Tex-1001-S	Final riding surface of travel lanes	1 per project	Engineer may verify Contractor's results for surface test Type B. For traditional design-bid-build TxDOT projects, CST has contracted with TTI to perform random ride verification at 10% frequency. Results for surface test Type A are not required to be reported.
	Permeability	Tex-246-F	Roadway	1 per project	Only applies to Items 342, 347, and 348.
FABRIC UNDERSEAL	Compliance with DMS-6220		Sampled, tested, and approved by CST/M&P		Sampling must be in accordance with Tex-735-I. Verify the source is listed on the current Material Producer List for Silt Fence, Filter Fabric, and Fabric Underseals . If not, sample and test prior to use in accordance with DMS-6220.

TABLE VI – FOOTNOTES	
A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field. This letter is required only for Asphalt Content and/or Gradation when production of complete mixture is suspended as required by QC/QA specifications.
B	Sampling may be performed at the plant, quarry, or both. Aggregate properties may be re-tested at any time during the project. These project tests may be used for one or more projects furnishing hot mix with the same aggregate source.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	Perform random sampling as specified in Tex-225-F, "Random Selection of Bituminous Mixture Samples."
E	Each test performed that is based on a quantity of material is considered "or fraction thereof" for calculating number of tests.

This is a guide for minimum sampling and testing.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE VII – ASPHALT CONCRETE PAVEMENT (Items 334)

(Refer to DMS-9210, “Limestone Rock Asphalt (LRA),” for testing requirements for Item 330.)

			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY (Per Design) (F)	REMARKS
COARSE AGGREGATE	L. A. Abrasion (A)	Tex-410-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer List for BRSQC , meets the project specifications. If not, sample in accordance with Tex-221-F and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. (D)
	Magnesium Sulfate Soundness (A)	Tex-411-A			
	Micro Deval	Tex-461-A			
	Surface Aggregate Classification (A)	Tex-499-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer List for BRSQC , meets the project specifications. If not, sample in accordance with Tex-221-F and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. SiteManager Quality Monitoring test documentation is accomplished by attaching an approved mix design.
COMBINED AGGREGATE	Sand Equivalent	Tex-203-F	Stockpiles, hot bins or feeder belts	1 per project, per source	Sample in accordance with Tex-221-F. The timing of when the test is performed is at the discretion of the Engineer.
ASPHALT BINDER	Compliance with Item 300 Binder & Tack Coat (A) (C)		Sampled, tested and pre-approved by CST/M&P. Project test sampled at the Plant for Binder & Road for Tack Coat	1 each for binder and tack coat per project, per grade, per source	Test a minimum of one sample from production. Sample tack coat at the distributor on the roadway in accordance with Tex-500-C, Part III. Sample binder at hot mix plant in accordance with Tex-500-C, Part II. Binder should arrive on the project pre-approved. If not pre-approved, sample binder before use.
MIX DESIGN	Compliance with applicable specification	Tex-204-F	At source (if not approved)	Min 1 design per Mix Type and Asphalt Grade	Verify that aggregates, recycled asphalt pavement, recycled asphalt shingles, mineral filler, asphalt binder, anti-stripping additives, and warm mix systems are on the Material Producer List where applicable and that they meet project specification requirements. Project sampling and testing may be conducted in individual materials as necessary for control.
COMPLETE MIXTURE	Asphalt Content (%) (A)	Tex-236-F	Engineer Truck Sample (E)	Minimum of 1 per 5,000 tons	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Voids in Mineral Aggregates (VMA)	Tex-207-F	Truck Sample Plant Produced (E)	1 per 5,000 tons	Sample in accordance with Tex-222-F.
	Gradation (A)	Tex-236-F	Truck Sample	Minimum 1 per 5,000 tons	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Boil Test	Tex-530-C		1 per project	Sample in accordance with Tex-222-F. The timing of when the test is performed is at the discretion of the Engineer.

This is a guide for **minimum** sampling and testing.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE VII – ASPHALT CONCRETE PAVEMENT (Items 334)

(Refer to DMS-9210, “Limestone Rock Asphalt (LRA),” for testing requirements for Item 330.)

			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY (Per Design) (F)	REMARKS
COMPLETE MIXTURE	Moisture Content	Tex-212-F, Part II	Truck Sample	1 per 5,000 tons	Sample in accordance with Tex-222-F. Performed by CST/M&P at the point of production for payment calculations.
	Hydrocarbon-Volatile Content	Tex-213-F		1 per 5,000 tons	Sample in accordance with Tex-222-F. The timing of when the test is performed is at the discretion of the Engineer.
	Lab Molded Density (A)	Tex-207-F		1 per 5,000 tons	Sample in accordance with Tex-222-F.
	Hveem Stability (A)	Tex-208-F		1 per 5,000 tons	Sample in accordance with Tex-222-F. The timing of when the test is performed is at the discretion of the Engineer.
ROADWAY	Ride Quality Test Type B (A)	Tex-1001-S	Final riding surface of travel lanes		Engineer may verify Contractor’s results for surface test Type B. For traditional design-bid-build TxDOT projects, CST has contracted with TTI to perform random ride verification at 10% frequency. Results from surface test Type A are not required to be reported.

TABLE VII – FOOTNOTES

A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field.
B	Sampling may be performed at the plant, quarry, or both. Aggregate properties may be re-tested at any time during the project.
C	Or as called for in the Specifications.
D	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
E	Perform random sampling as specified in Tex-225-F, “Random Selection of Bituminous Mixture Samples.”
F	Each test performed that is based on a quantity of material is considered “or fraction thereof” for calculating number of tests.

This is a guide for **minimum sampling and testing**.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE VIII – ASPHALT CONCRETE PAVEMENT (Item 340)

			PROJECT TESTS			
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY	REMARKS	
COARSE AGGREGATE	L. A. Abrasion (A)	Tex-410-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer List for BRSQC , meets the project specifications. If not, sample in accordance with Tex-221-F and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. (C)	
	Magnesium Sulfate Soundness (A)	Tex-411-A				
	Micro Deval	Tex-461-A	Stockpile (B)	1 per project, per source		Sample in accordance with Tex-221-F. Testing frequency may be reduced or eliminated based on a satisfactory test history.
	Surface Aggregate Classification (A)	Tex-499-A	Stockpile (B)	1 per project, per source		Verify the published value of the source, as listed on the current Material Producer list for BRSQC , meets the project specifications. If not, sample in accordance with Tex-221-F and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. (C)
COMBINED AGGREGATE	Sand Equivalent	Tex-203-F	Stockpiles, hot bins or feeder belts	1 per project, per design	Sample in accordance with Tex-221-F.	
ASPHALT BINDER	Compliance with Item 300 Binder & Tack Coat (A)		Sampled, tested and pre-approved by CST/M&P. Plant for Binder & Road for Tack Coat	1 each for binder and tack coat per project, per grade, per source	Test a minimum of 1 sample taken from the project. Sample tack coat at the distributor on the roadway in accordance with Tex-500-C, Part III. Sample binder at hot mix plant in accordance with Tex-500-C, Part II. Binder should arrive on the project pre-approved. If not pre-approved, sample binder before use.	
MIX DESIGN	Compliance with applicable specification	Tex-204-F	At source (if not approved)	Min. 1 design per Mix Type and Asphalt Grade	Verify that aggregates, recycled asphalt pavement, recycled asphalt shingles, mineral filler, asphalt binder, anti-stripping additives, and warm mix systems are on the Material Producer List where applicable and that they meet project specification requirements. Project sampling and testing may be conducted in individual materials as necessary for control.	
COMPLETE MIXTURE	Asphalt Content (%)	Tex-236-F	Truck Sample (D)	Minimum of 1 per day	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.	
	Voids in Mineral Aggregates (VMA)	Tex-207-F	Truck Sample Plant Produced (D)	1 per day	Sample in accordance with Tex-222-F.	
	Gradation (A)	Tex-236-F	Truck Sample	Minimum 1 per day	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.	
	Boil Test	Tex-530-C		1 per project	Sample in accordance with Tex-222-F. Unless waived by the Engineer.	
	Indirect Tensile Strength – Dry	Tex-226-F		1 per project, per design	Sample in accordance with Tex-222-F. Unless waived by the Engineer.	

This is a guide for **minimum sampling and testing**.
 Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE VIII – ASPHALT CONCRETE PAVEMENT (Item 340)

			PROJECT TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION	FREQUENCY	REMARKS
COMPLETE MIXTURE	Lab Molded Density (A)	Tex-207-F	Truck Sample	1 per day	Sample in accordance with Tex-222-F.
	Hamburg Wheel Tracker (A)	Tex-242-F		1 per project	Sample in accordance with Tex-222-F. Sample during production.
ROADWAY	Air Voids (A)	Tex-207-F	Selected by the Engineer (D)	1 per day (2 Cores)	Sample in accordance with Tex-222-F.
	Ride Quality Test Type B (A)	Tex-1001-S	Final riding surface of travel lanes		Engineer may verify Contractor's results for surface test Type B. For traditional design-bid-build TxDOT projects, CST has contracted with TTI to perform random ride verification at 10% frequency. Results from surface test Type A are not required to be reported.
FABRIC UNDERSEAL	Compliance with DMS-6220		Sampled, tested, and approved by CST/M&P		Sample in accordance with Tex-735-I. Verify the source is listed on the current Material Producer List for Silt Fence, Filter Fabric, and Fabric Underseals . If not sample and submit to CST/M&P for testing prior to use in accordance with DMS-6220.

TABLE VIII – FOOTNOTES

A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field. This letter is required only for Asphalt Content and/or Gradation when production of complete mixture is suspended as required by QC/QA specifications.
B	Sampling may be performed at the plant, quarry, or both. Aggregate properties may be re-tested at any time during the project. These project tests may be used for one or more projects furnishing hot mix with the same aggregate source.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	Perform random sampling as specified in Tex-225-F, "Random Selection of Bituminous Mixture Samples."

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE IX – MICROSURFACING (Item 350)

PROJECT TESTS					
MATERIAL OR PRODUCT	TEST FOR	TEST NUMBER	LOCATION OF SAMPLING	FREQUENCY (Per Design)	REMARKS
AGGREGATE	5-Cycle Magnesium Sulfate Soundness (A)	Tex-411-A	Stockpile (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer list for BRSQC meets the project specifications. If not, sample in accordance with Tex-221-F and submit to CST/M&P for testing at 1 per project, per source. (C)
	Gradation	Tex-200-F, Part II		1 per project, per source	Sample in accordance with Tex-221-F.
	Crushed Face Count	Tex-460-A		1 per project, per source	Sample in accordance with Tex-221-F.
	Acid Insoluble (A)	Tex-612-J		1 per project, per source	Verify the value of the source, as listed on the current BRSQC , meets the project specifications. If not, sample and submit to CST/M&P for testing prior to use in accordance with Tex-499-A. Sample in accordance with Tex-221-F. (C)
	Surface Aggregate Classification	Tex-499-A	Stockpile, or BRSQC (B)	1 per project, per source	Verify the published value of the source, as listed on the current Material Producer list for BRSQC meets the project specifications. If not, sample in accordance with Tex-221-F and submit to CST/M&P for testing at 1 per project, per source. (C)
COMBINED BLEND	Sand Equivalent	Tex-203-F	Stockpile (B)	1 per project, per source	Sample in accordance with Tex-221-F.
ASPHALT BINDER	Compliance with Item 300 Binder & Tack Coat (A)		Sampled, tested, and pre-approved by CST/M&P. Project test sampled at the Plant for Binder & Road for Tack Coat	1 each for binder and tack coat per project, per grade, per source	Test a minimum of one sample during production. Sample tack coat at the distributor on the roadway in accordance with Tex-500-C, Part III. Sample binder at microsurfacing machine in accordance with Tex-500-C, Part III. Binder should arrive on the project pre-approved. If not pre-approved, sample binder before use.
CEMENT	Compliance with DMS-4600				Verify the source is listed on the current Material Producer List for Cement . If not, sample and submit to CST/M&P for testing prior to use in accordance with DMS-4600.
COMPLETE MIX	Asphalt Content	Tex-236-F	During production	1 per day	Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven using Tex-236-F at a minimum of one per project.
	Gradation	Tex-200-F, Part II Tex-236-F			Sample in accordance with Tex-222-F. Determine correlation factors for ignition oven use at a minimum of one per project.

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

TABLE IX – FOOTNOTES

A	When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Letter of Certification of Materials Used or in the SiteManager Remarks field. This letter is required only for Asphalt Content and/or Gradation when production of complete mixture is suspended as required by QC/QA specifications.
B	Sampling may be performed at the plant, quarry, or both. Aggregate properties may be re-tested at any time during the project. These project tests may be used for one or more projects furnishing hot mix with the same aggregate source.
C	Attach the corresponding QM test report for SiteManager projects to satisfy project sampling and testing requirements.
D	Each test performed that is based on a quantity of material is considered “or fraction thereof” for calculating number of tests.

GEOTECHNICAL ENGINEERING REPORT PAVEMENT DESIGN RECOMMENDATIONS

ROADWAY AT ESPEJO GATES – COUNTY LINE ROAD ESPEJO GATES – COUNTY LINE ROAD AND US HIGHWAY 83 ENCINAL, WEBB COUNTY, TEXAS

Prepared for:

S & B Infrastructure, Ltd.
4001 McPherson, Suite 204
Laredo, TX 78041

Attn.: Manuel E. Escamilla, PE, RPLS
Project Engineer

Submitted By:



www.howlandcompanies.com

7615 N. Bartlett Avenue | P.O. Box 451128 (78041) | Laredo, TX 78041 | P. 956.722.4411 | F. 956.722.5414
TBPE Firm Registration No. F-4097 | TBPLS Firm Registration No. 100464-00

Report No: 35450
February 6, 2015

S & B Infrastructure, Ltd.
4001 McPherson, Suite 204
Laredo, TX 78041

Attn: Manuel E. Escamilla, PE, RPLS
Project Engineer

Sent Via E-Mail to MEEscamilla@sbinfra.com

**Subject: Geotechnical Report – Pavement Design Recommendations
Espejo Gates – County Line Road
Espejo Gates – County Line Road and US Highway 83
Encinal, Webb County, Texas**

Dear Mr. Escamilla:

Howland Engineering and Surveying Co. (Howland) is pleased to submit the enclosed geotechnical engineering study for the above referenced project to be located in Encinal, Webb County, Texas. This report addresses the field exploration and laboratory testing procedures and results along with our recommendations for site preparation and pavement recommendations for the Espejo Gates – County Line Road roadway improvements.

This report was conducted in accordance with our proposal dated October 16, 2014 and authorized by you.

We appreciate the opportunity to be of service to you in this phase of the project. Please call us if you have any questions or if we may be of further service.

Sincerely,
Howland Engineering and Surveying Co.
TBPE Firm Registration No. F-4097

Roberto P. Martinez
Roberto P. Martinez, P.E.
Project Engineer



Copies Submitted: (1) Above

02.06.15

Sergio Galindo, Jr.
Sergio Galindo, Jr., E.I.T.
Project Manager

CONTENTS

Page No.

INTRODUCTION	4
PURPOSE AND SCOPE	4
FIELD INVESTIGATION	4
LABORATORY TESTING	5
GENERAL SITE AND SUBSURFACE CONDITIONS	5
Site Physiography	5
Site Geology.....	5
Subsurface Stratigraphy	6
Groundwater	7
Potential Vertical Rise (PVR).....	8
PAVEMENT RECOMMENDATIONS	9
General.....	9
Clearing of Existing Pavement Section	9
Preparation of Natural Finish Ground.....	9
Bulking or Shrinkage Factor.....	10
Pavement Sections	10
Flexible Pavement Design	10
Rigid Pavement Design.....	16
Drainage Considerations.....	17
PRELIMINARY UTILITY TRENCHING AND BACKFILL CONSIDERATIONS	18
General.....	18
Trench Excavations.....	18
Trench Safety Guidelines.....	18
Utility Trench Backfill Methods.....	19
LIMITATIONS	19

APPENDICES

Boring Logs

Soil Boring Location Plan

Photographs

Symbols and Terms used on Boring Logs

Field and Laboratory Testing Procedures

Recommended Specifications for Placement of Compacted Select Fill

DCP Test Data

Pavement Design Options – Computer Program Outputs

Relevant Information About Your Geotechnical Engineering Report

INTRODUCTION

On December 13, 2014, Howland Engineering and Surveying Co. (Howland) conducted a geotechnical investigation for the roadway for Espejo Gates – County Line Road from US Highway 83 to Dimmit / Webb County Line at Encinal, Webb County, Texas. The roadway consists of a county road with a 55' to 76' wide back to back flexible base (caliche) section approximately ~28,500 LF. The proposed project will consist of an approximate 32' wide edge of asphalt to edge of asphalt pavement section.

The planned construction for the roadway construction will consist of hot mix asphaltic concrete (HMAC) pavement.

PURPOSE AND SCOPE

The purpose of this exploration were to determine the stratification and engineering properties of the soil and to develop recommendations for site preparation and provide pavement recommendations with compaction requirements for the proposed roadway improvements of the above referenced project. Equivalent Single Axle Loads (ESALs) are based on the type of road use as classified by the City of Laredo. Please note a traffic engineering study was beyond this scope of work.

The scope of this exploration includes the following: 1) a field investigation phase for determining the surface conditions (slope & drainage) and subsurface conditions obtaining representative soil samples for classification and testing, 2) a laboratory testing program designed to establish pertinent engineering properties of subsurface soils encountered, and 3) a compilation and evaluation of field and laboratory data in order to develop preliminary pavement recommendations.

FIELD INVESTIGATION

The site was explored by drilling a total of twenty-one (21) 5-ft depth bores along the approximate centerline of the proposed roadways at approximate quarter mile (1,320 LF) intervals. The boring locations were predetermined by Howland Engineering and Surveying Co., Inc. and staked out by S & B Infrastructure, Ltd on a site map provided by them.

The borings were drilled at the approximate locations that are shown on the Boring Location Plan in the appendix. The borings were advanced using a mobile B-53 drilling rig utilizing continuous flight solid stem augers. Samples of the materials encountered were obtained by split barrel sampling in conjunction with automatic standard penetration testing. The test boring logs are presented in the appendix along with descriptions of the test methods. The field sampling and testing were performed in substantial compliance with applicable ASTM standards D-1586.

LABORATORY TESTING

The soil samples were examined and visually classified by the Howland geologist and samples representative of the various soil strata encountered were selected for laboratory testing. Forty-two (42) sets of Atterberg limits, moisture content and percent fines tests were performed to assist in classifying the soils and to provide indicators of soil behavior. The test results are presented on the boring logs and the test procedures are described in the appendix.

GENERAL SITE AND SUBSURFACE CONDITIONS

Site Physiography

The proposed roadway rehabilitation is located on a Espejo-Gates – County Line Road between US Highway 83 extending approximately 28,500 LF to the Dimmit / Webb County Line. The roadway construction is located approximately 12.2 miles south of Catarina, Texas at Encinal, Webb County, Texas west of US Highway 83.

The topography is sloping northeast beginning at the intersection of US Highway 83 and Espejo-Gates – County Line Road with isolated high and low sections throughout the roadway. The approximate elevations range from 643' to 551'.

Site Geology

Bureau of Economic Geology The University of Texas at Austin

The “Geologic Atlas of Texas”, Crystal City-Eagle Pass Sheet, indicates the El Pico Clay, Eep underlie the site with adjacent Alluvium, Qal.

El Pico Clay, Eep, typically consists of clays, in part gypsiferous, interbedded with seams and/or layers of sandstones, coal, and clay, fine grained, argillaceous, silty, thin bedded to massive, friable to indurated. The El Pico Clay is about 700 – 900 feet thick.

Alluvium, Qal, are streambed deposits typically consisting of clay, sands, silts, gravels and organic matter. Such deposits are associated with point bars, cutbanks, oxbows, and abandoned fluvial associated with streambed activity. As a result, soil profiles in low terrace deposits areas may vary considerably within a given area.

A cursory review of available geologic maps of this area indicates that several faults are located in the general area of the site; however, faults in the area of Encinal are considered inactive. Therefore, seismic risk should be noted as low.

Subsurface Stratigraphy

The subsurface Stratigraphy at this site encountered various conditions that can be described by four (4) generalized strata described below. Each stratum has been identified by grouping soils that possess similar physical and engineering characteristics following the guidelines, presented in the ASTM D-2487 (Unified Soil Classification System). The lines designating the interfaces between strata on the boring logs represent approximate boundaries.

- *Lean Clay with Sand, Sandy Lean Clay* – Stiff, very stiff, stiff to very stiff, firm to hard, brown to reddish brown, greyish, reddish brown to light brown, brown, light brown, light brown to olive brown, light brown to yellowish brown, yellowish brown and greyish, light brown to brown, dark greyish lean clay with sand and sandy lean clay soils were encountered at various depths in all bores except P-5 and P-16.

The soil samples tested from these stratum had liquid limits ranging from 27 to 49, plasticity index ranging from 11 to 27 with fines fractions ranging from 52% to 84%. This soil is classified as medium to high plasticity, CL, soils under the Unified Soil Classification System.

The consistency of these stratum are firm to hard based on automatic standard penetration resistance test values of 6 blows per foot of penetration to 35 blows per foot of penetration.

- *Fat Clay* – Stiff, very stiff, firm, olive brown, light brown, fat clay soils were encountered at various depths in bores P-14, P-16, P-18 and P-19.

The soil samples tested from these stratum had a liquid limits ranging from 54 to 59, plasticity index ranging from 31 to 35 with fines fractions ranging from 85% to 96%. This soil is classified as high plasticity, CH, soils under the Unified Soil Classification System.

The consistency of these stratum are firm to very stiff based on automatic standard penetration resistance test values of 8 blows per foot of penetration to 24 blows per foot of penetration.

- *Silty, Clayey Sand and Silty, Clayey Sand with Gravel* – Medium dense, very dense, light brown, dark brown silty, clayey sand and silty, clayey sand with gravel soils were encountered from the surface to bore termination (~5') at P-5, and at the approximate 2' depth to bore termination (~5') at bores P-3 and P-12.

The soil samples tested from these stratum had liquid limits ranging from 20 to 23, plasticity index ranging from 5 to 7 and fines fractions of 35% to 48%. These soils are classified as low plasticity, SC-SM, clays under the United Soil Classification System.

The consistency of these stratum are medium dense to very dense based on automatic standard penetration resistance test values of 15 blows per foot of penetration to 68 blows per foot of penetration.

- *Clayey Sand with Gravel* – Loose, light brown, clayey sand with gravel soils were encountered at P-20 from the surface to the approximate 2' depths.

The soil samples tested from this stratum had a liquid limit of 32, plasticity index of 15 with fines fractions of 47%. This soil is classified as medium plasticity, SC, soils under the Unified Soil Classification System.

The consistency of this stratum is loose based on automatic standard penetration resistance test values of 9 blows per foot of penetration.

The above descriptions are generalized to highlight the major subsurface stratification. The boring logs should be consulted for specific information at each boring location.

Existing pavement section and thickness of the materials are as follows:

Bore No.	Existing Pavement Section	Bore No.	Existing Pavement Section
1	1"	12	3"
2	1"	13	3 ½"
3	1"	14	0"
4	2"	15	1 ½"
5	3"	16	0"
6	10"	17	0"
7	2"	18	12"
8	0"	19	1"
9	2"	20	10"
10	1 ½"	21	1"
11	3 ½"		

Please note the existing pavement section consists of flexible base material (Caliche).

Groundwater

Groundwater was not encountered during the drilling operations. The recovered soil samples contained generally dry soil moisture conditions during our subsurface investigation.

It should be noted that groundwater levels usually will fluctuate with seasonal variations in rainfall, during the construction process and surface water run-off. The short-term field observations are not a complete evaluation of the subsurface water levels at this location. The Contractor should check the subsurface water conditions prior to excavation activities.

Potential Vertical Rise (PVR)

Potential vertical soil movements have been estimated using the Texas Department of Transportation test method TEX-124-E, Potential Vertical Rise. This method utilizes the soils in-situ moisture conditions and plasticity characteristics within the active zone. It is estimated that depth of the active zone in this area is approximately twenty (20) feet. The potential vertical rise is expressed in inches and hence is the latent or potential ability of a soil material to swell, at a given density, moisture, and loading condition.

When the soil material is exposed to capillary or surface water an increase in elevation (heave) of the upper surface along with anything resting on it is plausible. The soils encountered at the site exhibit a low to medium shrink / swell potential with isolated high shrink / swell potential at the fat clay soil locations. Estimated PVR values are as follows:

Bore No.	Estimated PVR (in)
1	0.23"
2	0.70"
3	0.18"
4	0.31"
5	0.00"
6	0.37"
7	0.37"
8	1.48"
9	0.88"
10	0.78"
11	0.53"
12	0.47"
13	0.66"
14	1.32"
15	1.48"
16	1.86"
17	0.96"
18	1.48"
19	1.38"
20	0.66"
21	1.16"

Please note the analysis is based on approximate depth of bores

Please note that the above reported values represent total vertical in-situ movements and does not take into account movements by uncontrolled water sources such as poor drainage, migration of subsurface water from off-site locations and utility line leaks.

PAVEMENT RECOMMENDATIONS

General

The following recommendations are based the American Association of State Highway and Transportation Officials (AASHTO) Guide for Design of Pavement Structures, Equivalent Single Axel Load (ESAL) Calculation Study by AC Group, LLC, the soil test results and our experience with pavements in areas with similar subsoil conditions. The minimum pavement section we recommend for Espejo Gates – County Line Road is discussed in the following.

Clearing of Existing Pavement Section

The roadway improvements of Espejo Gates – County Line Road will consist of removing the existing pavement section. The existing pavement section consists of a varied depths of flexible base “caliche” with thicknesses ranging from no flexible base to 12". Howland recommends to cut and stock-pile the pit run “caliche” material throughout the roadway. This material may be reused should it meet the requirements of the TxDOT specifications for Item 247, Type B, Grade 2 with a minimum PI of 5 and a maximum PI of 12, if governed by design option.

Subgrade Preparation

The preparation of natural finish ground in areas cut should consist should initially consist of reworking the exposed surface to the 10" depth by watering and re-compacting the soils to a minimum of 95% of the TxDOT Method TEX 114-E, at $\pm 2\%$ of the optimum moisture content at 6" lifts or less.

Sub-base Preparation

The preparation of natural finish ground in areas to be filled should consist of reworking the surface to the 10" depth by watering and re-compacting the soils to a minimum of 95% of the TxDOT Method TEX 114-E, at $\pm 2\%$ of the optimum moisture content at 6" lifts.

The soil compaction for the select fill shall be placed in compacted lifts not to exceed 6" in thickness and should not be less than 95 % of maximum dry density determined in accordance with TxDOT Method TEX 114-E at $\pm 2\%$ of optimum moisture content. Any fill material lifts not meeting the required compaction specification must be reworked and compacted until the specified density is achieved.

Select fill needed for the pavement section should be low plasticity sandy lean clay, clayey sand, or granular base material ($7 \leq PI \leq 20$). Specifications for fill and placement are attached.

As per our understanding of the project, the project may require minor cut and fill material.

Bulking or Shrinkage Factor

Excavation increases the volume of material. To determine the volume of material that will be created by excavation the bulking factor is defined as:

$$\text{Bulking Factor} = \text{Volume after Excavation} / \text{Volume before Excavation}$$

Similarly a shrinkage factor is defined for the compaction of a soil at its final destination.

$$\text{Shrinkage Factor} = \text{Volume after Compaction} / \text{Volume before Excavation}$$

Typical values for the site soils can be found in Table 1 below.

Table 1 – Soil Properties

Material	Bulk Density Mg/m ³	Bulking Factor	Shrinkage Factor	Diggability
Clay (Low PI)	1.65	1.30	-	Medium
Clay (High PI)	2.10	1.40	0.90	Medium to Hard
Clay and Gravel	1.80	1.35	-	Medium to Hard
Sand	2.00	1.05	0.89	Easy
Sand and Gravel	1.95	1.15	-	Easy
Sandstone (Porous)	2.50	1.60	-	Medium

Pavement Sections

For the proposed roadway design purpose, we are following the AASHTO guide for Design of Pavement Structures with consideration to the modulus of subgrade reaction (k), our field Standard Penetration Test (SPT) and Dynamic Cone Penetration (DCP) results which we correlated an approximate CBR and the pavement specification.

Flexible Pavement Design

The 1993 AASHTO pavement design method is typically used in this location. The AASHTO design parameters include the following:

AASHTO Design Parameters Index	
18-kip Equivalent Single Axle Loads (ESAL)	W_{18}
Reliability	R
Standard Deviation	S_o
Environmental Effects	$\Delta PSI_{ENV} = \Delta PSI_{SW} + \Delta PSI_{FH}$
Loss in Serviceability Index Due to Swelling Soils	ΔPSI_{SW}
Loss in Serviceability Index Due to Frost Heave	ΔPSI_{FH}
Initial Serviceability Index	P_o
Minimum Terminal Serviceability Index	P_t
Total Change in Serviceability Index	$\Delta PSI = P_o - P_t$
Effective Road Bed Soil Resilient Modulus	M_r

Espejo Gates – County Line Road can be considered a Major / Minor Arterials Industrial Collector on a City of Laredo Long Range Thoroughfare Plan (COLLRTP) as per AC Group, LLC dated January 14, 2015.

As per our understanding, the ESAL amount considered for the following pavement design was based on a 20% Growth Rate with a calculated ESAL of 3,125,135 for a 20-Year Life Span.

Values for these parameters except for Environmental Effects and Subgrade Resilient Modulus are include in the COLLRTP and are presented below. Recommendations for the Environmental Effects and Subgrade Resilient Modulus along with other pertinent information are presented in the following paragraphs.

AASHTO Design Parameters								
COLLRTP								
	Major / Minor Arterials Industrial Collector		Major Collector Industrial Street		Local Collector		Local Street	
W_{18}	3,000,000		2,000,000		1,000,000		100,000	
R	95 %		90 %		70 %		70 %	
S_o	Flexible	Rigid	Flexible	Rigid	Flexible	Rigid	Flexible	Rigid
	0.45	0.35	0.45	0.35	0.45	0.35	0.45	0.35
P_o	4.2	4.5	4.2	4.5	4.2	4.5	4.2	4.5
P_t	2.5	2.5	2.5	2.5	2.5	2.5	2.0	2.0
ΔPSI	1.7	2.0	1.7	2.0	1.7	2.0	2.2	2.5
T	20		20		20		20	
SN	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
	3.80	5.76	2.92	5.08	2.58	4.20	1.98	3.18

Source: City of Laredo Long Range Thoroughfare Plan (COLLRTP)

The actual traffic volumes and wheel loads for these various pavements were based upon the ESAL Calculation Study by AC Group, LLC dated January 14, 2015.

The value of $\Delta\text{PSI}_{\text{sw}}$ is the portion of design serviceability loss caused by the environmental ($\Delta\text{PSI}_{\text{ENV}}$) factors of swelling soils. Since frost heave is not a concern in Encinal, the impact due to frost heave ($\Delta\text{PSI}_{\text{FH}}$) is not considered. Therefore, the environmental impacts ($\Delta\text{PSI}_{\text{ENV}}$) are reduced to the impact of expansive (swelling) soils only. **If the roadbed soils having a PI over 20 are treated by mentioned recommendation, then environmental factors from expansive soils would not apply for this site.**

The environmental factors reduce the maximum possible performance period of the pavement before an overlay is required to meet the expected service life. Based on the AASHTO design procedure and the subsurface soil properties, the value for the loss in Serviceability Index due to swelling soils ($\Delta\text{PSI}_{\text{sw}}$) is presented in the following table:

Time (years)	$\Delta\text{PSI}_{\text{sw}}$
0	0
5	0.50
10	0.78
15	0.95
20	1.04

Modulus of Subgrade Reaction (k)

The modulus of subgrade reaction (k) is determined by performing plate load bearing tests. Due to time and expense of performing test, researchers have developed correlations between k and CBR values. Based on these published correlations, an estimated k value of 125 per cubic inch (pci) for the subgrade may be used for this site.

Resilient Modulus Value (M_r)

The resilient modulus value, M_r is based on the most common subgrade soil conditions encountered in our soil test borings. Based on AASHTO recommendations, the following empirical strength values can be converted to a Modulus for use in pavement thickness calculations. We recommend that a CBR value of about 8 percent to be used in the pavement design analysis for the soils at the site.

$$M_r = 2550 (\text{CBR})^{0.64} \quad \text{psi}$$

Therefore, for this project we recommend the following M_r values:

$$M_r = 2550 (8)^{0.64} \quad 9,649 \text{ psi}$$

The next step in the AASHTO method is the determination of the Structural Number (SN), which can either be calculated using formulas in the AASHTO Guide or by using a nomograph contained in the guide. The SN is used to determine the required pavement sections.

The total required pavement thickness is then based on the following equation:

$$SN = a_1 * D_1 * m_1 + a_2 * D_2 * m_2 + a_3 * D_3 * m_3 + \dots + a_n * D_n * m_n$$

Where:

a_n = structural coefficient of material “n”

D_n = thickness of material “n”, inches

m_n = drainage coefficient for material “n”

Generally, the most cost effective pavement section can be obtained by maximizing the thicknesses of the materials with the lowest structural coefficient where applicable or where the pavement materials are locally available.

The drainage coefficient, m , is dependent on the quality of drainage in the untreated base and sub-base material layers of the flexible pavement section. Good drainage (i.e. Drainage Coefficient, $m = 1$) corresponds to water being removed from each layer in one (1) day; and, that the percent of time the pavement structure is exposed to moisture levels approaching saturation ranges from five (5) to twenty-five (25). If improper materials are used or standing water can develop due to construction or design deficiencies, the quality of drainage would be fair to very poor and reduce the drainage coefficient, m , and ultimately the structural capacity of the pavement. The AASHTO design procedure provides more guidance and discussion regarding this issue.

Recommended structural coefficient and drainage coefficients are as follows:

Material Type	Structural Coefficient	Drainage Coefficient
Type C (Coarse) or D (Fine) HMAC Surface	0.44	1.00
Type A (Coarse) or B (Fine) HMAC Base	0.34	1.00
Flexible Base (Type A, Grade 2)	0.14	1.00
Flexible Base (Type B, Grade 2)	0.11	1.00

Resulting pavement sections are as follows:

Roadway Design

Component	Flexible Base Section			
	<i>3.5" HMAC – PI < 20</i>		<i>3.5" HMAC – PI ≥ 20</i>	
	<i>Crushed Limestone</i>	<i>Pit Run "Caliche"</i>	<i>Crushed Limestone</i>	<i>Pit Run "Caliche"</i>
HMAC Surface	3.5"	3.5"	3.5"	3.5"
HMAC Base Ty. B	No	No	No	No
Flexible Base Ty. A Gr. 2	18"	No	12"	No
Flexible Base Ty. B Gr. 2	No	23"	No	11" / 6"*
Geogrid	No	No	Yes	Yes
Moisture Condition	10"	10"	10"	10"
SN Design	4.03	4.03	4.04	4.03
SN Actual	4.06	4.07	4.06	4.06
Estimate ESALs	3,250,000	3,301,000	3,250,000	3,245,000

Please note minimum pavement section of 3.5" HMAC and the minimum pavement section for soils with $PI > 20$. * - Denotes thickness of material separated by Geogrid; 6" of flexible base Type B, Grade 2 is placed with the Geogrid laid over and finally the 11" of flexible base Type B, Grade 2.

Component	Flexible Base Section			
	4.0" HMAC – PI < 20		4.0" HMAC – PI ≥ 20	
	Crushed Limestone	Pit Run "Caliche"	Crushed Limestone	Pit Run "Caliche"
HMAC Surface	4"	4"	4"	4"
HMAC Base Ty. B	No	No	No	No
Flexible Base Ty. A Gr. 2	16.5"	No	10.5"	No
Flexible Base Ty. B Gr. 2	No	21"	No	9" / 6"*
Geogrid	No	No	Yes	Yes
Moisture Condition	10"	10"	10"	10"
SN Design	4.03	4.03	4.04	4.04
SN Actual	4.07	4.07	4.07	4.04
Estimate ESALs	3,301,000	3,301,000	3,301,000	3,149,000

Please note minimum pavement section of 4" HMAC and the minimum pavement section for soils with PI>20. * - Denotes thickness of material separated by Geogrid; 6" of flexible base Type B, Grade 2 is placed with the Geogrid laid over and finally the 9" of flexible base Type B, Grade 2.

Hot Mix Asphaltic Concrete Surface: The Hot Mix Asphaltic Concrete (HMAC) shall meet the requirements set forth by the Texas Department of Highways (TxDOT) Specifications, Item 340, using Type "C" or "D" mix. The asphaltic concrete should be compacted to a minimum of 1.5% below the optimum density of the laboratory density as determined using TxDOT, Tex 206-F test method or ASTM D-1560 (Hveem or Marshall Method).

Flexible Base (Crushed Limestone): The base should meet the requirements of the TxDOT specifications for Item 247, Type A, Grade 2. The base should be compacted to at least 98% of the maximum dry density as determined by TxDOT Method TEX 113-E, at ± 2% of optimum moisture content.

Flexible Base Material (Pit Run): The base should meet the requirements of the TxDOT specifications for Item 247, Type B, Grade 2. The base should be compacted to at least 98% of the maximum dry density as determined by TxDOT Method TEX 113-E, at ± 2% of optimum moisture content.

Mechanically Stabilized Layer (MSL): The geogrid can increase the effective strength of a pavement structure or an unpaved working surface through the composite of a high performance geogrid and granular fill to form a mechanically stabilized layer (MSL). The geogrid is placed directly below the granular fill for reinforcement in an effort to increase the bearing strength of the subbase soils. Based on the soil information above, we recommend the Tensar® TriAx® TX5 or TerraGrid® RX1200.

Moisture Conditioned Subgrade: The subgrade should be moisture conditioned by reworking the surface to the 10" depth by watering and re-compacting the soils to a minimum of 95% of the maximum dry density as determined by TxDOT Method TEX 114-E, at ± 2% of the optimum moisture content at 6" lifts.

In addition, below is Espejo Gates – County Line Road further identified by the pavement sections based on their Plasticity Index (PI):

Pavement Section Reference (PI ≥ 20)
Between bores B-8 thru B-9
Between bores B-12 thru B-13
Between bores B-15 thru B-16
Between bores B-18 thru B-19
B-21

Refer to the Bore Location Map in the report.

Rigid Pavement

As per our understanding, rigid pavement design is planned for intersections or where specified by the Engineer. The roadway will include 745 tractor/trailers per day, seven (7) days a week. Based on our understanding, the owners would like to consider a 20-yr design life with 20% Growth Rate.

The Rigid Structural Design is used for both the analysis and design of rigid (Portland cement concrete) pavements. For design, Equivalent Single Axle Load, (ESALs) are an input and the slab thickness required for the specified traffic is calculated. All calculations are based on the American Association of State Highway and Transportation Officials (AASHTO) rigid pavement design procedure.

The most commonly used equivalent load in the U.S. is the 18,000 lb (80 kN) equivalent single axle load, normally designated as ESAL. A tractor / trailer typically has two (2) tandem axles and one (1) single axle. Based on typical load equivalency factors from AASHTO, the following is the total ESAL for each tractor / trailer: 3.92 ESAL.

20-YR Design Life

AASHTO Design Parameters	
<i>Pavement Parameters</i>	<i>20-YR Design</i>
18-Kip ESALs Over Initial Performance Period	3,125,135
Concrete Compressive Strength (f_c)	4,000 psi
Modulus of Rupture (MOR) = $7.5 * (f_c)^{1/2}$	474
28-day Mean Elastic Modulus of Slab	3,604,997 psi
Standard Modulus of Soil Reaction "k"	125 pci
Load Transfer Coefficient	2.6
Overall Drainage Coefficient, Cd	1
	<i>Calculated</i>
Design Thickness	8.5 in

18-Kip ESALs Over Initial Performance Period based on the ESAL Calculation Study by AC Group, LLC dated January 14, 2015.

Portland Cement Concrete: The concrete should be air entrained to result in $3\% \pm 1\%$ and should have a maximum slump of $4\frac{1}{2}'' \pm 1''$. The concrete should have a minimum 28-day compressive strength of 4,000 psi.

Moisture Conditioned Subgrade: The subgrade should be moisture conditioned by reworking the surface to the 10" depth by watering and re-compacting the soils to a minimum of 95 % of the maximum dry density as determined by TxDOT Method TEX 114-E, at $\pm 2\%$ of the optimum moisture content.

The design assumes doweled or keyed joints, temperature and flexural reinforcing steel of #5 @ 12" o.c. for heavy duty traffic and adequate control, expansion and construction joints. All joints should be sealed as per manufacture recommendations. A control joint spacing of no more than 15' is recommended. Since rainfall is light, no special provisions for drainage, such as permeable base course is necessary.

Drainage Considerations

Proper perimeter drainage is extremely important and should be provided so infiltration of surface water from unpaved areas surrounding the pavement is minimized. Improper drainage which allows saturation of the pavement subgrade will greatly reduce the performance and service life of the pavement systems, even when the system is constructed using either typical pavement sections or design recommendations based on site-specific soils testing.

Surface and subsurface drainage considerations crucial to the performance of pavements at this site include, but are not limited, to the following:

- Any man-made subsurface or known natural groundwater seepage at the site as to influence moisture contents within the subgrade should be intercepted by drainage ditches or below grade French drains.
- Final site grading should eliminate isolated depressions adjacent to curbs which may allow surface water to pond and infiltrate into the underlying soils.
- Pavement surfaces should be maintained to minimize surface ponding and to provide proper sealing of any developing cracks. These measures will help reduce infiltration of surface water downward through the pavement section.
- Drainage channels adjacent to roadway should have adequate transverse slopes for proper drainage away from the roadway so that ponding or stagnant water does not accumulate and infiltrate below the roadway thus weakening the sub-pavement section.

Poor drainage features provide an avenue for water to enter into the pavement section and underlying soil subgrade and can result in weakening of the subgrade soils. These conditions could result in degradation of pavement sections with time as vehicular traffic traverses the affected areas.

PRELIMINARY UTILITY TRENCHING AND BACKFILL CONSIDERATIONS

General

In general, the exploration and testing of the soil samples indicated a consistency of soil conditions with low to high plasticity, firm to hard, or loose to very dense, lean clay with sand, sandy lean clay, silty, clayey sand, silty, clayey sand with gravel, clayey sand with gravel, and fat clay soils.

This report may not reflect the exact variations of the subsurface conditions throughout the site. The nature and extent of variations across the site may not become evidence until construction commences. If variations then appear evident, it may be essential to reevaluate our recommendations after performing on-site observations and test to establish the engineering significance of such variations.

Trench Excavations

In regard to groundwater conditions, no groundwater was encountered during our drilling operations. Due to the long distance spacing between boreholes, the extent of subsurface groundwater depth and locations between our borings is not certain.

However the Contractor should provide and maintain adequate dewatering equipment to remove and dispose of all surface and ground water. Each excavation should be kept dry during the preparation of the subgrade until the installation of the utility lines is completed. The utility trenching, safety and backfill considerations for the proposed roadways are included in the following section.

Trench Safety Guidelines

Occupational Safety and Health Administration (OSHA) Safety and Health Standards contained in the Section 1926.652 of Title 29, Code of Federal Regulations (29 CFR) require that all trenches in excess of five (5) feet deep be shored or appropriately sloped or benched unless the trench sidewalls are comprised of solid rock.

Based on the our laboratory results, the soils encountered at the boring locations should be considered primarily a *Type A* soils which means cohesive soils i.e. silty clay, sandy clay, clay loam, and in some cases silty loam and sandy clay loam.

If during the construction process dissimilar soils are encountered, then the following soil types should be considered. Cemented soils i.e. caliche and hardpan are also considered *Type A* according to OSHA soil classification guidelines.

If soils are granular cohesion-less similar to crushed rock or fissured then *Type B* is the appropriate classification and if groundwater or water seepage is present in these strata then *Type C* is the appropriate classification.

Please note that the Contractor is responsible for development of the excavation plan which will meet all State and Federal requirements with regard to trench safety.

Utility Trench Backfill Methods

The design team is to verify if the City of Encinal has adopted a method to backfill utility trenches at date of design insurance.

LIMITATIONS

The evaluation and recommendations submitted in this report are based, in part, upon the information obtained from the twenty-one (21) soil test borings. The nature and extent of variations in soil conditions between or beyond the borings may not become evident until actual construction. It is also noted that the transition lines shown on the boring logs are approximate and the actual transitions may be gradual. Also, this report does not consider environmental opinions.

If changes in the nature or design of the project are planned, the conclusions and recommendations in this report should be reviewed by the soils engineer and, if necessary, modified. Soil samples recovered for laboratory testing will be retained for a period of 30 days and then, unless we are directed otherwise, will be discarded.

This report has been prepared for the exclusive use of S & B Infrastructure, Ltd. and their design team for specific application to the roadway rehabilitation at Espejo Gates – County Line Road in Encinal, Webb County, Texas in general accordance with the American Association of State Highway and Transportation Officials (AASHTO) Guide for Design of Pavement Structures. No other warranty, expressed or implied, is made. Additional information regarding the limitations and use of geotechnical engineering reports is included in the appendix.

LOG OF BORING NUMBER P-1

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
				1" Flexible Base							
1	P1	6		Stiff, Brown to Reddish Brown Sandy Lean Clay (CL)	61	10	32	16	16		
2		6									
3	P2	4		Very Stiff, Greyish Sandy Lean Clay (CL)	64	17	28	15	13		
4		7									
5		9									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required

NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-2

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	3		1" Flexible Base							
2		4		Stiff to Very Stiff, Reddish Brown to Light Brown Sandy Lean Clay with Calcareous Deposits	67	12	31	16	15		
3		5									
4	P2	5									
5		10 13		(CL)	61	13	34	17	17		
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined



LOG OF BORING NUMBER P-3

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
				1" Flexible Base							
1	P1	6		Stiff, Brown Sandy Lean Clay (CL)	63	12	30	17	13		
2		6									
3	P2	6		Medium Dense, Light Brown Silty, Clayey Sand with Gravel (SC-SM)	44	9	22	15	7		
4		7									
5		8									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-4

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
				2" Flexible Base							
1	P1	4		Stiff, Greyish Sandy Lean Clay (CL)	61	15	34	17	17		
2		6 7									
3	P2	5 6 8		Stiff, Light Brown Sandy Lean Clay with Calcareous Particles (CL)	63	13	27	16	11		
4											
5											
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-5

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	11		3" Flexible Base							
2		12		Medium Dense, Light Brown Silty, Clayey Sand with Gravel and Calcareous Deposits	35	7	20	15	5		
3		14									
4	P2	8		(SC-SM)	46	8	23	16	7		
5		8									
5		9									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required

NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-6

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
				10" Flexible Base							
1	P1	4		Stiff, Light Brown Sandy Lean Clay with Calcareous Deposits	67	16	29	16	13		
2		5									
3		6									
4	P2	4									
5		5									
5		8									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-7

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	8		2" Flexible Base							
2		13		Very Stiff, Light Brown Sandy Lean Clay with Calcareous Deposits	68	9	28	17	11		
3		14									
4	P2	9		(CL)	62	8	29	16	13		
5		10									
		13									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required

NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-8

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	9		Very Stiff, Light Brown to Olive Brown Lean Clay with Sand and Calcareous Particles (CL)	75	11	42	19	23		
2		10									
3		12									
4	P2	12									
5		10									
		12			77	17	48	22	26		
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required

NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-9

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	7		2" Flexible Base							
2		11		Stiff to Very Stiff, Light Brown Lean Clay with Sand, Calcareous Deposits and Ferrous Stains	75	14	41	21	20		
3		15									
4	P2	4		(CL)	73	15	38	19	19		
5		6									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-10

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	7		1½" Flexible Base							
2		9		Stiff to Very Stiff, Light Brown Lean Clay with Sand, Calcareous Deposits and Quarcitic Inclusions	71	12	35	17	18		
3		12									
4	P2	4									
5		5		(CL)	71	13	34	16	18		
6		6									
7				BORING TERMINATED							
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-11

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	7		3½" Flexible Base							
2		10		Stiff to Very Stiff, Light Brown to Yellowish Brown Sandy Lean Clay with Calcareous Deposits	68	11	33	17	16		
3		12									
4	P2	3									
5		5		(CL)	62	12	32	17	15		
6					BORING TERMINATED						
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required

NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-12

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
				3" Flexible Base							
1	P1	4		Stiff, Light Brown Lean Clay with Sand (CL)	72	17	45	21	24		
2		4									
3	P2	17		Very Dense, Dark Brown Silty, Clayey Sand with Calcareous Particles (SC-SM)	48	14	22	16	6		
4		36									
5		32									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required

NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-13

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
				3½" Flexible Base							
1	P1	2		Firm to Hard, Light Brown Lean Clay with Sand and Calcareous Deposits	83	22	49	22	27		
2		3									
3		5									
4	P2	6									
5		12 19									
				(CL)	84	18	43	21	22		
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required

NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-14

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)		
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.				
				No Flexible Base									
1	P1	3		Stiff, Light Brown Sandy Lean Clay with Traces of Gravel (CL)	52	13	33	16	17				
2		4										6	
3	P2			Stiff, Olive Brown Fat Clay with Calcareous Deposits (CH)	92	24	55	24	31				
4		3										5	6
5													
6				BORING TERMINATED									
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-15

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)						
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.								
1	P1	8		1/2" Flexible Base													
2		13										Very Stiff to Hard, Yellowish Brown and Greyish Lean Clay with Sand and Calcareous Deposits	83	15	47	22	25
3		16															
4	P2	8										(CL)	81	14	48	22	26
5		13															
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required

NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-16

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	4		No Flexible Base							
2		8		Very Stiff, Light Brown Fat Clay with Calcareous Deposits	85	15	59	24	35		
3		8									
4	P2	5		(CH)	96	16	54	22	32		
5		10									
5		14									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered NA = Not Applicable
 NR = Not Required ND = Not Determined

LOG OF BORING NUMBER P-17

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	4		No Flexible Base							
2		5		Stiff, Light Brown to Brown Lean Clay with Sand and Calcareous Particles	73	15	37	18	19		
3		7									
4	P2	6									
5		8 7		(CL)	80	14	41	21	20		
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered NA = Not Applicable
 NR = Not Required ND = Not Determined

LOG OF BORING NUMBER P-18

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
				12" Flexible Base							
1	P1	2		Firm, Dark Greyish Lean Clay with Sand (CL)	81	21	45	22	23		
2		4									
3	P2	2		Firm, Light Brown Fat Clay with Calcareous Deposits (CH)	89	23	59	24	35		
4		4									
5		4									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-19

PROJECT: Espejo Gates - County Line Road
CLIENT: S & B Infrastructure, Ltd.
PROJECT LOCATION: Espejo Gates - County Line Road
BORING LOCATION: As Per Plan
DRILLER: Hugo Rendon
DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
DATE: December 13, 2014

ELEVATION: NA
WEATHER: Sunny and Cool
LOGGED BY: J. Reyes
AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
				1" Flexible Base							
1	P1	4		Firm, Light Brown Lean Clay with Sand (CL)	79	21	40	20	20		
2		3									
3	P2	3		Stiff, Light Brown Fat Clay with Calcareous Deposits (CH)	92	21	56	24	32		
4		5									
5		6									
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-20

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
				10" Flexible Base							
1	P1	7		Loose, Light Brown Clayey Sand with Gravel (SC)	47	8	32	17	15		
2		5 4									
3	P2	3 5 6		Stiff, Light Brown Lean Clay with Sand and Calcareous Deposits (CL)	82	19	44	22	22		
4											
5											
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required
 NA = Not Applicable
 ND = Not Determined

LOG OF BORING NUMBER P-21

PROJECT: Espejo Gates - County Line Road
 CLIENT: S & B Infrastructure, Ltd.
 PROJECT LOCATION: Espejo Gates - County Line Road
 BORING LOCATION: As Per Plan
 DRILLER: Hugo Rendon
 DRILLING METHOD: Straight Flight Auger

REPORT NO.: 35450
 DATE: December 13, 2014

ELEVATION: NA
 WEATHER: Sunny and Cool
 LOGGED BY: J. Reyes
 AFTER 24 HOURS: NR

DEPTH TO WATER INITIAL: NE

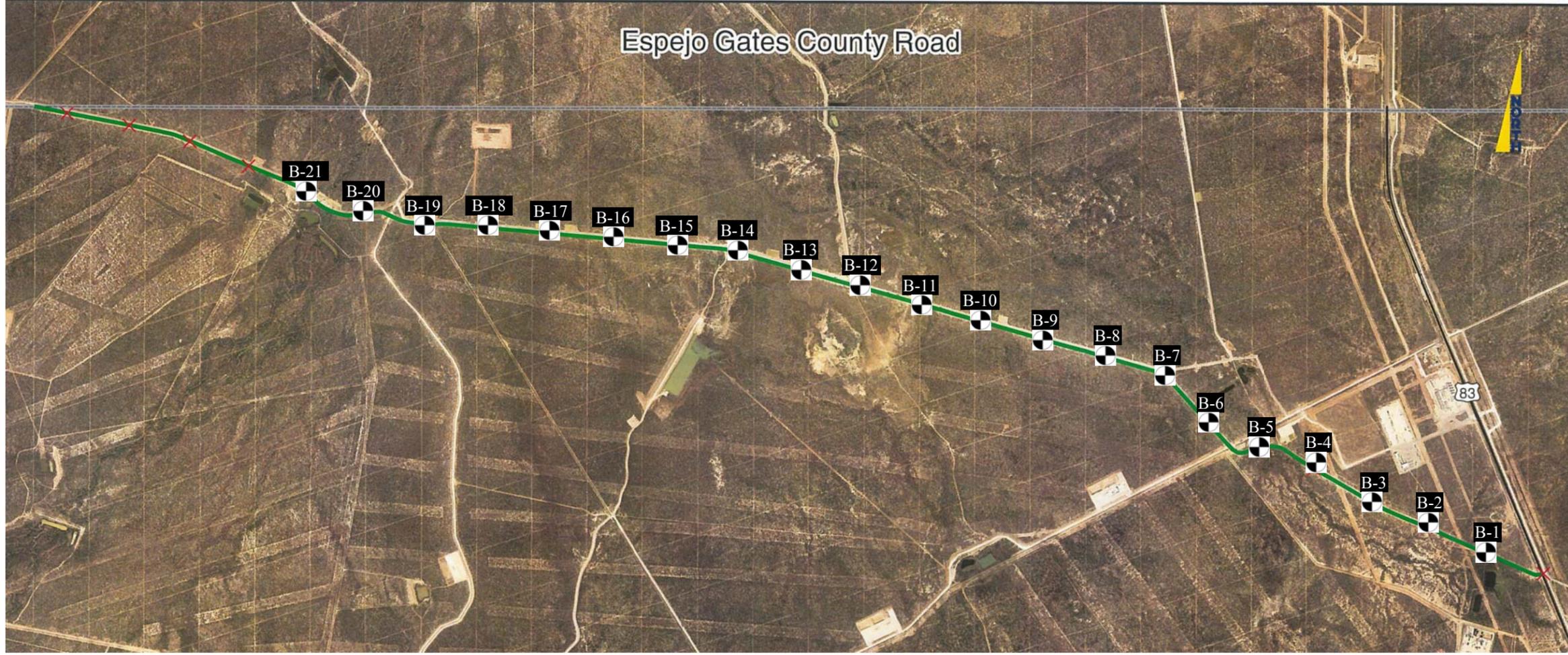
Depth (Feet)	Samples	N / (QP)	Soil Symbol	Description of Stratum	Minus 200 (%)	Moisture Content (%)	Atterberg Limits (%)			qu (TSF)	UNIT DRY WT (PCF)
							Liquid Limit L.L.	Plastic Limit P. L.	Plastic Index P. I.		
1	P1	4		1" Flexible Base							
2		5		Stiff, Brown to Light Brown Lean Clay with Sand and Calcareous Deposits	76	15	45	22	23		
3		6									
4	P2	2									
5		4		(CL)	79	18	42	20	22		
6				BORING TERMINATED							
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

P = Standard Penetration Resistance (BL/FT)
 Qp = Pocket Penetrometer Test (TSF)
 qu = Unconfined Compressive Strength Test
 ST = Shelby Tube Sample

NE = Not Encountered
 NR = Not Required

NA = Not Applicable
 ND = Not Determined





**ESPEJO GATES – COUNTY LINE ROAD
FROM US HIGHWAY 83 TO DIMMIT / WEBB COUNTY LINE**



APPROXIMATE TEST BORING LOCATION PLAN

PROJECT: Espejo Gates – County Line Road

LOCATION: Encinal, Webb County, Texas

REPORT NUMBER: 35450

HOWLAND
ENGINEERING AND SURVEYING CO.

7615 N. Bartlett Avenue
Laredo, Texas 78041-6508
P. 956.722.4411
F. 956.722.5414
TBPE Firm Registration No. F-4097
TBPLS Firm Registration No. 100464-00
www.howlandcompanies.com

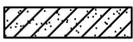
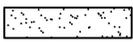
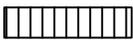
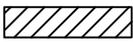
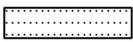
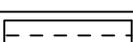


View west toward bore P-10.



View northwest toward bore P-11.

SYMBOLS AND TERMS USED ON BORING LOGS

UNIFIED SOIL CLASSIFICATION SYSTEM			
GRAVELS More than half of coarse fraction larger than No. 4 sieve size		GW	Well graded gravels or sand and gravel mixture, little or no fines.
		GP	Poorly graded gravels or sand and gravel mixture, little or no fines.
		GM	Silty gravels, poorly graded gravel-sand-silt mixture
		GC	Clayey gravels, poorly graded gravel-sand-clay mixtures.
SANDS More than half of coarse fraction smaller than No. 4 sieve size		SW	Well graded sand or gravelly sands, little or no fines.
		SP	Poorly graded sand or gravelly sands, little or no fines.
		SM	Silty sands, poorly graded sand-silt mixtures
		SC	Clayey sands, poorly graded sand-clay mixtures.
SILTS AND CLAYS More than half of coarse fraction smaller than No. 4 sieve size		ML	Inorganic silts and very fine sands of low to medium plasticity.
		CL	Inorganic clays of low to medium plasticity.
		OL	Organic silts and organic silty clays of low plasticity.
SILTS AND CLAYS Liquid Limit more than 50%		MH	Inorganic silts and very fine sands of low to medium plasticity.
		CH	Inorganic clays of low to medium plasticity.
		OH	Organic silts and organic silty clays of low plasticity.
HIGHLY ORGANIC SOILS		Pt	Peats and other highly organic soils.

TYPE OF TEST OR SAMPLE	
A - Auger Sample. P - Split Barrel Sample with Standard Penetration Test.	C - Rotary Coring Sample. S - Thin wall Tube (Shelby Tube) Sample. T - THD Cone Penetrometer Test.

CONSISTENCY OF SOILS			
Sand		Clay	
Descriptive Term	"N" Value (BL/LF)	Descriptive Term	"N" Value (BL/LF)
Very Loose	0 - 4	Very Soft	Less than 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Firm	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Greater than 50	Very stiff	15 - 30
		Hard	Greater than 30

FIELD AND LABORATORY TESTING PROCEDURES

(TEST PROCEDURES ARE PRESENTED FOR INFORMATIONAL PURPOSES)

FIELD TESTING

A. Boring Procedure between Samples

The borehole is extended downward, between samples, by continuous flight, hollow or solid stem augers or by rotary drilling techniques using bentonite drilling fluid or water.

B. Penetration Test and Split-Barrel Sampling of Soils (ASTM D-1586)

This sampling method consists of driving a 2 inch outside diameter split barrel sampler using a 140 pound hammer freely falling through a distance of 30 inches. The sampler is first seated 6 inches into the material to be sampled and then driven an additional 12 inches. The number of blows required to drive the sampler the final 12 inches is known as the Standard Penetration Resistance. Recovered samples are first classified as to color and texture by the driller. Later, in the laboratory, the driller's field classification is reviewed by the soils engineer who examines each sample.

C. Thin-walled Tube Geotechnical Sampling of Soils (ASTM D-1587)

This method consists of pushing thin walled steel tubes, usually 3 inches in diameter, into the soils to be sampled using hydraulic or other means. Cohesive soils are usually sampled in this manner and relatively undisturbed samples are recovered.

D. Soil Investigation and Sampling by Auger Borings (ASTM D-1452)

This method consists of augering a hole and removing representative soil samples from the auger flight or bit at 5 foot intervals or with each change in the substrata. Disturbed samples are obtained and this method is, therefore, limited to situations where it is satisfactory to determine the approximate subsurface profile.

E. Diamond Core Drilling for Site Investigation (ASTM D-2113)

This method consists of advancing a hole into hard strata by rotating a single or double tube core barrel equipped with a cutting bit. Diamond, tungsten carbide, or other cutting agents may be used for the bit. Wash water is used to remove the cuttings and to cool the bit. Normally, a 2 inch outside diameter by 1-3/8 inch inside diameter (NX) coring bit is used unless otherwise noted. The rock or hard material recovered within core barrel is examined in the field and in the laboratory and the core samples are stored in partitioned boxes. The core recovery is the length of material recovered and is expressed as a percentage of the total distance penetrated.

LABORATORY TESTING

A. Atterberg Limits: Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D-4318, TEX 104-E, 105-E and 106-E)

Atterberg Limits determine the soil's plasticity characteristics. The soil's Plasticity Index (PI) is representative of this characteristic and is the difference between the Liquid Limit (LL) and the Plastic Limit (PL). The LL is the moisture content at which the soil will flow as a heavy viscous fluid. The PL is the moisture content at which the soil begins to lose its plasticity. The test results are presented on the boring logs adjacent to the appropriate sampling information.

B. Particle Size Analysis of Soils (ASTM D-422 and TEX 110-E)

Grain size analysis tests are performed to determine the particle size and distribution of the samples tested. The grain size distribution of the soils coarser than the Standard Number 200 sieve was determined by passing the sample through a standard set of nested sieves. The results are given on the gradation sheets in the appendix.

C. Laboratory Determination of Water (Moisture) Content of Soil and Rock (ASTM D-2216 and TEX 103-E)

The moisture content of soil is defined as the ratio, expressed as a percentage, of the weight of water in a given soil mass to the weight of solid particles. It is determined by measuring the wet and oven dry weights of a soil sample. The test results are presented on the boring logs.

D. Unconfined Compressive Strength of Cohesive Soil (ASTM D-2166)

The unconfined compressive strength of soil is determined by placing a section of an undisturbed sample into a loading frame and applying an axial load until the sample fails in shear. The test results are presented on the boring logs adjacent to the appropriate sampling information.

E. California Bearing Ratio (CBR) of Lab Compacted Soils (ASTM D-1883)

The CBR test is performed by compacting soil in a six inch diameter mold at the desired density, soaking the sample for four days under a surcharge load approximating the pavement weight and then testing the soil in punching shear. A two inch diameter piston is forced into the soil to determine the resistance to penetration. The CBR is the ratio of the actual load required to produce 0.1 inches of penetration to that producing the same penetration in a standard crushed stone.

F. Swell Test (ASTM D-4546)

The Swell Test is performed by compacting soil in a steel mold at varying moisture contents. Layers are compacted using a hammer weight and number of blows per layer which vary with the different test procedures. ASTM D-698, D-1557, TEX-113-E and 114 E. The data is plotted and the maximum unit weight and optimum moisture content determined. The test results are given in the appendix with a notation of the test method used.

G. Compaction Tests (ASTM D-698, D-1557, TEX 113E or 114-E)

The compaction test is performed by compacting soil in a steel mold at varying moisture contents. Layers are compacted using a hammer weight and number of blows per layer which vary with the different test procedures, ASTM D-698, D-1557, TEX-113-E and 114-E. The data is plotted and the maximum unit weight and optimum moisture content determined. The test results are given in the appendix with a notation of the test method used.

RECOMMENDED SPECIFICATIONS FOR PLACEMENT OF COMPACTED SELECT FILL

1. General

The soils engineer shall be the owners' representative to control the placement of compacted fill. The soils engineer shall approve the subgrade preparation, the fill materials, the method of placement and compaction; and shall give written approval of the completed fill.

2. Preparation of Existing Ground

All topsoil, plants and other organic material shall be removed. The exposed surface shall be scarified, moistened if necessary, and compacted in the manner specified for subsequent layers of fill.

3. Select Fill Material

Fill shall have a liquid limit of 37 or less and a Plasticity Index between 7 and 18. The fill shall contain no organic or other perishable material, and no stones larger than six (6) inches. The soils engineer shall approve select fill material.

4. Placing Fill

Fill materials shall be placed in horizontal layers not exceeding eight (8) inches thickness after compaction. Successive loads of material shall be dumped so as to secure even distribution avoiding the formation of layers or lenses of dissimilar materials. The contractor shall route his hauling equipment to distribute travel evenly over the fill area.

5. Compaction of Fill

- a. Moisture Control: The moisture content of the fill material shall be distributed uniformly throughout each layer of the material. The allowable range of moisture content during compaction shall be within plus two (+2) and minus two (-2) percentage points of the optimum moisture content. The contractor may be directed to add necessary moisture to the material either in the borrow area or upon the fill surface or to dry the material, as directed by the soils engineer. The drying of cohesive soils between lifts to moisture contents less than seventy percent (70 %) of optimum before the placement of subsequent lifts shall be avoided or the fill reworked at the proper moisture content.
- b. Compaction: The material in each layer shall be compacted to obtain proper densities. Compaction by the hauling equipment alone will not be considered sufficient. Structural fills, including pavement subgrade, sub base and base, shall be compacted to densities equivalent to the percentages of the Standard Proctor (ASTM D-698) or the Modified Proctor (ASTM D-1557) maximum dry density listed in Table I. The Texas Department of Highways and Public Transportation Method TEX-113-E compaction test, which varies the compactive effort with soil type, may be substituted for the Standard or Modified Proctor methods and the percentages listed in table I used.

TABLE I		
AREA	PERCENT COMPACTION	
	Fine Grained Soils ASTM D-698 Standard Proctor	Coarse Grained Soils ASTM D-1557 Modified Proctor
Within five (5) feet of building lines, under footings floor slabs, slab-on-grade foundations and structures attached to buildings (i.e. walls, patios, steps)	95	95 +
More than five (5) feet beyond building lines, under walks, and fill areas to be landscaped	90	90
Pavement subgrade and subbase, including lime treated soils	95	95 +
Flexible Base	N/A	98

Soils classified as coarse grained soils are those with more than fifty (50) percent, by weight, retained on the No. 200 Standard Sieve and with plasticity indices of less than 4.

6. Compaction Testing

A qualified testing laboratory in accordance with recognized procedures for making such tests shall perform Field density tests for the determination of the compaction of the fill. A representative number of tests shall be made in each compacted lift at locations selected by the soils engineer or his representative. For general structural and paving fills, we suggest one test per 3,000 square feet per lift with a minimum of three tests per lift.



SpectraPave4 PRO™ Pavement Optimization Design Analysis



Standard Asphalt Pavement - TWH Edition - 2014/08/26

Design Parameters for AASHTO (1993) Equation

Reliability (%)	= 95	Initial Serviceability	= 4.2
Standard Normal Deviate	= -1.645	Terminal Serviceability	= 2.5
Standard Deviation	= 0.45	Change in Serviceability	= 1.7

Aggregate fill shall conform to following requirement:

D50 <= 27mm (Base course)

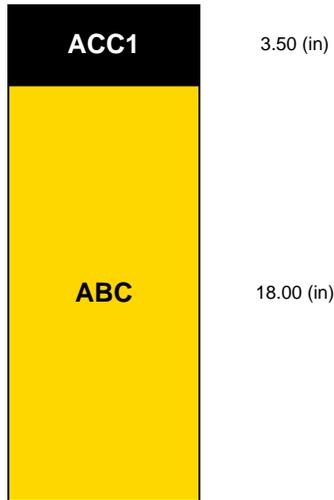
Unstabilized Section Material Properties

Layer	Description	Cost (\$/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ABC	Aggregate Base Course	20	0.140	1.0

Stabilized Section Material Properties

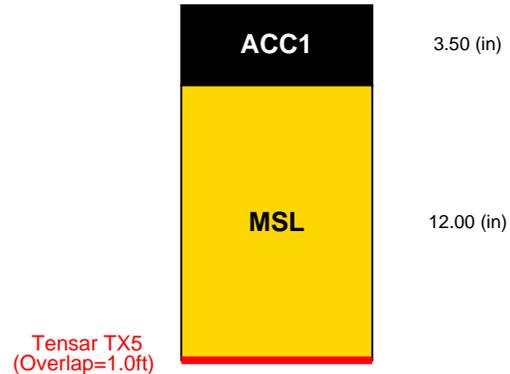
Layer	Description	Cost (\$/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
MSL	Mechanically Stabilized Base Cour	20	0.210	1.0

Unstabilized Pavement



Subgrade Modulus = 9,649 (psi)
Structural Number = 4.060
Calculated Traffic (ESALs) = 3,250,000

Stabilized Pavement



Subgrade Modulus = 9,649 (psi)
Structural Number = 4.060
Calculated Traffic (ESALs) = 3,250,000

LIMITATIONS OF THE REPORT

The designs, illustrations, information and other content included in this report are necessarily general and conceptual in nature, and do not constitute engineering advice or any design intended for actual construction. Specific design recommendations can be provided as the project develops.

Project Name	S&B Infrastructure, Inc. - Espejo Gates County Rd.		
Company Name	Howland Engineering and Surveying Co., Inc.		
Designer	SG	Date	01-16-15

Printed on 01-16-2015 C:\Tensar International Corporation\SpectraPave4 PRO\Untitled.sp4p



SpectraPave4 PRO™ Pavement Optimization Design Analysis



Standard Asphalt Pavement - TWH Edition - 20140826

Design Parameters for AASHTO (1993) Equation

Reliability (%)	= 95	Initial Serviceability	= 4.2
Standard Normal Deviate	= -1.645	Terminal Serviceability	= 2.5
Standard Deviation	= 0.45	Change in Serviceability	= 1.7

Aggregate fill shall conform to following requirement:

D50 ≤ 27mm (Base course)

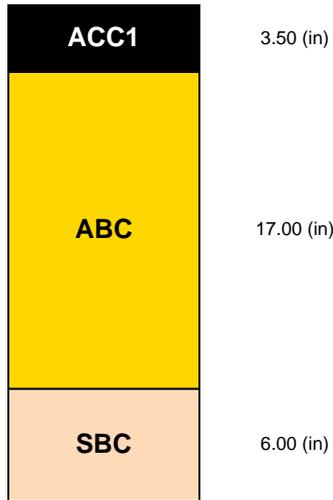
Unstabilized Section Material Properties

Layer	Description	Cost (\$/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ABC	Aggregate Base Course	20	0.110	1.0
SBC	Subbase Course	16	0.110	1.0

Stabilized Section Material Properties

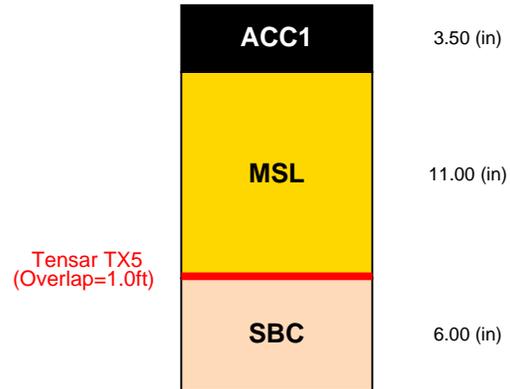
Layer	Description	Cost (\$/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
MSL	Mechanically Stabilized Base Cour	20	0.169	1.0
SBC	Subbase Course	16	0.110	1.0

Unstabilized Pavement



Subgrade Modulus = 9,649 (psi)
 Structural Number = 4.070
 Calculated Traffic (ESALs) = 3,301,000

Stabilized Pavement



Subgrade Modulus = 9,649 (psi)
 Structural Number = 4.059
 Calculated Traffic (ESALs) = 3,245,000

LIMITATIONS OF THE REPORT

The designs, illustrations, information and other content included in this report are necessarily general and conceptual in nature, and do not constitute engineering advice or any design intended for actual construction. Specific design recommendations can be provided as the project develops.

Project Name	S&B Infrastructure, Inc. - Espejo Gates County Rd.		
Company Name	Howland Engineering and Surveying Co., Inc.		
Designer	SG	Date	01-16-15

Printed on 01-16-2015 C:\Tensar International Corporation\SpectraPave4 PRO\Untitled.sp4p



SpectraPave4 PRO™ Pavement Optimization Design Analysis



Design Parameters for AASHTO (1993) Equation

Reliability (%)	= 95	Initial Serviceability	= 4.2
Standard Normal Deviate	= -1.645	Terminal Serviceability	= 2.5
Standard Deviation	= 0.45	Change in Serviceability	= 1.7

Aggregate fill shall conform to following requirement:

D50 ≤ 27mm (Base course)

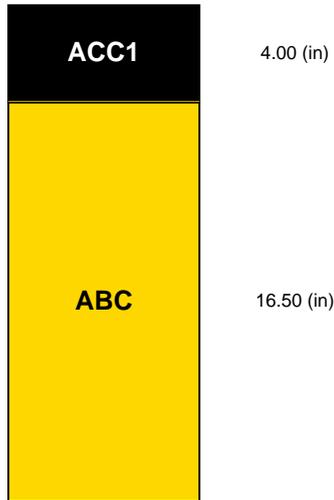
Unstabilized Section Material Properties

Layer	Description	Cost (\$/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ABC	Aggregate Base Course	20	0.140	1.0

Stabilized Section Material Properties

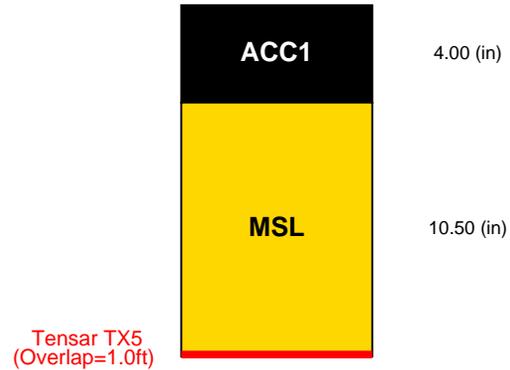
Layer	Description	Cost (\$/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
MSL	Mechanically Stabilized Base Cour	20	0.220	1.0

Unstabilized Pavement



Subgrade Modulus = 9,649 (psi)
Structural Number = 4.070
Calculated Traffic (ESALs) = 3,301,000

Stabilized Pavement



Subgrade Modulus = 9,649 (psi)
Structural Number = 4.070
Calculated Traffic (ESALs) = 3,301,000

LIMITATIONS OF THE REPORT

The designs, illustrations, information and other content included in this report are necessarily general and conceptual in nature, and do not constitute engineering advice or any design intended for actual construction. Specific design recommendations can be provided as the project develops.

Project Name	S&B Infrastructure, Inc. - Espejo Gates County Rd.		
Company Name	Howland Engineering and Surveying Co., Inc.		
Designer	SG	Date	01-16-15



SpectraPave4 PRO™ Pavement Optimization Design Analysis



Design Parameters for AASHTO (1993) Equation

Reliability (%)	= 95	Initial Serviceability	= 4.2
Standard Normal Deviate	= -1.645	Terminal Serviceability	= 2.5
Standard Deviation	= 0.45	Change in Serviceability	= 1.7

Aggregate fill shall conform to following requirement:

D50 ≤ 27mm (Base course)

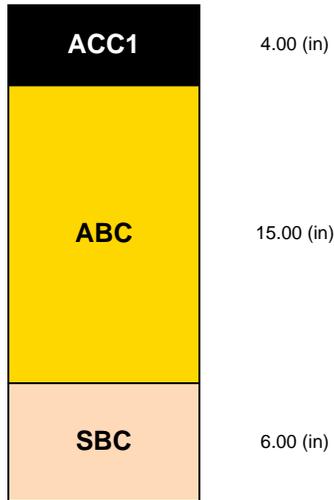
Unstabilized Section Material Properties

Layer	Description	Cost (\$/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ABC	Aggregate Base Course	20	0.110	1.0
SBC	Subbase Course	16	0.110	1.0

Stabilized Section Material Properties

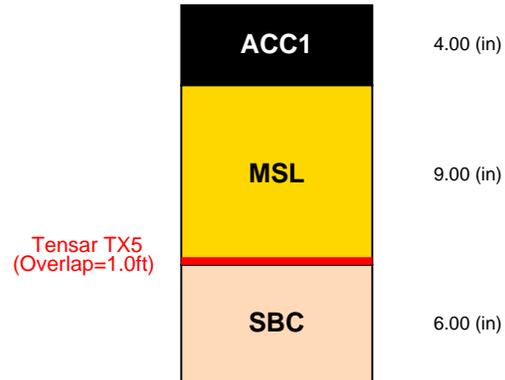
Layer	Description	Cost (\$/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
MSL	Mechanically Stabilized Base Cour	20	0.180	1.0
SBC	Subbase Course	16	0.110	1.0

Unstabilized Pavement



Subgrade Modulus = 9,649 (psi)
Structural Number = 4.070
Calculated Traffic (ESALs) = 3,301,000

Stabilized Pavement



Subgrade Modulus = 9,649 (psi)
Structural Number = 4.040
Calculated Traffic (ESALs) = 3,149,000

LIMITATIONS OF THE REPORT

The designs, illustrations, information and other content included in this report are necessarily general and conceptual in nature, and do not constitute engineering advice or any design intended for actual construction. Specific design recommendations can be provided as the project develops.

Project Name	S&B Infrastructure, Inc. - Espejo Gates County Rd.		
Company Name	Howland Engineering and Surveying Co., Inc.		
Designer	SG	Date	01-16-15

Important Information about Your Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply the report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that

have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely on Your ASFE-Member Geotechnical Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

Copyright 2004 by ASFE, Inc. Duplication, reproduction, or copying of this document, in whole or in part, by any means whatsoever, is strictly prohibited, except with ASFE's specific written permission. Excerpting, quoting, or otherwise extracting wording from this document is permitted only with the express written permission of ASFE, and only for purposes of scholarly research or book review. Only members of ASFE may use this document as a complement to or as an element of a geotechnical engineering report. Any other firm, individual, or other entity that so uses this document without being an ASFE member could be committing negligent or intentional (fraudulent) misrepresentation.