INVITATION TO BIDDERS – KENDALL COUNTY WCID #3A IMPROVEMENTS
Corley Farms Unit 3

Sealed Bids, in duplicate, addressed to **Pulte Homes of Texas, L.P. on behalf of Kendall County Water Control and Improvement District No. 3A**, will be **electronically** received, until **2:00 p.m.** Local Time, **October 25th, 2023**, and then publicly opened and read for "**Corley Farms Unit 3** for **Kendall County Water Control and Improvement District No. 3A**, Kendall County, Texas." To electronically submit your bid package visit www.CivcastUSA.com: search **Corley Farms Unit 3**: then click "Bid."

Scope of Work of the Contract includes the following: The installation of streets, drainage, sewer, water, grading and SWPPP infrastructure required for the construction of a residential subdivision unit.

Bids received after the closing time will be returned unopened. A **MANTADORY** pre-bid conference will be held on **October 12th, 2023**, at **2:00 p.m.** Local Time. The meeting will be held in person at Cude Engineers (4122 Pond Hill Road, Ste. 101, San Antonio Texas, 78231). Attendance by each prospective bidder or its representative at the pre-bid conference is mandatory, and NO BID WILL BE ACCOUNTED FOR UNLESS A CONSTRUCTION SCHEDULE IS INCLUDED IN THE BID PACKAGE.

Each Bid must be accompanied by a Bid Bond or a certified or cashier's check, acceptable to the Owner, in an amount not less than five percent (5%) of the total amount Bid, as a guarantee that the successful bidder will enter into the Contract and execute the Bonds on the forms provided and provide the required insurance certificates within seven (7) days after the date Contract Documents are received by the Contractor. If a certified or cashier's check is provided, the successful bidder shall deliver the original certified or cashier's check within twenty-four (24) hours of receipt of the bid opening.

Copies of the bidding documents may be obtained from www.CivcastUSA.com: search **Corley Farms Unit 3**. Bidders must register on this website in order to view and/or download any document for this Project. There is NO charge to view or download documents.

Bidder must submit its Bid and bid securities in compliance with Owner's Order Adopting Section 49.2731 Electronic Bidding Rules and all Bids and bid securities must be submitted through www.CivcastUSA.com. Bidder must register on this website to submit a Bid and bid security, there is no charge to submit Bids and bid securities on this website.

By submitting a Bid, Bidder acknowledges and agrees that the Contract Documents may be accepted, executed, or agreed to through the use of an Electronic Signature, as defined by and in accordance with Owner's Electronic Signature Rules for Construction Contracts.

The Owner reserves the right to reject any or all Bids and to waive all defects and irregularities in bidding or bidding process except time of submitting a Bid. The Successful Bidder, if any, will be the responsible Bidder which in the Board's judgment will be most advantageous to the District and result in the best and most economical completion of the Project.

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

AVAILABLE PROJECT INFORMATION

PART 1 GENERAL

1.01 EXISTING CONDITIONS

A. Certain information relating to existing surface and subsurface conditions and structures is available to Bidders but will not be part of the Contract Documents, as follows:

B. Site and Utility Survey(s):
   1. This will be provided on Civcast and will consist of a CAD file with existing ground, existing utilities and improvements. This file is to be verified by the contractor prior to submitting the bid proposal.
   2. This survey file identifies grade elevations prepared primarily for the use of Engineer in establishing new grades and identifying natural water shed.
   3. Cat 1A Survey will be provided on Civcast (PDF).

C. Geotechnical Report(s):
   1. This will be provided on Civcast (PDF).
   2. This report identifies properties of below grade conditions and is for informational purposes only. The report is not a warranty of surface or subsurface conditions, nor is it part of the Contract Documents.

1.02 PRELIMINARY DATA

A. Certain preliminary investigations and studies made by the Owner are available to the Bidders but will not be part of the Contract Documents, as follows:

B. Tree Preservation Plan will be provided on Civcast (PDF).

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 PERMITS

A. The following permits are known to be required and shall be obtained by the Contractor:
   1. The Contractor will be responsible for compliance with the Storm Water Pollution Prevention Plan (SWPPP) prepared by others for Owner, and file as an Operator as required for coverage under State of Texas General Permit No. TXR150000. SWPPP to be provided to contractor prior to construction.
   2. Kendall County Water Control and Improvements District No. 3A. approval for onsite construction.
   3. Kendall County Construction Permit where working within Kendall County right-of-way (ROW).
   4. City of Boerne for gas construction, sewer construction to tie to existing CoB sewer, and any construction within CoB right-of-way.

B. The successful Bidder will be required to obtain all other permits necessary to perform the work contemplated for this project.

END OF AVAILABLE PROJECT INFORMATION

INSTRUCTIONS TO BIDDERS

INVITATION

1.01 PROJECT IDENTIFICATION

A. Project Name: Corley Farms Unit 3

B. Cude Engineers Project Numbers: R03481.007.0

C. Contract Number:

D. The Owner, hereinafter referred to as Owner: Pulte Homes of Texas, L.P. on behalf of Kendall County Water Control and Improvement District No.3A.
   1. Sales Tax Exemption Number:_____.

E. Owner's Representative: Sean Miller
   1. Corporate Name: Pulte Homes of Texas, L.P.
   2. Address: 1718 Dry Creek Way, Suite 120
   3. City, State, Zip: San Antonio, Texas 78259.
   4. Phone: (210) 581-8812
   5. E-mail: Sean.Miller@PulteGroup.com

1.02 BID SUBMISSION

A. Bids signed and under seal, executed, and dated will be received via www.CivcastUSA.com: search Corley Farms Unit 3 until 2:00 pm CST on October 25th, 2023.

B. Offers submitted after the above time will not be accepted.

C. Submit required Supplements to Bid Forms with the Bid Documents.

D. Offers will be publicly opened immediately after the time for receipt of Bids.

1.03 REJECTION

A. The Owner reserves the right to reject any and all Bids, and to waive any irregularities or information.

1.04 DELIVERY OF PROPOSALS

A. It is the Bidder's responsibility to deliver the proposal at the proper time through www.CivcastUSA.com. The mere fact that a proposal was dispatched will not be considered. The Bidder must have the proposal delivered as specified in 1.02.

1.05 INTENT

A. The intent of this Bid request is to obtain an offer to perform work for a Stipulated Sum Contract, in accordance with the Contract Documents.

1.06 WORK IDENTIFIED IN THE CONTRACT DOCUMENTS

A. Work of this proposed Contract comprises of the installation of streets, drainage, sewer, water, grading and SWPPP infrastructure required for the construction of a residential subdivision unit.

B. Location: Corley Farms Unit 3 is generally located west of Scenic Loop Road at the intersection of Corley Rd. and Vallerie Ln and west of Unit 2.

1.07 CONTRACT TIME

A. Owner requires that the work under this Contract be completed as quickly as possible and consideration will be given to time of completion when reviewing the submitted Bids and awarding the Contract.

BID DOCUMENTS AND CONTRACT DOCUMENTS

2.01 DEFINITIONS

A. Bid Documents: Contract Documents supplemented with Instructions to Bidders, Bid Form, Supplements to Bid Forms and Appendices identified.

B. Bid, Offer, or Bidding: Act of submitting an offer under seal.

C. Bid Amount: Monetary sum identified by the Bidder in the Bid Form.

2.02 CONTRACT DOCUMENTS IDENTIFICATION

A. The Contract Documents are identified as Project Number 03481.007.0, Contract No. ____, as prepared by Cude Engineers who is located at 4122 Pond Hill Rd, Suite 101, San Antonio, TX 78231, and with contents as identified in the Table of Contents.

2.03 AVAILABILITY

A. Complete sets of Bidding Documents shall be used in preparing Bids.

B. Neither the Owner nor the Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

C. Copies of the bidding documents may be obtained from www.CivcastUSA.com: search Corley Farms Unit 3. Bidders must register on this website in order to view and/or download specifications, plans, soils report, and environmental reports for this Project. There is NO charge to view or download documents.

D. Subcontractors requiring Drawings and Project Manuals must obtain them from General Contractors.

E. Bid Documents are made available only for the purpose of obtaining offers for this Project. Their use does not grant a license for other purposes.

2.04 EXAMINATION

A. Bidders shall carefully examine the Bidding Documents and the Construction Site to familiarize themselves with existing local conditions under which the work is to be performed.

B. Bidders shall carefully examine the Bidding Documents to verify that they agree with the Table of Contents in the Project Manual, the Index of Drawings Sheet on the Drawings, and the Cover Page of all Addenda. Bidders shall be responsible for obtaining any pages or sheets which may have been inadvertently left out during the printing process.

C. All Bidders and Sub-Bidders acknowledge and agree that any information that they may have obtained from Owner or its Engineer relating to site conditions (including surface, sub-surfaces and existing structures, if any), availability of materials or labor, applicable statutes, ordinances, or regulations, and any other information not specifically provided for otherwise in the proposed Contract Documents, including Drawings and Specifications, shall be for general information purposes only, and Owner does not warrant or represent the accuracy or completeness thereof. All Bidders and Sub-Bidders agree that they shall and, by submission of a Bid, do warrant and represent that they have made their own independent investigation of

such matters, have reached their own conclusion with respect thereto, and have relied completely on their own such investigations in connection with the preparation of their Bid.

D. Upon receipt of Bid Documents verify that documents are complete. Notify Engineer should the documents be incomplete.

E. Immediately notify Engineer upon finding discrepancies or omissions in the Bid Documents.

2.05 INQUIRIES/ADDENDA

A. Bidders shall promptly notify the Engineer of any ambiguity, inconsistency or error which they may discover upon examination of the Bidding Documents or of the site and local conditions. Conflict in documents not brought to the attention of the Engineer during bidding shall be deemed to be provided at no additional cost.

B. Bidders desiring further information or further interpretation of any part of the Contract Documents are hereby obligated to submit a written request online to the www.CivcastUSA.com system for such information to Engineer not less than 7 calendar days before the Bid opening. Answers to these requests will be given, in writing, to all bidders as addenda to the Contract, and each addendum will be made a part of the Contract. No explanation or interpretation of the Contract, other than written addenda, shall be binding.

C. Addenda may be issued during the bidding period. All Addenda become part of the Contract Documents. Include resultant costs in the Bid Amount.

D. Verbal answers are not binding on any party.

2.06 PRODUCT/ASSEMBLY/SYSTEM SUBSTITUTIONS

A. Where the Bid Documents stipulate a particular product, substitutions will be considered up to five (5) days before receipt of Bids.

B. When a request to substitute a product is made, Engineer may approve the substitution and will issue an Addendum to known Bidders.

C. In submission of substitutions to products specified, Bidders shall include all changes required in the Work and changes to Contract Time and Contract Price to accommodate such substitutions. A later claim by the Bidder for an addition to the Contract Time or Contract Price because of changes in work necessitated by use of substitutions shall not be considered.

D. The submission shall provide sufficient information to determine acceptability of such products.

E. Provide complete information on required revisions to other work to accommodate each proposed substitution.

F. Provide products as specified unless substitutions are submitted in this manner and accepted.

SITE ASSESSMENT

3.01 SITE EXAMINATION

A. Examine the project site before submitting a Bid.

B. Extra payments will not be authorized for work that could have been foreseen by careful examination of the Site. Submission of a Bid shall constitute acceptance, by the Bidder, of existing Site conditions as a part of the requirements for this work.

C. The Contractor shall have access to the premises during the bidding period for the purposes of acquainting himself with the conditions.

D. The Contractor shall not enter or have access to the site in order to perform the work without first having given timely notice to the Owner so that the necessary arrangements may be made to enter or have access.

3.02 PREBID CONFERENCE

A. A Pre-Bid Conference has been scheduled for 2:00 p.m. on October 12th, 2023. The meeting will be held in person at Cude Engineers (4122 Pond Hill Road, Ste. 101, San Antonio Texas, 78231).

B. Representatives of Engineer will be in attendance.

C. No Addendum will be issued at the Pre-Bid Conference, but an Addendum will be issued afterwards, if necessary, to answer questions presented at the Conference.

3.03 BASIS OF BIDS

A. Bids shall be on a lump sum price basis and shall include all costs for Corley Farms Unit 3 as described and shown by the Contract Documents. This total will be utilized in evaluating the Bid for award. Basis for Bidding shall include brands, materials, processes, products, persons or organizations, etc., indicated in the Contract Documents.

B. Bids shall include all Unit Price costs as indicated by the Contract Documents and Bid Form. The Bid price submitted by the Contractor shall be a lump sum price. Unit prices are requested for the purposes of establishing costs for additional work and to evaluate the Bids. The Contractor shall guarantee himself of the accuracy of the quantities shown in the Bid Form. Any quantities shown are estimates only and indicate only the magnitude of the project and a basis for Bid comparison. Any discrepancies in quantity or work necessary to fulfill the intent of the plans shall be included, whether a Bid item is included or not. Any work required for which a Bid item is not shown shall be considered subsidiary to other work items.

C. Contractor is to perform an independent quantity take-off prior to submitting the Bid, to verify that any quantities given in the Bid proposal are within five percent (5%) of the actual quantities required to complete the construction represented by the plans and specifications. If any quantity is found to be in error of more than five percent (5%), the Contractor shall notify the Engineer no later than five (5) days prior to the Bid due date.

D. Bids shall include all Alternate costs as indicated by the Contract Documents and Bid Form.

E. The Contractor undertakes and accepts that the Contract Documents are meant to include or imply all items required for the proper execution of the Work. Any items mentioned in the specifications and not shown in the drawings, or the reverse, shall be provided as if shown or mentioned in both.

3.04 ALTERNATES

A. The Owner may, at its option, elect to proceed with any or all Alternates as set forth in the Bidding Requirements.

B. Amount shown on Bid Form for each Alternate shall include profit, insurance, contingencies, and other costs incidental to performance under such Alternative.

C. Amount shown on Bid Form for Each Alternate shall include the making of all changes and the installation of all materials and equipment necessary to the accomplishment of the Alternate requirements.

D. Refer to the respective Section for complete Specifications of each Alternate.

E. If an Alternate is accepted, it shall be included as part of the Contract Document.

3.05 VOLUNTARY ALTERNATES

A. The Contractor shall submit a list of voluntary cost-saving alternates for consideration. The list shall be submitted along with the Bid.
   1. Amount shown in Bid for each Alternate shall include profit, insurance contingencies and other costs incidental to performance under such Alternative.
   2. Amount shown in Bid for each Alternate shall include the making of all changes and the installation of all materials and equipment necessary to the accomplishment of the Alternate requirements.

3.06 UNIT PRICES

A. Authorized work, done in addition to that indicated by the Contract Documents, will be paid for as an extra according to the Unit Price Schedule. Costs of authorized omissions of work from that indicated by the Contract Documents will be deducted from the Contract amount according to the Unit Price Schedule.

B. Amounts shown on the Unit Price Schedule shall be total compensation; labor, materials, fees, taxes, profit, overhead and insurance and other expenses to be added or deducted from the Contract amount.

C. Unit Price Schedule form is included with the Bid Form and shall be a part of the Agreement.

3.07 BIDS

A. Bids shall be made on unaltered Bid Forms furnished by the Engineer. No oral, telephonic, or personal Proposals will be considered. All blank spaces shall be properly filled in by typewriter or manually in ink.

B. Where so indicated by the makeup of the Bid Form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the written word amount shall govern.

C. Any alteration or erasure to information entered in the blank spaces must be initialed by the signer of the Bid. Bidder shall make no additional stipulations on the Bid Form nor qualify his Bid in any other manner.

D. Original typed sheets shall be submitted, signed in longhand below the typed name of the person authorized to bind the Bidder to a Contract.

E. Where Bidder is a corporation, Bid must be signed with the legal name of the corporation followed by the name of the State of Incorporation and the legal signature of a person authorized to bind the corporation to a Contract.

F. The Bid must be accompanied by a sealed envelope marked “List of Subcontractors” containing a list of the names and addresses of all proposed Subcontractors on the project, a general description of the Work to be performed by each and an estimated dollar value of each Subcontract.

G. Upon submittal of his Bid, each Bidder shall sign a statement declaring that he has received and understands each Addendum which might be prepared during the course of the Bid process.

H. Failure to submit a Bid in the form requested or the inclusion of conditions, limitations or provisions distorting the intent of the Bid Documents, will render the Bid irregular and subject to rejection.

QUALIFICATIONS

4.01 EVIDENCE OF QUALIFICATIONS

A. To demonstrate qualification for performing the Work of this Contract, Bidders may be requested to submit written evidence of financial position, prior relevant work experience, and license to perform work in the State.

B. Owner reserves the right to reject a Bid as noted in 5.04 H, below.

4.02 SUBCONTRACTORS/SUPPLIERS/OTHERS

A. Owner reserves the right to reject a proposed Subcontractor for reasonable cause.

B. Refer to General Conditions.

BID SUBMISSION

5.01 SUBMISSION PROCEDURE

A. Bidders shall be solely responsible for the delivery of their Bids in the manner and time prescribed.

B. Submit one digital copy of the executed offer on the Bid Forms provided via www.CivcastUSA.com: search Corley Farms Unit 3, signed and sealed, clearly identified with Bidder's name, project name and Owner's name on the Bids.

C. Improperly completed information or irregularities in security deposit may be cause not to open the Bid Form envelope and declare the Bid invalid or informal.

5.02 MODIFICATION OR WITHDRAWAL OF BID

A. Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids.

B. Prior to the time and date designated for receipt of Bids, Bids submitted early may be modified or withdrawn only by notice to the party receiving Bids at the place and prior to the time designated for receipt of Bids.

C. Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these instructions to Bidders.

5.03 BID INELIGIBILITY

A. Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at the discretion of the Owner, be declared unacceptable.

B. Bid Forms, Appendices, and enclosures that are improperly prepared may, at the discretion of Owner, be declared unacceptable.

C. Failure to provide security deposit, bonding or insurance requirements may, at the discretion of Owner, invalidate the Bid.

D. Bids are open to the public.

5.04 CONSIDERATION OF BIDS

A. Properly identified Bids received on time will be publicly opened on October 25, 2023, at 2:00 p.m.

B. Owner reserves the right to reject any or all Bids submitted, to enter into negotiations with any Bidder hereunder; to alter the Contract by agreement in writing with the successful Bidder; or to take such other steps as may ensure its complete freedom of action in selecting the successful Bidder, all without any obligation or liability whatsoever to any Bidder hereunder.

C. All Bidders shall be completely responsive to these specifications; however, should the Bidder, through his own experience, wish to make alternate suggestions regarding any phase of the scope, terms, procedures, or frequencies, he may do so as an alternate and such suggestions must be in a separate letter enclosed with this Bid.

D. The Owner shall have the right to reject any or all Bids and in particular to reject a Bid that is not accompanied by any required Bid Security or data required by the Bidding Documents or a Bid in any way incomplete or irregular.

E. The Owner shall have the right to waive any informality or irregularity in any Bid received.

F. If the Owner accepts any Alternatives, he shall have the right to accept them in any order or combination.

G. Award of Contract may include full consideration of completion time, unit prices, and Alternates. Owner may accept or reject any or all Alternates.

H. Owner shall have the right to make such inquiries as it seems appropriate to determine the ability of the Bidder to perform the work and the Bidder shall furnish Owner such information for this purpose as Owner may request. The right is reserved to reject any proposal where information submitted by such Bidder does not satisfy Owner that the Bidder is qualified to carry out properly the terms of the Contract.

I. The Owner reserves the right to let other Contracts in connection with this Work. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his work with theirs.

J. The successful Bidder to whom the Contract is awarded shall, within nine (9) days, execute the necessary bonds and sign the Agreement. Failure to do so will be considered abandonment by the Owner.

K. Prior to any work beginning Contractor must adhere to the following requirements:
   1. A fully executed Contract between Owner and Contractor.
   2. A Certificate of Insurance showing that the insurance requirements outlined herein have been met.

BID ENCLOSURES/REQUIREMENTS

6.01 SECURITY DEPOSIT

A. Bids shall be accompanied by a security deposit as follows:
   1. For Bid Amounts up to $200,000, a Bid Security of a sum no less than five percent (5%) of the Bid Amount in the form of a certified check or bank check, or
   2. For Bid Amounts in excess of $200,000, a Bid Security of a sum no less than five percent (5%) of the Bid Amount in the form of a Bid Bond issued by a surety acceptable to Owner.

B. Endorse the Bid Bond in the name of the Owner as obligee, signed and sealed by the principal (Contractor) and surety.

C. The Bid Security will be returned to all but the three (3) most qualified, responsible Bidders within five (5) days after opening of the Bids, and the latter's Bid Security will be returned after complete execution of the Agreement.

F. If no Contract is awarded, all Bid Securities will be returned.

6.02 PERFORMANCE ASSURANCE

A. Within five (5) days of receipt from the Owner of the notice of award of the Agreement, the successful Bidder shall submit to Engineer the original Performance Bond, Maintenance Bond, Payment Bond, and One Year Surface Correction Bond (the "Bonds") and all information necessary to complete the Contract Documents, including the Schedule of Completion and Contractor's safety program. Engineer shall then prepare the final Contract Documents and forward them to the successful Bidder for execution. The successful Bidder shall return the signed Contract Documents to Engineer within four (4) days of receipt, or Owner may disqualify the Bid and accept another Bid and the Bidder shall, at Owners option, forfeit its Bid Security.

6.03 INSURANCE

A. Paragraph 5.04 of the General Conditions requires Contractor to carry certain insurances during performance of the Contract. Bidders shall state the limits of such insurances which they will carry and the names of the insurance carriers in the blank spaces provided in the proposal form.

B. Contractor must provide Owner with evidence of the minimum insurance requirements expressed in the General Conditions. In no way do these minimum requirements limit the liability assumed elsewhere in this Agreement.

1. Additional Requirements
    a. Owner being both Pulte Homes of Texas, L.P., and Kendall County Water Control and Improvement District No. 3A for the purpose of insurance coverage requirements, shall be included as an Additional Insured on all applicable coverages listed in Paragraphs 5.04.
    b. Contractor shall require the same minimum insurance requirements from its Subcontractors and Suppliers and they shall also comply with the additional requirements listed herein.
    c. All insurance coverages required as herein set forth shall be at the sole cost and expense of Contractor, Subcontractor, or Suppliers and all deductibles shall be assumed by, for the account of, and at the sole risk of said Contractor, Subcontractor or Suppliers.
    d. Except where prohibited by law, all insurance policies shall contain provisions that the insurance companies waive the rights of recovery of subrogation against Owner, its agents, servants, invitees, employees, co-lessees, co-venturers, affiliated companies and their insurers.
    e. A Certificate of Insurance evidencing all the above must be presented to Owner prior to commencement of the Work.
    f. The cancellation provision of such Certificate of Insurance shall provide as follows:
        1) "To be effective as to certificate holder, the issuing companies must provide to the below named certificate holder thirty (30) days' written notice prior to any cancellation or material modification of the above referenced policies before the expiration dates thereof."

6.04 BID FORM REQUIREMENTS

A. Complete all requested information in the Bid Form and Appendices.

6.05 FEES FOR CHANGES IN THE WORK

A. Include in the Bid Form, the overhead and profit fees on own Work and Work by Subcontractors, applicable for Changes in the Work, whether additions to or deductions from the Work on which the Bid Amount is based.

B. Include in the Bid Form, the fees proposed for Subcontract work for changes (both additions and deductions) in the Work. Contractor shall apply fees as noted, to the Subcontractor's gross (net plus fee) costs on additional Work.

6.05 SELECTION AND AWARD OF ALTERNATIVES

A. Indicate variation of Bid Price for alternatives listed on the Bid Form. Unless otherwise indicated, indicate alternatives as a difference in Bid Price by adding to or deducting from the Base Bid Price.

B. Bids will be evaluated on the total of the Base Bid Price and all of the alternatives. After determination of the successful Bidder, consideration will be given to which alternatives will be included in the Work.

OFFER ACCEPTANCE/REJECTION

7.01 DURATION OF OFFER

A. Bids shall remain open to acceptance and shall be irrevocable for a period of sixty (60) days after the Bid closing date.

7.02 ACCEPTANCE OF OFFER

A. Owner reserves the right to accept or reject any or all offers.

B. After acceptance by Owner, Owner will issue to the successful Bidder, a written Award of Contract letter. A written Notice to Proceed will be issued after the Agreement is fully executed as formal instruction from Owner to begin the work herein and define the commencement date of the Contract.

CONTRACTOR DISCLOSURE REQUIREMENTS

8.01 CONTRACTOR DISCLOSURE

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

8.02 HOUSE BILL 1295

A. Provision of Texas Ethics Commission Form 1295 ("TEC Form 1295") pursuant to Texas Government Code § 2252.908 (the "Interested Party Disclosure Act" or the "Act"): Unless bidder is exempt from such requirements pursuant to Texas Government Code Section 2252.908(c)(4), the District may not award the contract to a bidder unless the bidder has provided to the District a completed and signed TEC Form 1295 which has been assigned a certificate number by the Texas Ethics Commission (the "TEC"). Pursuant to the rules prescribed by the TEC, the TEC Form 1295 must be completed online through the TEC's website, assigned a certificate number, printed, signed, and provided to the District. The TEC Form 1295 may accompany the bid or may be submitted separately, but must be provided to the District prior to the award of the contract. For purposes of completing the TEC Form 1295, the entity's name is Kendall County Water Control and Improvement District No.3A; the contract ID number is R03481.004.0; and the description of goods and services is Corley Farms Unit 3. Neither the District nor its consultants have the ability to verify the information included in a TEC Form 1295, and neither have an obligation nor undertake responsibility for advising any bidder with respect to the proper completion of the TEC Form 1295.

END OF INSTRUCTIONS TO BIDDERS

PUBLIC BID TABULATION

PROJECT CORLEY FARMS, UNIT 3
DEVELOPER PULTE HOMES OF TEXAS, L.P.
ON BEHALF OF KCWCID NO. 3A
BID DATE 10/25/2023

CORLEY FARMS, UNIT 3 PUBLIC CONSTRUCTION ITEMS

SPECS	ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	SUBTOTAL
TCEQ		MOBILIZATION	LS	1	$	$
TCEQ		INSURANCE AND BOND	LS	1	$	$
BOERNE		PREPARE RIGHT-OF-WAY	LS	1	$	$
BOERNE		CLEARING	AC	18.5	$	$
		CLEARING			**SUBTOTAL**	**$**
BOERNE		PUBLIC UNIT EXCAVATION	CY	36,202	$	$
BOERNE		PUBLIC UNIT EMBANKMENT	CY	28,803	$	$
BOERNE		PUBLIC MATERIAL TO BE IMPORTED TO UNIT 3	CY	36,124	$	$
		GRADING			**SUBTOTAL**	**$**
BOERNE		CONCRETE WASHOUT PIT	EA	1	$	$
BOERNE		CONSTRUCTION ENTRANCE/EXIT	EA	2	$	$
BOERNE		STAGING	EA	1	$	$
BOERNE		ROCK FILTER DAM	LF	105	$	$
BOERNE		CURB INLET GRAVEL FILTERS	LF	245	$	$
BOERNE		SILT FENCE	LF	3,045	$	$
BOERNE		OPEN SPACE REVEGETATION	SY	82,860	$	$
		SEDIMENT CONTROL			**SUBTOTAL**	**$**
TCEQ/BOERNE		8" SANITARY SEWER PIPE (0'-6')	LF	0	$	$
TCEQ/BOERNE		8" SANITARY SEWER PIPE (6'-10')	LF	2,887	$	$
TCEQ/BOERNE		8" SANITARY SEWER PIPE (10'-14')	LF	1,973	$	$
TCEQ/BOERNE		6" SEWER LATERALS (SDR-26)	LF	6425	$	$
TCEQ/BOERNE		TELEVISE SEWER MAIN	LF	4860	$	$
TCEQ/BOERNE		TRENCH EXCAVATION PROTECTION	LF	11285	$	$
TCEQ/BOERNE		STANDARD MANHOLES	EA	18	$	$
TCEQ/BOERNE		DROP MANHOLE	EA	0	$	$
TCEQ/BOERNE		TIE INTO EXISTING SANITARY SEWER	EA	1	$	$
TCEQ/BOERNE		EXTRA DEPTH - MANHOLES	VF	59.13	$	$
TCEQ/BOERNE		CONCRETE SADDLES	EA	0	$	$
TCEQ/BOERNE		8" X 6" WYES	EA	154	$	$
		SANITARY SEWER			**SUBTOTAL**	**$**
		DRAIN "3-B"				
BOERNE		INLET TYPE II (COMPLETE)(20 FT)	EA	1	$	$
BOERNE		INLET TYPE II (COMPLETE)(30 FT)	EA	2	$	$
BOERNE		PRECAST REINFORCED CONCRETE BOX CULVERT (4 - 5' x 3')	LF	81	$	$
BOERNE		SAFETY END TREATMENT	EA	2	$	$
BOERNE		CONCRETE RIP-RAP (5" THICK)	SY	754	$	$
BOERNE		CONCRETE STRUCTURE (BAFFLE BLOCKS)	CY	527	$	$
BOERNE		GABION MATTRESS	SY	152	$	$
		DRAIN "3-C"				
BOERNE		INLET TYPE I (COMPLETE)(15 FT)	EA	2	$	$
BOERNE		CONCRETE RIP-RAP (5" THICK)	SY	5	$	$
BOERNE		SIDEWALK PIPE RAILING	LF	0	$	$
BOERNE		GABION MATTRESS	SY	0	$	$
		DRAIN "3-D"				
BOERNE		INLET TYPE I (COMPLETE)(20 FT)	EA	1	$	$
BOERNE		CONCRETE RIP-RAP (5" THICK)	SY	5	$	$
BOERNE		SIDEWALK PIPE RAILING	LF	0	$	$
BOERNE		GABION MATTRESS	SY	0	$	$
		DRAIN "3-E"				
BOERNE		INLET TYPE I (COMPLETE)(25 FT)	EA	1	$	$
BOERNE		CONCRETE RIP-RAP (5" THICK)	SY	6	$	$
BOERNE		SIDEWALK PIPE RAILING	LF	10	$	$
		OVERALL				
BOERNE		REVEGETATION (INCLUDING TOP SOIL)	SY	17955	$	$
BOERNE		SOD LINING	SY	7505	$	$
		DRAINAGE			**SUBTOTAL**	**$**
SAWS		8" PVC C-900 WATER MAIN, CLASS 235 DR 18	LF	4485	$	$
SAWS		16" PVC C-900 WATER MAIN, CLASS 235 DR 18	LF	905	$	$
SAWS		2" HDPE 200 PSI DR 11	LF	741	$	$
SAWS		TIE INTO EXISTING WATER MAIN	EA	2	$	$
SAWS		8" GATE VALVE & BOX, COMPLETE	EA	16	$	$
SAWS		16" GATE VALVE & BOX, COMPLETE	EA	3	$	$
SAWS		STANDARD F.H. COMPLETE W/ VALVE	EA	10	$	$
SAWS		CAST IRON FITTINGS	TON	2.38	$	$
SAWS		1" IRRIGATION SERVICE (1" METER)	EA	1	$	$
SAWS		3/4" SINGLE SHORT SERVICE (5/8" METER)	EA	19	$	$
SAWS		3/4" SINGLE LONG SERVICE (5/8" METER)	EA	5	$	$
SAWS		1" DUAL SHORT SERVICE (5/8" METER)	EA	40	$	$
SAWS		1" DUAL LONG SERVICE (5/8" METER)	EA	25	$	$
SAWS		2" PERMANENT BLOWOFF	EA	2	$	$
SAWS		HYDROSTATIC TEST	EA	1	$	$
SAWS		TRENCH EXCAVATION PROTECTION	LF	6131	$	$
SAWS		METER BOXES	EA	155	$	$

	STREETS			**SUBTOTAL**	**$**
BOERNE	REMOVE CONCRETE HEADER CURB AND 6" GUARD POSTS	LF	108	$	$
BOERNE	2" HMAC, TYPE D (LOCAL STREET)	SY	18855	$	$
BOERNE	3" HMAC, TYPE D (COLLECTOR STREET)	SY	4044	$	$
BOERNE	TEMPORARY TURNAROUND	SY	1860	$	$
BOERNE	PRIME COAT	GAL	4952	$	$
BOERNE	TACK COAT	GAL	2476	$	$
BOERNE	9.5" FLEX BASE (LOCAL STREET)	SY	18855	$	$
BOERNE	16" FLEX BASE (COLLECTOR STREET)	SY	4044	$	$
BOERNE	FLEXIBLE BASE (8" COMPACTED DEPTH)(TEMPORARY TURNAROUND)	SY	1860	$	$
BOERNE	8" LIME TREATED SUBGRADE	SY	24759	$	$
BOERNE	LIME	TON	520	$	$
BOERNE	CONCRETE CURB	LF	940	$	$
BOERNE	ALTERNATE DEEP CURB	LF	9422	$	$
BOERNE	HEADER CURB	LF	72	$	$
BOERNE	6" GUARD POSTS	EA	12	$	$
BOERNE	REGULATORY SIGNS	EA	13	$	$
BOERNE	9 IN. STREET NAME SIGN	EA	16	$	$
BOERNE	FIRE HYDRANT BLUE PAVEMENT REFLECTORS	EA	10	$	$
	PAVING			**SUBTOTAL**	**$**
BOERNE	CONCRETE SIDEWALK	SY	195	$	$
BOERNE	WHEELCHAIR RAMPS	EA	30	$	$
	SIDEWALK			**SUBTOTAL**	**$**
TOTAL					**$**

*Notes

1. Existing dirt on site to be used to avoid import/export. Contractor to verify volume prior to submitting the bid.
2. Contractor to verify the volume of dirt on-site prior to submitting the bid and subtract the quantity from the "PUBLIC MATERIAL TO BE IMPORTED TO UNIT 3" line item.

CORLEY FARMS, UNIT 3 PRIVATE CONSTRUCTION ITEMS

SPECS	ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	SUBTOTAL
		LOT EXCAVATION	CY	18,366	$	$
		LOT EMBANKMENT	CY	61,890	$	$
		GRADING			**SUBTOTAL**	**$**
TCEQ/BOERNE		2"x4" LUMBER (GREEN PAINTED)	EA	154	$	$
		GAS			**SUBTOTAL**	**$**
BOERNE		2" POLYETHELENE GAS MAIN DR 11 WITH FITTINGS	LF	4773	$	$
BOERNE		4" POLYETHELENE GAS MAIN DR 11 WITH FITTINGS	LF	930	$	$
BOERNE		2" POLYETHELENE TEE	EA	4	$	$
BOERNE		2" POLYETHELENE CROSS	EA	1	$	$
BOERNE		2" POLYETHELENE GAS VALVE AND BOX, COMPLETE	EA	19	$	$
BOERNE		4" POLYETHELENE GAS VALVE AND BOX, COMPLETE	EA	3	$	$
BOERNE		6" POLYETHELENE GAS VALVE AND BOX, COMPLETE	EA	0	$	$
BOERNE		2" POLYETHELENE CAP	EA	3	$	$
BOERNE		4" POLYETHELENE CAP	EA	1	$	$
BOERNE		6" POLYETHELENE CAP	EA	0	$	$
BOERNE		TRACER WIRE BOX	EA	8	$	$
BOERNE		1" DIA. SHORT SINGLE SERVICE	EA	68	$	$
BOERNE		1" DIA. LONG SINGLE SERVICE	EA	86	$	$
BOERNE		CONECTION TO EXISTING GAS MAIN	LS	3	$	$
BOERNE		TESTING AS REQUIRED	LS	1	$	$
BOERNE		TRENCH EXCAVATION SAFETY PROTECTION	LF	5703	$	$
		GAS			**SUBTOTAL**	**$**
BEC		CONDUIT SECONDARY CROSSINGS (2-2" & 2-4" PVC BUNDLE)	LF	77	$	$
BEC		CONDUIT PRIMARY CROSSINGS (4-2" & 2-4" PVC BUNDLE)	LF	722	$	$
SAWS		IRRIGATION CROSSINGS (2-4" PVC BUNDLE)	LF	60	$	$
		ELECTRIC			**SUBTOTAL**	**$**
TOTAL						**$**

*NOTE

-Specifications noted in the construction deocuments govern over specification noted in this bid tab. It only shown to provide more detail on each line item.
- Lot grading not included in public bid. Lot grading shall follow specifications noted on the grading plan.
- Every sewer lateral location must be identified with a 2"x4" lumber. This 2"x4" must be painted green and remain in place during construction.

BIDDER SIGNATURE _____

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents 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

c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 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, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 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 15 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 15 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.

BOND NO. _____

PERFORMANCE BOND

STATE OF TEXAS Contract Date _____

COUNTY OF Kendall Date Bond Executed _____

PRINCIPAL _____

SURETY _____

OWNER Pulte Homes of Texas, L.P., on behalf of Kendall Water Control and Improvement District No. 3A

PENAL SUM OF BOND (in words and figures) _____,

being 100 percent of the Contract Price.

CONTRACT for Corley Farms Unit 3 for Kendall Water Control and Improvement District No. 3A, Kendall County, Texas (the "Contract").

KNOW ALL PERSONS BY THESE PRESENTS, that we, Principal and Surety above named, are held and firmly bound unto Owner, its successors and assigns, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves and our respective heirs, executors, administrators, officers, directors, shareholders, partners, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal entered into that certain Contract with Owner, which Contract is expressly incorporated herein for all purposes.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION IS SUCH, that if Principal well and truly performs the work in accordance with the plans, specifications and any other contract documents, during the original term of the Contract and any extensions thereof that may be granted by Owner, with or without notice to Surety, and during the life of any guaranty or warranty required under the Contract, then this obligation is void; otherwise it is to remain in full force and effect. Should the Principal fail to faithfully and strictly perform the work as required by the Contract in all its terms, the Surety will be liable for all damages, losses, expenses and liabilities that the Owner may suffer in consequence thereof.

This Bond is given in compliance with the provisions of Chapter 2253 of the Texas Government Code, as amended, which is incorporated herein by this reference. However, all of the express provisions contained herein and in the Contract are applicable whether or not within the scope of said statute.

Surety hereby agrees, for value received, that no change, extension of time, alteration or addition to the terms of the Contract or to work performed under the Contract, or to the plans, specifications or drawings accompanying the Contract, will in any way affect its obligations 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 to be performed thereunder.

The bound parties have executed this instrument pursuant to authority of their respective governing body, to be effective on the same date of the Contract.

_____	ATTEST
PRINCIPAL	
By _____	By _____
Name _____	Name _____
Title _____	Title _____
Address _____	
_____	(SEAL)

_____	ATTEST
SURETY	
By _____	By _____
Name _____	Name _____
Title _____	Title _____

(SEAL)

Physical Address:

_____

_____

_____

Mailing Address:

_____

_____

_____

Telephone: _____

Local Recording Agent Personal Identification Number:

_____

Agency Name:_____

Agency Address_____

Agency Telephone _____

Surety must attach its original Power of Attorney to this Bond.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I,_____, certify that I am the secretary of the corporation named as Principal in the Bond; that _____, who signed the Bond on behalf of Principal, was then _____ of the corporation; that I know his or her signature, and his or her signature is genuine; and that the Bond was duly signed for and on behalf of the corporation by authority of its governing body.

_____ (Corporate Seal)

Signature of Corporate Secretary

ATTACH POWER OF ATTORNEY

SECTION 00 7300

SUPPLEMENTARY CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

A. These Supplementary Conditions amend and supplement the General Conditions defined in Document 00 7200 and other provisions of the Contract Documents as indicated below. The following paragraphs and subparagraphs take precedence over the General Conditions. All provisions that are not so amended or supplemented remain in full force and effect.

B. As detailed in 1.04 below, these Supplementary Conditions modify, change, delete from or add to the General Conditions and shall apply to each and every Section of the Work as though written in full therein.

C. The terms used in these Supplementary Conditions that are defined in the General Conditions have the meanings assigned to them in the General Conditions.

D. Paragraph numbers and titles refer to like numbers and titles in the General Conditions.

E. In the event of a conflict between provisions in the Agreement, the General Conditions, or these Supplementary Conditions, the most restrictive provision shall govern.

1.02 RELATED SECTIONS

A. Section 00 5000 - Contracting Forms and Supplements.

1.03 REFERENCE STANDARDS

A. EJCDC C-800 - Guide to the Preparation of Supplementary Conditions; 2007.

1.04 MODIFICATIONS TO GENERAL CONDITIONS

SC-1.01. Add Paragraph 1.01.A.52:

52. *Contracting Information* – Contracting Information means the following:

(1) information in a voucher or contract relating to the receipt or expenditure of public funds by a governmental body;

(2) solicitation or bid documents relating to a contract with a governmental body;

(3) communications sent between a governmental body and a vendor, contractor, potential vendor, or potential contractor during the solicitation, evaluation, or negotiation of a contract;

(4) documents, including bid tabulations, showing the criteria by which a governmental body evaluates a vendor, contractor, potential vendor, or potential contractor responding to a solicitation and, if applicable, an explanation of why the vendor or contractor was selected; and

(5) communications and other information sent between a governmental body and a vendor or contractor related to the performance of a final contract with the governmental body or work performed on behalf of the governmental body.

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

A. Owner shall furnish to Contractor up to 6 printed or hard copies of the Drawings and Project Manual and one set in electronic format. Additional copies will be furnished upon request at the cost of reproduction.

SC-2.03 Delete Paragraph 2.03.A in its entirety and insert the following in its place:

A. The Contract Times will commence to run on the day indicated in the Notice to Proceed. The Notice to Proceed may be given at any time within 90 days after the Effective Date of the Agreement.

SC-3.07. Add Paragraph 3.07 to read as follows:

3.07 *Contracting Information*

If the Contract Price is equal to or greater than $1,000,000, Contractor, pursuant to the Government Code Section 552.372 shall:

(1) preserve all Contracting Information related to the Contract as provided by the records retention requirements applicable to the Owner for the duration of the Contract;
(2) promptly provide to the Owner any Contracting Information related to the Contract that is in the custody or possession of the Contractor on request of the Owner; and
(3) on final completion of the Contract, provide at no cost to Owner all Contracting Information related to the Contract that is in the custody or possession of the Contractor or preserve the Contracting Information related to this Contract as provided by the records retention requirements of the Owner.

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

SC-4.02.A. Delete Paragraph 4.02.A in its entirety and insert the following in its place, leaving subparagraphs 1. and 2. of said section unaltered:

A. *Reports and Drawings*: Section 00-3100 – Available Project Information of the Contract Documents identifies:

SC-4.02.B. Amend the second sentence of Paragraph 4.02.B. by striking out the following words:

Such “technical data” is identified in the Supplementary Conditions.

SC-4.06.A. Delete Paragraph 4.06.A in its entirety and insert the following in its place:

A. *Reports and Drawings*: Section 00-3100 – Available Project Information of the Contract Documents identifies those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the site.

SC-4.06.B. Amend the second sentence of Paragraph 4.06.B. by striking out the following words:

Such "technical data" is identified in the Supplementary Conditions.

SC-4.06.G. Delete Paragraph 4.06.G and 4.06.H in their entirety and replace them with the following paragraph:

G. TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS OWNER, KENDALL COUNTY WATER CONTROL AND IMPROVEMENT DISTRICT NO. 3A, AND ENGINEER, AND THE OFFICERS, DIRECTORS, 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 SHALL OBLIGATE CONTRACTOR TO INDEMNIFY ANY INDIVIDUAL OR ENTITY FROM AND AGAINST THE CONSEQUENCES OF THAT INDIVIDUAL'S OR ENTITY'S OWN NEGLIGENCE.

SC-5.04 Delete Section 5.04 in its entirety and insert the following in its place:

5.04 *Contractor's Insurance*

A. Contractor shall, at Contractor's sole cost and expense, comply with the insurance requirements set forth in Paragraph 5.04.B for the entire term of the Agreement and thereafter, as set forth below.

1. Prior to the start of any Work, and prior to entering onto any Project Site, Contractor shall document compliance with the insurance requirements of this Agreement, including without limitation Paragraph 5.04.B. Contractor shall furnish Owner with copies of certificates of insurance, waiver of subrogation endorsement(s), additional insured endorsement(s), and primary and non-contributory endorsements as required in the Agreement for all of such policies showing the insurance carriers, policy numbers, Contractor as the named insured, Owner and Kendall County Water Control and Improvement District No. 3A, as additional insured's and expiration dates. Contractor shall promptly provide Owner with certified copies of insurance policies upon request of Owner. In addition to any other conditions to payment by Owner hereunder, no payments of the Contract Price will be due to Contractor unless and until Contractor has documented compliance with all insurance requirements in this Agreement, including without limitation Paragraph 5.04.B, to the satisfaction of Owner. If at any time Contractor's insurance fails to meet the requirements under the Agreement, all payments may be held until the deficiency has been resolved acceptably to Owner. Notwithstanding the foregoing, commencement or continuation of Work by Contractor and/or payment by Owner shall not be deemed to relieve Contractor of any of the requirements under the Agreement. Renewal certificates and endorsements shall be delivered to Owner prior to the expiration of the existing policy or policies.

2. No acceptance of insurance certificates or additional insured endorsements and no other act or omission by Owner shall in any way limit or relieve Contractor of its duties and responsibilities under the Agreement. Nothing in this Paragraph 5.04.A shall in any way

limit or relieve Contractor of its indemnification obligations under Paragraph 6.20 or otherwise. Any provision on any certificate of insurance provided by Contractor that states anything to the effect that the certificate does not confer any rights to insurance upon the certificate holder is hereby deemed deleted from said certificate.

3. Contractor hereby agrees to immediately notify (or cause its insurers or insurance broker to notify) Owner of any receipt of a notice (and provide to Owner a copy of any such notice) of cancellation, non-renewal or rescission received from an insurance carrier referring to or relating to a policy which names Owner or any of the other parties named as additional insureds or which may otherwise impact the ability of Contractor to fully perform its obligations hereunder or under any Agreement (including, without limitation, the indemnity obligations of Contractor set forth in Paragraph 6.20 below).
4. If Contractor fails to obtain, secure and/or maintain any of the insurance coverages required by the Agreement, Owner shall have the right (without any obligation to do so, however) (i) to terminate the Agreement and any and all outstanding Work Agreements pursuant to

Paragraph 15.03 hereof or (ii) to secure same in the name of and for the account of Contractor, in which event, Contractor shall pay the cost thereof (which Owner may deduct from sums due Contractor under the Agreement) and shall furnish, upon demand, all information that may be required in connection therewith. Notwithstanding anything to the contrary, waiver or modification of any of these insurance requirements, including the amount or extent of coverage, may only be obtained upon Owner's written consent, which consent Owner may limit or withhold in its sole and absolute discretion and which consent shall only be effective if provided in writing by an authorized officer of Owner.

5. If Contractor is out of business or otherwise unavailable at the time a claim or demand is presented to Owner, to the extent permitted by Law, Contractor hereby assigns to Owner each and every and all of its rights under all potentially applicable policies of insurance.
6. Contractor hereby waives any right of subrogation which it or its insurers may have against Owner or any of the other additional named insureds described in Paragraph 5.04.B with regard to any loss, injury or damage arising out of or incident to any Work or any Project. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not such person or entity had an insurable interest in the property damaged.
7. Contractor shall require all of its subcontractors and suppliers of every tier to: (i) procure and maintain all of the same insurance coverages which are required of Contractor under the Agreement; and (ii) furnish Owner with certificates of insurance which evidence all of the coverages required under the Agreement, which include all required attachments and additional insured endorsements, and which afford the same guarantee of notice of cancellation, non-renewal, rescission or reduction or restriction of coverage as is required of Contractor under the Agreement.

B. Insurance Requirements:

1. All insurance certificates need to list Owner and Kendall County Water Control and Improvement District No. 3A, as certificate holders, and must be on Form Acord 25 S (7/97) or later.
2. The insurance policy must cover the Project (as defined in the Agreement) or "All Work performed for Certificate Holders" and so state in the Description of Operations.
3. The Insurance Carrier(s) must be A. M. Best A:VI rated or better. All insurance carriers must be rated by A. M. Best as 'A' in Financial Strength and 'VI' or higher in Financial Size. (ambest.com)
4. The insurance certificate(s) must have a thirty (30) day Cancellation Notice.
5. Failure to meet any of the Insurance Requirements may result in an "Insurance Hold", placing a block on payment(s) by Owner under the Agreement, regardless of provisions presented in Article 14.
6. Any deductible or self-insured retention on any policy required hereunder shall not exceed $10,000 per occurrence unless this requirement is waived in writing by Owner.
7. General Liability Policy Requirements:
   a. The minimum limits of the policy shall be $1,000,000 per occurrence; $2,000,000 general aggregate; $2,000,000 products/completed operations; and $1,000,000 personal injury/advertising.
   b. The policy must be an Occurrence policy. Owner does not accept 'Claims-Made' general liability policies.

c. The policy must include a Primary & Non-contributory Endorsement. This policy endorsement requires the Contractor's General Liability Policy be primary and that Owner's own policy(ies) will not be required to contribute to a loss. Any reference to Contractor's coverage being excess to other additional insured coverage available to the additional insureds shall be deleted unless said additional insured carrier agrees to share with other additional insured carriers.

d. The policy must include Additional Insured Form CG2010 (11/85) (if available) or commercially available equivalent. Other acceptable forms include 2010 1001 plus 2037 1001 and 2010 0704 plus 2037 0704. Owner and Kendall County Water Control and Improvement District No. 3A must be named as additional insureds on the General Liability Policy. Blanket endorsements are acceptable if in the proper form. If form requires additional insureds to be scheduled, the aforementioned entities shall be scheduled. The actual endorsement must be provided to Owner. The endorsement must include coverage arising out of both Contractor's ongoing and completed operations. The endorsement must identify named insured and additional insureds and must include policy number and expiration date.
Coverage provided to additional insureds must be at least as broad as that provided to Contractor and may not contain any additional exclusionary language or limitations applicable to the additional insureds.

e. The form of the policy must be a Comprehensive Form, or it must include all of the following:

Blanket Contractual Liability
Broad Form Property Damage
Collapse / Structural Injury
Damage by Blasting & Explosion
Damage to Property
Independent Contractors
Owners / Contractors
Personal / Advertising Injury
Premises / Operations
Products / Completed Operations
Protective
Subsidence
Underground
"XCU" Coverage

f. Policies containing exclusions for residential construction, condominiums, multi-family, townhomes, and/or attached product are not acceptable.

8. Automobile Policy Requirements $1,000,000 Minimum Limits

a. The minimum limits of the policy shall be $1,000,000 for bodily injury per person; $1,000,000 property damage; and $1,000,000 combined single limit per accident, including uninsured and under-insured motorist coverage.

b. The policy must include Any Auto, or all of the following: All Owned, Leased Autos, Non-Owned Autos, and Hired Autos.

9. Workers' Compensation and Employer's Liability Policy Requirements

a. The minimum limits of the policy shall be $1,000,000.

b. The policy must include Employer's Liability - Each Accident; Disease – Policy Limits; Disease – Each Employee, and a Waiver of Subrogation in favor of Owner on Form WC 00 03 13 (4/84) or equivalent.

c. For elective workers' compensations states, Contractor shall procure worker's compensation insurance, have a qualified self insured plan, or submit details regarding how employee injuries are handled for Owner's review. If leased workers are used, Alternate Employer endorsement from leasing company naming Contractor as alternate employer is required (Form WC 00 03 01 A, or equivalent).

10. Umbrella Liability shall be in the amount of $2,000,000 per occurrence; $2,000,000 general aggregate.

SC-5.11. Add the following new Paragraph immediately after Paragraph 5.10:

5.11. Workers' Compensation Insurance Coverage.

In addition to other insurance requirements stipulated herein, the Contractor shall comply with all requirements of 28 TAC 110.110 and other requirements outlined in this section. Definitions contained in this section are for this section only."

5.11.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 Owner'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 Owner.

"Persons providing services on the project ("subcontractor") - 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."

5.11.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."

5.11.C. The Contractor must provide a certificate of coverage to the Owner prior to being awarded the contract."

5.11.D. If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the Owner showing that coverage has been extended."

"5.11.E. The Contractor shall obtain from each person providing services on a project, and

provide to the Owner:

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

(2) no later than seven calendar 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."

5.11.F. The Contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter."

5.11.G. The Contractor shall notify the Owner in writing by certified mail or personal delivery, within 10 calendar 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."

5.11.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."

5.11.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 to the Contractor:

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

(b) a new certificate of coverage showing extension of 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 Owner in writing by certified mail or personal delivery, within 10 calendar 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."

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

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

5.11.L. The text for the notice prescribed in 5.11.G. shall read as follows:

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."

5.11.M. Contractor shall require that all insurance policies in any way related to the Work and maintained by Contractor, as well as by all subcontractors of every tier, be endorsed specifically to name Owner, Developer and Engineer and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of Owner, Developer and Engineer as additional insureds, excluding however Worker's Compensation Insurance, and to provide that each underwriter waives its right of subrogation against the additional insureds. All of the aforesaid policies shall be further endorsed to provide that they are primary coverages and not in excess of any other insurance available to Owner, and without rights of contribution or recovery against any of the insureds or from any such other insurance available to Owner. Evidence of such specific endorsements shall be furnished with Contractor's Certificate of Insurance.

SC-6.02 Add the following new paragraph immediately after Paragraph 6.02.A.:

C. Contractor shall, in addition to all of the other obligations imposed by the Agreement and the Contract Documents upon Contractor, and at Contractor's own cost and expense, work such overtime as may be necessary, in the opinion of Owner to meet the progress schedule issued by Owner from time to time and approved, or deemed approved, by Contractor

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

D. Except as otherwise provided herein, all materials, workmanship and Work, if not otherwise designated by the Contract Documents, shall be subject to inspection, examination and testing by or for Owner at any and all times during manufacture and/or construction and at any and all places when such manufacturing and/or construction are carried on. Contractor shall cooperate with Owner, and any third party inspectors retained by Owner, to permit a thorough inspection

of the Work and to correct any deficiencies discovered during such inspections. Owner shall have the right to reject improper or defective material, workmanship or Work or require correction without charge to Owner. Contractor shall promptly segregate and remove rejected material from a Project Site. Nothing contained in this Paragraph 6.03.D. shall in any way restrict the rights of Owner under any warranty by Contractor of material, workmanship or Work. Contractor acknowledges and agrees that Owner has no obligation or duty to perform continuous or comprehensive inspections of any such materials, workmanship or Work. No such inspection, examination, testing or approval by or for Owner shall be construed as an inspection or approval of material, workmanship or Work not in compliance with the Agreement, the Contract Documents or applicable Laws. Neither the inspections referred to in this Paragraph 6.03.D., nor the failure to inspect, shall in any way relieve Contractor of its sole responsibility for properly performing the Work in accordance with the Agreement, the Contract Documents and applicable Laws, or relieve Contractor of any of its liabilities or obligations, under the Agreement, under Law or otherwise. Contractor agrees to reimburse Owner for any lender, Department of Veterans Affairs ("VA") and/or Federal Housing Administration ("FHA"), city, county, or any other public agency reinspection fees caused by its incomplete or faulty workmanship and/or materials.

SC-6.10 Delete Paragraph 6.10.A in its entirety and insert the following in its place:

A. The Contract Price shall be deemed to include any obligation Contractor may have to pay Federal, State and local taxes, tariffs and duties with respect to the Agreement. All taxes levied or assessed against Owner arising out of the Agreement or the performance of any Work shall be paid by Contractor. If Contractor is not required to pay or is able to obtain a refund in whole or in part of any such tax which was expressly included in the Contract Price, the Contract Price shall be correspondingly decreased for the benefit of Owner.

SC 7.01 Add the following new paragraph immediately after Paragraph 7.01.C.:

D. In carrying out the Work, Contractor shall take all necessary precautions to protect the Work and the work of others from damage caused by Contractor's operations. In the event that Contractor causes damage to any Project or to the property of Owner or others, Contractor shall promptly remedy such damage to the satisfaction of Owner and any other applicable party. In the event Contractor fails to remedy such damage to Owner's reasonable satisfaction within five (5) days of notice thereof from Owner, Owner may so remedy the damage itself and deduct the cost thereof from the Contract Price.

SC-10.01 Add the following new paragraph immediately after Paragraph 10.01.A. and renumber existing Paragraph 10.01.B to Paragraph 10.01.C:

B. Prior to the commencement of any Changes in the Work, Contractor shall submit a written claim for any required adjustment to the Contract Price based upon either (i) the unit prices as established in Paragraph 1.09 of the Contractor's Bid as attached to the Agreement, or (ii) the percentages as established in Paragraph 1.10 of the Contractor's Bid. Such adjustment shall be accepted in writing by Owner unless Owner believes such adjustment to be inequitable. If Owner and Contractor cannot agree on the amount of the addition or deletion, Contractor shall nonetheless timely perform the Work unless it receives Owner's written direction to the contrary.

SC-10.02 Add the following new paragraph immediately after Paragraph 10.02.A.:

B. Notwithstanding Paragraph 10.02.A, if Contractor makes any other changes to the Work without written direction from Owner, such change constitutes an agreement by Contractor that it will not be paid for that changed work even if Contractor claims to have received verbal direction from Owner or any form of direction, written or otherwise, from any other person or entity. In addition, Contractor shall be liable for any and all losses, costs, expenses, damages, and liabilities of any nature whatsoever associated with or in any way arising out of any such change made without written direction from Owner. The parties hereto specifically contemplate and agree that no verbal or oral modifications will be binding to the Agreement.

SC-11.01 Add the following new paragraph immediately after Paragraph 11.01.A.5.i.:

j. Contractor shall obtain and pay for any permits required to complete the Work.

SC-14.02 Add the following new paragraphs immediately after Paragraph 14.02.A.3.:

4. Unless otherwise prohibited by Law, any invoices or other requests for payment, in whatever form, received six (6) months or more after Work has been completed shall not be honored.

5. In order for any invoice or other request for payment for Work (all such invoices or requests for payment being referred to herein as an "invoice") to be "properly prepared", all of the applicable requirements set forth in the Agreement must have been satisfied with respect to such invoice and all the following must be true with respect to such invoice:

a. Contractor's insurance policies are in full force and effect in compliance with Paragraph 5.04.

b. The portion of the Work which is the subject of the invoice is satisfactorily complete and in conformity with the Contract Documents in the opinion of Engineer at the time of receipt of the invoice. All material and workmanship furnished or performed by Contractor shall be further subject to final inspection, tests, and acceptance by or for Owner upon completion of all Work and whether or not previously paid for by Owner. At any and all proper times during the manufacture or performance of the Work, all materials and workmanship furnished or performed by Contractor shall be subject to inspection, tests, and approval by an inspector of Owner, at any and all places where such manufacture or performance shall be carried on. Failure to make inspections or tests or to discover faulty workmanship or materials shall not prejudice the rights of Owner on final inspection and tests. All expenses of tests and inspections to prove or establish the acceptability of performance of Work or material hereunder and any damage caused by such test shall, if the material or Work fails the test, be borne by Contractor.

c. The invoice must contain the identifying number of this Agreement (and addendum number, if applicable) as assigned by Owner.

d. All prices contained in the invoice must agree in all respects with the applicable price schedule set forth in the Agreement, as the same may be modified pursuant to the Agreement.

e. The invoice must show the gross amount billed, the amount of the retainage, if applicable, and the net amount billed.

f. Neither tax, freight nor other similar charges shall be added to the invoice. The parties recognize that the Contract Price includes all such costs.

g. The invoice shall not demand any progress payment other than those permitted in the Agreement.

h. The invoice shall be accompanied by appropriate conditional lien releases from all persons or entities who might claim liens arising out of Contractor's performance of the Work to date (see Paragraph 14.09).

6. Owner shall have no obligation to pay Contractor for labor, materials, equipment or services or for any Changes in the Work unless the invoice for such Changes in the Work comply with Paragraph 14.02.A.5., other than clause d. thereof. Any Changes in the Work must be documented in a change order or addendum to this Agreement signed by Owner ("Change Order"), which executed Change Order must be obtained by Contractor prior to its commencement of such Changes in the Work. In emergency situations only, Owner may give a verbal Change Order approval and request Contractor immediately start such emergency work. Contractor may proceed on that basis; however, it is Contractor's responsibility to secure an appropriate Change Order prior to invoicing the emergency Changes in the Work.

7. Except where prohibited by Law, Owner has the right to make any payment due to Contractor hereunder by joint check to Contractor and its subcontractors, material suppliers or employees which have performed work or furnished materials under this Agreement without regard to whether or not lien releases have been submitted to Owner.

SC-14.02 Delete Paragraph 14.02.C.1 in its entirety and insert the following in its place:

1. Fifteen 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.

SC-14.07 Add the following new paragraph immediately after Paragraph 14.07.C.1.:

D. Maximum Payments:

1. Notwithstanding the provisions of Article 14 hereof, but excluding the payment of retainage, which shall be governed by Paragraph 6.02 of the Agreement, Owner shall not be obligated to pay any amount to Contractor if such payment would render the balance in the Contract Price then due to Contractor to be less than the sum of (i) the retainage plus (ii) the amount necessary for Contractor to complete or correct all of its then-remaining obligations for the Work. Owner shall have no obligation to pay Contractor for labor, materials, equipment or services or for any Changes in the Work unless such Changes in the Work are expressly covered by a Change Order signed by Owner, which executed Order was obtained by Contractor prior to its commencement of such Changes in the Work.

SC-14.10 Add the following new paragraph immediately after Paragraph 14.09.A.2.:

14.10 Withholding Payments

A. Owner may withhold, or on account of subsequently-discovered evidence nullify, the whole or part of any payment under the Agreement to the extent necessary to protect Owner from loss, including costs and attorneys' fees, expenses and court costs, on account of (i) defective Work not remedied; (ii) claims or liens filed or reasonable evidence indicating the

probable filing of claims or liens; (iii) failure of Contractor to make payments promptly to its subcontractors, vendors, suppliers or laborers for material, labor or fringe benefits; (iv) reasonable doubt that the Work can be completed for the balance then unpaid; (v) damage to the work of another contractor; (vi) claims made or penalties assessed against Owner or Contractor for failure of Contractor to comply with Laws; (vii) any dispute or controversy between the parties hereto concerning the Agreement, or any dispute concerning Contractor and another contractor or vendor; (viii) breach of the Agreement; (ix) failure to pay, on behalf of any employee, federal or State withholding, FICA, employee benefits (including union trust fund or cooperative committee payments, SIIS and ESD, if applicable), or any other required payments on behalf of any employee to a governmental agency; (x) any monies that are claimed by Owner or any third party against Contractor for injuries incurred as a result of any Work performed by Contractor; or (xi) any other ground for withholding payment allowed by Law or as otherwise provided in the Agreement. When and to the extent that the above matters are satisfactorily rectified in the sole judgment and discretion of Owner, such withheld amounts as may then be due and owing shall be paid or credited to Contractor.

SC-14.11 Add the following new paragraph immediately after Paragraph 14.10.A. (as inserted above):

14.11 Backcharges

A. Applicable backcharges shall include: (a) the costs of replacement, repair or warranty work performed by Owner or third parties for the benefit of Owner in Owner's reasonable judgment and (b) any increases in the cost of any Work incurred by Owner in excess of the prices for such Work as agreed with Contractor in the Agreement in Owner's retention of replacement contractors. In addition, in order to cover, among other things, the projected cost of warranty work which may be required to be performed by third parties (other than Contractor) and Owner's administrative costs associated with retention of replacement contractor(s), Contractor acknowledges that Owner will be adding to any backcharges assessed under the terms of the Agreement an administrative charge in an amount equal to fifteen percent (15%) of each such backcharge and Contractor agrees to pay such administrative charge to Owner concurrently with the payment of such backcharge. In the event that the retainage or amount of any other final payment is insufficient to satisfy the backcharge(s), including administrative charges, Owner shall have the right to require Contractor to pay Owner the amount of the backcharge(s) (including the applicable administrative charges) within fifteen (15) days after Contractor's receipt of an invoice therefor. Contractor's failure to make such payment in the prescribed period shall constitute a default in the Agreement.

SC-15.05 Add the following new paragraphs immediately after Paragraph 15.04.B.:

15.05 Bankruptcy.

A. In the event of the appointment of a receiver for Contractor or in the event Contractor makes an assignment for the benefit of creditors, Owner may terminate the Agreement by giving three (3) business days written notice to Contractor and its surety, if any. If a voluntary or involuntary petition under any federal or state bankruptcy or debtor protection Law is filed with respect to Contractor, Owner may terminate the Agreement by giving three (3) business days written notice, to Contractor.

B. If Contractor is not performing the Work in accordance with the Agreement at the time of any bankruptcy filing or the entering an order for relief, or at any subsequent time, Owner, while awaiting the decision of Contractor or its trustee to reject or to accept and provide adequate assurance of its ability to perform hereunder, may immediately avail itself of such remedies as are reasonably necessary to maintain the progress of the completion of any

Project or Projects which are the subject of the Agreement. Owner may offset against the Contract Price all costs incurred in pursuing any of the remedies provided hereunder, including, but not limited to, reasonable overhead, profit and attorneys' fees, expenses and court costs. Contractor shall be liable for the payment of any amount by which such expense may exceed the unpaid balance of the Contract Price.

C. In the event that Contractor has proceeded to file a petition with the Bankruptcy Court under the applicable bankruptcy Laws during the pendency of any Claim, Contractor agrees that, upon request of Owner, it shall immediately stipulate to an order granting relief from any automatic stay then in effect so as to allow Owner to proceed against any insurance carrier covering Contractor for the Work or any obligations described in the Agreement as well as any insurance carrier having issued certificates or endorsements to Owner, its parent, subsidiaries and/or affiliates as additional insureds.

SC-15.06 Add the following new paragraph immediately after Paragraph 15.05.C. (as inserted above):

15.06 Breach of One Contract is Breach of All

A. Contractor and Owner acknowledge that during its performance of any Work entered into pursuant to the Agreement, Contractor may also be under contract with Owner or one or more of its affiliates for work at Owner's (or such affiliates) other projects or subdivisions under other agreements. At Owner's sole election, a breach in the performance of any of Contractor's obligations under the Contract Documents pursuant to the Agreement shall constitute a breach in Contractor's obligations under any other agreement(s) with Owner or its affiliates and a breach under any other agreement(s) with Owner shall also constitute a breach of Contractor's obligations under the Contract Documents pursuant to the Agreement. In such event, and in addition to Owner's rights and remedies under the Agreement, Owner or such affiliates may terminate any or all of such other agreements, may withhold monies due or to become due on any of such other agreements and apply the same toward payment of any damages suffered on that or any other agreement.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SUPPLEMENTARY CONDITIONS

CONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

Project: Corley Farms Unit 3 Job No. _____

On receipt by the signer of this document of a check from _____ (maker of check) in the sum of $_____ payable to _____ (payee or payees of check) and when the check has been properly endorsed and has been paid by the bank on which it is drawn, this document becomes effective to release any mechanic's lien right, any right arising from a payment bond that complies with a state or federal statute, any common law payment bond right, any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or payment rights for persons in the signer's position that the signer has on the property of Kendall County Water Control and Improvement District No. 3A (owner) located at Corley Road and Vallerie Lane (location) for the Project described above to the following extent: the installation of streets, drainage, sanitary sewer, water, dry utility conduit, and SW3P infrastructure of single-family residential subdivision. (Job description).

This release covers a progress payment for all labor, services, equipment, or materials furnished to the property or to_____(person with whom signer contracted) as indicated in the attached statement(s) or progress payment request(s), except for unpaid retention, pending modifications and changes, or other items furnished.

Before any recipient of this document relies on this document, the recipient should verify evidence of payment to the signer.

The signer warrants that the signer has already paid or will use the funds received from this progress payment to promptly pay in full all of the signer's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or services provided for or to the above referenced project in regard to the attached statement(s) or progress payment request(s).

The undersigned hereby represents and warrants that he or she is duly authorized agent of the signer and is fully authorized to sign this Lien Waiver and Release.

It is the intent of this release to comply with the provisions of Subchapter L of Chapter 53 of the Property Code of the State of Texas.

_____.
Date: _____
By: _____
Printed Name: _____
Title:_____

STATE OF _____ §
COUNTY OF _____ §

This instrument was acknowledged before me on the ___ day of _____, 20___ by _____, _____ of _____, a limited company, for the consideration herein expressed, on behalf of same.

_____
Notary Public in and for the
STATE OF _____

NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. IT IS PROHIBITED FOR A PERSON TO REQUIRE YOU TO SIGN THIS DOCUMENT IF YOU HAVE NOT BEEN PAID THE PAYMENT AMOUNT SET FORTH BELOW. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM.

UNCONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

Project: Corley Farms Unit 3

Job No. _____

The signer of this document has been paid and has received a progress payment in the sum of **$_____** for all labor, services, equipment, or materials furnished to the property or to _____(person with whom signer contracted) on the property of Kendall County Water Control and Improvement District No. 3A (owner) located at Corley Road and Vallerie Lane (location) to the following extent: the installation of streets, drainage, sanitary sewer, water, dry utility conduit, and SW3P infrastructure of single-family residential subdivision. (job description).

The signer therefore waives and releases any mechanic's lien right, any right arising from a payment bond that complies with a state or federal statute, any common law payment bond right, any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or payment rights for persons in the signer's position that the signer has on the above referenced project to the following extent:

This release covers a progress payment for all labor, services, equipment, or materials furnished to the property or to _____ (person with whom signer contracted), as indicated in the attached statement(s) or progress payment request(s), except for unpaid retention, pending modifications and changes, or other items furnished.

The signer warrants that the signer has already paid or will use the funds received from this progress payment to promptly pay in full all of the signer's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or services provided for or to the above referenced project in regard to the attached statement(s) or progress payment request(s).

The undersigned hereby represents and warrants that he or she is duly authorized agent of the signer and is fully authorized to sign this Lien Waiver and Release.

It is the intent of this release to comply with the provisions of Subchapter L of Chapter 53 of the Property Code of the State of Texas.

_____.
Date: _____
By: _____
Printed Name: _____
Title:_____

STATE OF _____ §

COUNTY OF _____ §

This instrument was acknowledged before me on the ___ day of _____, 20___ by _____, _____ of **_____.**, a limited company, for the consideration herein expressed, on behalf of same.

_____
Notary Public in and for the
STATE OF _____

CONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

Project: Corley Farms Unit 3 Job No. _____

On receipt by the signer of this document of a check from _____ (maker of check) in the sum of **$**_____ payable to _____ (payee or payees of check) and when the check has been properly endorsed and has been paid by the bank on which it is drawn, this document becomes effective to release any mechanic's lien right, any right arising from a payment bond that complies with a state or federal statute, any common law payment bond right, any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or payment rights for persons in the signer's position that the signer has on the property of Kendall County Water Control and Improvement District No. 3A. (owner) located at Corley Road and Vallerie Lane to the following extent: the installation of streets, drainage, sanitary sewer, water, dry utility conduit, and SW3P infrastructure of single-family residential subdivision. (job description).

This release covers the final payment to the signer for all labor, services, equipment, or materials furnished to the property or to _____(person with whom signer contracted).

Before any recipient of this document relies on this document, the recipient should verify evidence of payment to the signer.

The signer warrants that the signer has already paid or will use the funds received from this final payment to promptly pay in full all of the signer's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or services provided for or to the above referenced project up to the date of this waiver and release.

The undersigned hereby represents and warrants that he or she is duly authorized agent of the signer and is fully authorized to sign this Lien Waiver and Release.

It is the intent of this release to comply with the provisions of Subchapter L of Chapter 53 of the Property Code of the State of Texas.

_____
Date: _____
By: _____
Printed Name: _____
Title:_____

STATE OF _____ §
COUNTY OF _____ §

This instrument was acknowledged before me on the ___ day of _____, 20___ by _____, _____ of _____., a corporation, for the consideration herein expressed, on behalf of same.

_____
Notary Public in and for the
STATE OF _____

NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. IT IS PROHIBITED FOR A PERSON TO REQUIRE YOU TO SIGN THIS DOCUMENT IF YOU HAVE NOT BEEN PAID THE PAYMENT AMOUNT SET FORTH BELOW. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM.

UNCONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

Project: Corley Farms Unit 3 Job No. _____

The signer of this document has been paid in full for all labor, services, equipment, or materials furnished to the property or to _____ (person with whom signer contracted) on the property of Kendall County Water Control and Improvement District No. 3A. (owner) located at Corley Road and Vallerie Lane (location) to the following extent the installation of streets, drainage, sanitary sewer, water, dry utility conduit, and SW3P infrastructure of single-family residential subdivision. (job description).

The signer therefore waives and releases any mechanic's lien right, any right arising from a payment bond that complies with a state or federal statute, any common law payment bond right, any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or payment rights for persons in the signer's position**.**

The signer warrants that the signer has already paid or will use the funds received from this final payment to promptly pay in full all of the signer's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or services provided for or to the above referenced project up to the date of this waiver and release.

The undersigned hereby represents and warrants that he or she is duly authorized agent of the signer and is fully authorized to sign this Lien Waiver and Release.

It is the intent of this release to comply with the provisions of Subchapter L of Chapter 53 of the Property Code of the State of Texas.

_____**.**
Date:_____
By: _____
Printed Name: _____
Title:_____

STATE OF _____ §
COUNTY OF _____ §

This instrument was acknowledged before me on the ___ day of _____, 20___ by _____, _____ of_____**.**, a limited company, for the consideration herein expressed, on behalf of same.

_____
Notary Public in and for the
STATE OF _____

BOND NO. _____

PAYMENT BOND

STATE OF TEXAS

Contract Date _____

COUNTY OF Kendall

Date Bond Executed _____

PRINCIPAL _____

SURETY _____

OWNER Pulte Homes of Texas, L.P., on behalf of Kendall County Water Control and Improvement District No. 3A.

PENAL SUM OF BOND (in words and figures) _____,

being 100 percent of the Contract Price.

CONTRACT for Corley Farms Unit 3 for Kendall County Water Control and Improvement District No. 3A, Kendall County, Texas.

KNOW ALL PERSONS BY THESE PRESENTS, that we, Principal and Surety above named, are held and firmly bound unto Owner, its successors and assigns, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves and our respective heirs, executors, administrators, officers, directors, shareholders, partners, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal entered into the Contract with Owner, which Contract is expressly incorporated herein for all purposes.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION IS SUCH, that if Principal shall promptly pay claimants for all labor, subcontracts, materials and specially fabricated materials performed or furnished under or by virtue of the Contract, and duly authorized modifications and normal and usual extras thereto, notice of which modifications to Surety being hereby waived, then this obligation shall be void, otherwise to remain in full force and effect. Should Principal fail to promptly pay claimants for all labor, subcontracts, materials and specially fabricated materials performed or furnished under or by virtue of the Contract, Surety is hereby bound to make such payments on behalf of Principal up to a total aggregate amount equal to the penal sum of the Bond. Labor, subcontracts, materials, and specially fabricated materials shall be construed in accordance with Chapter 2253, Texas Government Code.

PROVIDED, HOWEVER, that Owner having required Principal to furnish this Bond in order to comply with the provisions of Chapter 2253, Texas Government Code, all rights and remedies on this Bond shall inure solely to such claimants and shall be determined in accordance with the provisions, conditions, and limitations of the aforesaid Government Code to the same extent as if they were copied at length herein.

The bound parties have executed this instrument pursuant to authority of their respective governing body, to be effective on the same date of the Contract.

_____	ATTEST
PRINCIPAL	
By _____	By _____
Name _____	Name _____
Title _____	Title _____
Address _____	
_____	(SEAL)
_____	ATTEST
SURETY	
By _____	By _____
Name _____	Name _____
Title _____	Title _____
(SEAL)	Physical Address:
	_____
	_____
	_____
	Mailing Address:
	_____
	_____
	_____
	Telephone: _____

Local Recording Agent Personal Identification Number:

_____

Agency Name:_____

Agency Address_____

Agency Telephone _____

Surety must attach its original Power of Attorney to this Bond.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I,_____, certify that I am the secretary of the corporation named as Principal in the Bond; that _____, who signed the Bond on behalf of Principal, was then _____ of the corporation; that I know his or her signature, and his or her signature is genuine; and that the Bond was duly signed for and on behalf of the corporation by authority of its governing body.

_____ (Corporate Seal)

Signature of Corporate Secretary

ATTACH POWER OF ATTORNEY

GOVERNING CONSTRUCTION SPECIFICATIONS

All specifications applicable to this project are identified as follows:

- Kendall County local development guidelines and specifications within County right of way.
- City of Boerne local development guidelines and specifications within City right of way.
- Bandera Electric Coop local development guidelines and specifications for electric infrastructure.
- All construction to follow general TCEQ construction guidelines.

BOND NO. _____

MAINTENANCE BOND

STATE OF TEXAS Contract Date _____

COUNTY OF Kendall Date Bond Executed _____

PRINCIPAL _____

SURETY _____

OWNER Pulte Homes of Texas, L.P., on behalf of Kendall County Water Control and Improvement District No. 3A

PENAL SUM OF BOND (in words and figures) _____,

being 100 percent of the Contract Price.

CONTRACT for Corley Farms Unit 3 for Kendall County Water Control and Improvement District No. 3A, Kendall County, Texas (the "Contract").

KNOW ALL PERSONS BY THESE PRESENTS, that we, Principal and Surety above named, are held and firmly bound unto Owner, its successors and assigns, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves and our respective heirs, executors, administrators, officers, directors, shareholders, partners, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal entered into that certain Contract with Owner, which Contract is expressly incorporated herein for all purposes.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION IS SUCH, that if Principal well and truly repair any and all defects in the work occasioned by or resulting from defects in materials furnished by, or workmanship of, the Principal in performing the work covered by the Contract, including any guaranty or warranty required under the Contract, then this obligation is void; otherwise it is to remain in full force and effect. Should the Principal fail to well and truly repair any and all defects in the work occasioned by or resulting from defects in materials furnished by, or workmanship of, the Principal in performing the work as required by the Contract in all its terms, the Surety will be liable for all damages, losses, expenses and liabilities that the Owner may suffer in consequence thereof.

The parties intend this maintenance bond to be a common law bond to be constructed in accordance with Texas law.

Surety hereby agrees, for value received, that no change, extension of time, alteration or addition to the terms of the Contract or to work performed under the Contract, or to the plans, specifications or drawings accompanying the Contract, will in any way affect its obligations 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 to be performed thereunder.

The bound parties have executed this instrument pursuant to authority of their respective governing body, to be effective on the same date of the Contract.

_____ ATTEST

PRINCIPAL

By _____ By _____

Name _____ Name _____

Title _____ Title _____

Address _____

_____ (SEAL)

_____ ATTEST

SURETY

By _____ By _____

Name _____ Name _____

Title _____ Title _____

(SEAL)

Physical Address:

_____

_____

_____

Mailing Address:

_____

_____

_____

Telephone: _____

Local Recording Agent Personal Identification Number:

_____

Agency Name:_____

Agency Address_____

Agency Telephone _____

Surety must attach its original Power of Attorney to this Bond.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the secretary of the corporation named as Principal in the Bond; that _____, who signed the Bond on behalf of Principal, was then _____ of the corporation; that I know his or her signature, and his or her signature is genuine; and that the Bond was duly signed for and on behalf of the corporation by authority of its governing body.

_____ (Corporate Seal)

Signature of Corporate Secretary

ATTACH POWER OF ATTORNEY

Exhibit A

"General Decision Number: TX20210007 01/01/2021

Superseded General Decision Number: TX20200007

State: Texas

Construction Types: Heavy and Highway

Counties: Atascosa, Bandera, Bastrop, Bell, Bexar, Brazos, Burleson, Caldwell, Comal, Coryell, Guadalupe, Hays, Kendall, Lampasas, McLennan, Medina, Robertson, Travis, Williamson and Wilson Counties in Texas.

HEAVY (excluding tunnels and dams, not to be used for work on Sewage or Water Treatment Plants or Lift / Pump Stations in Bell, Coryell, McClennon and Williamson Counties) and HIGHWAY Construction Projects

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021

* SUTX2011-006 08/03/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER (Paving and Structures)	$ 12.56	
ELECTRICIAN	$ 26.35	

FORM BUILDER/FORM SETTER
Paving & Curb.....$ 12.94
Structures.....$ 12.87

LABORER
Asphalt Raker.....$ 12.12
Flagger.....$ 9.45
Laborer, Common.....$ 10.50
Laborer, Utility.....$ 12.27
Pipelayer.....$ 12.79
Work Zone Barricade Servicer.....$ 11.85

PAINTER (Structures).....$ 18.34

POWER EQUIPMENT OPERATOR:
Agricultural Tractor.....$ 12.69
Asphalt Distributor.....$ 15.55
Asphalt Paving Machine.....$ 14.36
Boom Truck.....$ 18.36
Broom or Sweeper.....$ 11.04
Concrete Pavement Finishing Machine.....$ 15.48
Crane, Hydraulic 80 tons or less.....$ 18.36
Crane, Lattice Boom 80 tons or less.....$ 15.87
Crane, Lattice Boom over 80 tons.....$ 19.38
Crawler Tractor.....$ 15.67
Directional Drilling Locator.....$ 11.67
Directional Drilling Operator.....$ 17.24
Excavator 50,000 lbs or Less.....$ 12.88
Excavator over 50,000 lbs...$ 17.71
Foundation Drill, Truck Mounted.....$ 16.93
Front End Loader, 3 CY or Less.....$ 13.04
Front End Loader, Over 3 CY.$ 13.21
Loader/Backhoe.....$ 14.12
Mechanic.....$ 17.10
Milling Machine.....$ 14.18
Motor Grader, Fine Grade....$ 18.51
Motor Grader, Rough.....$ 14.63
Pavement Marking Machine....$ 19.17
Reclaimer/Pulverizer.....$ 12.88
Roller, Asphalt.....$ 12.78
Roller, Other.....$ 10.50
Scraper.....$ 12.27
Spreader Box.....$ 14.04
Trenching Machine, Heavy....$ 18.48

Servicer.....$ 14.51

Steel Worker
Reinforcing.....$ 14.00
Structural.....$ 19.29

TRAFFIC SIGNAL INSTALLER
Traffic Signal/Light Pole Worker.....$ 16.00

TRUCK DRIVER
Lowboy-Float.....$ 15.66
Off Road Hauler.....$ 11.88
Single Axle.....$ 11.79
Single or Tandem Axle Dump Truck.....$ 11.68
Tandem Axle Tractor w/Semi Trailer.....$ 12.81

WELDER.....$ 15.97

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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

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

Union Rate Identifiers

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

005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

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

Survey Rate Identifiers

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

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION
"

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

THIS AGREEMENT is by and between Pulte Homes of Texas, L.P. on behalf of Kendall County Water Control and Improvement District No. 3A ("Owner") and _____("Contractor") in the awarded amount of _____

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:

A. Under this Contract, Contractor shall furnish all materials, appliances, tools, equipment, transportation, services, and all labor and superintendence necessary for the construction of the Work as described in these Technical Specification and as shown on the Plans. The completed installation shall not lack any part that can be reasonably implied as necessary to its proper functioning or any subsidiary item that is customarily furnished, and Contractor shall deliver the installation to Owner in operating condition.

B. Work, in general, under this Contract consists of furnishing, installing, and constructing all structures, equipment, and materials, including appurtenances, as indicated on the Plans.

C. Contractor is employed by Owner as an independent contractor to perform the Work. Contractor represents and warrants that, to the extent required by "Law" (as defined in Paragraph 6.09 of the General Conditions) in connection with the performance of the Work, Contractor is duly licensed to perform the Work under the Laws of the State in which the applicable Project is located ("State") and that Contractor's license number, if applicable, is set forth on the signature page of this Subcontract.

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:

A. Corley Farms Unit 3 for Kendall County Water Control and Improvement District No. 3A, Kendall County, Texas,
according to those particular Plans and Technical Specifications
prepared by Design-Build Engineer
in the initial Contract Price of $_____

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Cude Engineers (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 Contract Time to substantially complete the Items will be ____ calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions.

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 $1,000 for each day that expires after the times 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 for each day that expires after the times specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

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:

A. For all Work, at the prices stated in Contractor's Bid, provided in Section 00 4100 – Bid Form.

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 no later than the 20th 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 12% 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 4.02 of the General 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 4.06 of the General 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.

J. Contractor acknowledges that Owner's architectural, structural, civil and landscape drawings, plans and specifications, and all other design materials with respect to the Work (the "Design Documents") are and shall remain the property of Owner whether or not any Work is completed. Contractor acknowledges and agrees that the Design Documents are privileged and proprietary in nature and that Owner has and maintains copyrights to the Design Documents under applicable state and federal Law. Contractor shall return all Design Documents and all copies thereof to Owner at the request of Owner at the completion of the Work or earlier termination of this Agreement. Except as necessary to complete the Work, Contractor shall not copy or otherwise reproduce the Design Documents in any way without the express written permission of Owner. Further, submission or distribution to meet official regulatory requirements or for all other governmental approval purposes in connection with the Work shall not be construed as a publication that undermines or otherwise derogates Owner's ownership rights.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement.
2. Performance bond.
3. Payment bond.
4. Other bonds.
5. General Conditions.
6. Supplementary Conditions.
7. Specifications as listed in the table of contents of the Contract Documents & Specifications.
8. Drawings consisting of _____.
9. Addenda (numbers 1 to 1, inclusive).
10. Exhibits to this Agreement (enumerated as follows):
    a. Contractor's Bid.
    b. Documentation submitted by Contractor prior to Notice of Award.
11. Wage Rate Scale for Construction Projects.
12. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    a. Notice(s) to Proceed.
    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.

B. Contractor acknowledges that Owner is relying upon the experience, expertise and ability of the present officers, stockholders, members and/or partners of Contractor to cause all of the terms and provisions of this Agreement to be fulfilled. Contractor shall not further subcontract the whole or any material part of this Agreement beyond the subcontracts presented in the final Bid submitted by Contractor to Owner, without first obtaining the written consent of Owner, which consent Owner may withhold in its sole and absolute discretion. In the event of any material change in any of the officers, stockholders, members or partners of Contractor prior to the completion of the Work, Owner shall have the right, at its option, to terminate this Agreement pursuant to Paragraph 15.03 of the General Conditions.

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 anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive

levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 Other Provisions

A. Failure to Exercise. The failure of either party hereto to insist, in any one or more instances, upon the performance of any of the terms, covenants or conditions of this Agreement or to exercise any right herein, shall not be construed as a waiver or relinquishment of such term, covenant, condition or right as respects further performance.

B. Attorneys' Fees. Should either party employ an attorney to institute suit, demand mediation, demand arbitration or institute any other procedure for the resolution of a dispute in order to enforce any of the provisions hereof, to protect its interest in any matter arising under this Agreement, or to collect damages for the breach of this Agreement or to recover on a surety bond given by a party under this Agreement, the prevailing party shall be entitled to recover its attorneys' fees, consultants and experts fees, costs, charges and expenses expended or incurred therein. Specifically, the parties hereto agree that should a dispute proceed to arbitration the arbitrator is empowered to award attorneys' fees to the prevailing party.

C. Entire Agreement. This Agreement and the Exhibits and Schedules attached hereto, and the Contracts Documents entered into pursuant hereto, are solely for the benefit of the parties hereto and together represent the entire and integrated agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior negotiations, representations, or agreements, either written or oral.

D. Authorization. The signature of any person on behalf of a party to this Agreement shall be deemed a personal warranty by that person that such person has the power and authority to bind any corporation, limited liability company, partnership or any other business entity for whom that person purports to act.

E. Amendments. No oral statement of any person shall in any manner or degree modify or otherwise affect the terms of this Agreement. It is agreed that nothing done by Owner in the performance of its obligations hereunder or in directing performance by Contractor shall be construed in any manner or to any extent whatsoever as a waiver by Owner of any default in or a failure of performance of the terms and conditions of this Agreement by Contractor. It is agreed that no person has or shall hereinafter have any power or authority to waive, modify, alter or rescind any provision of this Agreement on behalf of Owner except the person or persons whose names are affixed to this Agreement as representatives of Owner and except further, such persons who are authorized by the President or Secretary of Owner, in writing, to agree to such waiver, modification, alterations or rescission and in the case of these latter persons, their authority shall be strictly limited to the terms of the writing granting them such authority.

F. No Presumption or Construction Against Drafter. The terms of this Agreement to be entered into pursuant hereto are and will be contractual and the result of negotiation between the parties hereto. Accordingly, any rule of construction of contracts that ambiguities are to be construed against the drafting party shall not be employed in the interpretation of this Agreement.

G. No Waiver. Neither the final payment nor any provision in any document shall relieve Contractor of responsibility for faulty materials or workmanship and Contractor shall, when notified of any such defects, promptly remedy the same and pay for any damage to any Project and/or other Work resulting therefrom.

H. Notice. Any and all notices required or permitted hereunder shall be given in writing and be either personally delivered, sent by facsimile (delivery of which must be evidenced by a confirmation of successful transmission printed by the transmitting facsimile machine), sent by first class United States mail with postage prepaid or sent by prepaid overnight courier service providing evidence of receipt. All notices to be sent to Contractor shall be sent to the address shown below. All notices to be sent to Owner shall be sent to the address shown below, and to be effective, a copy of any such notice constituting a notice of default hereunder must also be sent to Owner by a method or methods permitted above to: Pulte Homes of Texas, L.P., c/o Kendall County Water Control and Improvement District No. 3A, Attn.: Cameron Sasko, 1718 Dry Creek Way, Suite 120, San Antonio, Texas 78259; phone _(210) 581-8812; email: Cameron.Sasko@PulteGroup.com .

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

PROHIBITION ON BOYCOTTING ISRAEL AND CONTRACTING WITH TERRORIST ORGANIZATIONS VERIFICATION

This verification is hereby incorporated into the terms of the contract by and between Pulte Homes of Texas, L.P., on behalf of Kendall County Water Control and Improvement District No. 3A and _____ entered into this the_____day of__, ____.

1.01 _____, in conjunction with the execution of the above referenced contract and in accordance with Chapter 2271 of the Texas Government Code, , does hereby agree, confirm, and verify that it:

A. Does not Boycott Israel; and

B. Will not Boycott Israel during the term of the contract

"Boycott Israel" has the meaning given to it in Chapter 808 of Subtitle A, Title 8 of the Texas Government Code. As of the effective date of the statute, the term means "refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action make for ordinary business purposes."

1.02 Contractor hereby certifies that it is not an entity that contracts with or provides supplies or services to a foreign terrorist organization, as defined by Section 2252.151(2), Texas Government Code, and has not been identified as a company known to have contracts with or provide supplies or services to a foreign terrorist organization as identified on a list prepared and maintained under Section 2252.153, Texas Government Code.

1.03 Contractor hereby acknowledges and agrees that this verification is a material term of the contract and Owner is expressly relying on this verification in agreeing to enter into the contract with Contractor.

1.04 TO THE MAXIMUM EXTENT PERMITTED BY LAW, CONTRACTOR AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS OWNER FROM ALL CLAIMS, CAUSES OF ACTION, LEGAL PROCEEDINGS, DAMAGES, COSTS, FEES AND EXPENSES ARISING OUT OF OR RELATED TO AN ACTUAL OR ALLEGED MISREPRESENTATION BY CONTRACTOR PROVIDED HEREUNDER.

_____
Contractor Signature

THE STATE OF TEXAS §
§
COUNTY OF _____ §

Before me, a notary public, on this day personally appeared _____, known to me to be the person whose name is subscribed to the foregoing document and, being by me first duly sworn, declared that the statements therein contained are true and correct.

_____
Notary Public, State of Texas

(SEAL)

Receipt and incorporation into the above-referenced contract hereby agreed to and acknowledged by:

_____
Owner Signature

Developer as Owner for Purposes of Payment

DEVELOPER AS OWNER FOR PURPOSES OF PAYMENT. Notwithstanding any other items, conditions, or provisions of the general or special conditions or any other provisions of the Contract Documents to the contrary Kendall County Water Control and Improvement District No. 3A, the ('District") shall be deemed and considered as Owner for all purposes under the Contract Documents, except that Pulte Homes of Texas, L.P. ("Developer") shall be considered the "Owner" for purposes of making payments to the Contractor or to any other party pursuant to or In relation to the Contract Documents of all or any portion of the Contract Price and for paying all or any costs or damages that might ever be due, including any costs associated with any change orders to the Contract. The District and Developer shall each approve all of the invoices, certificates and supporting documentation in connection with a request for payment. The Contractor agrees to and shall look solely to Developer for payment of all invoices, change orders, or other sums or claims, of whatever nature, due or to become due under or related to the Contract, and the District shall never be responsible or liable to the Contractor or any other party for such payments. Developer agrees to make all payments due under the Contract in accordance with its terms and agrees to all conditions and provisions herein. Failure by Developer to make such payments to the Contractor shall constitute a default by Owner and shall entitle the Contractor to all rights and remedies arising under the Contract Documents for a default in payment of sums due the Contractor pursuant to the Contract Documents; provided, however, the District shall have no obligation for payment of sums due or to become due under the Contract including any damages and Contractor shall look solely to the Developer for any such payment.

Developer reserves the right to assign its obligations hereunder to District, subject to written acceptance thereof by the District (at District's sole option). A copy of any such assignment and the acceptance thereof by the District shall be provided to the Contractor and thereafter the District shall be obligated to make all payments thereafter becoming due to the Contractor pursuant to this Contract and the obligations of Developer contained in the first paragraph of these Special Conditions shall terminate.

For purposes of convenient administration of this Contract, District may require Developer to advance funds due from time to time in order to make payments due the Contractor pursuant to this Contract from such funds; provided, however, no such payment by District will obligate District to make further payments due the Contractor pursuant to this Contract unless and until District has accepted an assignment of Developer's obligations hereunder and a copy of the assignment and the District's acceptance is delivered to the Contractor, whereupon the District shall become liable for payment to the extent of the assignment.

If Owner breaches its obligations in any respect under the Contract, before exercising any remedy the Contractor shall give written notice to Developer and District at the addresses below specifying the breach and the steps necessary to cure the breach and Developer shall have the right and power, within thirty (30) days after receipt of such notice, to cure or cause the breach to be cured, if it so elects, before Contractor exercises any of its remedies under the Contract.

Kendall County Water Control and Improvement District No. 3A
c/o SK Law
Attn: Julianne Kugle
1980 Post Oak Boulevard, Suite 1380
Houston, Texas 77056

Pulte Homes of Texas, L.P.
a Texas limited partnership
c/o Coats Rose
Attn: John Cannon
9 Greenway Plaza, Suite 1000
Houston, Texas 77046

The District, Developer and Contractor hereby acknowledge that these Special Conditions to the Agreement are accepted regarding the project described as Corley Farms Unit 3.

Effective October ____, 2023.

Kendall County Water Control and Improvement District No. 3A

By: _____

Name: _____

Title: _____

Date: _____

_____
Contractor

By: _____

Name: _____

Title: _____

Date: _____

Pulte Homes of Texas, L.P.
a Texas limited partnership

By: Sean Miller,
Texas,
its authorized agent

By: _____

Name: _____

Title: _____

Subsurface Exploration and Pavement Analysis
Proposed New Streets
324 Acre Biedenharn Tract
Corley Road
Boerne, Texas

InTEC Project No. S201216-P
September 23, 2020

Pulte Homes of Texas, LP
1718 Dry Creek Way, Suite 120
San Antonio, Texas 78259

Integrated Testing and Engineering Company of San Antonio, L.P.
12028 Radium, San Antonio, Texas 78216—Phone: (210) 525 9033—Fax: (210) 525 9032—www.InTEC-SA.com

Integrated Testing and Engineering Company of San Antonio, L.P.
Geotechnical & Environmental Engineering • Construction Services • Geologic Assessment

E.A. Palaniappan, Ph.D., P.E.
Murali Subramaniam, Ph.D., P.E.
Kausi Subramaniam, B.S.

September 23, 2020

Pulte Homes of Texas, LP
1718 Dry Creek Way, Suite 120
San Antonio, Texas 78259

Attention: **Mr. Sean Miller**
Email: sean.miller@pultegroup.com

Re: Subsurface Exploration and Pavement Analysis
Proposed New Streets
324 Acre Biedenharn Tract
Corley Road
Boerne, Texas

InTEC Project No. S201216-P

Ladies & Gentlemen:

Integrated Testing and Engineering Company of San Antonio (InTEC) has completed a **subsurface exploration and pavement thickness evaluation report** at the above referenced project site. The results of the exploration are presented in this project.

We appreciate and wish to thank you for the opportunity to be of service to you on this project. If we can be of additional assistance during the foundations explorations, and materials testing-quality control phase of construction, please call us.

Sincerely,
InTEC of San Antonio, L.P.

09/30/2020

InTEC of SAN ANTONIO
F-7623

Murali Subramaniam, Ph. D., P.E.

EXECUTIVE SUMMARY

The soil conditions at the location of the **proposed new streets at the 324 Acre Biedenharn Tract at Corley Road in Boerne, Texas** were obtained from **34 borings drilled to depths of 11 to 15 feet.** Laboratory tests were performed on selected specimens to evaluate the engineering characteristics of various soil strata encountered in the borings.

The results of our exploration, laboratory testing, and engineering evaluation indicate the underlying clays at this site are **moderately plastic to highly plastic in character.** Potential vertical movements on the order of **1 ½ to 2 ¾ inches** were estimated.

The proposed streets at this site may be supported by flexible asphalt pavements. Cut and fill information is not available for review at this time. At the time of construction, if the final street subgrade consists of material other than encountered in our borings, the recommendations may have to be revised. Pavement section recommendations for Residential Local, Collector, and Arterial type streets are presented.

Ground water was not encountered in the borings at the time of drilling.

Detailed descriptions of subsurface conditions, engineering analysis, and design recommendations are included in this report.

Input Parameters used in Asphalt Pavement Section Calculation

Street Classification →	Residential Local	Residential Collector	Arterial Street
ESAL	100,000	1,000,000	3,000,000
Reliability Level	R-80	R-90	R-95
Initial and Terminal Serviceability	4.2 and 2.0	4.2 and 2.5	4.2 and 2.5
Standard Deviation	0.45	0.45	0.45
Service Life	20 years	20 years	20 years
Minimum HMAC	1.5 inches	2.0 inches	3.0 inches
Minimum Aggregate Base	8.0 inches	10.0 inches	12.0 inches
Minimum Base Compaction (ASTM D1557 at Moisture content between -2 and +2 percent of optimum moisture content)	95 %	95 %	95 %
Minimum Subgrade Compaction (ASTM D1557)	95 %	95 %	95 %

Summary of Recommended Options
Minimum Flexible Pavement Recommendations – CBR = 2.5 **

Classification	Asphaltic Concrete, inches	Asphaltic Concrete, inches	Aggregate Base, Inches	Geogrid	Subgrade, Inches	Structural Number
Residential Local	Type D 2.00	-	9.50	No	8*	2.85
		-	8.00	Yes	8*	2.88
Residential Collector	Type D 3.00	-	16.00	No	8*	4.20
		-	13.50	Yes	8*	4.25
Arterial	Type D 2.00 + Type C 2.00 Or Type C 4.00	-	22.50	No	8*	5.55
		-	18.50	Yes	8*	5.54
		Type B 9.50	-	No	8*	5.63

Subgrade Notes (*):

- Cut and fill information is not known at this time.
- The street subgrade may be underlain by brown clays, tan clays, tan calcareous clays, tan marl, and tan limestone.
- Subgrade Plasticity Index values are expected to be greater than 20 in some areas. As per City of Boerne requirements, lime stabilization is recommended in these areas.
    - The subgrade should be stabilized to a depth of 8 inches using 7 percent lime content.
        - The subgrade soils should be tested for soil sulfate content prior to stabilization. If the soil sulfate content is high, an alternate procedure will be required.
        - Lime application rate of **42.0 lbs per sq yard for 8-inch depth** of stabilization is recommended.
    - In some areas, the plasticity index values of the pavement subgrade may be less than 20. These areas do not need lime stabilization.

General Notes (**):

- Input parameters are shown in Table No. 6. Please call us to provide pavement recommendations, if needed, for different input values.
- If repetitive truck or heavy truck traffic is anticipated, please contact us for revised pavement recommendations.
- Pavement section recommendations are based on a subgrade CBR value of 2.5. The pavement recommendations are not based on the shrink / swell characteristics of the underlying soils. The pavement can experience cracking and deformation due to shrinkage and swelling characteristics of the soils as described in the Vertical Movements section of this report. Use of geogrid will help reduce the shrink / swell related pavement cracking.

- If water is allowed to get underneath the asphalt or if moisture content of the base or subgrade changes significantly, then pavement distress will occur. Exterior moisture barrier, such as curbs extending a minimum of 3 inches into subgrade, will help reduce moisture getting underneath the pavement.

Geogrid:

- One layer of geogrid, Tensar Triax TX5, installed on top of compacted (stabilized or moisture conditioned) subgrade as per manufacturer's guidelines.

Fill Material:

- If fill is used to raise the grade, approved fill material should be used to raise the grade. The fill material should be free of deleterious material with a minimum CBR value of 2.5 and **conform to City of Boerne requirements**. The material should be placed as per applicable city or county guidelines.

Subgrade Delineation:

- The project geotechnical engineer should delineate the street sections for lime stabilization areas and areas which do not require lime stabilization at the time of construction.

Summary of Pavement Materials

Pavement Section	Material	Subgrade	Thickness
Subgrade	Stratum I Clays	Subgrade Stabilization (tested for soil sulfate)	As recommended in pavement options (8 inches)
	Marl / Limestone (Plasticity Index <= 20)	Moisture conditioned subgrade	6 inches
Base	TxDOT Item 247 A1-2	-	As recommended in pavement options (maximum of 6 inches per lift)
Asphalt	Type B, C, D	-	As recommended in pavement options
Geogrid	Tensar Triax TX5	One layer	As per manufacturer's recommendations

All applicable guidelines as presented in "City of Boerne Standard Specifications for Public Works Construction" should be followed.

TABLE OF CONTENTS

INTRODUCTION

General

This report presents the results of our **subsurface exploration and pavement thickness evaluation** for the **proposed new streets at the 324 Acre Biedenharn Tract at Corley Road in Boerne, Texas.** This project was authorized by **Mr. Sean Miller.**

Purpose and Scope of Services

The purpose of our subsurface investigation was to evaluate the site's subsurface and ground water conditions and provide pavement thickness recommendations for the planning and development phases of the project. Our scope of services includes the following:

1) drilling and sampling of 34 borings – to depths of 11 to 15 feet;

2) evaluation of the in-place conditions of the subsurface soils through field penetration tests;

3) observing the ground water conditions during drilling operations;

4) performing laboratory tests such as Atterberg limits, California Bearing Ratio (C.B.R.), Lime Series, and Moisture content tests;

5) review and evaluation of the field and laboratory test programs during their execution with modifications of these programs, when necessary, to adjust to subsurface conditions revealed by them;

6) compilation, generalization and analyses of the field and laboratory data in relation to the project requirements;

7) estimate of potential vertical movements;

8) preparation of pavement guidelines;

9) preparation of a written geotechnical engineering report for use by the members of the design team in their preparation of construction, contract, and specifications documents.

The Scope of Services **did not include any environmental assessment** for the presence or absence of wetlands or hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site. Any statements in this report or on the boring logs regarding odors, colors or unusual or suspicious items or conditions are strictly for the information of the client.

Project Description

The proposed project involves the development of the 324 Acre Biedenharn Tract at Corley Road in Boerne, Texas. The proposed pavement areas are anticipated to include residential Local and Collector type streets. Street profiles showing cut and fill information are not available at the time of our investigation.

The project tracts (south and north) are located west of IH-10 and south of Cascade Caverns Road in Boerne, Texas. Based on the review of the aerial maps, (a) the tracts appear to be undeveloped with numerous trees on the south and west parts of north tract and fewer trees in the south tract and (b) a few structures were noted on the south tract with indications of farming or ranching operations. A review of the topographic map indicates that the site generally slopes from the north west to the south east and a couple of drainage areas noted in the south part of the north tract. The southern edge of the south tract borders a creek. A review of the geologic map indicates that the site is primarily underlain by Kgru, Upper Glenrose Formation and alluvial formation at the southern edge of the south tract.

Limestone was encountered in the borings. Karst features are formed in limestone, dolomite, or gypsum by dissolution. A geophysical study of the site may indicate the presence and potential impact of Karst features, caves, or significant cavities on the building performance and construction delays. The thickness of the stratum I clay is likely to vary across the site. Geophysical study is not within the scope of this investigation.

SUBSURFACE EXPLORATION

Scope

The field exploration to determine the engineering characteristics of the subsurface materials included a reconnaissance of the project site, drilling the borings, performing standard penetration tests, and obtaining Split Barrel samples.

Thirty-four soil test borings were drilled at the approximate locations shown on the Boring Location Plan, Plate 1, included in the Illustration section of this report. These borings were **drilled to depths of 11 to 15 feet below the presently existing ground surface**. Boring locations were selected by the project geotechnical engineer and established in the field by the drilling crew using normal taping procedures. The soil conditions may need to be verified if the proposed street profiles show deeper cuts from the existing grade elevation.

Drilling and Sampling

The soil borings were performed with a drilling rig equipped with a rotary head. Conventional solid stem augers were used to advance the holes and samples of the subsurface materials were obtained **using a Split Barrel sampler.** The samples were identified according to boring number and depth, encased in polyethylene plastic wrapping to protect against moisture loss, and transported to our laboratory in special containers.

In summary, the following samples as presented in Table No. 1 were collected as a part of our field exploration procedure:

Table No. 1

Type of Sample	Number Collected
Split Barrel Samples	116
Auger Samples	48

Field Tests and Water Level Measurements

Penetration Tests – During the sampling procedures, **standard penetration tests were performed** in the borings in conjunction with the split-barrel sampling. The standard penetration

value (N) is defined as the number of blows of a 140-pound hammer, falling thirty inches, required to advance the split-spoon sampler one foot into the soil. The sampler is lowered to the bottom of the drill hole and the number of blows recorded for each of the three successive increments of six inches penetration. The "N" value is obtained by adding the second and third incremental numbers. The results of the standard penetration test indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components.

Water Level Measurements – Ground water was not encountered in the borings at the time of drilling. In relatively pervious soils, such as sandy soils, the indicated elevations are considered reliable ground water levels. In relatively impervious soils, the accurate determination of the ground water elevation may not be possible even after several days of observation. Seasonal variations, temperature and recent rainfall conditions may influence the levels of the ground water table and volumes of water will depend on the permeability of the soils.

Field Logs

A field log was prepared for each boring. Each log-contained information concerning the boring method, samples attempted and recovered, indications of the presence of various materials such as silt, clay, gravel or sand and observations of ground water. It also contained an interpretation of subsurface conditions between samples. **Therefore, these logs included both factual and interpretive information.**

Presentation of the Data

The final logs represent our interpretation of **the contents of the field logs for the purpose delineated by our client.** The final logs are included on **Plates 2 thru 35** included in the Illustration section. A key to classification terms and symbols used on the logs is presented on **Plate 36.**

LABORATORY TESTING PROGRAM

Purpose

In addition to the field exploration, a supplemental laboratory testing program was conducted to determine additional **pertinent engineering characteristics** of the subgrade materials necessary in evaluating the soil parameters.

Laboratory Tests

All phases of the laboratory testing program were performed **in general accordance with the indicated applicable** ASTM Specifications as indicated in Table No. 2.

Table No. 2

Laboratory Test	Applicable Test Standard
Liquid Limit, Plastic Limit and Plasticity Index of the Soils	ASTM D 4318
Moisture Content	ASTM D 2216
California Bearing Ratio	ASTM D 1883

In the laboratory, each sample **was examined and classified by a geotechnical engineer.** As a part of this classification procedure, the natural water contents of selected specimens were determined. Liquid and plastic limit tests were performed on representative specimens to determine the plasticity characteristics of the different soil strata encountered.

Presentation of the Data

In summary, the tests presented in Table No. 3 in the following page were conducted in the laboratory to evaluate the engineering characteristics of the subsurface materials:

Table No. 3

Type of Test	Number Conducted
Natural Moisture Content	164
Atterberg Limits	23
California Bearing Ratio	1
Lime Series	1

The results of all these tests are presented on appropriate boring logs. These laboratory test results were used to classify the soils encountered generally according to the Unified Soil Classification System (ASTM D 2487).

GENERAL SUBSURFACE CONDITIONS

Soil Stratigraphy

The soils underlying the site may be grouped into **two to three generalized strata** with similar physical and engineering properties. The lines designating the interface between soil strata on the logs represent approximate boundaries. Transition between materials may be gradual. The soil stratigraphy information at the boring locations are presented in **Boring Logs, Plates 2 thru 35.** The soil conditions in between our borings may vary across the site. We should be called upon at the time of construction to verify the soil conditions between our borings.

The engineering characteristics of the underlying soils, based the results of the laboratory tests performed in selected samples, are summarized and presented in the following paragraph.

The site is underlain by brown clays, tan clays to tan gravelly clays, tan clays to tan calcareous clays, tan calcareous clays, light tan calcareous clays, and light tan marl to limestone. The underlying clays are moderately plastic to highly plastic with tested liquid limit values varying from 23 to 97 and plasticity index values ranging from 10 to 77. The results of standard penetration tests performed within these clays varied from 16 to greater than 50 blows per foot.

The above description is of a generalized nature to highlight the major soil stratification features and soil characteristics. The test boring logs should be consulted for specific information at each boring location.

Soil Stratigraphy may vary across the site. If deviations from the noted subsurface conditions are encountered during construction, they should be brought to the attention of InTEC. We may revise the recommendations after evaluating the significance of the changed conditions. If the construction crew encounters, at the time of grade beam excavations or during utility trench excavations, conditions such as abundant gravel, fill material, or sand seams, please contact InTEC.

Ground Water Observations

Ground water was not encountered in the borings at the time of drilling. Short term field observations generally do not provide accurate ground water levels. The contractor should check the subsurface water conditions prior to any excavation activities. The low permeability of the soils would require several days or longer for ground water to enter and stabilize in the bore

holes. Ground water levels will fluctuate with seasonal climatic variations and changes in the land use.

It is not unusual to encounter shallow groundwater during or after periods of rainfall. The surface water tends to percolate down through the surface until it encounters a relatively impervious layer.

PAVEMENTS ON EXPANSIVE SOIL

General

There are many plastic clays that swell considerably when water is added to them and then shrink with the loss of water. Pavements constructed on these clays are subjected to large uplifting forces caused by the swelling.

In the characterization of a pavement site, two major factors that contribute to potential shrink-swell problems must be considered. Problems can arise if a) the soil has expansive and shrinkage properties and b) the environmental conditions that cause moisture changes to occur in the soil.

Evaluation of the Shrink-Swell Potential of the Soils

Subsurface sampling, laboratory testing and data analyses are used in the evaluation of the shrink-swell potential of the soils under the pavements.

The Mechanism of Swelling

The mechanism of swelling in expansive clays is complex and is influenced by a number of factors. Basically, expansion is a result of changes in the soil-water system that disturbs the internal stress equilibrium. Clay particles in general have negative electrical charges on their surfaces and positively charged ends. The negative charges are balanced by actions in the soil water and give rise to an electrical interparticle force field. In addition, adsorptive forces exist between the clay crystals and water molecules, and Van Der Waals surface forces exist between particles. Thus, there exists an internal electro-chemical force system that must be in equilibrium with the externally applied stresses and capillary tension in the soil water. If the soil water chemistry is changed either by changing the amount of water or the chemical composition, the interparticle force field will change. If the change in internal forces is not balanced by a corresponding change in the state of stress, the particle spacing will change so as to adjust the interparticle forces until equilibrium is reached. This change in particle spacing manifests itself as a shrinkage or swelling.

Initial Moisture Condition and Moisture Variation

Volume change in an expansive soil mass is the result of increases or decreases in water content. The initial moisture content influences the swell and shrink potential relative to possible limits, or ranges, in moisture content. Moisture content alone is useless as an indicator or predictor of

shrink-swell potential. The relationship of moisture content to limiting moisture contents such as the plastic limit and liquid limit must be known.

If the moisture content is below or near plastic limit, the soils have high potential to swell. It has been reported that expansive soils with liquidity index* in the range of 0.20 to 0.40 will tend to experience little additional swell.

The availability of water to an expansive soil profile is influenced by many environmental and manmade factors. Generally, the upper few feet of the profile are subjected to the widest ranges of moisture variation, and are least restrained against movement by overburden. This upper stratum of the profile is referred to as the active zone. Moisture variation in the active zone of a natural soil profile is affected by climatic cycles at the surface, and fluctuating groundwater levels at the lower moisture boundary. The surficial boundary moisture conditions are changed significantly simply by placing a barrier such as a building floor slab or pavement between the soil and atmospheric environment. Other obvious and direct causes of moisture variation result from altered drainage conditions or man-made sources of water, such as irrigation or leaky plumbing. The latter factors are difficult to quantify and incorporate into the analysis, but should be controlled to the extent possible for each situation. For example, proper drainage and attention to landscaping are simple means of minimizing moisture fluctuations near structures, and should always be taken into consideration.

Man Made Conditions That Can Be Altered

There are a number of factors that can influence whether a soil might shrink or swell and the magnitude of this movement. For the most part, either the owner or the designer has some control over whether the factor will be avoided altogether or if not avoided, the degree to which the factor will be allowed to influence the shrink-swell process.

Antecedent Rainfall Ratio This is a measure of the local climate and is defined as the total monthly rainfall for the month of and the month prior to laying the pavement divided by twice the average monthly rate measured for the period. The intent of this ratio is to give a relative measure of ground moisture conditions at the time the pavement is placed. Thus, if a pavement is placed at the end of a wet period, the pavement should be expected to experience some loss of support around the perimeter as the wet soils begin to dry out and

* LIQUIDITY INDEX = {NATURAL WATER CONTENT - PLASTIC LIMIT} / {LIQUID LIMIT - PLASTIC LIMIT}

shrink. The opposite effect could be anticipated if the pavement is placed at the end of an extended dry period; as the wet season occurs, uplift around the perimeter may occur as the soil at the edge of the slab pavement in moisture content.

Age of Pavement The length of time since the pavement was cast provides an indication of the type of swelling of the soil profile that can be expected to be found beneath the pavement.

Drainage This provides a measure of the slope of the ground surface with respect to available free surface water that may accumulate around the pavement. Most builders are aware of the importance of sloping the final grade of the soil away from the pavement so that rain water is not allowed to collect and pond against or adjacent to the pavement. If water were allowed to accumulate next to the pavement, it would provide an available source of free water to the expansive soil underlying the pavement. Similarly, surface water drainage patterns or swales must not be altered so that runoff is allowed to collect next to the pavement.

Pre-Construction Vegetation Large amount of vegetation existing on a site before construction may have desiccated the site to some degree, especially where large trees grew before clearing. Constructing over a desiccated soil can produce some dramatic instances of heave and associated structural distress and damage as it wets up.

Post-Construction Vegetation The type, amount, and location of vegetation that has been allowed to grow since construction can cause localized desiccation. Planting trees or large shrubs near a pavement can result in loss of foundation support as the tree or shrub removes water from the soil and dries it out. Conversely, the opposite effect can occur if flowerbeds or shrubs are planted next to the pavement and these beds are kept well-watered or flooded. This practice can result in swelling of the soil around the perimeter where the soil is kept wet.

Utilities Underneath the Pavement The utilities such as sewer, water, electricity, gas, and communication lines are often installed underneath the streets. The sewer utility construction, for example, typically involves trenching to the desired depth, installing gravel a gravel bed underneath the sewer main, installing primary backfill (gravel), and placing back the secondary backfill (generally excavated soils). The secondary backfill material is compacted in lifts. In addition, sewer service lines run laterally from each house (for a

typical subdivision, approximately every 50-ft). These trenches with gravel and onsite material backfill are conducive to carrying water. In addition, the sewer service lines can carry water from behind the curb. Occasionally, the sewer line may be encased in concrete which will cause ponding of any travelling water within the sewer trenches. Any water travelling within these trenches can cause expansive clays to swell. If the backfill is not adequately compacted or if excessive water is flowing in these trenches, the trench backfill can potentially settle.

Summation

It is beyond the scope of this investigation to do more than point out that the above factors have a definite influence on the amount and type of swell to which a pavement is subjected during its useful life. The design engineer must be aware of these factors as he develops his design and make adjustments as necessary according to the results of special measurements or from his engineering experience and judgment.

DESIGN ENGINEERING ANALYSIS

Pavement Design Considerations

Review of the borings and test data indicates that the following factors will affect the pavement design and construction at this site:

1) The underlying soils at the site are moderately plastic to highly plastic. Structures supported on or within these clays will be subjected to potential vertical movements on the order of **1 ½ to 2 ¾ inches.**

2) The strengths of the underlying soils are adequate to support the proposed new streets.

3) Based on the stratigraphy observed at this site, the final street subgrade is anticipated to be in the clay areas. The cut and fill information is not available at this time. The final street subgrade should be verified by InTEC at the time of construction.

4) Ground water was not encountered in the borings at the time of drilling.

Vertical Movements

The potential vertical rise (PVR) for slab-on grade construction at the location of the structures had been estimated using Texas Department of Transportation Procedure TXDOT-124-E. This method utilizes the liquid limits, plasticity indices, and in-situ moisture contents for soils in the seasonally active zone, estimated to be about twelve feet at the project site.

The estimated PVR value provided is based on the proposed floor system applying a sustained surcharge load of approximately 1.0 lb. per square inch on the subgrade materials**. Potential vertical movement on the order of 1 ½ to 2 ¾ inches was estimated at the existing grade elevation**.

The PVR values are based on the current site grades. If cut and fill operations in excess of 6 inches are performed, the PVR values could change significantly. Higher PVR values than the above mentioned values will occur in areas where water is allowed to pond for extended periods.

If proper drainage is not maintained (allowing subgrade moisture content to change significantly) and / or if the pavement is underlain by utility trenches, resulting (a) potential vertical movements will be much greater than 2 to 3 times the anticipated vertical movements and (b) the subgrade strength may be reduced significantly reduced.

If the finish grade elevation is higher than the existing grade, compacted select fill should be used to raise the grade level. Any select fill should be placed and compacted as recommended under "Select Fill" in the "Construction Guidelines" section of this report. Each lift should be compacted and tested by InTEC to verify Compaction Compliance.

Method to Lower Vertical Movements

The underlying clays may be removed and replaced by compacted crushed limestone select fill. The depth options and the respective anticipated movements after selection of one of the depth options are presented in Table No. 4.

Table No. 4

Removal of Existing Clays and Replacement with Select Fill, Feet	Anticipated Potential Vertical Movement, Inches
0	2 ¾
2	1 ¾
4	1

The select fill should be placed and compacted as recommended under "Select Fill" in the "Construction Guidelines" section of this report. The compacted select fill should extend a minimum of 3-ft outside the edges of the pavement. Each lift should be tested and approved by InTEC before placement of the subsequent lift.

If over excavation and select fill replacement is used to lower potential vertical movements, the bottom of excavation should be drained properly. It should not act as a bathtub and hold water in the event any accidental source of water enters the excavation. Gravel fill and perforated drainpipes with perforations at the bottom, outlet pipes with a gradient, and day-lighting the pipes with head walls should be considered for proper drainage. If additional options are required, please contact InTEC.

When the clay removal and select fill replacement method is used to reduce potential vertical movements, the select fill extending 3 to 5-ft outside the pavement area should be covered by 2-ft thick compacted impervious clay. The impervious clay (with plasticity index value 35 or greater) should be placed in 8-inch loose lifts and compacted to a minimum of 95 percent of the maximum TxDOT 114E dry density at a water content between Optimum and Optimum Plus two percentage points. The top surface of clay seal should be sloped away from the pavement perimeter. If other options are required to lower PVR, please contact InTEC.

It should be noted that expansive clay does not shrink/swell without changes in moisture content, and thus good site design is very important to minimize movements. Coping with problems of shrink/swell due to expansive clays is a “fact of life” in the Texas region of south western U.S.A.

PAVEMENT GUIDELINES

General

Pavement area at this unit is expected to include Residential Local, Collector, and Arterial type streets. The following recommendations are presented as a guideline for pavement design and construction. These recommendations are based on a) our previous experience with subgrade soils like those encountered at this site, b) pavement sections which have proved to be successful under similar design conditions, c) final pavement grades will provide adequate drainage for the pavement areas, (d) that water will not be allowed to enter the pavement system by either edge penetration adjacent to landscape areas or penetration from the surface due to surface ponding, or (e) inadequate maintenance of pavement joints, or surface cracks that may develop.

Pavement Design

Pavement designs provide an adequate thickness of structural sections over a particular subgrade (in order to reduce the wheel load to a distributed level so that the subgrade can support load). The support characteristics of the subgrade are based on strength characteristics of the subgrade soils and not on the shrinkage and swelling characteristics of the clays. Therefore, the pavement sections may be adequate from a structural stand point, may still experience cracking and deformation due to shrinkage and swelling characteristics of the soils. In addition, if the proposed new pavements are used to carry temporary construction traffic, then heavier sections may be needed. Please contact InTEC to discuss options.

It is very important to minimize moisture changes in the subgrade to lower the shrinkage and swell movements of the subgrade clays. The pavement and adjacent areas should be well drained. Proper maintenance should be performed by sealing the cracks as soon as they develop to prevent further water penetrations and damage. In our experience,

(a) majority of the pavement distress observed over the years were caused by changes in moisture content of the underlying subgrade and / or excessive moisture in the base section,

(b) pavements with a grade of one percent or more have performed better than the pavements with allowable minimum grade,

(c) pavements with no underground utilities (under the pavement) have performed better than pavements with underground utilities and the associated laterals (underneath the pavement),

(d) pavements that are at a higher grade elevation than the surrounding lots have performed better, and

(e) any design effort that minimizes moisture penetration into the pavement layers have performed better.

"Alligator" type Cracks

A layer of aggregate base is typically used underneath the concrete curbs around the pavement areas. This layer of aggregate base underneath the concrete curb is conducive to the infiltration of surface water into the pavement areas. Water infiltration into the base layer can result in "alligator type" cracks especially when accompanied by construction traffic. Increasing the moisture content of the pavement sections will significantly impact the support characteristics. Penetrating the concrete curbs at least six inches into the native clays soils will act as a barrier to this type of water infiltration. In addition, French Drains installed on the outside of the curbs will reduce this type of water infiltration. Alligator type cracks are also caused by weak / soft pockets within the pavement layers.

Longitudinal Cracks

Asphalt pavements in highly expansive soil conditions, such as the soils encountered at this site, can develop longitudinal cracks along the pavement edges. The longitudinal cracking typically occurs about 1 to 4 feet inside of the pavement edges and they run parallel to the pavement edge. The longitudinal cracks are generally caused by differential drying and shrinkage of the underlying expansive clays. The moisture content change of the underlying subgrade clays can be reduced by installing moisture barriers. Vertical moisture barriers along the edge of the pavement or horizontal moisture barriers such as paved sidewalks or geogrid will help reduce the development of the longitudinal or reflective cracks.

Periodic Maintenance

The pavements constructed on clay subgrades such as the one encountered at this site will be subjected to swell related movements. Hence, proper maintenance should be performed by sealing the cracks as soon as they develop to prevent further water penetrations and damage.

Pavement Sections

Local and collector type residential streets may be designed with flexible pavements. Cut and fill information is not available at the time of our investigation. The final finish street subgrade is expected to be in the clay areas. Minimum flexible pavement sections for the anticipated subgrades are presented in Table No. 5 in the following page. Input parameters used in the pavement section calculations are presented in Table No. 6.

- If pavement design for parameters other than those shown in Table No. 7 is needed or if repetitive / heavy truck traffic is anticipated, please contact us for additional pavement section recommendations.
- The pavement sections are not based on shrink / swell characteristics of the subgrade soils.
- The recommended pavement sections are based on the subgrade soil support characteristics.
- The subgrade soil support characteristics will be significantly affected by changes in moisture content.

The cut and fill information is not available at this time. The final street subgrade should be verified by InTEC at the time of construction.

Table No. 5 – Minimum Flexible Pavement Recommendations – CBR = 2.5 **

Classification	Asphaltic Concrete, inches	Asphaltic Concrete, inches	Aggregate Base, Inches	Geogrid	Subgrade, Inches	Structural Number
Residential Local	Type D 2.00	-	9.50	No	8*	2.85
		-	8.00	Yes	8*	2.88
Residential Collector	Type D 3.00	-	16.00	No	8*	4.20
		-	13.50	Yes	8*	4.25
Arterial	Type D 2.00 + Type C 2.00 Or Type C 4.00	-	22.50	No	8*	5.55
		-	18.50	Yes	8*	5.54
		Type B 9.50	-	No	8*	5.63

Subgrade Notes (*):

- Cut and fill information is not known at this time.
- The street subgrade may be underlain by brown clays, tan clays, tan calcareous clays, tan marl, and tan limestone.
- Subgrade Plasticity Index values are expected to be greater than 20 in some areas. As per City of Boerne requirements, lime stabilization is recommended in these areas.
    - The subgrade should be stabilized to a depth of 8 inches using 7 percent lime content.
        - The subgrade soils should be tested for soil sulfate content prior to stabilization. If the soil sulfate content is high, an alternate procedure will be required.
        - Lime application rate of **42.0 lbs per sq yard for 8-inch depth** of stabilization is recommended.
    - In some areas, the plasticity index values of the pavement subgrade may be less than 20. These areas do not need lime stabilization.

General Notes (**):

- Input parameters are shown in Table No. 6. Please call us to provide pavement recommendations, if needed, for different input values.
- If repetitive truck or heavy truck traffic is anticipated, please contact us for revised pavement recommendations.
- Pavement section recommendations are based on a subgrade CBR value of 2.5. The pavement recommendations are not based on the shrink / swell characteristics of the underlying soils. The pavement can experience cracking and deformation due to shrinkage and swelling characteristics of the soils as described in the Vertical Movements section of this report. Use of geogrid will help reduce the shrink / swell related pavement cracking.
- If water is allowed to get underneath the asphalt or if moisture content of the base or subgrade changes significantly, then pavement distress will occur. Exterior moisture barrier,

such as curbs extending a minimum of 3 inches into subgrade, will help reduce moisture getting underneath the pavement.

Geogrid:

- One layer of geogrid, Tensar Triax TX5, installed on top of compacted (stabilized or moisture conditioned) subgrade as per manufacturer's guidelines.

Fill Material:

- If fill is used to raise the grade, approved fill material should be used to raise the grade. The fill material should be free of deleterious material with a minimum CBR value of 2.5 and **conform to City of Boerne requirements**. The material should be placed as per applicable city or county guidelines.

Subgrade Delineation:

- The project geotechnical engineer should delineate the street sections for lime stabilization areas and areas which do not require lime stabilization at the time of construction.

Table No. 6 – Input Parameters used in Asphalt Pavement Section Calculation

Street Classification →	Residential Local	Residential Collector	Arterial Street
ESAL	100,000	1,000,000	3,000,000
Reliability Level	R-80	R-90	R-95
Initial and Terminal Serviceability	4.2 and 2.0	4.2 and 2.5	4.2 and 2.5
Standard Deviation	0.45	0.45	0.45
Service Life	20 years	20 years	20 years

Subgrade Preparation

It is important that any existing pavement and organic and compressible soils are removed and the exposed subgrade is properly prepared prior to pavement installation. The subgrade should be prepared as described in the applicable city or TxDOT Guidelines. Base course material should be placed immediately upon completion of the subgrade compaction operation to prevent drying of the soils due to exposure.

The finish grade elevation of the subgrade should be such that water drains downward freely towards a drainage area. At the drainage area, 3x5 rock may be provided at the subgrade level and the collected water at the drainage area should be taken out (such as into the existing

concrete drainage channel). If any voids in the subgrade should be filled in with the same subgrade material and compacted in lifts.

The approved fill material should be placed in 8-inch lifts (6 inches compacted) and compacted as recommended in the Site Preparation section of the Construction Guidelines presented in this report. If the fill depth exceeds 4 feet, the potential subgrade settlement should be considered. Please contact InTEC with the cut and fill information to evaluate the effect of proposed cut and fill on the recommendations and to provide fill material and compaction recommendations.

Base Course

Based on the survey of available materials in the area, a base course of crushed limestone aggregate or gravel appears to be the most practical material for asphalt pavement project. The base course should conform to Texas State Department of Highways and Public Transportation Standard Specification, Item 247, Type A, Grade 1 or 2. The aggregate base course should be installed as per applicable city or TxDOT Guidelines.

Aa minimum the base course should be brought to near optimum moisture conditions and compacted in lifts to at least 95 percent of maximum dry density as determined by applicable City of Boerne guidelines.

Asphaltic Concrete

The asphaltic concrete surface course should conform to City of Boerne Standard Construction Guidelines. The asphaltic concrete should be installed as per applicable city or TxDOT Guidelines.

Perimeter Drainage

It is important that proper perimeter drainage be provided so that infiltration of surface water from compacted areas surrounding the pavement is minimized, or if this is not possible, curbs should extent through the base and into the subgrade. A crack sealant compatible to both asphalt and concrete should be installed at the concrete-asphalt interfaces.

Wherever there are drastic grade changes in the pavement area (such as from 3 to 4 percent grade to 1 to 2 percent grade) 3 x 5 inch gravel subgrade with a subsurface drain system (such as Akwadrain® on the sides of the pavement) and outlet should be considered. This aspect will

provide for a better drainage system in this area. Please contact InTEC for drainage recommendations.

CONSTRUCTION GUIDELINES

Construction Monitoring

As Geotechnical Engineer of Record for this project, InTEC should be involved in monitoring the pavement construction and earth work activities. Performance of any pavement system is not only dependent on the pavement design, but is strongly influenced by the quality of construction. Please contact our office prior of construction so that a plan for pavement construction and earthwork monitoring can be incorporated in the overall project quality control program. The testing requirements shall comply with the minimum testing requirements as per applicable city and county guidelines.

Site Preparation

Site preparation will consist of **preparation of the subgrade, and placement of select structural fill.** The project geotechnical **engineer InTEC should approve the subgrade preparation, the fill materials, and the method of fill placement and compaction.**

In any areas where soil-supported concrete structure or pavement is to be used, vegetation and all loose or excessively organic material should be stripped to a minimum depth of six inches and removed from the site. Subsequent to stripping operations, the subgrade should be proof rolled prior to fill placement and recompacted to a minimum of **95 percent of the maximum dry density as determined by ASTM D 1557 test method within optimum moisture content and three percent above optimum moisture content.** The exposed subgrade should not be allowed to dry out prior to placing structural fill. Each lift should be tested by InTEC geotechnical engineer or his representative prior to placement of the subsequent lift.

Voids caused by site preparation, such as removal of trees, and low areas (such as present in this unit) should be compacted as described below:

Compaction

Site grading plan is not available for review at this time. If any low areas or disturbed areas encountered during construction should be appropriately prepared and compacted. Any deleterious or wet materials should be removed and wasted. The fill placement in the low areas should not be in a “bowl shape”. The sides of the fill area should be “squared up” and the excavated bottom should be proof rolled as described in *Proof Rolling* section of this report. On site

material, with no deleterious material, may be used to raise the grade. After proof rolling operation, the fill should be placed in 6-inch lifts and compacted to a minimum of **95 percent of the maximum dry density as determined by ASTM D 1557 test method within optimum and three percent above optimum moisture content.** Each lift should be tested by InTEC for compaction compliance and approved before placement of the subsequent lifts. The exposed subgrade should not be allowed to dry out prior to placing structural fill. It is recommended that any given lot does not straddle filled areas and natural areas to help reduce differential movement of the structures.

The excavation boundaries should be set such that building or pavement areas do not straddle fill and natural areas. The anticipated potential vertical movement may be significantly affected after the cut and fill operations are performed in this area.

Proof Rolling

Proof rolling should be accomplished in order to locate and densify any weak compressible zones under the structure and pavement areas and prior to placement of the select fill or base.

A minimum of 10 passes of a 25-ton pneumatic roller should be used for planning purposes. The operating load and tire pressure should conform to the manufactures specification to produce a minimum ground contact pressure of 90 pound per square inch. Proof rolling should be performed under the observation of the InTEC Geotechnical Engineer or his representative. The soils that yield or settle under proof rolling operations should be removed, dried and compacted or replaced with compacted select fill to grade. Density tests should be conducted as specified under *Control Testing and Filed Observation* after satisfactory proof rolling operation.

Proper site drainage should be maintained during construction so that ponding of surface run-off does not occur and cause construction delays and/or inhibit site access.

Select Fill

Any select structural fill used under the building should have a liquid limit less than 40 and a plasticity index in between 5 and 20 and be crushed limestone. The fill should contain no particles greater than 3 inches in diameter. **The percent passing U.S. Standard Sieve No. 4 should be in between 40 and 80 percent and Sieve No. 40 passing should be in between 10 and 50 percent. The percent passing Sieve No. 200 should be less than 20 percent**.

Crushed limestone with sufficient fines to bind the aggregate together is a suitable select structural fill material. The fill materials should be placed in loose lifts not to exceed 8 inches thick (6-inches compacted) and compacted to 95 percent of the maximum dry density as determined by ASTM D 1557 procedure at a moisture content within 2 percent of the optimum water content.

Ground Water

In any areas where significant cuts (2-ft or more) are made to establish final grades for pavement, attention should be given to possible seasonal water seepage that could occur through natural cracks and fissures in the newly exposed stratigraphy. Subsurface drains may be required to intercept seasonal groundwater seepage. The need for these or other dewatering devices on should be carefully addressed during construction. Our office could be contacted to visually inspect final pads to evaluate the need for such drains.

The ground water seepage may happen several years after construction if the rainfall rate or drainage changes within the project site or outside the project site. If seepage run off occurs towards the pavement areas an engineer should be called on to evaluate its effect and provision of French Drains at this location.

Drainage

Ground water seepage was not encountered in the borings at the time of drilling. However, minor ground water seepage may be encountered within the pavement areas and grading excavations at the time of construction, especially after periods of heavy precipitation. **Small quantities of seepage may be handled by conventional sump and pump methods of dewatering.**

Temporary Drainage Measures

Temporary drainage provisions should be established, as necessary, to minimize water runoff into the construction areas. If standing water does accumulate, it should be removed by pumping as soon as possible.

Adequate protection against sloughing of soils should be provided for workers and inspectors entering the excavations. This protection should meet O.S.H.A. and other applicable building codes.

Temporary Construction Slopes

Temporary slopes on the order of 1H to 1V may be provided for excavations through Strata I clays.

Fill slopes on the order of 1H to 1V may be used provided a) the fill materials are compacted as recommended and b) the slopes are temporary.

Fill slopes should be compacted. Compacting operations shall be continued until the slopes are stable but not too dense for planting on the slopes. Compaction of the slopes may be done in increments of 3 to 5-ft in fill height or the fill is brought to its total height for shallow fills.

Permanent Slopes

Maximum permanent slope of 1V to 3H is recommended in Stratum I clays. In areas where people walk on sloped areas, a slope of 1V to 5H is recommended.

Time of Construction

If the pavement is installed during or after an extended dry period, the subgrade may experience greater movement around the edges when the soil moisture content increases, such as due to rain or irrigation. Similarly, a pavement installed during or after a wet period may experience greater movement around the edges during the subsequent drying of the soils.

Control Testing and Field Observation

Subgrade preparation and base and asphalt placement should be monitored by the project geotechnical engineer or his representative of InTEC. As a guideline, at least one in-place density test should be **performed for every 100 lineal feet (or as per respective city and county requirements, whichever requires more frequent testing) of street of compacted surface lift.** However, a minimum of three density tests should be performed by InTEC on the subgrade or subsequent lifts of compaction. Any areas not meeting the required compaction should be re-compacted and retested until compliance is met.

DRAINAGE AND MAINTENANCE

Final drainage is very important for the performance of the proposed pavement. Landscaping, plumbing, and downspout drainage is also very important. It is vital that drainage be transported away from the pavement so that no water ponds around the pavement (such as behind the curbs) which can result in soil volume change under the pavement. Any leaks or drainage issues should be repaired as soon as possible in order to minimize the magnitude of moisture change under the pavement. Large trees and shrubs should not be planted in the immediate vicinity of the pavement, since root systems can cause a substantial reduction in soil volume in the vicinity of the trees during dry periods. Silt fences placed adjacent to the curb can potentially allow water to get into the pavement area.

Trench backfill for utilities should be properly placed and compacted as outlined in this report and in accordance with all applicable requirements such local City / County / SAWS Standards. Since granular bedding backfill is used for most utility lines, the backfilled trench should be prevented from becoming a conduit and allowing an access for surface or subsurface water to travel toward the new pavement. Concrete cut-off collars or clay plugs should be provided where utility lines cross curbs to prevent water traveling in the trench backfill and entering beneath the pavement. If concrete encasing is used around the sewer pipes, an alternate path for water to continue to drain should be installed.

In areas with sidewalks or other structures adjacent to the new pavement, a positive seal must be provided and maintained between the structures and the pavement or sidewalk to minimize seepage of water into the underlying supporting soils. **Post-construction movement of pavement and flat-work is not uncommon.** Maximum grades practical should be used for paving and flatwork to prevent areas where water can pond. In addition, allowances in final grades should take into consideration post construction movement of flatwork particularly if such movement would be critical. **Normal maintenance should include inspection of all joints in paving and sidewalks, etc. as well as re-sealing where necessary.**

Several factors relate to civil and architectural design and/or maintenance which can significantly affect future movements of the pavement systems:

1. Where positive surface drainage cannot be achieved by sloping away of the ground surface adjacent to the pavement, a drainage system should carry runoff water away from the completed pavement.

2. Planters located adjacent to the pavement should preferably be **self-contained**. Sprinkler mains should be located a minimum of five feet from the pavement.

3. Planter box structures placed adjacent to pavement should be provided with a means to assure concentrations of water are not available to the subsoils stratigraphy.

4. Large trees and shrubs should not be allowed closer to the pavement than a horizontal distance equal to roughly their mature height due to their significant moisture demand upon maturing.

5. Moisture conditions should be maintained **"constant" around the edge of the pavements.** Ponding of water in planters, in unpaved areas, and around joints in paving and sidewalks can cause movements beyond those predicted in this report and significantly reduce the subgrade support.

Adequate drainage should be provided to reduce seasonal variations in moisture content of soils around the pavement. The PVR values estimated and stated under Vertical Movements are based on provision and maintenance of positive drainage to divert water away from the pavement areas. If the drainage is not maintained, the wetted front may move below the assumed twelve feet depth, and resulting **PVR will be much greater than 2 or 3 times the stated values under Vertical Movements. Utility line leaks may contribute water and cause similar movements to occur. In addition, if the soil is allowed to dry, the associated shrinkage can cause pavement cracks. Similarly, significant changes in moisture content of the underlying pavement layers, will impact the support characteristics of the subgrade.**

Dry Periods

Close observations should be made around pavements during extreme dry periods to ensure that adequate watering is being provided to keep soil from separating or pulling back from the curb and to minimize the shrinkage related cracks.

LIMITATIONS

The analyses and recommendations submitted in this report are based upon the data obtained from **34 borings** drilled at the site. This report may not reflect the exact variations of the soil conditions across the site.

If deviations from the noted subsurface conditions are encountered during construction, they should be brought to the attention of the geotechnical engineer. The information contained in this report and on the boring logs is not intended to provide the contractor with all the information needed for proper selection of equipment, means and methods, or for cost and schedule estimation purposes. The use of information contained in the report for bidding purposes should be done at the contractor's option and risk.

Final plans for the proposed streets should be reviewed by the project geotechnical engineer so that he may determine if changes in the recommendations are required. The soil conditions may need to be verified if the proposed street profiles show deeper cuts from the existing grade elevation.

The project geotechnical engineer declares that the findings, recommendations or professional advice contained herein have been made and this report prepared in accordance with generally accepted professional engineering practice in the fields of geotechnical engineering and engineering geology. The recommendations presented in this report should be reevaluated by InTEC if cut and fill operations are performed, any changes are made to drainage conditions. No other warranties are implied or expressed.

This report has been prepared for the exclusive use of **Pulte Homes of Texas, LP** for pavement thickness evaluation for the **proposed new streets at the 324 Acre Biedenharn Tract at Corley Road in Boerne, Texas.**

Illustration Section

Description	Plate No.
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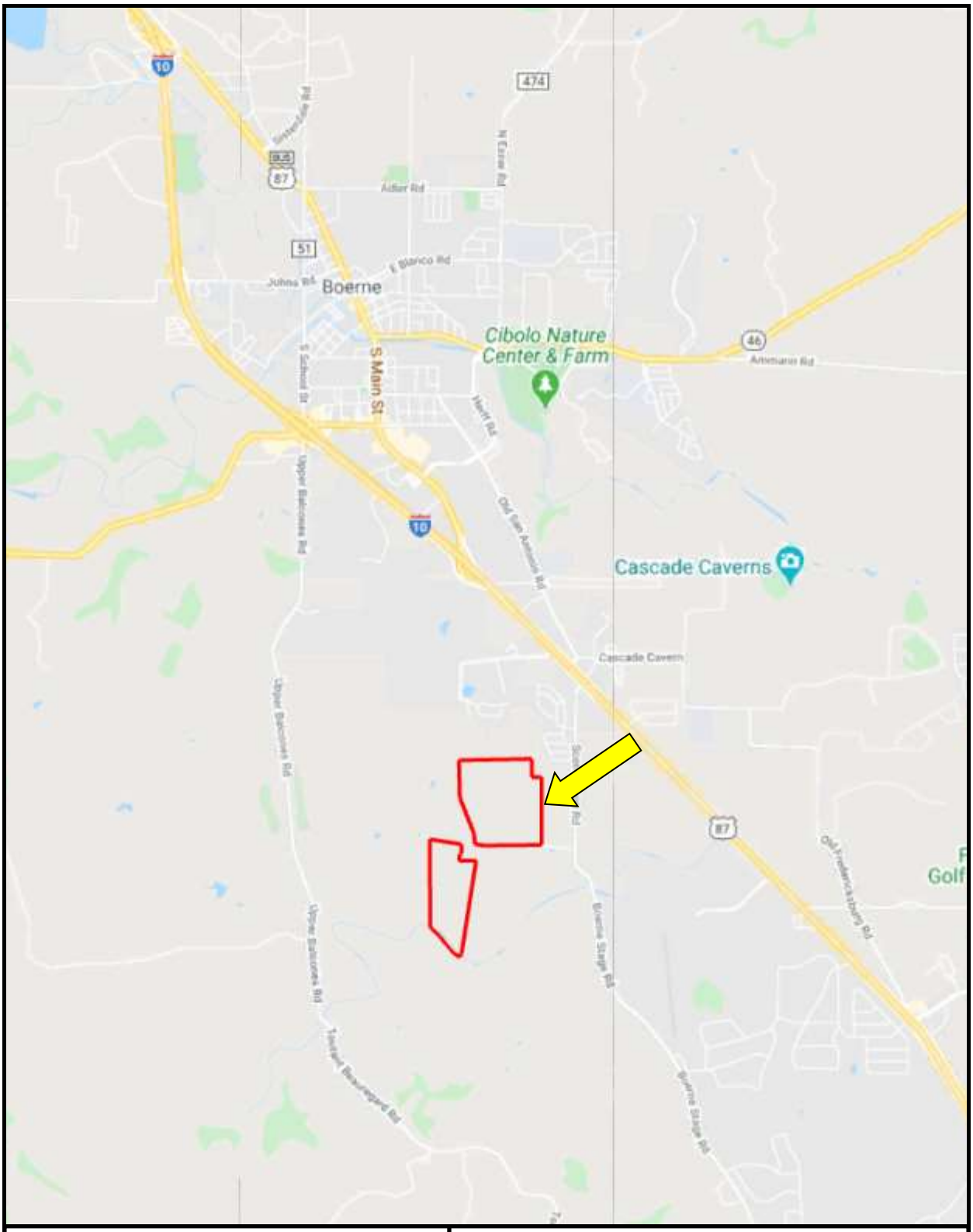
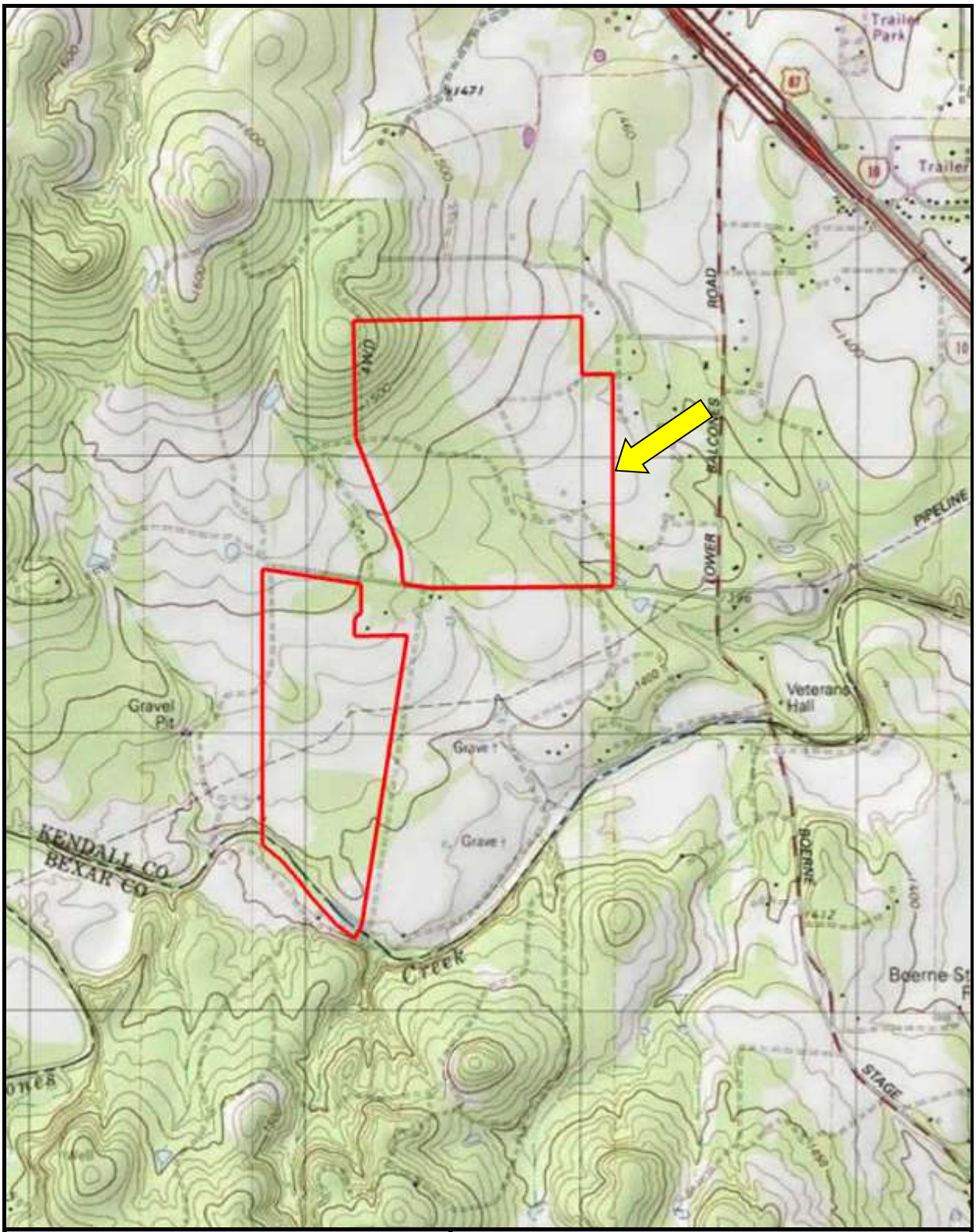
Aerial Map	Plate 1B
Topographic Map	Plate 1C
Geologic Map	Plate 1D
Soil Map	Plate 1E
Approximate Boring Locations	Plate 1F
Boring Logs	Plates 2—35
Keys to Classifications and Symbols	Plate 36
Calculations	Plates 37—46
Information on Geotechnical Report	Appendix



Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Vicinity Map**	
	InTEC Project Number: **S201216-P**	Date: 09/15/2020

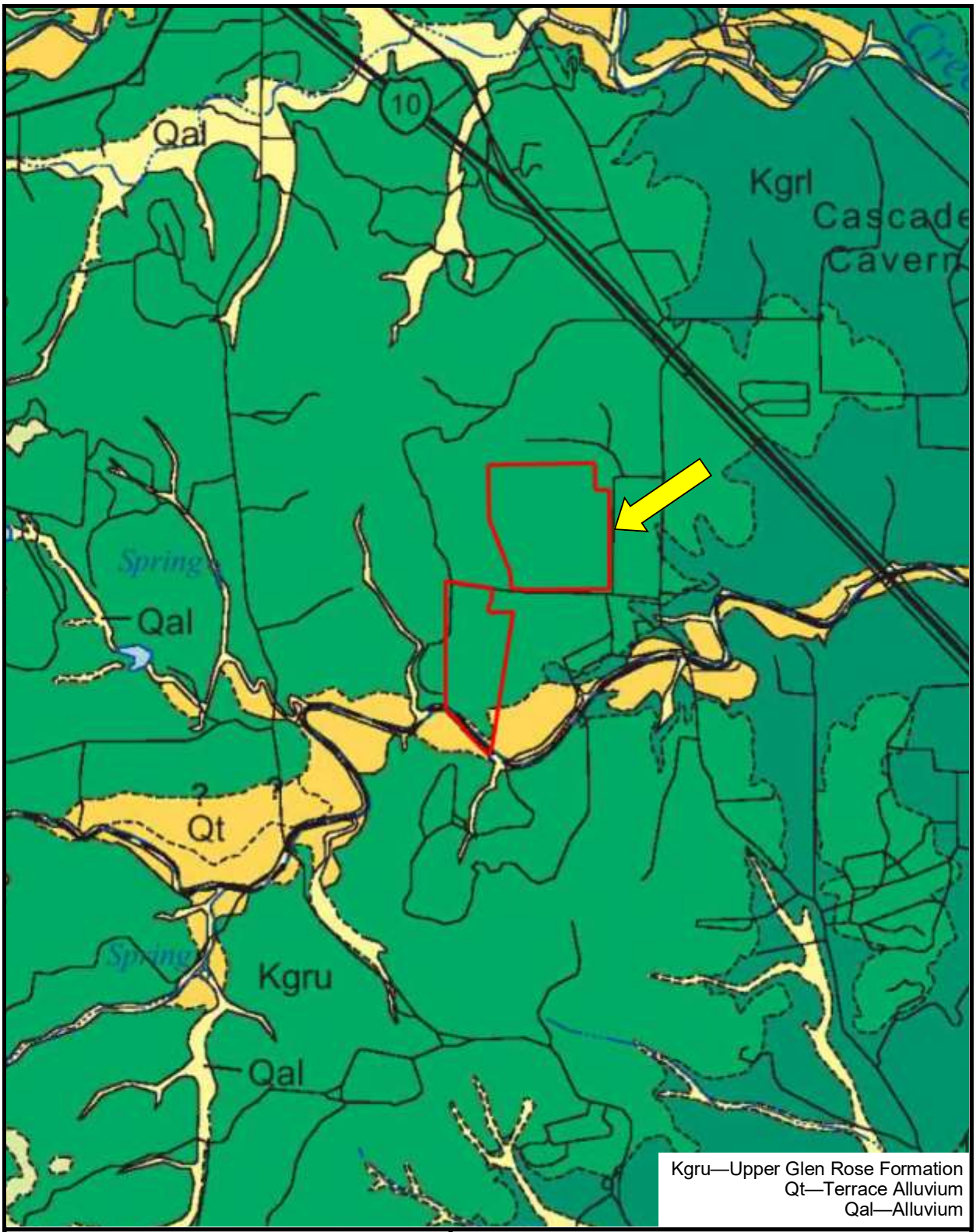
Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Aerial Map—Approximate Location**	
	InTEC Project Number: **S201216-P**	Date: 09/15/2020

Integrated Testing and Engineering Company of San Antonio, L.P. Plate No. 1B



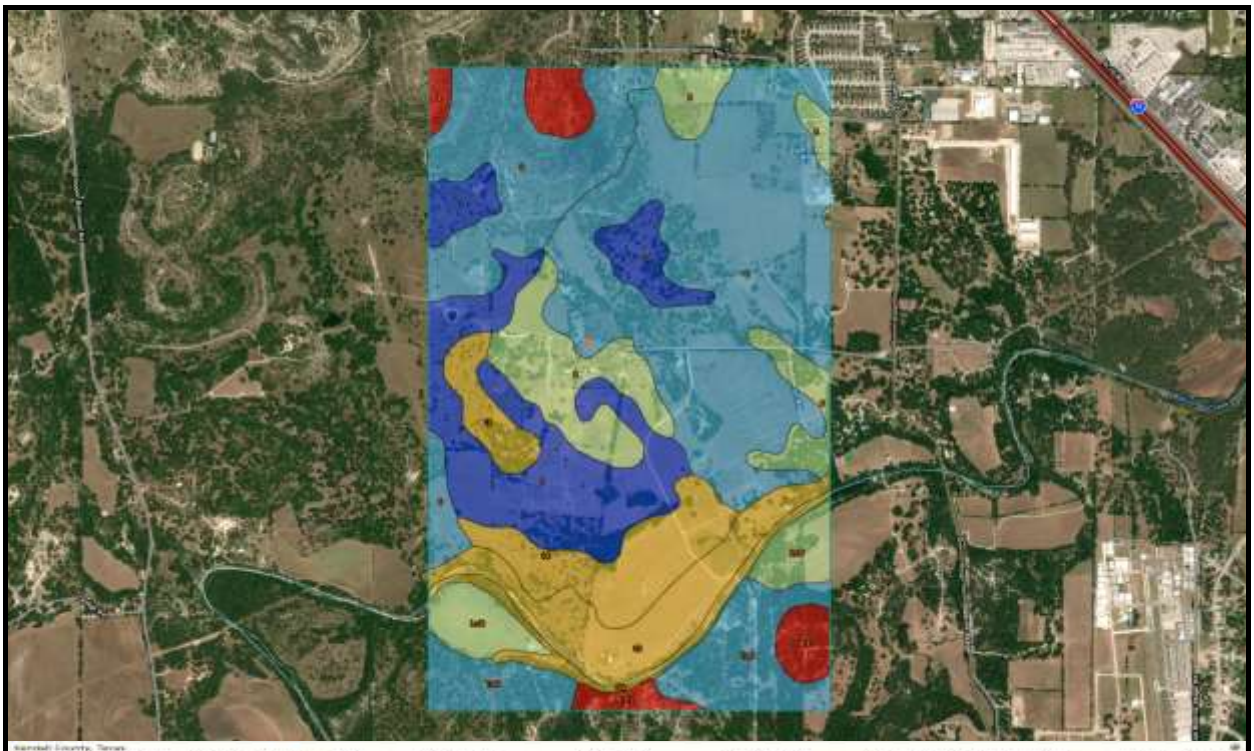
Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Topographic Map—Approximate Location**	
	InTEC Project Number: **S201216-P**	Date: 09/15/2020

Integrated Testing and Engineering Company of San Antonio, L.P. Plate No. 1C



Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Geologic Map—Approximate Location**	
	InTEC Project Number: **S201216-P**	Date: 09/15/2020

Integrated Testing and Engineering Company of San Antonio, L.P. Plate No. 1D



Kendall County, Texas

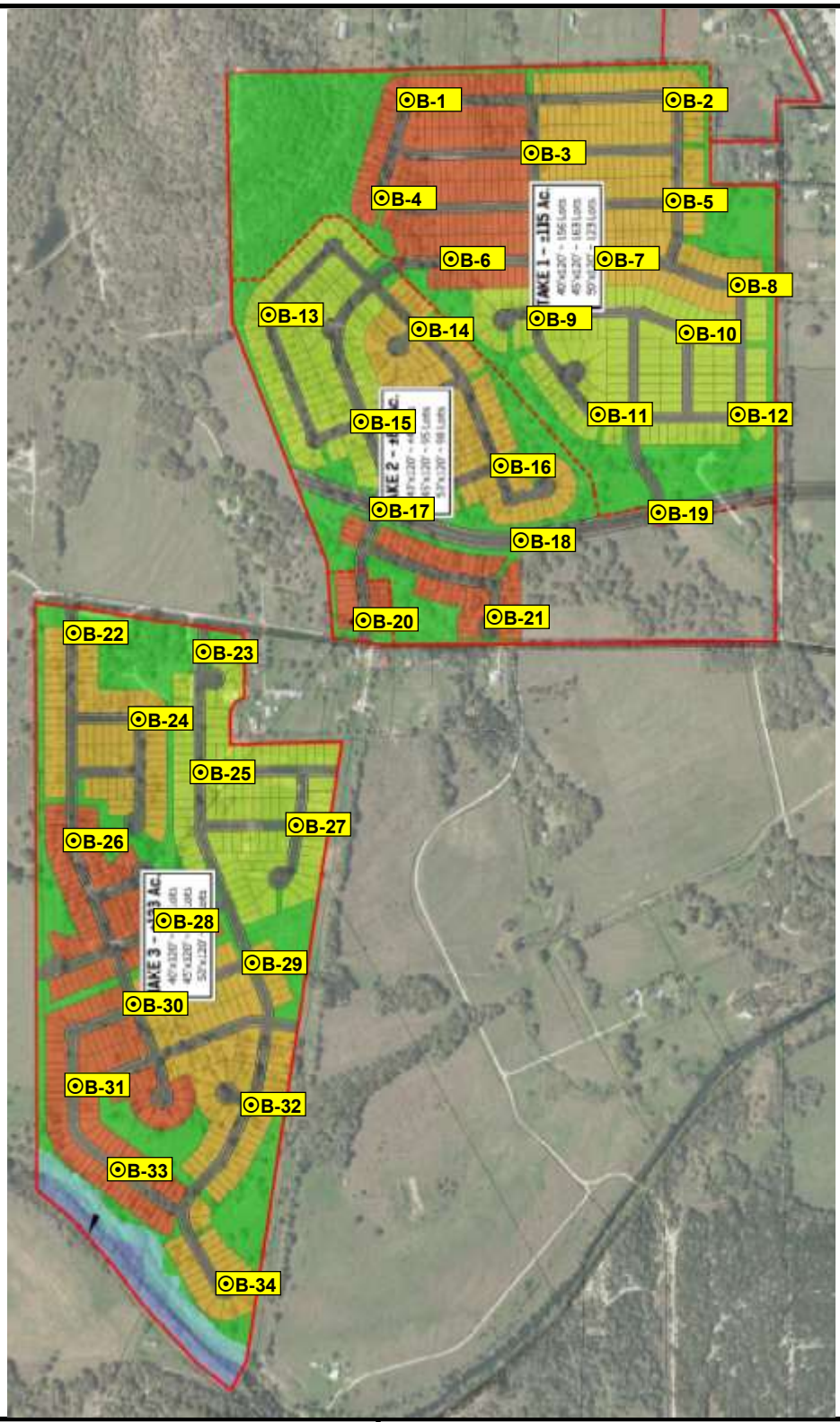
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			in				L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H
1—Anhalt clay, 1 to 3 percent slopes														
AnhaA	90	D	0-6	Clay	CH	A-7-6	0-0-0	0-0-2	79-86-100	76-86-100	61-83-100	57-80-98	50-71-77	27-42-48
			6-15	Clay	CH	A-7-6	0-0-0	0-0-2	77-86-100	74-86-100	64-83-100	60-80-100	69-80-86	40-56-67
			15-39	Clay	CH	A-7-6	0-0-0	0-0-2	77-86-100	74-86-100	64-83-100	60-80-100	69-80-86	40-56-67
			39-60	Bedrock	—	—	—	—	—	—	—	—	—	—
4—Brackett association, 1 to 8 percent slopes														
Brackett	67	D	0-5	Clay loam	CL, GC	A-7-6, A-6	0-0-0	0-0-0	70-88-98	68-88-98	58-80-97	44-60-80	30-32-48	13-14-24
			5-14	Clay loam, gravelly clay loam, gravelly loam, loam	CL, GC	A-7-6, A-6, A-4	0-0-0	0-0-1	64-84-98	62-83-98	53-78-98	43-68-87	28-29-47	7-11-25
			14-60	Bedrock	—	—	—	—	—	—	—	—	—	—
5—Denton silty clay, 1 to 3 percent slopes														
Denton	88	D	0-14	Silty clay	CH, CL	A-7-6	0-0-0	0-0-0	93-95-100	90-94-100	84-93-100	81-92-100	48-59-70	24-32-41
			14-23	Clay, silty clay, silty clay loam	CH, CL	A-7-6	0-0-0	0-0-0	89-95-100	83-94-100	73-93-100	68-88-100	42-55-67	20-30-39
			23-33	Silty clay, silty clay loam, clay	CH, CL	A-7-6	0-0-0	0-0-0	89-95-100	83-94-100	73-93-100	68-88-100	41-54-67	17-30-39
			33-80	very gravelly silty clay, silty clay, gravelly very gravelly silty clay loam, gravelly silty clay loam, clay loam, very gravelly gravelly clay, very gravelly gravelly clay loam, gravelly silty clay	CL, CH, GC	A-7-6, A-2-6, A-6	0-0-0	0-3-13	39-89-92	27-81-91	20-81-91	14-57-91	31-47-63	11-25-39
			29-80	Bedrock	—	—	—	—	—	—	—	—	—	—
9—Doss silty clay, moist, 1 to 5 percent slopes														
Doss	90	D	0-9	Silty clay	CH	A-7-6	0-0-0	0-1-13	79-86-100	69-86-100	60-83-100	53-81-98	48-63-82	20-29-34
			9-17	Silty clay loam, clay loam, silty clay	CH, CL	A-7-6	0-0-0	0-3-16	68-82-100	67-82-100	60-81-100	57-87-98	41-53-61	18-27-34
			17-80	Bedrock	—	—	—	—	—	—	—	—	—	—
9—Doss-Brackett association, undulating														
Doss	48	D	0-18	Silty clay	CH	A-7-6	0-0-1	0-3-15	84-92-100	81-91-100	75-88-100	70-83-95	50-56-61	30-35-39
			18-30	Bedrock	—	—	—	—	—	—	—	—	—	—
Brackett	28	D	0-6	Gravelly clay loam	CL, SC, SC	A-6	0-1-2	0-0-15	70-85-99	62-75-88	50-65-79	43-58-72	23-33-46	10-17-23
			6-14	Loam, clay loam	CL	A-6, A-7-6	0-1-2	0-2-2	90-95-100	85-93-100	65-90-94	60-74-87	25-34-43	10-16-25
			14-60	Bedrock	—	—	—	—	—	—	—	—	—	—
14—Nuvalde silty clay, moist, 0 to 1 percent slopes														
Nuvalde, moist	93	C	0-11	Silty clay	CL, CH	A-7-6	0-0-0	0-0-0	97-99-100	94-98-100	89-97-100	85-97-98	47-54-63	22-25-30
			11-26	Clay loam, silty clay loam, clay, silty clay	CH, CL	A-7-6, A-6	0-0-0	0-0-0	96-99-100	91-98-100	81-94-100	69-80-91	40-51-62	18-25-34
			26-37	Clay loam, silty clay loam, silty clay, clay	CL, CH	A-7-6, A-6	0-0-0	0-0-0	96-98-100	91-96-100	77-92-100	64-79-91	33-48-58	11-22-32
			37-44	Clay loam, silty clay loam, clay, silty clay	CL, CH	A-7-6, A-6, A-4	0-0-0	0-0-0	96-98-100	91-96-100	74-92-98	62-79-86	31-48-54	9-20-26
			44-80	Clay loam, silty clay loam, silty clay, clay, gravelly clay loam	CL	A-6, A-7-6, A-4	0-0-0	0-0-0	77-99-100	70-98-100	46-93-100	39-80-92	31-38-49	10-16-23
15—Nuvalde silty clay, moist, 1 to 3 percent slopes														
Nuvalde, moist	90	C	0-11	Silty clay	CL, CH	A-7-6	0-0-0	0-0-0	97-99-100	94-98-100	89-97-100	85-97-98	47-54-63	22-25-30
			11-26	Clay loam, silty clay loam, silty clay, clay	CH, CL	A-7-6, A-6	0-0-0	0-0-0	96-99-100	91-98-100	81-94-100	69-80-91	40-51-62	18-25-34
			26-37	Clay loam, silty clay, silty clay loam, clay	CL, CH	A-6, A-7-6	0-0-0	0-0-0	96-98-100	91-96-100	77-92-100	64-79-91	33-48-58	11-22-32
			37-44	Clay loam, silty clay loam, clay, silty clay	CL, CH	A-4, A-6, A-7-6	0-0-0	0-0-0	96-98-100	91-96-100	74-92-98	62-79-86	31-48-54	9-20-26
			44-80	Silty clay loam, clay loam, silty clay, clay, gravelly clay loam	CL	A-6, A-7-6, A-4	0-0-0	0-0-0	77-99-100	70-98-100	46-93-100	39-80-92	31-38-49	10-16-23
18—Tarpley clay, 1 to 3 percent slopes														
Tarpley	90	D	0-6	Clay	CL, CH	A-7-6	0-0-1	0-1-6	75-95-100	72-94-100	61-87-97	53-76-86	41-51-55	22-25-26
			6-17	Gravelly clay, clay	CH	A-7-6	0-0-1	0-2-11	80-94-100	57-94-100	52-91-100	50-87-100	50-55-99	26-30-60
			17-60	Bedrock	—	—	—	—	—	—	—	—	—	—

Subsurface Exploration and Pavement Analysis
Proposed New Streets
324 Acre Biedenharn Tract
Corley Road
Boerne, Texas

Soil Map—Approximate Location

InTEC Project Number:
S201216-P

Date:
09/15/2020



Subsurface Exploration and Pavement Analysis
Proposed New Streets
324 Acre Biedenharn Tract
Corley Road
Boerne, Texas

Approximate Boring Locations

InTEC Project Number:
S201216-P

Date:
09/15/2020

Integrated Testing and Engineering Company of San Antonio, L.P.

Plate No. 1F

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

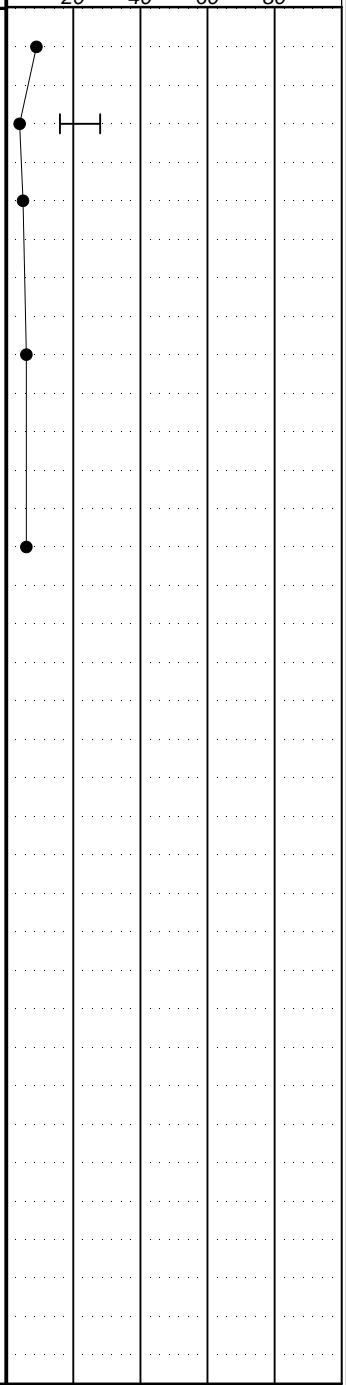
LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-1

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Hard Brown Clay -with Gravel and Limestone Seams				35			
		AU	Hard Light Tan Marl to Limestone -with Caliche -with Tan Calcareous Clay Seams to 4- ft						28	12
5		SS					50/5"			
10		SS					50/4"			
15		SS					50/3"			



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

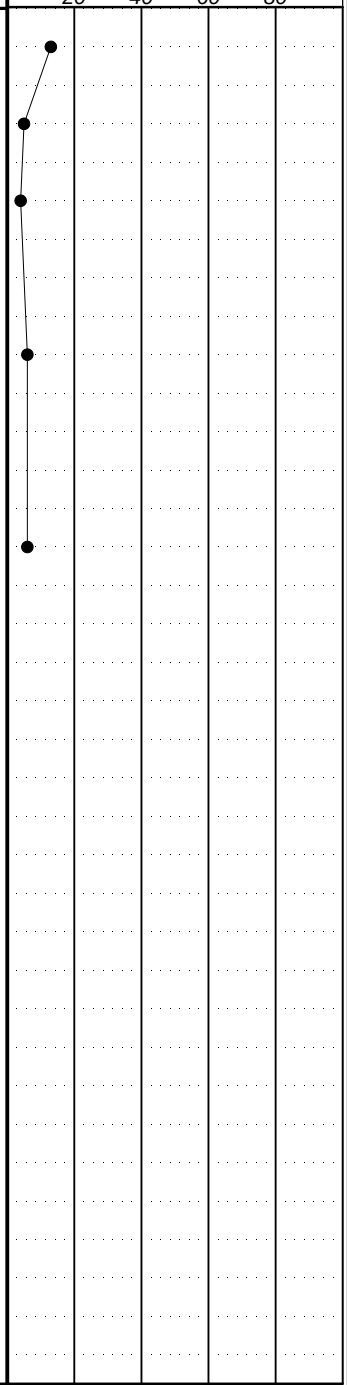
LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-2

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Hard Brown Clay -with Gravel and Limestone Seams				43			
		AU	Hard Light Tan Marl to Limestone -with Caliche -with Tan Calcareous Clay Seams to 4- ft							
5		SS					50/5"			
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-3

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Hard Brown Clay							
		SS	-with Gravel and Limestone Seams				39			
			Hard Light Tan Marl to Limestone							
			-with Caliche							
		AU	-with Tan Calcareous Clay Seams to 4- ft							
5		SS					50/6"			
		AU							27	12
10										
		SS					50/5"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ Liquid Limit

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-01-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-4

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0										
		SS	Hard Brown Clay				56			
			-with Gravel and Limestone Seams							
			Hard Light Tan Marl to Limestone							
		SS	-with Caliche				50/4"			
			-with Tan Calcareous Clay Seams to 5- ft							
5		AU							27	13
		AU								
10										
		SS					50/3"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ Liquid Limit

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

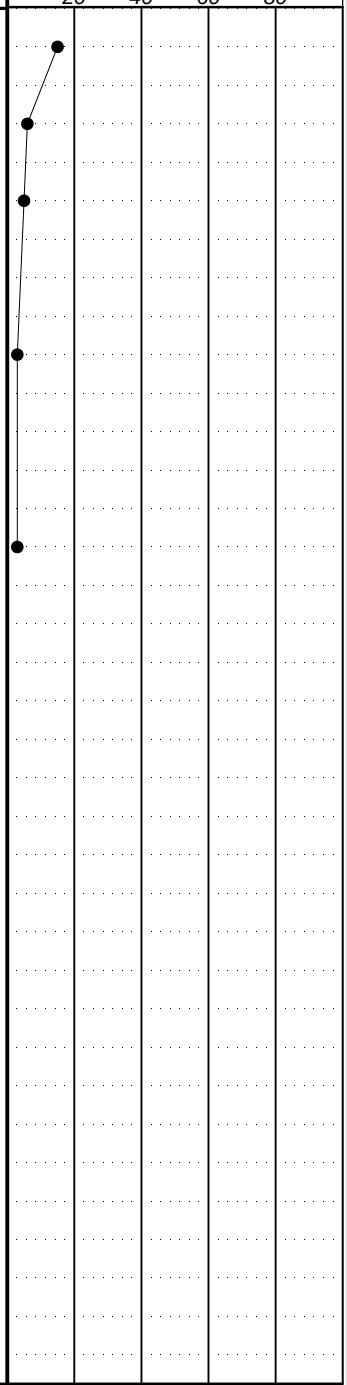
LOCATION: Boerne, Texas **DATE:** 09-01-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-5

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Hard Brown Clay -with Gravel and Limestone Seams				43			
		AU	Hard Light Tan Marl to Limestone -with Caliche -with Tan Calcareous Clay Seams to 4- ft							
5		SS					50/5"			
		AU								
10										
		SS					50/3"			
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

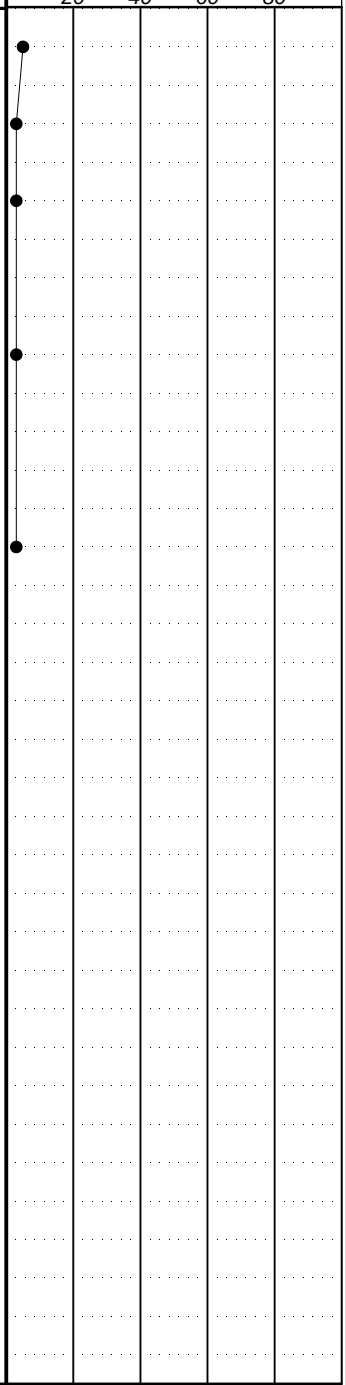
LOCATION: Boerne, Texas **DATE:** 09-01-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-6

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Hard Brown Clay -with Gravel and Limestone Seams				38			
		SS	Hard Light Tan Marl to Limestone -with Caliche				50/3"			
5		AU								
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

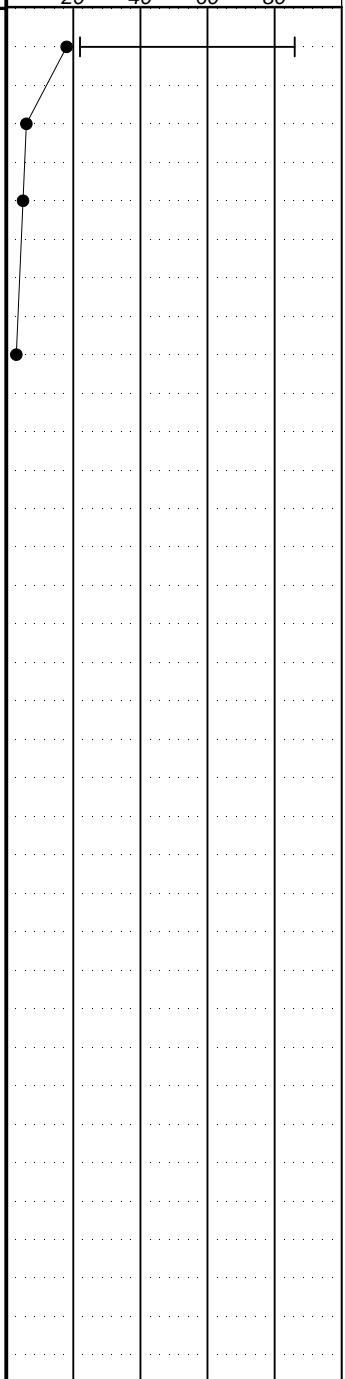
PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-01-2020

CLIENT: Pulte Homes of Texas, LP

BORING NO. B-7

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Hard Brown Clay -with Gravel and Limestone Seams				38		86	64
		SS					45			
5		AU	Hard Tan Calcareous Clay -with Gravel							
			Hard Light Tan Marl to Limestone -with Caliche							
		SS					50/4"			
10										
			Auger Refusal							
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 12

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-01-2020

CLIENT: Pulte Homes of Texas, LP

BORING NO. B-8

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Hard Brown Clay -with Gravel and Limestone Seams				17			
		SS					42			
			Hard Tan Calcareous Clay -with Gravel							
5		SS	Hard Light Tan Marl to Limestone -with Caliche				50/4"		35	21
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

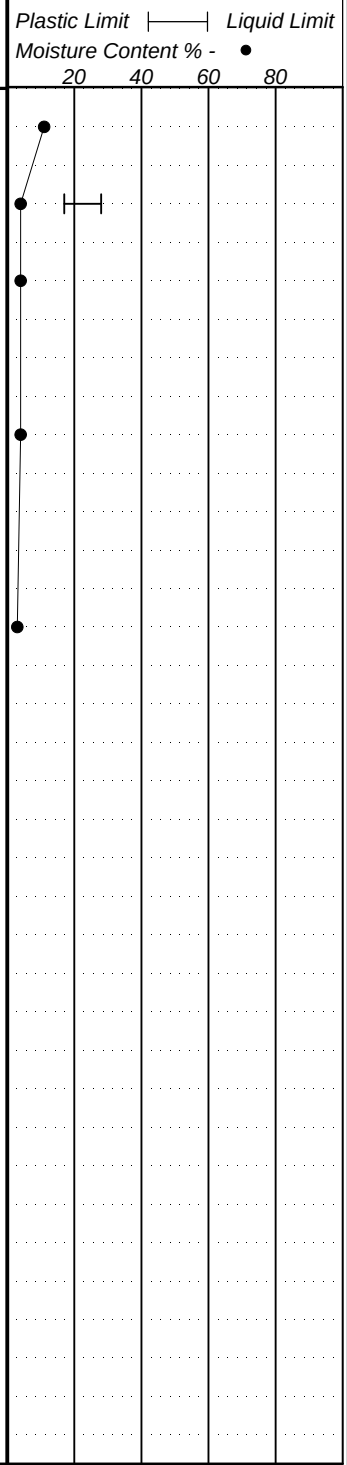
LOCATION: Boerne, Texas **DATE:** 09-01-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-9

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Hard Brown Clay -with Gravel and Limestone Seams				36			
		SS	Hard Light Tan Marl to Limestone -with Caliche				50/4"		28	11
5		AU								
10		AU								
15		SS					50/5"			
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

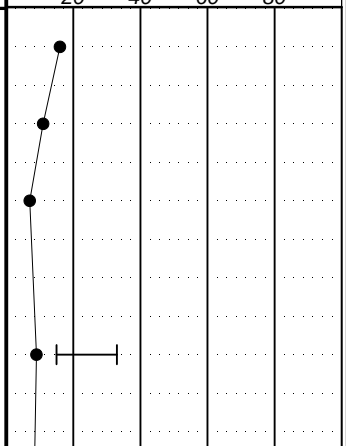
HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**
LOCATION: Boerne, Texas **DATE:** 09-02-2020
CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-10

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0										
		SS	Very Stiff Brown Clay -with Caliche and a Trace of Gravel				18			
		SS	Very Stiff Tan Clay to Tan Calcareous Clay -with Caliche				28			
5		SS	Hard Light Tan Marl to Limestone -with Caliche and Tan Calcareous Clay Seams				39			
		AU							33	18
10										
		SS					48			
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer
S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample
HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-11

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Very Stiff Brown Clay							
		SS	-with Caliche and a Trace of Gravel				27		33	19
			Very Stiff Tan Clay to Tan Calcareous Clay -with Caliche							
		SS					29			
			Hard Light Tan Marl to Limestone -with Caliche and Tan Calcareous Clay Seams							
5		SS					50/5"			
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ Liquid Limit

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

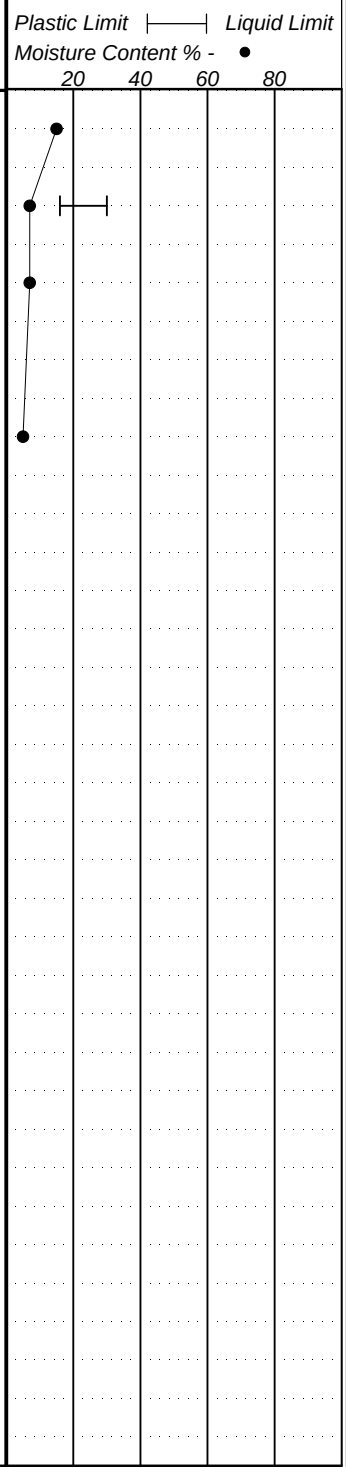
LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-12

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Very Stiff Brown Clay -with Caliche and a Trace of Gravel				266			
		SS	Very Stiff Tan Clay to Tan Calcareous Clay -with Caliche				28		30	14
5		AU	Hard Light Tan Marl to Limestone -with Caliche and Tan Calcareous Clay Seams							
		SS					50/4"			
10			Auger Refusal							
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 11

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-13

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Hard Brown Clay							
		SS	-with Gravel and Limestone Seams				45			
			Hard Light Tan Marl to Limestone							
			-with Caliche							
		AU	-with Tan Calcareous Clay Seams to 4- ft							
5		SS					50/4"		23	10
		AU								
10										
		SS					50/3"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-14

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0										
		SS	Hard Brown Clay -with Gravel and Limestone Seams				36			
			Hard Light Tan Marl to Limestone -with Caliche							
		AU	-with Tan Calcareous Clay Seams to 4- ft						24	19
5		AU								
		SS					50/4"			
10										
		SS					50/3"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● *20 40 60 80*

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

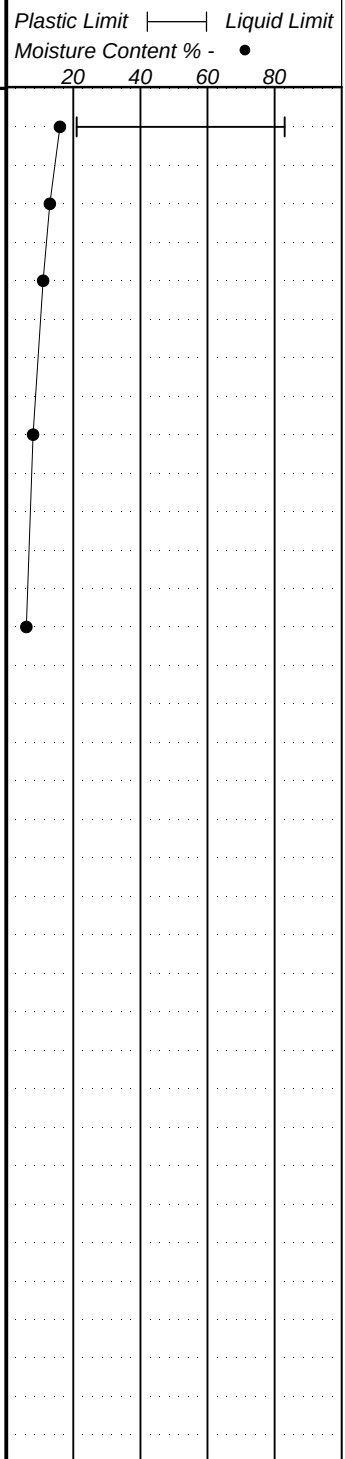
LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-15

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Very Stiff Brown Clay -with Caliche and a Trace of Gravel				23		83	62
		SS	Very Stiff Tan Clay to Tan Calcareous Clay -with Caliche				26			
5		AU	Hard Light Tan Marl to Limestone -with Caliche and Tan Calcareous Clay Seams							
		AU								
10										
		SS					50/5"			
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-16

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Hard Brown Clay							
		SS	-with Gravel and Limestone Seams				39			
			Hard Light Tan Marl to Limestone							
			-with Caliche							
		SS	-with Tan Calcareous Clay Seams to 4- ft				50/4"			
5		AU								
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-17

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Very Stiff Brown Clay -with Caliche and a Trace of Gravel				16			
		SS	Very Stiff Tan Clay to Tan Calcareous Clay -with Caliche				21			
5		SS	Hard Light Tan Marl to Limestone -with Caliche and Tan Calcareous Clay Seams				39		64	46
		SS					50/6"			
10			Auger Refusal							
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● *20 40 60 80*

Notes:

Ground Water Observed: No

Completion Depth (ft): 11

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

BORING NO. B-18

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Hard Brown Clay -with Gravel and Limestone Seams				38			
		SS	Hard Light Tan Marl to Limestone -with Caliche -with Tan Calcareous Clay Seams to 4- ft				66			
5		AU								
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ Liquid Limit

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

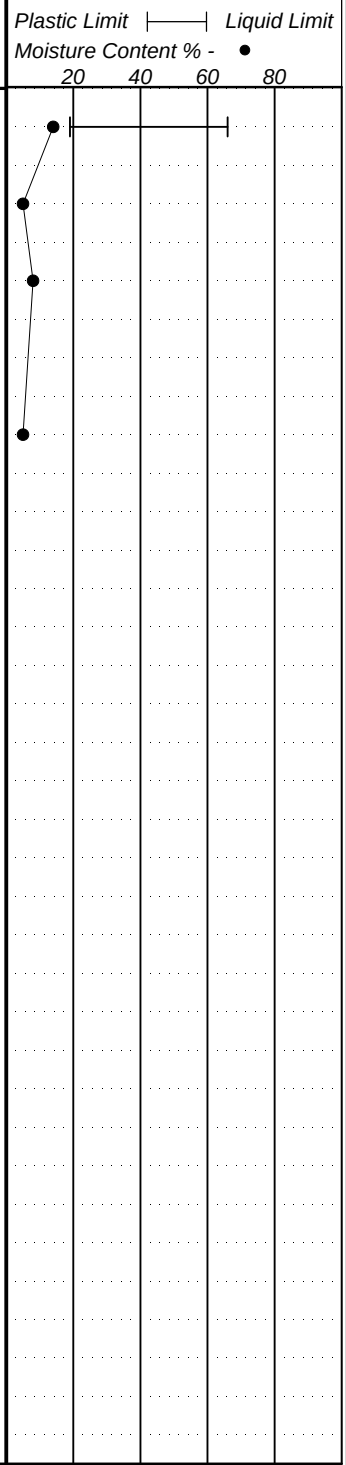
HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**
LOCATION: Boerne, Texas **DATE:** 09-02-2020
CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-19

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Very Stiff Brown Clay -with Caliche and a Trace of Gravel				26		66	47
		SS	Very Stiff Tan Clay to Tan Calcareous Clay -with Caliche				29			
5		AU	Hard Light Tan Marl to Limestone -with Caliche and Tan Calcareous Clay Seams							
		SS					50/5"			
10			Auger Refusal							
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 11

S.S by P.P - Shear Strength in TSF by Hand Penetrometer
S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample
HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

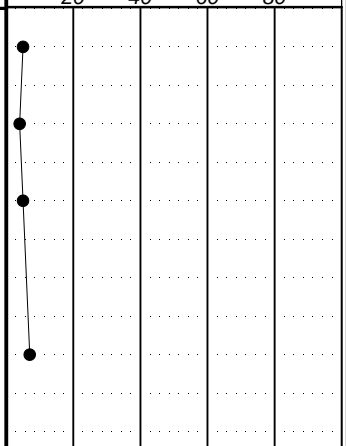
LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-20

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Very Stiff Brown Clay -with Caliche and a Trace of Gravel				24			
		SS	Very Stiff Tan Clay to Tan Calcareous Clay -with Caliche				28			
5		AU	Hard Light Tan Marl to Limestone -with Caliche and Tan Calcareous Clay Seams							
		SS					50/4"			
10			Auger Refusal							
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 12

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-21

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Hard Brown Clay							
		SS	-with Gravel and Limestone Seams				38		34	19
			Hard Light Tan Marl to Limestone							
			-with Caliche							
		SS	-with Tan Calcareous Clay Seams to 4- ft				50/6"			
5		AU								
		SS					50/5"			
10			Auger Refusal							
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● *20 40 60 80*

Notes:

Ground Water Observed: No

Completion Depth (ft): 11

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 09-02-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-22

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Hard Brown Clay							
		SS	-with Gravel and Limestone Seams				37			
			Hard Light Tan Marl to Limestone							
			-with Caliche							
		AU	-with Tan Calcareous Clay Seams to 4- ft							
5		SS					50/5"			
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

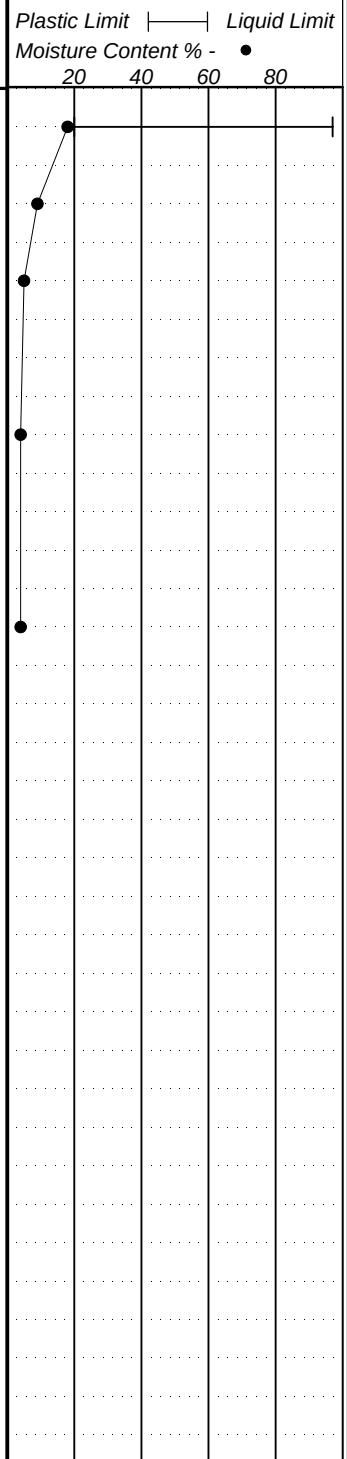
LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-23

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Very Stiff Brown Clay -with Caliche and a Trace of Gravel				29		97	77
		SS	Hard Tan Calcareous Clay				35			
5		SS	Hard Light Tan Marl to Limestone -with Caliche and Tan Calcareous Clay Seams				50/5"			
10		AU								
15		SS					50/4"			
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-24

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Brown Clay							
		SS	Hard Tan Clay to Tan Gravelly Clay -with Caliche				21			
		SS					58			
5		SS	Hard Light Tan Marl to Limestone				50/3"			
		AU								
10										
		SS					50/3"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ Liquid Limit

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

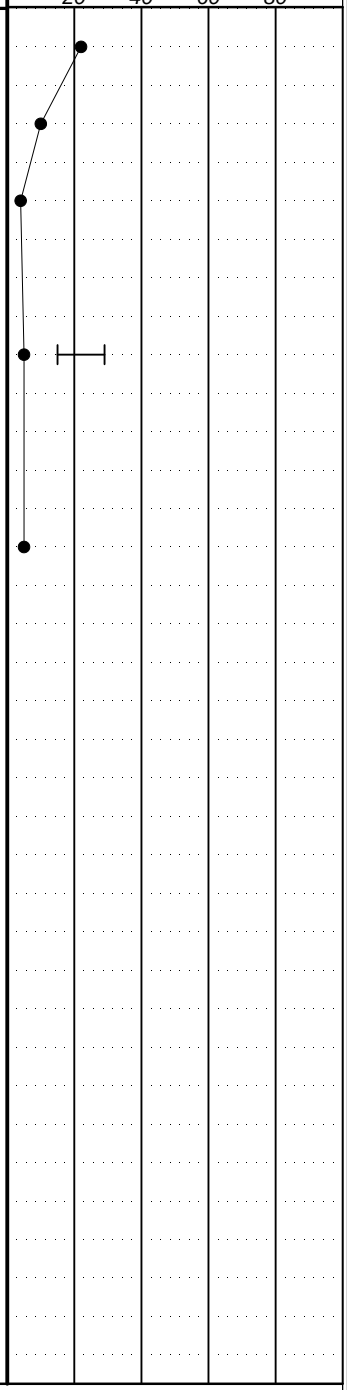
LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-25

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0										
		SS	Very Stiff Brown Clay -with Gravel				30			
		SS	Hard Light Tan Calcareous Clay -with Caliche				42			
5		SS	Hard Light Tan Marl to Limestone				50/5"			
		AU							29	14
10										
		SS					50/4"			
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-26

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Hard Brown Clay							
		SS	-with Gravel and Limestone Seams				37			
			Hard Light Tan Marl to Limestone							
		SS	-with Caliche -with Tan Calcareous Clay Seams to 4- ft				50/6"			
5		AU								
		AU								
10										
		SS					50/5"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● *20 40 60 80*

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

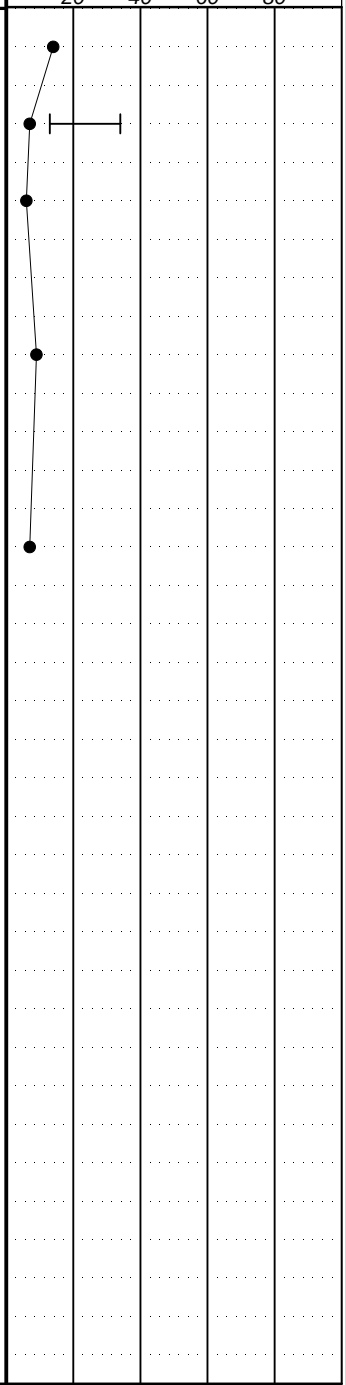
HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**
LOCATION: Boerne, Texas **DATE:** 08-31-2020
CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-27

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0										
		SS	Hard Brown Clay -with Gravel and Limestone Seams				38			
		SS	Hard Light Tan Marl to Limestone -with Caliche -with Tan Calcareous Clay Seams to 4- ft				66		34	21
5		AU								
		AU								
10										
		SS					50/5"			
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer
S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample
HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-28

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0										
		SS	Very Stiff Brown Clay -with Gravel				28			
		SS	Hard Tan Gravelly Clay				43			
5		SS	Hard Light Tan Marl to Limestone -with Caliche				50/5"			
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ●

20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

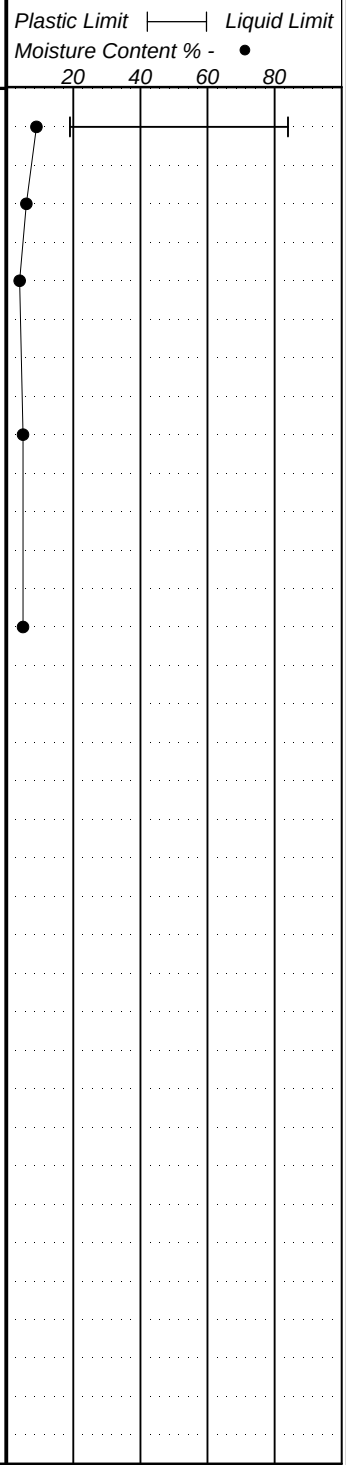
LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-29

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Very Stiff Brown Clay							
		SS	-with Gravel				27		84	65
			Hard Tan Gravelly Clay							
		SS					41			
			Hard Light Tan Marl to Limestone							
5			-with Caliche							
		SS					50/4"			
		AU								
10										
		SS					50/3"			
15										
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

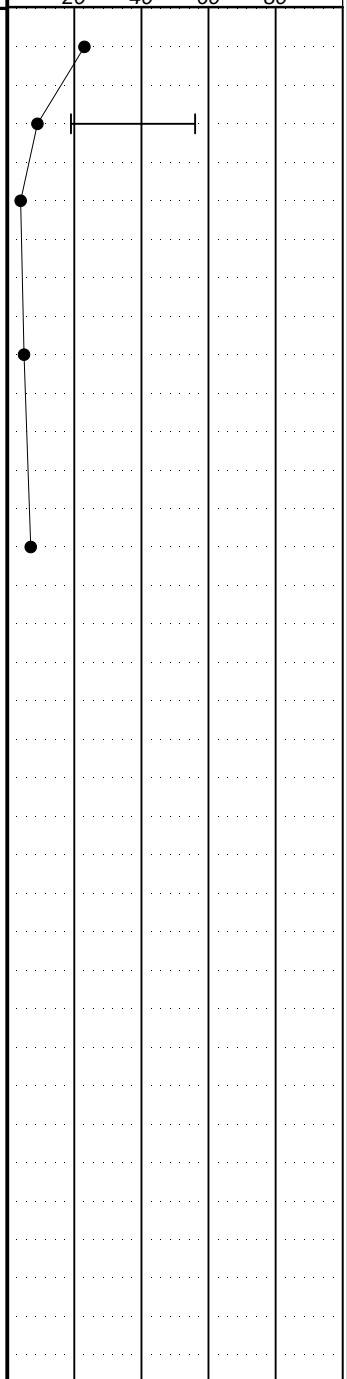
inTEC

BORING NO. B-30

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Very Stiff Brown Clay -with Gravel				22			
		SS								
		SS	Hard Tan Gravelly Clay				37		56	37
5		SS	Hard Light Tan Marl to Limestone				50/5"			
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ Liquid Limit

Moisture Content % - ● 20 40 60 80



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

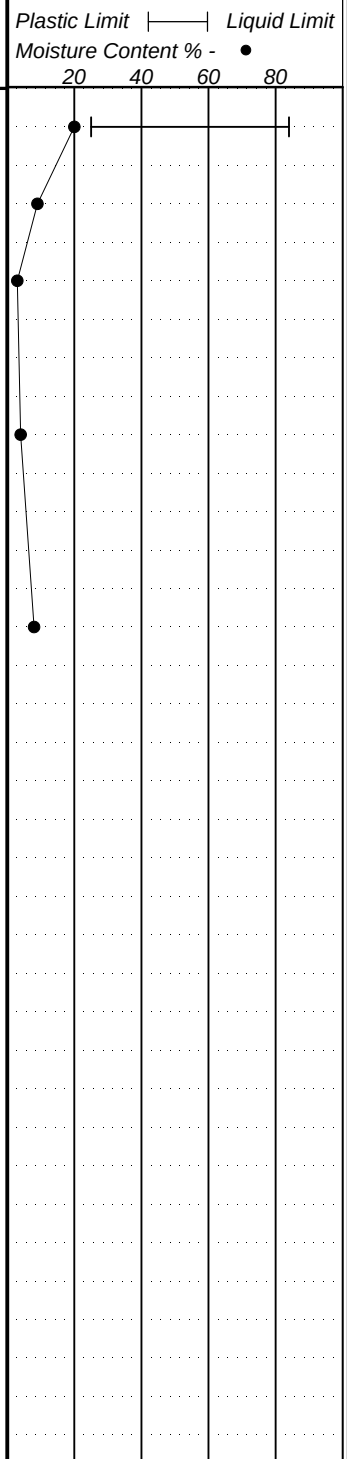
PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 08-31-2020

CLIENT: Pulte Homes of Texas, LP

BORING NO. B-31

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0		SS	Very Stiff Brown Clay -with Gravel				26		84	59
		SS	Hard Tan Gravelly Clay				41			
5		SS	Hard Light Tan Marl to Limestone				50/4"			
10		AU								
15		SS					50/3"			
20										
25										
30										
35										



Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 08-28-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-32

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0			Very Stiff Brown Clay							
		SS	-with Gravel				29			
			Hard Tan Gravelly Clay							
		SS					36			
			Hard Light Tan Marl to Limestone							
5		SS					50/4"			
		AU								
10										
		SS					50/3"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 08-28-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-33

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0										
		SS	Very Stiff Brown Clay -with Gravel				36			
			Hard Tan Gravelly Clay							
		SS					47			
			Hard Light Tan Marl to Limestone							
5		SS					50/5"		26	11
		AU								
10										
		SS					50/4"			
15										
20										
25										
30										
35										

Plastic Limit ⊢⊣ Liquid Limit

Moisture Content % - ● 20 40 60 80

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

PROJECT: 324 Acre Biedenharn Tract - Corley Rd **PROJECT NO: S201216**

LOCATION: Boerne, Texas **DATE:** 08-28-2020

CLIENT: Pulte Homes of Texas, LP

inTEC

BORING NO. B-34

DEPTH (feet)	SYMBOL	SAMPLES	SOIL DESCRIPTION	% MINUS 200 SIEVE	UNIT DRY WT IN PCF	S.S. BY P.P	BLOWS PER FOOT	SHEAR STRENGTH TSF	LIQUID LIMIT	PLASTICITY INDEX
0										
		SS	Hard Brown Clay -with Gravel and Limestone Seams				46			
		SS	Hard Light Tan Marl to Limestone -with Caliche -with Tan Calcareous Clay Seams to 4- ft				50/3"			
5		AU								
10		AU							24	10
15		SS					50/4"			
20										
25										
30										
35										

Plastic Limit ⊢⊣ *Liquid Limit*

Moisture Content % - ● *20 40 60 80*

Notes:

Ground Water Observed: No

Completion Depth (ft): 15

S.S by P.P - Shear Strength in TSF by Hand Penetrometer

S.S. - Split Spoon Sample
S.T. - Shelby Tube Sample

HA - Hand Auger
AU - Auger Sample

KEY TO CLASSIFICATIONS AND SYMBOLS

Soil Fractions

Component	Size Range
Boulders	Greater than 12"
Cobbles	3" - 12"
Gravel	3" - #4 (4.76mm)
Coarse	3" - ¾"
Fine	¾" - #4
Sand	#4 - #200 (0.074mm)
Coarse	#4 - #10 (2.00mm)
Medium	#10 - #40 (0.42mm)
Fine	#40 - #200 (0.074mm)
Silt and Clay	Less than #200

Soil or Rock Types
(Shown in symbols column)
(Predominate Soil Types Shown Heavy)

TERMS DESCRIBING SOIL CONSISTENCY

Description (Cohesive Soils)	Unconfined Compression TSF	Blows/Ft. Std. Penetration Test	Description (Cohesionless Soils)	Blows/Ft. Std. Penetration Tests
Very Soft	0.25	<2	Very Loose	0 – 4
Soft	0.25 – 0.50	2 – 4	Loose	4 – 10
Firm	0.50 – 1.00	4 – 8	Medium Dense	10 – 30
Stiff	1.00 – 2.00	8 – 15	Dense	30 – 50
Very Stiff	2.00 – 4.00	15 – 30	Very Dense	50
Hard	>4.00	>30		

SOIL STRUCTURE

Calcareous	Containing deposits of calcium carbonate; generally nodular.
Slickenside	Having inclined planes of weakness that are slick and glossy in appearance.
Laminated	Composed of thin layers of varying color and texture.
Fissured	Containing shrinkage cracks frequently filled with fine sand or silt. Usually more or less vertical.
Interbedded	Composed of alternate layers of different soil types.
Jointed	Consisting of hair cracks that fall apart as soon as the confining pressure is removed.
Varved	Consisting of alternate thin layers of sand, silt or clay formed by variations in sedimentations during the various seasons of the year, of often exhibiting contrasting colors when partially dried. Each layer is generally less than ½" in thickness.
Stratified	Composed of, or arranged in layers (usually 1 inch or more)
Well-graded	Having a wide range of grain sizes and substantial amount of all intermediate particle sizes.
Poorly or Gap-graded	Having a range of sizes with some intermediate sizes missing.
Uniformly-graded	Predominantly of one grain size.

Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas		
	InTEC Project Number: **S201216-P**	Date: 09/15/2020

Calculations

CBR = 2.5

Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas		
	InTEC Project Number: **S201216-P**	Date: 06/29/2020

Tensar.

SpectraPave4 PRO™
Pavement Optimization Design Analysis

Design Parameters for AASHTO (1993) Equation

Reliability (%)	= 80	Initial Serviceability	= 4.2
Standard Normal Deviate	= -.842	Terminal Serviceability	= 2.0
Standard Deviation	= 0.45	Change in Serviceability	= 2.2

Aggregate fill shall conform to following requirement:

D50 <= 27mm (Base course)

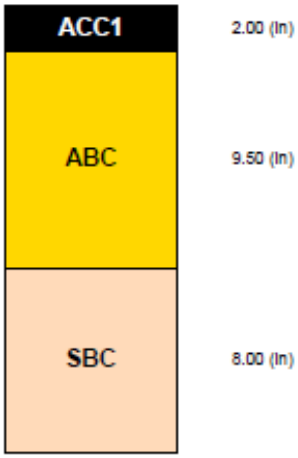
Unstabilized Section Material Properties

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
SBC	Subbase Course	16	0.080	1.0

Stabilized Section Material Properties

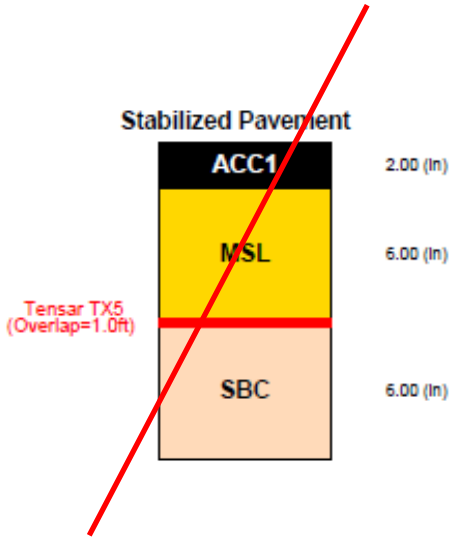
Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.420	N/A
MSL	Mechanically Stabilized Base Cour	20	0.265	1.0
SBC	Subbase Course	16	0.080	1.0

Unstabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 2.850
Calculated Traffic (ESALs) = 115,000

Stabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 2.910
Calculated Traffic (ESALs) = 131,000

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.

Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Residential Local**	
	InTEC Project Number: **S201216-P**	Date: 06/29/2020

Tensar.

SpectraPave4 PRO™
Pavement Optimization Design Analysis

Design Parameters for AASHTO (1993) Equation

Reliability (%)	= 80	Initial Serviceability	= 4.2
Standard Normal Deviate	= -.842	Terminal Serviceability	= 2.0
Standard Deviation	= 0.45	Change in Serviceability	= 2.2

Aggregate fill shall conform to following requirement:

D50 <= 27mm (Base course)

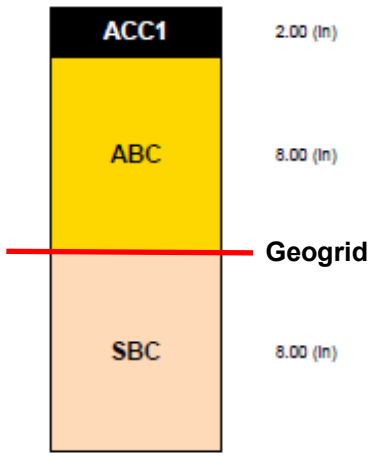
Unstabilized Section Material Properties

Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ABC	Aggregate Base Course	20	0.170	1.0
SBC	Subbase Course	16	0.080	1.0

Stabilized Section Material Properties

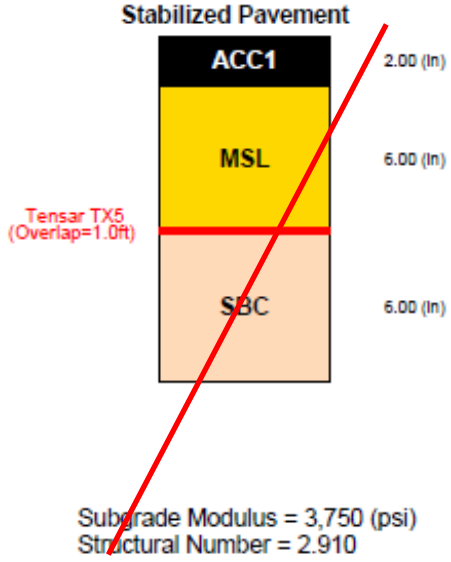
Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.420	N/A
MSL	Mechanically Stabilized Base Cour	20	0.265	1.0
SBC	Subbase Course	16	0.080	1.0

Unstabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 2.880
Calculated Traffic (ESALs) = 123,000

Stabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 2.910
Calculated Traffic (ESALs) = 131,000

Geogrid option calculated with adjusted structural coefficient value

LIMITATIONS OF THE REPORT

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Subsurface Exploration and Pavement Analysis
Proposed New Streets
324 Acre Biedenharn Tract
Corley Road
Boerne, Texas

Residential Local

InTEC Project Number: **S201216-P**

Date: 06/29/2020

Tensar.

SpectraPave4 PRO™
Pavement Optimization Design Analysis

Design Parameters for AASHTO (1993) Equation

Reliability (%)	= 90	Initial Serviceability	= 4.2
Standard Normal Deviate	= -1.282	Terminal Serviceability	= 2.0
Standard Deviation	= 0.45	Change in Serviceability	= 2.2

Aggregate fill shall conform to following requirement:

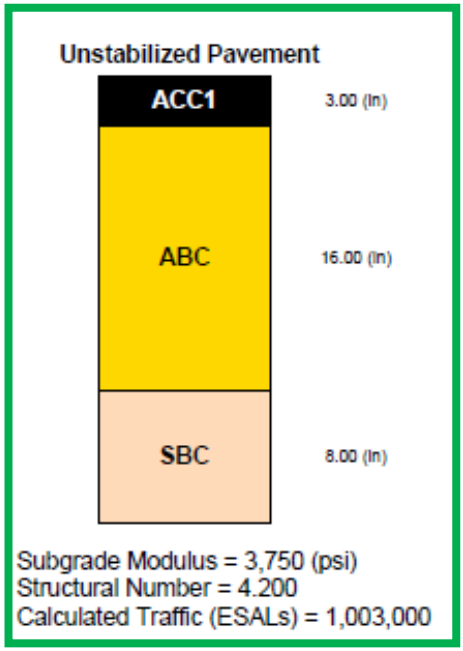
D50 <= 27mm (Base course)

Unstabilized Section Material Properties

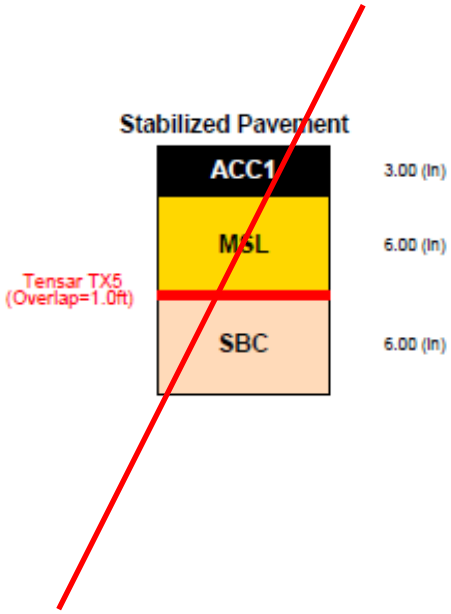
Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ABC	Aggregate Base Course	20	0.140	1.0
SBC	Subbase Course	16	0.080	1.0

Stabilized Section Material Properties

Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.420	N/A
MSL	Mechanically Stabilized Base Cour	20	0.265	1.0
SBC	Subbase Course	16	0.080	1.0



Subgrade Modulus = 3,750 (psi)
Structural Number = 4.200
Calculated Traffic (ESALs) = 1,003,000



Subgrade Modulus = 3,750 (psi)
Structural Number = 3.330
Calculated Traffic (ESALs) = 203,000

LIMITATIONS OF THE REPORT

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Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Residential Collector**	
	InTEC Project Number: **S201216-P**	Date: 06/29/2020

Tensar.

SpectraPave4 PRO™
Pavement Optimization Design Analysis

Design Parameters for AASHTO (1993) Equation

Reliability (%)	= 90	Initial Serviceability	= 4.2
Standard Normal Deviate	= -1.282	Terminal Serviceability	= 2.0
Standard Deviation	= 0.45	Change in Serviceability	= 2.2

Aggregate fill shall conform to following requirement:

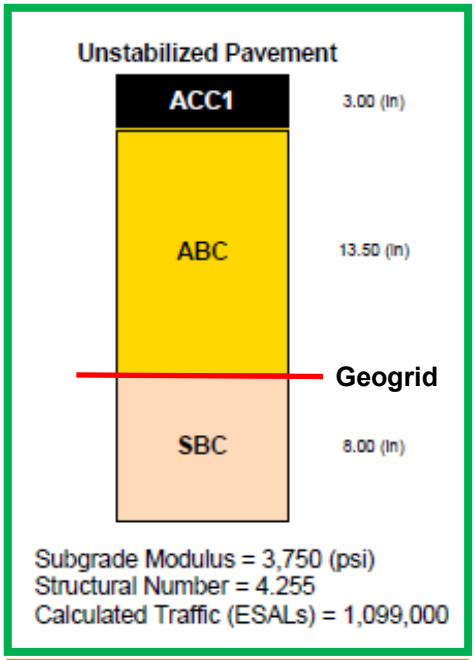
D50 <= 27mm (Base course)

Unstabilized Section Material Properties

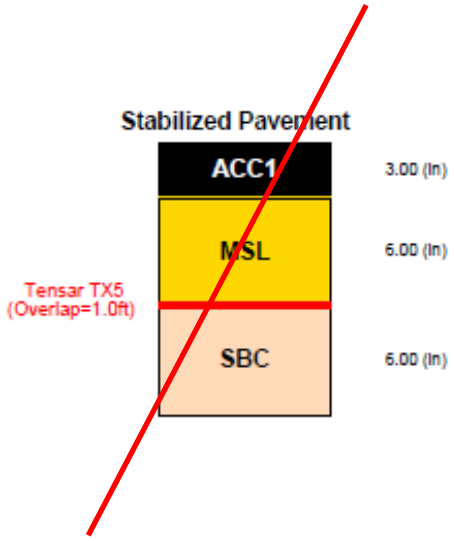
Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ABC	Aggregate Base Course	20	0.170	1.0
SBC	Subbase Course	16	0.080	1.0

Stabilized Section Material Properties

Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.420	N/A
MSL	Mechanically Stabilized Base Cour	20	0.265	1.0
SBC	Subbase Course	16	0.080	1.0



Subgrade Modulus = 3,750 (psi)
Structural Number = 4.255
Calculated Traffic (ESALs) = 1,099,000



Subgrade Modulus = 3,750 (psi)
Structural Number = 3.330
Calculated Traffic (ESALs) = 203,000

Geogrid option calculated with adjusted structural coefficient value

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.

Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Residential Collector**	
	InTEC Project Number: **S201216-P**	Date: 06/29/2020

Tensar

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)

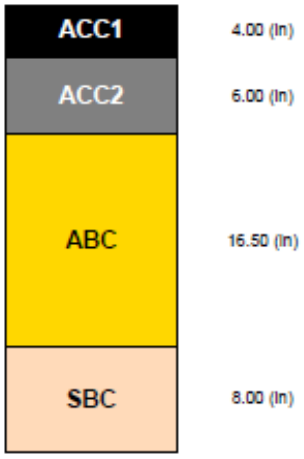
Unstabilized Section Material Properties

Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ACC2	Dense-graded Asphalt Course	70	0.140	N/A
ABC	Aggregate Base Course	20	0.140	1.0
SBC	Subbase Course	16	0.080	1.0

Stabilized Section Material Properties

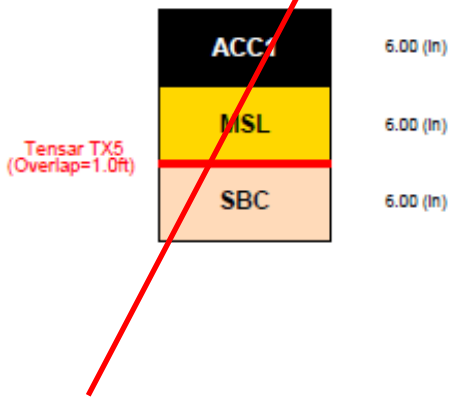
Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.420	N/A
MSL	Mechanically Stabilized Base Cour	20	0.265	1.0
SBC	Subbase Course	16	0.080	1.0

Unstabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 5.550
Calculated Traffic (ESALs) = 3,077,000

Stabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 4.590
Calculated Traffic (ESALs) = 810,000

LIMITATIONS OF THE REPORT

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Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Arterial**	
	InTEC Project Number: **S201216-P**	Date: 06/29/2020

Tensar

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)

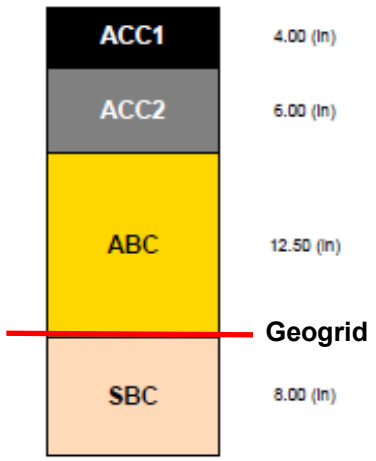
Unstabilized Section Material Properties

Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ACC2	Dense-graded Asphalt Course	70	0.170	N/A
ABC	Aggregate Base Course	20	0.170	1.0
SBC	Subbase Course	16	0.080	1.0

Stabilized Section Material Properties

Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.420	N/A
MSL	Mechanically Stabilized Base Cour	20	0.265	1.0
SBC	Subbase Course	16	0.080	1.0

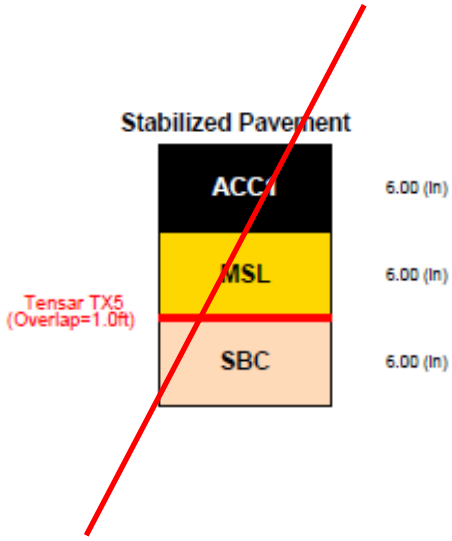
Unstabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 5.545
Calculated Traffic (ESALs) = 3,057,000

Geogrid option calculated with adjusted structural coefficient value

Stabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 4.590
Calculated Traffic (ESALs) = 810,000

LIMITATIONS OF THE REPORT

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Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Arterial**	
	InTEC Project Number: **S201216-P**	Date: 06/29/2020

Tensar

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)

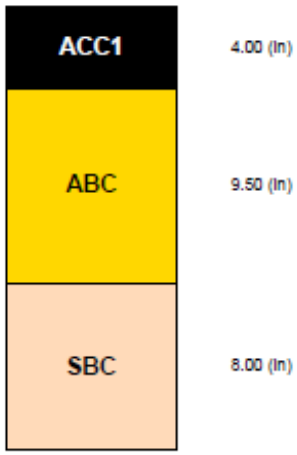
Unstabilized Section Material Properties

Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.440	N/A
ABC	Aggregate Base Course	20	0.340	1.0
SBC	Subbase Course	16	0.080	1.0

Stabilized Section Material Properties

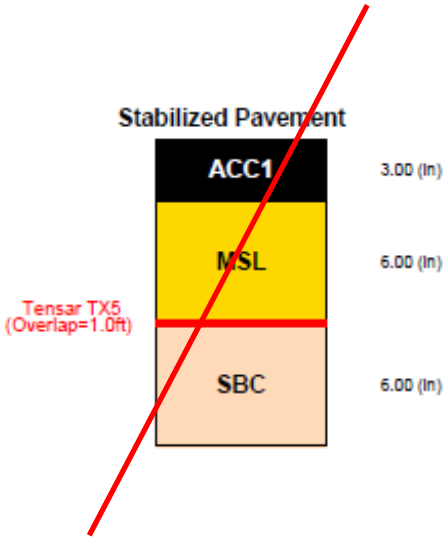
Layer	Description	Cost ($/ton)	Layer coefficient	Drainage factor
ACC1	Asphalt Wearing Course	70	0.420	N/A
MSL	Mechanically Stabilized Base Cour	20	0.265	1.0
SBC	Subbase Course	16	0.080	1.0

Unstabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 5.630
Calculated Traffic (ESALs) = 3,418,000

Stabilized Pavement



Subgrade Modulus = 3,750 (psi)
Structural Number = 3.330
Calculated Traffic (ESALs) = 106,000

LIMITATIONS OF THE REPORT

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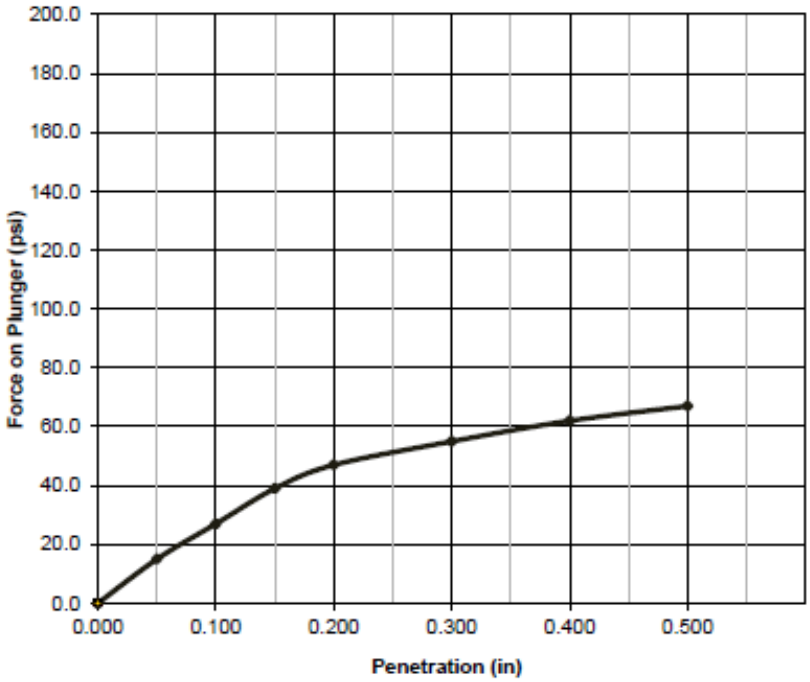
Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Arterial**	
	InTEC Project Number: **S201216-P**	Date: 06/29/2020

InTEC of San Antonio

ASTM D-1883 California Bearing Ratio Test Report

Load Penetration Curve



CBR Results					
Results	A	B	C	D	Average
0.1 in Pen.	2.7				
0.2 in Pen.	3.1				
Moisture (%)	16.20				
Density (pcf)	97.10				
Final Moisture (%)	28.90				
Final Density (pcf)	92.30				

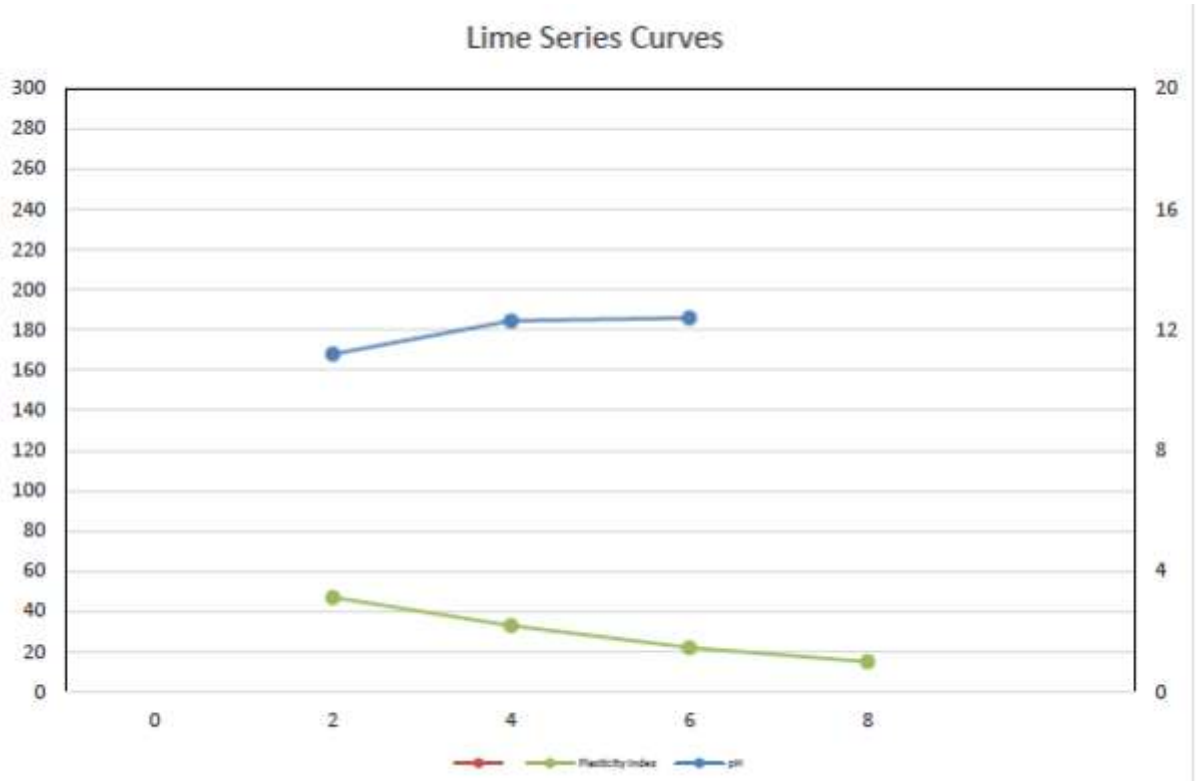
Project Information			
Project Number	S201216-P	Sample Location	
Project Name	Biedenham Tract	Specimen A	near B-26
Date	9/12/2020	Specimen B	
Client	Pulte Homes	Specimen C	
		Specimen D	
Job Ref.		Liquid Limit:	53.0
Sample Num.		Plastic Limit:	20.0
Remarks	Brown Clay, Tan Clay		

Subsurface Exploration and Pavement Analysis
Proposed New Streets
324 Acre Biedenharn Tract
Corley Road
Boerne, Texas

CBR Test Results

InTEC Project Number: **S201216-P**

Date: 06/29/2020



Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas	**Lime Series**	
	InTEC Project Number: **S201216-P**	Date: 06/29/2020

Appendix

Subsurface Exploration and Pavement Analysis Proposed New Streets 324 Acre Biedenharn Tract Corley Road Boerne, Texas		
	InTEC Project Number: **S201216-P**	Date: 06/29/2020

Important Information about This

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.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Geotechnical-Engineering 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 given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled*. No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- 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;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the 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. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be*, and, in general, *if you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying it. A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed*. The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include 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 personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old.*

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration.*** Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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e-mail: info@geoprofessional.org www.geoprofessional.org