



**DeWight Dopslauf, C.P.M., CPPO
Harris County Purchasing Agent**

July 22, 2020

Commissioners Court
Harris County, Texas

	YES	NO	ABSTAIN
Judge Lina Hidalgo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm. Rodney Ellis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm. Adrian Garcia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm. Steve Radack	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm. R. Jack Cagle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RE: Job No. 200126

Members of Commissioners Court:

Please approve the following award on the basis of best bid meeting specifications and subject to applicable bond(s) to be received from the vendor(s):

Description: Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 – UPIN 18104MFOUE01

Bid(s) Received: Thirteen (13) on June 29, 2020 (see attached)

Vendor(s): Reytec Construction Resources

Amount: \$11,788,980

Evaluated By: • Harris County Purchasing • Office of the County Engineer
• Community Services Department • Precinct 4

Purchase order(s) will be issued upon Commissioners Court approval.

Sincerely,

For DeWight Dopslauf
DeWight Dopslauf
Purchasing Agent

Presented to Commissioners Court

July 28, 2020

KCA
Attachment(s)
cc: Vendor(s)

Approve: E/G

FOR INCLUSION ON COMMISSIONERS COURT AGENDA JULY 28, 2020

Line Item	Description	Unit	Quantity	Unit Price	Total Price	Bids										Total Bids	Low Bid	Low Bid Price
						1	2	3	4	5	6	7	8	9	10			
101	GRAVEL	CY	1000	12.50	12500.00	12500.00	12500.00	12500.00	12500.00	12500.00	12500.00	12500.00	12500.00	12500.00	12500.00	12500.00	12500.00	12500.00
102	CRACK SEALANT	LB	500	1.50	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00
103	PAVEMENT MARKING	LF	1000	0.50	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
104	CONCRETE CURB	LF	100	10.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
105	CONCRETE DRIVE	LF	50	20.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
106	CONCRETE SIDEWALK	LF	50	15.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00
107	CONCRETE DRIVE	LF	50	20.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
108	CONCRETE SIDEWALK	LF	50	15.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00
109	CONCRETE DRIVE	LF	50	20.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
110	CONCRETE SIDEWALK	LF	50	15.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00
111	CONCRETE DRIVE	LF	50	20.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
112	CONCRETE SIDEWALK	LF	50	15.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00
113	CONCRETE DRIVE	LF	50	20.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
114	CONCRETE SIDEWALK	LF	50	15.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00
115	CONCRETE DRIVE	LF	50	20.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
116	CONCRETE SIDEWALK	LF	50	15.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00
117	CONCRETE DRIVE	LF	50	20.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
118	CONCRETE SIDEWALK	LF	50	15.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00
119	CONCRETE DRIVE	LF	50	20.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
120	CONCRETE SIDEWALK	LF	50	15.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00

PROJECT:

Job No. 20/0126, Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 – UPIN 18104MF0UE01

BIDDER:

Reytec Construction Resources

TOTAL BID:

\$11,788,980.20

COMPLETION TIME:

Not Required

BIDDER INFO:

1901 Hollister St
Houston, TX 77080
P: 8328448322
F:



**HARRIS COUNTY
INVITATION FOR BID
COVER SHEET**

Job No. 20/0126

INVITATION FOR BID: Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 – UPIN 18104MF0UE01

BID DUE DATE: Monday, ~~June 22, 2020~~ June 29, 2020 Due no later than 2:00 P.M. CST.
NO EXCEPTIONS.

PRE-BID CONFERENCE DATE: Monday, June 8, 2020 at 9:00 A.M. CST

QUESTIONS DUE DATE: Friday, June 12, 2020 by 12:00 P.M. CST

BIDDERS' NOTE: Carefully read all instructions, requirements and specifications. Fill out all forms properly and completely. Bidders must submit hardcopy sealed bids by hand-delivering or mailing to the address listed below.

BID MUST SHOW THE IFB NUMBER, DESCRIPTION AND BE MARKED "SEALED BID".

RETURN BID TO: When submitting a hard copy, sealed bids must be hand-delivered or mailed to:
HARRIS COUNTY PURCHASING AGENT
1001 PRESTON, SUITE 670
HOUSTON, TEXAS 77002
Buyer: Karen Allen at 713-274-4471 or e-mail karen.allen@pur.hctx.net

COMPANY NAME	Reytec Construction Resources, Inc.
TOTAL BID AMOUNT	\$ 11,788,980.20

This page must be complete and included with your submission



**DeWight Dopslauf, C.P.M., CPPO
Harris County Purchasing Agent**

June 17, 2020

TO: ALL VENDORS

RE: Job No. 20/0126


DUE DATE: June 22, 2020, no later than 2:00 p.m. local time, Houston, TX

All vendors are required to sign and attach a copy of this addendum with each bid for Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 – UPIN 18104MF0UE01. This addendum must be received by the Purchasing Department no later than the above due date.


ADDENDUM NO. 1

1. Replaced the Bid Form (Bid Schedule / Pricing Form) and it is available on CivCast at <https://www.civcastusa.com/>.
2. Revised Attachment U, Plans & Drawings, available on CivCast at <https://www.civcastusa.com/>.
3. Summary of Addendum No. 1 (attached).

Sincerely,


DeWight Dopslauf
Purchasing Agent


KCA/mjh


Vendor's Signature

For

Reytec Construction Resources, Inc.
Company Name



**DeWight Dopslauf, C.P.M., CPPO
Harris County Purchasing Agent**

June 22, 2020

TO: ALL VENDORS

RE: Job No. 20/0126

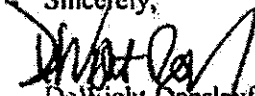
**EXTENDED
DUE DATE:** June 29, 2020, no later than 2:00 p.m. local time, Houston, TX

All vendors are required to sign and attach a copy of this addendum with each bid for Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 – UPIN 18104MF0UE01. This addendum must be received by the Purchasing Department no later than the above due date.

ADDENDUM NO. 2

1. The due date has been extended from Monday, June 22, 2020 to **Monday, June 29, 2020**, no later than 2:00 pm local time, Houston, TX (see pages 1 and 5 attached)
2. Questions & Answers No. 2 (attached).

Sincerely,


DeWight Dopslauf
Purchasing Agent


KCA/mjh


Vendor's Signature

For

Reytec Construction Resources, Inc.
Company Name

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I. INTRODUCTION

Harris County administers Federal grant funds received from various sources, including but not limited to the Texas General Land Office (GLO), the Federal Emergency Management Agency (FEMA), and the U.S. Department of Housing and Urban Development (HUD). All purchases made with grant monies shall comply with the terms and conditions of the grant, as well as the applicable Federal, State, and County procedures regarding these purchases.

All Federal grant awards are subject to the Uniform Administrative Requirements and Cost Principles, codified at 2 CFR 200. This includes the standards for procurements under Federal grants, which applies to contracts for services, goods, construction, or repair. Harris County shall follow applicable local and State requirements except to the extent that these are inconsistent with Federal statutes, regulations, or grant conditions. In other words, Harris County shall follow the rule that allows compliance with all the rules that apply to it: Federal, State, and local. If compliance with all applicable levels is not possible and no rule is more restrictive than another, Harris County shall follow the Federal rule.

This contract shall be funded, in whole or in part, with Federal grant monies. Harris County is authorized to use the sealed bid (formal advertising) method of procurement for this contract opportunity in accordance with 2 CFR 200.320(c).

Harris County is an Affirmative Action/Equal Opportunity Employer. Minority Business Enterprises, Small Business Enterprises, Women Business Enterprises, Historically Underutilized Businesses, Section 3 Business Concerns, and labor surplus area firms are encouraged to submit bids.

A. PROJECT DESCRIPTION

As used herein, the term “Contractor” shall mean and refer to Bidder selected pursuant to this IFB process that enters into a contract with Harris County.

Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4.

B. PROJECT SCHEDULE

Project is anticipated to be completed within eight hundred and twenty-five (825) calendar days from the date of the Notice to Proceed directed by the County.

C. ANTICIPATED CONTRACT TERM

The Contract shall commence on the date on the Notice to Proceed Letter and shall remain in effect until Inspection and Final Acceptance of all required work for the Project and completion of all required services.

II. TIMETABLE

A. PRE-BID CONFERENCE

PRE-BID CONFERENCE

1. There will be a **PRE-BID CONFERENCE** on **June 8, 2020, 9:00 a.m. CST**, via conference call instead of on-site. The conference number is: **832-927-8888**; when you are prompted, enter the 7 digit conference code **7556039**, then press the # key. Should you wish to attend, please RSVP to Karen Allen at 713-274-4471 or email at karen.allen@pur.hctx.net no later than **June 5th at 12:00 p.m. CST**. Attendance at the Pre-Bid Conference is not mandatory; however, Bidders are strongly encouraged to attend to discuss the requirements of the IFB and identify any common questions.
2. Regardless of whether or not Bidders attend the Pre-Bid Conference, Bidders are responsible for fully acquainting themselves with the conditions of the Project site (which may include more than one site), as well as those relating to the construction and labor of the Project, and for informing themselves with respect to local labor availability, means of transportation, necessity for security, laws and codes, local permit requirements, wage scales, local tax structure, contractors' licensing requirements, availability of required insurance, and other factors that could affect the Work. It is the responsibility of each Bidder to fully understand the facilities, difficulties and restrictions which may impact the cost or effort required to complete the Project.

B. QUESTIONS

It is the responsibility of each Bidder to examine the entire IFB package, seek clarification in writing, and review their Bid for accuracy before submitting. It is the responsibility of each Bidder before submitting a Bid, to:

1. Examine the Invitation for Bid Documents thoroughly;
2. Visit the site or structure to become familiar with conditions that may affect costs, progress, performance or furnishing of the Work; and
3. Take into account Harris County, federal, state, and local laws, regulations, ordinances, and requirements that may affect costs, progress, performance, furnishing of the Work, or award.

During the period between issuance of this IFB and the Bid due date, no oral interpretation of the IFB's requirements will be provided to any prospective Bidder. Requests for interpretation (and other questions) must be made in writing by the questions deadline either via CivCast at <https://www.civcastusa.com> or via email to karen.allen@pur.hctx.net. The deadline for submission of questions relating to this IFB is **June 12, 2020** no later than **12:00 PM CST**.

All questions submitted in writing prior to the deadline will be compiled and answered in writing via an Addendum. A copy of all questions and answers via Addendum will be published online and/or forwarded in an email to all firms. The County will not be bound by any information conveyed verbally.

The submission of a Bid shall constitute an incontrovertible representation by Bidder that Bidder has complied with the IFB requirements and that without exception, the Bid is premised upon performing and

furnishing the Work detailed in the Invitation for Bid Documents and that the provided documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

C. ADDENDA

Prior to the submission deadline, Harris County may wish to amend, add to, or delete from the contents of this IFB. Harris County may also issue clarifications resulting from any pre-bid conferences or questions submitted. In such situations, Harris County shall issue an Addendum to the IFB setting forth the nature of the modification. Once an Addendum is issued, it will be uploaded to BuySpeed and/or CivCast, and all Bidders who have downloaded the IFB will be notified via email that an Addendum is ready to be downloaded.

D. EXTENSIONS

The County reserves the right to extend the bid due date and time prescribed above. However, unless the County issues a written Addendum to this IFB that extends the Bid due date and time for all Bidders, the bid due date and time prescribed above shall remain in effect.

E. PUBLIC BID OPENING

Pursuant to 2 CFR 200.320(c)(2)(iii), all bids will be opened at the time and place prescribed in this Invitation For Bids, and the Bids shall be opened publicly.

Sealed Bids will be opened publicly on **June 22, 2020, shortly after 2:00 PM CST**. The public bid opening will be held at Harris County Office of the Purchasing Agent. Late Bids will not be accepted – no exceptions.

F. SCHEDULE SUMMARY

The following is the estimated timetable and is provided to assist responding firms in planning:

IFB Release Date	May 29, 2020
Pre-Bid Conference	June 8, 2020 at 9:00 AM CST
Submission of Questions Deadline	June 12, 2020 by noon CST
Bid Submission Deadline	June 22, 2020 by 2:00 PM CST
Notice to Proceed	When directed by Harris County

III. SUBMISSION INSTRUCTIONS

A. BID & ADDENDA ACKNOWLEDGEMENTS

1. By submitting a Bid in response to this IFB, Bidders accept the solicitation process as it has been outlined in this IFB.

2. All bids are required to remain in effect for at least 120 days from the date of submission. This effective period should be taken into account when preparing the bid.
3. Harris County will not be liable for any costs incurred by the Bidder in preparing a response to this IFB. Bidders submit Bid(s) at their own risk and expense. Harris County makes no guarantee that any products or services will be purchased as a result of this IFB and reserves the right to reject any and all Bids. All Bids and accompanying documentation will become the property of Harris County. By submitting a Bid, Bidders acknowledge and accept that reference checks and/or background investigation may be conducted as a part of the due-diligence process. Award will be made to the lowest, responsible, and responsive Bidder who submits a response to this IFB.
4. Bidders must sign Attachment A, *Bid & Addenda Acknowledgement*, and include with their bid submission.
5. In cases where Addenda are issued under this solicitation, Bidder must ensure all Addenda are reflected within the *Bid & Addenda Acknowledgement* document, and Bidder must sign and submit the actual Addenda documents with their bid. All Addenda shall become a part of the requirements for this IFB. In signing and submitting the *Bid & Addenda Acknowledgment* (Attachment A) with its Bid, Bidder acknowledges that it has examined all documents, attachments, forms, specifications, addenda, and all instructions. The County may deem a bid non-responsive for failure of Bidder to acknowledge any and all Addenda.
6. Bidders are responsible for consulting the standards referenced in this IFB. Failure of Bidder to so examine and inform itself shall be at its sole risk, and no relief for error or omission will be given except as required under State law.
7. **READ THIS ENTIRE DOCUMENT CAREFULLY AND FOLLOW ALL INSTRUCTIONS. THE BIDDER IS RESPONSIBLE FOR FULFILLING ALL REQUIREMENTS AND SPECIFICATIONS.**

B. BID SUBMISSION OPTIONS

Bids must be submitted as a hard copy, or electronically as detailed below.

C. HARD COPY BID SUBMISSION

1. FOR HARD COPY SUBMISSIONS, Bidders must hand-deliver or mail their Bids to:

HARRIS COUNTY PURCHASING AGENT

1001 PRESTON, SUITE 670

HOUSTON, TEXAS 77002

Buyer: Karen Allen at (713) 274-4471 or e-mail karen.allen@pur.hctx.net
2. Bids must be sealed and must show the IFB Number, Description and be marked "SEALED BID".
3. Bids must include:
 - The IFB title.

- All documents must be labeled with the Bidder's name and the IFB number. Any response received by the Office of the Harris County Purchasing Agent that is not identified on the outside with the IFB number will be at risk for rejection.
- Bid must indicate for which contract opportunities the Bidder is submitting.
- All Bids must be typed, single spaced, and formatted to print on 8 ½" by 11" paper.
- Each section of the Bidder's response should start on a new page. A tabbed divider page marked with the section number should separate each section.
- Bidders should prepare a Table of Contents for the Bid being submitted. The Table of Contents must list all sections and the contents of each section.

D. ONLINE BID SUBMISSION

1. Bidders choosing to submit Bids in digital format may electronically submit bids through CivCast (<https://www.civcastusa.com>), which is a third-party online provider website and facilitates the bid management process. Bids submitted via e-mail will be rejected. Bids must include:
 - ONE (1) complete Bid as ONE (1) PDF document.
 - Bids must indicate for which contract opportunities the Bidder is submitting.
2. If Bidder elects to submit its bid electronically, it is the responsibility solely of Bidder to see that its Bid is properly submitted in proper form and prior to the stated closing time. **THE ELECTRONIC BID MANAGEMENT SYSTEM WILL NOT ACCEPT LATE BIDS.** The County will only consider bids that have transmitted successfully and have been issued a confirmation number with a time stamp from CivCast indicating that the Bid was submitted successfully. Bidders shall be solely responsible for informing themselves with respect to the proper utilization of the online bid management system, for ensuring the capability of their computer system to upload the required documents, and for the stability of their internet service. Failure of the Bidder to successfully submit an electronic Bid shall be at the Bidder's sole risk, and no relief will be given for late and/or improperly submitted Bids.

Bidders experiencing any technical difficulties with the bid submission process may contact CivCast Support at **281-376-4577**. Neither the County nor CivCast make any guarantee as to the timely availability of assistance or assurance that any given problem will be resolved by the bid submission date and/or time.

E. DIGITAL FORMAT

Bids submitted via email will not be accepted. If, in its Bid response, Bidder makes any changes whatsoever to the County's published IFB specifications, the County's IFB specifications, *as published*, shall control. Furthermore, if a Bidder has been found to have made an alteration of any kind to the County's published IFB specifications, or the work under the Contract is not being performed, the Contract is subject to immediate cancellation.

F. LATE BIDS; BID RETURNS

Bids are due to the Harris County Purchasing Department by the date and time specified on the cover sheet and as listed under Section II - **Timetable**. Harris County will not accept late bids. Late bids will be rejected. If a solicitation is cancelled, submitted bids will not be returned.

G. SCANNED OR RE-TYPED RESPONSE

If in its response, Bidder either electronically scans, re-types, or in some way reproduces the County's published IFB package, then in the event of any conflict between the terms and provisions of the County's published IFB package, or any portion thereof, and the terms and provisions of the response made by Bidder, the County's IFB package as published shall control. Furthermore, if an alteration of any kind to the County's published IFB package is only discovered after the Contract is executed and is or is not being performed, the Contract is subject to immediate cancellation.

H. PRICING

Bidder must provide the pricing as requested for all services and/or items specified within the *Bid Schedule /Pricing Form* (Attachment B), or in CivCast.

Pricing must be all-inclusive. No price or rate changes, additions, or subsequent qualifications will be honored during the course of the Contract.

Any rates provided to the County must be all-inclusive. "All-inclusive" shall be construed as costs incorporating all charges for service, labor, material, equipment, overhead, and any other costs. No separate line item rates or charges for services listed in the scope of work will be accepted.

I. BID BOND

If the Contract is for the construction of public works, or the Contract value is anticipated to exceed \$100,000, Bidder must furnish a good and sufficient bid bond in the amount of five (5) percent of the total Contract price (LGC 262.032). A bid bond must be executed with a surety company authorized to do business in this state. Bid bonds must be submitted with the Bid package as follows:

Individual bid bond payable to Harris County for 5% of the total amount of each separate bid (if applicable),
or

Bank cashier's check payable to Harris County for 5% of the total amount of each separate bid (if applicable). *NOTE: If Bidder is submitting Bid online through CivCast, and is electing to provide a cashier's check in lieu of a bid bond, the cashier's check must be physically dropped off in a sealed envelope referencing the Job No. before the due date of this IFB at the address provided on the IFB Cover Sheet. If submitting a cashier's check or certified check instead of a bid bond, Bidders must complete the *Bid Check Return Authorization Form* (Attachment H) and attach to bid check. All bid checks must be for the required amount and be payable to Harris County, not payable to any individual. See Section VI, **General Provisions** of this IFB for surety requirements.

J. REQUIRED BID DOCUMENTS

Bidder's IFB submission package must include the components checked below, in the order in which they are listed. If the item is "X" checked, the item must be included in Bidder's submission in order for the submission to be considered complete. Bidders are asked to review the documentation to ensure all applicable parts are included. If any portion of this IFB or its attachments are missing, notify the Purchasing

Department immediately. Bidder should be thoroughly familiar with all of the following items applicable to the bid submission before submitting a bid.

<input checked="" type="checkbox"/>	1.	Cover Page – Bidder must complete and submit the <i>Cover Page</i> for this IFB, providing their Company Name and Total Bid Amount.
<input checked="" type="checkbox"/>	2.	Bid & Addenda Acknowledgement – Bidder must sign and submit the <i>Bid & Addenda Acknowledgement</i> form, included as Attachment A.
<input checked="" type="checkbox"/>	3.	Bid Schedule / Pricing Form – Bidder must complete the <i>Bid Schedule / Pricing Form</i> , included as Attachment B.
<input checked="" type="checkbox"/>	4.	Certification Regarding Lobbying – Bidder must sign and submit the <i>Certification Regarding Lobbying</i> form, included as Attachment C.
<input checked="" type="checkbox"/>	5.	Certificate of Interested Parties (Form 1295) – Pursuant to Texas Government Code § 2252.908, Bidders must complete and submit Form 1295, <i>Certificate of Interested Parties</i> , prior to the bid deadline using the following website: https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm . Bidders must file Form 1295 electronically with the Texas Ethics Commission using the online filing application, and then print a copy of the form filed with the Commission and submit the signed copy with their Bid.
<input checked="" type="checkbox"/>	6.	Statement of Bidder Qualifications – Bidder must complete and submit the <i>Statement of Bidder Qualifications</i> form, included as Attachment D.
<input checked="" type="checkbox"/>	7.	Bidder and Subcontractor Licensing / Certifications – Bidder must submit any applicable licensing and/or certifications required for the completion of the scope of work under this IFB.
<input checked="" type="checkbox"/>	8.	Subcontractor Listing Form – Bidder must complete and submit the <i>Subcontractor Listing Form</i> , (Attachment E).
<input checked="" type="checkbox"/>	9.	References – Bidder must complete and submit the <i>References</i> form, included as Attachment F.
<input checked="" type="checkbox"/>	10.	Bid Check Return Authorization Form – Bidder must sign and submit the <i>Bid Check Return Authorization</i> form (if a bid bond is required), included as Attachment H.
<input checked="" type="checkbox"/>	11.	Bid Bond – If the contract is for the construction of public works, or the contract value is anticipated to exceed \$100,000, Bidder must furnish a good and sufficient bid bond (either an individual bid bond or a bank cashier's check) in the amount of five (5) percent of the total contract price.
<input checked="" type="checkbox"/>	12.	Certification of Compliance with Federal Standards & Requirements – Bidder must sign and submit the <i>Certification of Compliance with Federal Standards & Requirements</i> form, included as Attachment L.
<input checked="" type="checkbox"/>	13.	Section 3 Utilization Plan & Statement of Compliance – Bidder must complete and submit the <i>Section 3 Utilization Plan & Statement of Compliance</i> (Attachment R), for any for any HUD-funded projects expected to exceed \$100,000.

<input checked="" type="checkbox"/>	14.	Section 3 Business Concern Self-Certification Form – Bidders intending to self-perform as Section 3 Businesses, or for any subcontractors of Bidder who qualify as Section 3 Businesses and wish to self-certify as Section 3, the Harris County Section 3 Business Concern Self-Certification Form must be included and submitted with the Bid.
<input checked="" type="checkbox"/>	15.	Certification or documentation that Bidder, or its subcontractor(s), is HUB-certified by the Texas Comptroller of Public Accounts or the local MWBE office in their jurisdiction
<input checked="" type="checkbox"/>	16.	Conflict of Interest Questionnaire – Bidders who enter or seek to enter into a contract with Harris County must disclose Bidder’s or its employees’ affiliation, business relationship, employment, family relationship, or provision of gifts that might cause a conflict of interest with Harris County. By law, <i>the Conflict of Interest Questionnaire</i> (provided by the Texas Ethics Commission at www.ethics.state.tx.us) must be filed with the records administrator of Harris County not later than the 7th business day after the date Bidder becomes aware of facts that require the statement to be filed.
<input checked="" type="checkbox"/>	17.	Statement of Conflicts – A statement of conflicts the Bidder or key employees may have regarding these services.
<input checked="" type="checkbox"/>	18.	System for Award Management results – Bidder must include verification that your company as well as the company’s principal is not debarred through the System for Award Management (www.SAM.gov). Bidder must enclose a print out of the search results that includes the record date.
<input checked="" type="checkbox"/>	19.	Sample Insurance Certificate – Bidder must provide a sample Insurance Certificate which adheres to the <i>Minimum Insurance Requirements</i> shown under Attachment M (does not supersede the “Hold Harmless” provision).
<input type="checkbox"/>	20.	<p>GLO Compliance Package – This project is funded in whole or in part by the Texas General Land Office (GLO). As such, Bidder must also complete and submit the following documents with their Bid:</p> <ul style="list-style-type: none"> • <i>GLO Compliance Package</i> (Attachment Y) <ul style="list-style-type: none"> ○ GLO Contractor Bid Certification ○ GLO Certification of Bidder Regarding Civil Rights Laws and Regulations ○ GLO Contractor Certification of Efforts to Fully Comply with Employment and Training Provisions of Section 3

IV. EVALUATION & AWARD PROCEDURES

A. NONCONFORMING BIDS

Bids that are incomplete, contain material irregularities or include alterations to or terms and conditions that do not conform to the terms and conditions of the IFB, or otherwise do not comply with the requirements of the IFB are subject to rejection as non-responsive. In accordance with the regulations of 2 CFR 200 and the laws of the State of Texas, Harris County reserves the right to waive any informality or irregularity, to make awards to more than one Bidder, and/or to reject any or all bids if there is a sound documented reason.

B. EVALUATION PROCESS

Harris County will select the responsive and responsible Bidder that, in the opinion of Harris County, has been determined to have submitted the lowest bid based on all identified factors.

Prices proposed by Bidder shall be irrevocable until Contract award unless the bid is withdrawn. A Bid may be withdrawn by a Bidder, provided an authorized representative of the Bidder submits a written request to withdraw the Bid prior to the time set for opening the Bids.

C. BASIS OF AWARD

Pursuant to 2 CFR 200.320(c)(2)(iv), Harris County shall evaluate Bids in response to this solicitation, and intends to award a firm fixed price contract to the responsive and responsible bidder, whose Bid, considering price and any price-related factors specified in the solicitation, is the lowest.

Where specified in these bidding documents, factors such as discounts, transportation cost, and life cycle costs shall be considered in determining which bid is lowest. Payment discounts will only be used to determine the low bid when prior experience indicates that such discounts are usually taken advantage of.

D. UNBALANCED BID

To the extent applicable, Harris County may reject any Bid as nonresponsive if it is materially unbalanced as to the prices for the various items of work to be performed. A Bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

E. CONTRACT OBLIGATION

If award is recommended, Harris County Commissioners Court must award the Contract and the County Judge or other person authorized by the Harris County Commissioners Court must sign the Contract before it becomes binding on Harris County or Bidder. Department heads are NOT authorized to sign agreements for Harris County. Binding agreements shall remain in effect until all products and/or services covered by this procurement have been satisfactorily delivered and accepted.

No award can be made until approved by the Harris County Commissioners Court. This IFB does not obligate Harris County to the eventual purchase of any services described, implied or which may be proposed. Progress toward this end is solely at the discretion of Harris County and may be terminated at any time prior to execution of a contract.

F. RESPONSIBILITY

Harris County shall award contracts only to responsible Bidders who have the ability to perform successfully under the terms and conditions of the proposed contract. Information provided in the *Statement of Bidder Qualifications* form (Attachment D) may be used, in part, by Harris County to assess Bidders' responsibility.

To be considered responsible, a Bidder must:

1. Have adequate financial resources to perform the contract, or the ability to obtain them;
2. Be able to comply with the required or proposed delivery or performance schedule, taking into consideration all existing business commitments;

3. Have a satisfactory performance record;
4. Have a satisfactory record of integrity and business ethics;
5. Have the necessary organization, experience, accounting and operational controls, and technical skills, or the ability to obtain them;
6. Have the necessary production, construction, and technical equipment and facilities, or the ability to obtain them; and
7. Be otherwise qualified and eligible to receive an award under applicable laws and regulations.

Before being considered for award, the Bidder may be requested by Harris County to submit a statement or other documentation regarding any of the items above. Failure by the Bidder to provide such additional information shall render the Bidder nonresponsive and ineligible for award.

Responsible Bidders must have the experience necessary to complete the Scope of Work and ability to comply with Texas and Harris County requirements and all federal codes, policies and regulations applicable to this project.

For any work which may involve or require Architects or Engineers, Bidders must submit *Form SF-330 – Architect-Engineer Qualifications* (found at <https://www.gsa.gov/forms-library/architect-engineer-qualifications>). If applicable, Bidders must submit a completed *Form SF-330 – Architect-Engineer Qualifications* for each of the subcontractors proposed to be used in the completion of the Contract (Harris County must approve the actual subcontractors prior to their use).

Harris County shall conduct research to determine that a Bidder is responsible. Some methods to determine responsibility include:

- Compliance with Delivery and Performance Schedules: The County may request information on other active contracts the Bidder is performing and verify the status with those buyers;
- Performance Record: The County may require Bidders to submit contact information for recent contracts they have performed for other customers and contact them to ascertain the Bidder's quality of performance, including timeliness of delivery/completion, quality of work, compliance with terms and conditions of the contract, and cost control, if applicable.
- Integrity and Business Ethics: The County may check local offices of Code Compliance and Business Licenses or other regulatory agencies for business ethics record and compliance with public policy. The County may verify the Bidder's compliance with payments, wage rates, and affirmative action requirements with other customers and with applicable State and Federal Government offices, e.g., DOL Wage and Hour Division;
- Necessary Organization, Experience, Operational Controls, and Technical Skills: The County may verify experience with other customers, request copies of audits, or verify that necessary personnel will be available to work on the County's contract;
- Necessary Production, Construction, and Technical Equipment and Facilities: The County may request evidence that the Bidder has all the equipment and facilities he/she will need or the capability to obtain them; and
- System for Award Management: The County shall verify that the Bidder is not debarred through the System for Award Management (www.SAM.gov).

Bidders are responsible for determining the responsibility of their prospective subcontractors. Bidders shall submit the *Subcontractor Listing Form* (Attachment E) with their Bid and provide information on any prospective subcontractors to be used in completion of the Project. Determinations of prospective subcontractor responsibility may affect the County's determination of the Bidder's responsibility. A Bidder may be required to provide written evidence of a proposed subcontractor's responsibility.

The County may directly determine a prospective subcontractor's responsibility. In this case, the same standards used to determine a Bidders responsibility shall be used by the County to determine subcontractor responsibility.

V. GENERAL PROVISIONS

A. ALTERNATES

When there is a justifiable need, Harris County may opt to use Alternate Bids. If the County chooses to use Alternates, the County will identify the Base Bid Specifications, or the specifications listing or describing only those materials, equipment, work, and services upon which the Base Bid must be predicated, exclusive of any alternate bids. The requested Base Bid would comprise the sum of money for which the Bidder offers to perform the work identified in the Base Bid Specifications, not including that work for which alternate bids are also submitted.

Alternates shall be accomplished either with Additive or Deductive Alternates. An Additive Alternate Bid is a body of work that the County may award in *addition* to the Base Bid if there is sufficient funding after the bids are received, and may include items that are not part of the base scope or may be replacements.

By contrast, a Deductive Alternate Bid is a body of work that the owner may *delete* from the base bid if there is insufficient funding to award the full base bid. A Deductive Bid Alternative is when work shall be *deducted* from the Base Bid work.

The purpose of both Additive and Deductive bids is to build flexibility into the bidding process so that the County can award the maximum amount of the project possible dependent on funding available.

Harris County will use Alternates when there is an understandable need and will attempt to limit Alternates to no more than three potential Alternates. One or more of Alternates may be used to adapt a project to stay within the County's budget, which shall allow an award to be made.

B. AUTHORIZATION TO DO BUSINESS IN TEXAS

Bidders must obtain Texas Sales & Use Tax permit from the Texas State Comptroller Office if they are engaged in business in Texas and they are selling tangible personal property, leasing personal property, or selling a taxable service in Texas.

All Bidders are required to have and maintain any licenses, certifications, and registrations required by the State of Texas, Harris County, or recognized professional organization governing the services performed under this contract (such as professional licensing requirements i.e. Licensed Plumbers). The Texas Department of Licensing and Regulation is the primary state agency responsible for the oversight of businesses, industries, general trades, and occupations that are regulated by the state.

For businesses to legally operate in Harris County, Bidders must be registered with the Texas Secretary of State to transact business in Texas and must be current on all state and local fees and taxes, including but

not limited to Franchise Account Status with the Texas Comptroller of Public Accounts in good standing, delinquent taxes, court judgments, tickets, tolls, fees, or fines.

A Sole Proprietorship, General Partnership, and all business entities (SP, LLC, INC, etc.) doing business under a name other than the name of the owner requires a DBA (Doing Business As) Certificate, which must be filed within the county of which they are doing business. If a Bidder's business isn't located in Harris County, Bidders must submit the licenses, certifications, and other documentation required by the locality in which their business is based.

C. PERFORMANCE & PAYMENT BONDS

2 CFR 200.325 mandates the minimum federal bonding requirements. However, Texas Government Code is more stringent, and provides for the requirements set forth below. Since the Texas Government Code requirements are more stringent than 2 CFR 200.325, compliance with the following requirements shall satisfy the federal bonding requirements.

1. **Performance Bonds:** Successful Bidder may be required to furnish a performance bond within ten (10) days after award of the Contract and receipt of performance and/or payment bond application form.
 - a. If a contract is for a public works project and is expected to exceed \$100,000, Bidders must furnish a performance bond to Harris County for the full amount of the contract (TGC 2253.021(1)) within ten (10) days after award of the contract and receipt of performance bond application form. The prescribed Performance Bond Form for public works contracts over \$100,000 is found under Attachment I, and is the only form Harris County will accept.
 - b. If a contract is not a public works project and is expected to exceed \$50,000, Bidders must furnish a performance bond to Harris County for the full amount of the contract (LGC 262.032) within ten (10) days after award of the contract and receipt of performance bond application form. The prescribed Performance Bond Form for non-public works contracts over \$50,000 is found under Attachment J, and is the only form Harris County will accept.
 - c. The Performance Bond, if required, must be submitted within ten (10) days after award and prior to commencement of the actual work. The performance bond shall be in the amount equal to the amount of money to be paid by the County under the contract, unless otherwise stated, and shall be executed by a surety company authorized to do business in the State of Texas. The performance bond is:
 - i. Solely for the protection of Harris County;
 - ii. In the full amount of the contract; and
 - iii. Conditioned on the faithful performance of the work in accordance with the plans, specifications, and contract documents.
2. **Payment Bonds:** A payment bond is required on all public works jobs that exceed \$25,000 (TGC 2253.021), or as required by Harris County. Harris County may require Payment Bonds for other contracts depending on the scope and use of subcontractors. Bidders must furnish payment bond within ten (10) days after award of the contract and receipt of payment bond application form. The prescribed Payment Bond form for public works contracts over \$25,000 is found under Attachment K, and is the only form Harris County will accept.

If the successful Bidder submits a bank cashier's check as guaranty, Harris County may elect to hold the check until all provisions of the Contract have been completed, and/or require Bidder to submit a performance and/or payment bond. The performance and/or payment bond shall be in the amount equal to the amount of money to be paid by the County under the Contract, unless otherwise stated, and shall be executed by a surety company authorized to do business in the State of Texas.

If any required performance and/or payment bond forms and related documents are not returned to the Harris County Office of the Purchasing Agent, 1001 Preston, Suite 670, Houston, Texas 77002, within ten (10) days, Harris County has the right to render the award ineffective. Written verification of the validity of the bond shall be received by the Office of the Purchasing Agent from the contractor's surety before any payments will be made.

A bond required by this section must be executed by a corporate surety in accordance with Section 1, Chapter 87, Acts of the 56th Legislature, Regular Session, 1959 (Article 7.19-1, Vernon's Texas Insurance Code). A bond executed for a public work contract with Harris County must be payable to and its form must be approved by Harris County.

A bond required under this section must clearly and prominently display on the bond or on an attachment to the bond:

1. The name, mailing address, physical address, and telephone number, including the area code, of the surety company to which any notice of claim should be sent; or
2. The toll-free telephone number maintained by the Texas Department of Insurance under Subchapter B, Chapter 521, Insurance Code, and a statement that the address of the surety company to which any notice of claim should be sent may be obtained from the Texas Department of Insurance by calling the toll-free telephone number.

D. COMPLIANCE WITH STATE, FEDERAL, AND LOCAL LAWS

The following regulations shall apply to this Contract opportunity. Bidders should refer to Attachment P – *Required Contract Provisions* for more detailed information on the requirements and regulations applicable to this contract opportunity:

1. 2 CFR 200 – Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
2. 24 CFR Part 570 – Community Development Block Grants
3. Texas Local Government Code Section 262 – Purchasing and Contracting Authority of Counties in Texas
4. Texas Local Government Code Section 271 – Purchasing and Contracting Authority of Municipalities, Counties, and Certain Other Local Governments
5. Texas Government Code Section 2269 – Contracting and Delivery Procedures for Construction Projects
6. Harris County Purchasing Rules and Procedures Manual (2013)
7. 24 CFR Part 135 – Economic Opportunities for Low- and Very Low-Income Persons, which implements Section 3 of the Housing and Urban Development Act of 1968.

8. Texas Health & Safety Code Section 361.426 – Governmental Entity Preference for Recycled Products

Bidder shall follow all Federal, State, and local laws, rules, codes, ordinances, and regulations applicable to Bidder's services.

Harris County operates its business ethically and in compliance with the law. We ask that any Bidder or Bidder's employee doing business with Harris County who believes he or she has witnessed any suspected ethical violation or fraud immediately report the allegations to:

Chief Assistant County Auditor – Audit Division

713-274-5673

All suspected criminal conduct will be investigated and reported to the District Attorney's Office or an appropriate law enforcement agency. Bidders who report suspected ethical violations or fraud can do so without fear of retaliation. Retaliating against any Bidder or Contractor for reporting suspected ethical violations or fraud is strictly prohibited.

In accordance with Texas Government Code 2270.002, Bidder must warrant that it does not boycott Israel and agrees that it will not boycott Israel during the term of this Contract.

E. CONTRACTOR PROFILE

The *Contractor Profile* form (Attachment G) must be completed and submitted by the Successful Bidder, and any of its subcontractors, within fifteen (15) working days of notification as the apparent low bidder.

F. DISQUALIFICATION OF BIDDER

Upon signing its Bid, Bidder certifies that Bidder has not violated the antitrust laws of this state codified in Texas Business and Commerce Code §15.01, et seq., as amended, or the federal antitrust laws, and has not communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of business. Any or all bids may be rejected if the County believes that collusion exists among Bidders. If multiple bids are submitted by a Bidder and after the bids are opened, one of the bids is withdrawn, the result will be that all of the bids submitted by that Bidder will be withdrawn; however, nothing herein prohibits Bidders from submitting multiple bids for different products or services.

G. E-MAIL ADDRESSES CONSENT

By submission of a bid, Bidder affirmatively consents to the disclosure of its e-mail addresses that are provided to Harris County, the Harris County Flood Control District, the Harris County Appraisal District, or any department or agency of Harris County. This consent is intended to comply with the requirements of the Texas Public Information Act, Texas Government Code Section 552.137, as amended, and shall survive termination of this agreement. This consent shall apply to e-mail addresses provided by Bidder, its employees, officers, and agents acting on Bidder's behalf and shall apply to any e-mail address provided in any form for any reason whether related to this IFB or otherwise.

H. GOVERNING LAW

This IFB is governed by the competitive sealed bidding requirements of 2 CFR 200 "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards", the County Purchasing Act, and Texas Government Code Section 2269 et seq., as amended. Where there is a difference in regulation, Harris County shall follow the more stringent regulation and shall require that Bidders comply

with all applicable federal, state and local laws and regulations. In the event of any conflict of interpretation of any part of this overall document, Harris County's interpretation shall govern.

Bidder is further advised that these requirements shall be fully governed by the laws of the State of Texas and that Harris County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the County Attorney concerning any portion of these requirements. Forum for contractual issues shall be in Texas and venue shall be in Houston, Harris County, Texas, in a federal or state court of competent jurisdiction. The County does not agree to binding arbitration and does not waive its right to a jury trial.

I. FUNDING

Harris County anticipates that all or partial funding for the project subject to this IFB will consist of federal grant funding. The federal agencies providing this funding may include, but shall not be limited to, the U.S. Department of Housing and Urban Development (HUD), the Federal Emergency Management Agency's (FEMA) Public Assistance program, or H.O.M.E. As such, Bidder acknowledges and is responsible for ensuring compliance with the general procurement standards applicable to Contractors, as detailed in Title 2 CFR 200. Any Contract awarded pursuant to this IFB shall include all required Contract clauses in all solicitation and contract awards for services and work associated with this project, and the selected Bidder shall include the applicable clauses in its subcontracts (see 2 CFR 200, Appendix II, Required Contract Clauses).

Bidder must complete and return Attachment L, *Certification of Compliance with Federal Standards & Requirements*, certifying their compliance with and understanding of their responsibility to ensure compliance with federal regulations. Failure to include the signed *Certification of Compliance with Federal Standards & Requirements* document with your bid may be cause to reject the entire bid. Failure to maintain compliance throughout the duration of the project or Contract may be cause to terminate the Contract.

Additionally, any contract entered into by the County that is to be paid in whole or in part from grant funds will be subject to termination for convenience by the County should grant funding become unavailable at any time for the continuation of services paid for by the grant, and further funding cannot be obtained for the contract. Such termination will be without liability to the County, other than for payment of services rendered prior to the date of termination.

J. SECTION 3 ACT OF 1968 COMPLIANCE

DISCLAIMER: THIS SOLICITATION DOES INVOLVE HUD FUNDING AND THEREFORE SECTION 3 DOES APPLY.

24 CFR 135 requires that for any HUD-funded contract with a value in excess of \$100,000, contractors and subcontractors must comply with the Section 3 Act of 1968. The purpose of Section 3 is to ensure that employment and other economic opportunities generated by certain HUD financial assistance shall, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations, be directed to low- and very low income persons, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low- and very low-income persons. Section 3 is triggered when the normal completion of construction and rehabilitation projects creates the need for new employment, contracting, or training opportunities.

Bidders must complete and submit the *Section 3 Utilization Plan & Statement of Compliance* (Attachment R), with their Bid. The *Section 3 Utilization Plan & Statement of Compliance* should detail the Bidder's goals to hire new Section 3 residents and/or subcontract with Section 3 Business Concerns. Bidders should

indicate all firms proposed as subcontractors on this project, and whether any of the firms are Section 3 Business Concerns. Section 3 Business Concerns can be found on the HUD Section 3 website at <https://portalapps.hud.gov/Sec3BusReg/BRegistry/What>.

Businesses which fit the definition of a Section 3 Business Concern, and would like to self-perform in order to comply with Section 3 requirements, must submit Section 3 Self-Certification documentation. At Harris County's discretion, the County shall accept the *Harris County Section 3 Business Concern Self-Certification*, or equivalent Section 3 Self-Certification forms from HUD, the Texas GLO, the City of Houston, and other Section 3 programs in the Bidder's local jurisdiction. Contractors and subcontractors must include the Section 3 Clause (Attachment Q, *Section 3 Clause*) in its entirety, in every subcontract subject to compliance with regulations in 24 CFR 135.

Upon award, Bidders will also be required to provide all pertinent information related to Section 3 residents and Section 3 Business Concerns including but not limited to the self-certification forms, copies of lease agreements, copies of documents evidencing participation in public assistance programs, copies of documents as proof of income, and other pertinent documents. Harris County shall monitor and evaluate contractor's, and contractor's subcontractors, Section 3 compliance towards achieving the numerical goals relative to Section 3 employment, training, and contracting on a minimum monthly basis throughout the contract period. Contractors and subcontractors shall be responsible for providing monthly reports in the format requested by Harris County.

K. HUB / MWBE UTILIZATION COMMITMENT

2 CFR 200.321 requires that Contractors take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. Contractors are required to facilitate Historically Underutilized Business (HUB) and/or Minority & Women-Owned Business Enterprise (MWBE) participation. Affirmative steps must include:

1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and
5. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

Bidders must indicate which of their subcontractors will be HUB / MWBE using the *Subcontractor Listing Form*. Bidders must indicate the type of work to be performed by each firm and whether each firm is a HUB / MWBE or non-HUB / MWBE firm. Bidders must include certification or documentation when the Bidder itself, or its subcontractor(s), is HUB-certified by the Texas Comptroller of Public Accounts or the local MWBE office in their jurisdiction. Harris County shall monitor and evaluate Bidder's HUB / MWBE compliance throughout the contract period. Upon award, Bidder shall be responsible for providing reports in the format requested by Harris County.

L. HISTORICALLY UNDERUTILIZED BUSINESSES

The State of Texas identifies any business at least 51 percent owned by an Asian Pacific American, Black American, Hispanic American, Native American, American woman and/or Service Disabled Veteran, who

reside in Texas and actively participate in the control, operations and management of the entity's affairs as a Historically Underutilized Business (also considered MWBE).

M. NO UNAUTHORIZED CONTACTS

Bidder shall not contact any Harris County personnel or County Board members during this IFB process without the express permission from the Harris County Purchasing Office. Harris County Purchasing may disqualify any Bidder who has made site visits, contacted Harris County personnel or Board Members, or distributed any literature without authorization from Harris County Purchasing.

All correspondence relating to this IFB, from advertisement to award shall be sent to Harris County Purchasing.

N. PUBLIC INFORMATION

All information, documentation, and other materials submitted in response to this solicitation are considered non-confidential and/or non-proprietary and are subject to public disclosure under the Texas Public Information Act after the solicitation is completed and contract(s) executed with selected firm(s). Once opened, Bids are public records. There are no exceptions.

When submitting Bids, Bidder must be sure to identify trade secrets or confidential information contained in the Bid or redact confidential information if information is needed to address requirements of the IFB. To the extent permitted by law, Bidders may request, in writing, non-disclosure of confidential data. Such information shall accompany the Bid, be readily separable from the response, and shall be CLEARLY MARKED "CONFIDENTIAL." For those portions identified as confidential by Bidder, Harris County must rely on advice, decisions, and opinions of the Attorney General of the State of Texas relative to the disclosure of data or information.

The County will accept information clearly labeled "TRADE SECRET," "CONFIDENTIAL," or "PROPRIETARY". The County will endeavor to inform the submitter of any request for the disclosure of such information. Under no circumstances, however, will the County be responsible or liable to the submitter or any other party for the disclosure of any such labeled information. Bidders that indiscriminately identify all or most of their submission as exempt from disclosure without justification may, at the County's discretion, be deemed non-responsive.

The County will not advise as to the nature or content of documents entitled to protection from disclosure under the Texas Public Information Act, including interpretations of the act or the definitions of "Trade Secret," "Confidential," or "Proprietary."

If the County receives a Public Information Act request, prior to withholding any information, Bidder shall be required to execute an express agreement, in a form provided by the County, to indemnify, defend and hold harmless the County in any action to compel disclosure of any withheld material. If the Bidder refuses to sign such an agreement, the County shall have the right to disclose the entirety of the Bid package, regardless of any marking or labeling of material as trade secret, confidential or proprietary. By submitting Bids, the Bidder expressly waives any claims against the County for such disclosure in the absence of an express written indemnification agreement. Bidder shall provide to the County a specific legal basis for each portion of a Bid sought to be withheld from disclosure

O. FISCAL FUNDING

A multi-year lease or lease/purchase arrangement, if identified as a requirement for this IFB, or any resultant contract continuing as a result of an extension option, must include fiscal funding out. If, for any reason,

funds are not appropriated to continue the lease or contract, said lease or contract shall become null and void on the last day of the current appropriation of funds. After expiration of the lease, leased equipment shall be removed by Bidder from the using department without penalty of any kind or form to Harris County. All charges and physical activity related to delivery, installation, removal and redelivery shall be the responsibility of Bidder.

P. MINIMUM EFFECTIVE PERIOD OF BID

All bids are required to remain in effect for at least 120 days from the date of submission. This effective period should be taken into account when preparing the bid.

Q. SUPPLEMENTAL MATERIALS

Bidders are responsible for including all pertinent product data in the returned bid package. Literature, brochures, data sheets, specification information, completed forms requested as part of the bid package and any other facts which may affect subsequent contract award should be included. Failure to include all necessary and proper supplemental materials may be cause to reject the entire Bid.

R. BRAND NAMES / SUBSTITUTION

Brand names and model numbers that may appear in the documents of this IFB are for reference only and shall serve as an example of functional, design, and/or quality standards and requirements for the product or service identified. It is not the intent of Harris County to restrict bids in such cases, but rather to establish a desired quality or level of merchandise or to meet a pre-established standard due to existing items. Herein, or within the attached specifications, whenever the County has listed a specific brand name, the words “or equal” shall automatically apply thereto. This term “or equal” means that Contractor may propose to provide an alternate product as long as such proposed alternate product, in the opinion of the County, meets the minimum specifications.

If Bidder wishes to provide a different product than the product the County has identified within this IFB, Bidder may propose different products or items within their Bid submission, provided the products or items provide the same essential characteristics and are of equal or better quality. The burden of proof of such rests with Bidders. Harris County shall act as sole judge in determining equality and acceptability of products offered. After opening of bid, but prior to award recommendation, Harris County may require documentation demonstrating equal or superior products as compared to products required.

S. REGULATORY REQUIREMENTS & PERMITS

Bidders awarded pursuant to this IFB shall comply with all applicable federal, state, and local laws, rules, regulations, ordinances, and codes and shall identify, prepare and/or obtain all licenses, documentation, coordination, testing, inspections, plans, reports, forms, and permits required to provide the services under this IFB and as required by Local, State, and Federal Agencies, Departments, Boards, and Commissions at his/her own expense. Bidder shall be responsible for supplying necessary reports and studies (if applicable) to the agencies as required and provide responses to their comments, as necessary.

VI. SCOPE OF WORK & SPECIFICATIONS

The successful Bidder shall perform the Scope of Work to the extent necessary (a) for the proper execution and completion of the Work under the Contract; (b) to supervise and direct the Work in a safe manner and perform all Work in accordance with the Contract, Applicable Law, Applicable Permits and Industry Standards; (c) to achieve Final Completion of the project; and (d) in conformance with the Contract Documents and the Technical

Specifications and such that the Work is in compliance with the Contract, Industry Standards, Applicable Codes, Applicable Laws and Applicable Permits.

The successful Bidder is responsible for identifying, coordinating, and conforming scope, specifications, and recommendations of assigned project(s) to meet legal and regulatory parameters/constraints, codes and applicable requirements set forth by agencies, including, but not limited to the State of Texas, the Texas General Land Office (GLO), Harris County, U.S. Environmental Protection Agency (EPA), the Federal Emergency Management Agency (FEMA), the Texas Commission on Environmental Quality (TCEQ), and any other local codes or agencies as they may apply.

A. BACKGROUND & OBJECTIVES

The purpose of this bid is to provide road construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4.

B. SCOPE OF WORK

This project consists of the successful Bidder furnishing all qualified personnel, supervision, labor, services, materials, equipment, facilities, travel, overhead and incidentals necessary for road construction at Neuens Road between Gessner Road and Blalock Road, but are not limited to, the following:

The reconstruction of Neuens Road from a two-lane asphalt to two-lane concrete road from Gessner Road to Blalock Road with appropriate drainage facilities.

Bidder may receive input from the County and shall take such input under advisement. When applicable, Bidders should refer to the *Standards & Specifications, General Conditions, and General Notices, Notes & Information* for further details and information.

C. STANDARDS & SPECIFICATIONS

When applicable, Standards and Specifications required under this IFB are included under the *Standards & Specifications* attachment T.

Bidders may download the *Standards & Specifications*, when available, from CivCast at <https://www.civcastusa.com>.

D. PLANS & DRAWINGS

When applicable, Plans and Drawings pertinent to this IFB are included under the *Plans & Drawings* attachment U.

Bidders may download the drawings, blueprints, plans, and/or maps for this project CivCast at <https://www.civcastusa.com>. Do NOT include the drawings from this IFB package with your submittal.

E. HARRIS COUNTY GENERAL CONDITIONS

All Bidders completing labor, building or public construction, or any related work of any kind are obligated to comply with all requirements under the *General Conditions* attachment.

Bidders may download the *General Conditions*, when available, from CivCast at <https://www.civcastusa.com>.

F. WORK STANDARDS

It is the responsibility of the Bidder to ensure that each worker provided by the Bidder shall be fully trained and qualified to provide any assigned work. Accordingly, all work provided shall be guaranteed by the Bidder to be performed in a workmanlike, skillful, and competent manner and in accordance with all applicable laws, codes, and/or regulations, including those issued by, but not limited to, Harris County (and/or, if applicable, any city jurisdiction therein in which work will be performed), and/or the State of Texas, and/or any applicable Federal laws, codes, and regulations.

VII. CONTRACT REQUIREMENTS & PAYMENT

The following Contract terms and payment requirements shall apply to the work intended to be awarded pursuant to this IFB. The term "Contractor" shall mean and refer to the successful Bidder. To the extent that any of the Contract terms contained in this Section conflict with the Specifications, Standards, Plans, General Conditions, or Federal provisions applicable to the Project, the more stringent requirement shall govern.

A. CONTRACT PROVISIONS

The federal regulations and standards applicable to the required work are set forth in Attachment P, *Required Contract Provisions*, and incorporated herein as part of this IFB. The Contractor shall be required to comply with the federal terms and conditions under the *Required Contract Provisions*, which shall apply to and govern all work and services provided under the Contract. Any Contractor awarded a contract as a result of this IFB will be required to sign a contract containing the County's contract provisions, which adhere to and include, but are not limited to, all required federal contract provisions as required of any federally-funded work. These provisions shall be substantially as they appear in Attachment P, *Required Contract Provisions*.

In accordance with 2 CFR 200.326, contracts executed by Harris County which are funded in whole or in part by federal grant monies shall contain the applicable provisions described in 2 CFR Appendix II to Part 200—Contract Provisions for non-Federal Entity Contracts Under Federal Awards.

B. NOTICE TO PROCEED

The Contractor shall not commence work under the Contract without a Harris County Notice to Proceed, and a purchase order signed by an authorized agent of the Harris County Purchasing Department.

C. TIME FOR COMPLETION & LIQUIDATED DAMAGES FOR DELAY

1. The Contractor shall commence work under the Contract on the date to be specified within the Notice to Proceed form issued by the County, and shall fully complete all work thereunder within **eight hundred and twenty-five (825)** consecutive calendar days from said date. The Contractor shall meet any deadlines or schedules required for the work.

NOTE: Any Bidder that may have any concerns pertaining to the noted "**eight hundred and twenty-five (825) calendar days**" may bring this up at the pre-bid Conference.

Normal working hours shall be Monday through Friday, 8:00 AM to 5:00 PM (CST). All other working hours require pre-approval, in the County's sole discretion. The Contractor shall be required to provide a minimum five (5) working days for approval and planning of any request for work windows outside normal working hours.

2. *Time is of the essence* of each and every provision of the Contract. If the Contractor fails to acceptably complete the Contract work within the time specified, including any properly authorized extension(s), the County will be damaged and will suffer financial loss. The exact amount of damage is, and will be, difficult of exact ascertainment. Accordingly, instead of requiring any such proof, the County and the Contractor agree that the Contractor will pay the County the sum of **Two Thousand - Five Hundred (\$2500)** for each and every calendar day of delay in completing the Contract work beyond the time prescribed for completion the work, as Liquidated Damages and not as a penalty or forfeiture.

The Contractor specially binds and obligates itself to pay such Liquidated Damages to the County on demand, or at the County's option the County may withhold the amount thereof from any sums due the Contractor under this Contract.

D. PAYMENT PROVISIONS

The sum of the payments due to the Contractor is limited to the amount of money stated in the Contract. Any products provided, or services rendered, in excess of this amount will be at the Contractor's expense and not payable by Harris County. No alterations, substitutions or extra charges of any kind will be permitted. Merchandise may not be billed at a price higher than is stated on the order. Contractors cannot include federal excise, state or city sales tax. Pursuant to Texas Tax Code Section 151.309, as amended, Harris County is exempted from sales and use taxes.

E. INVOICING PROCEDURES

Coordination of the project will be through the Harris County using department, and all invoices must be routed through that department. All invoices shall include submission requirements stated in the specifications including completed certified payroll records and lien waivers. Payment terms are "Net 30" from date the invoice is received by the Auditor's Office – Accounts Payable Department; therefore, payment to the Contractor may take up to one (1) month from the date the invoice is initially approved by the Harris County using department and received in Accounts Payable. Payment shall be in accordance with Harris County's Policy for Payment.

For prospective vendors downloading this IFB from CivCast at <https://www.civcastusa.com/>, the Harris County Policy for Payment may also be picked up between 7:30 a.m. and 4:30 p.m., Monday through Friday at the Office of the Purchasing Agent, 1001 Preston, Suite 670, Houston, TX.

F. RETENTION

The County may retain up to 20% of the funds pending a supplemental inspection in no fewer than thirty (30) days. Following a satisfactory supplemental inspection, the retainage will be paid to the Contractor upon availability of grant funds following the final thirty (30) day inspection.

If any problems are identified in this supplemental inspection, the County shall notify the Contractor to come back and correct the same within a reasonable amount of time, not to exceed two (2) weeks after notification by the County. Should the Contractor fail to do so, the County will not disburse the retainage and may take any necessary legal recourse, and the Contractor will be barred from performing any more work for the County. In addition, should the Contractor be doing other work for the County and fails to correct any warranty problems, no other payments will be made to him/her until such problems are corrected.

G. PROGRESS PAYMENTS

The provisions of this section shall only apply if progress milestones have been specified for the work.

1. If progress milestones have been specified, then payments for the work will be made as the requirements of such progress milestones are met. Progress payments for the work will be made by County upon proper application by Contractor during the progress of the work and according to the terms of payment as specified. Contractor's progress billing invoice will include progress payments due for the original scope of work and changes. Each item for payment shown in any County schedule for the project and each change order will be itemized on the invoice.
2. Payments otherwise due may be withheld by County on account of defective work not remedied, liens or other claims filed, reasonable evidence indicating probable filing of liens or other claims, failure of Contractor to make payments properly to its subcontractors or for material or labor, the failure of Contractor to perform any of its other obligations under the contract, or to protect County against any liability arising out of Contractor's failure to pay or discharge taxes or other obligations. If the causes for which payment is withheld are removed, the withheld payments will be made promptly. If the said causes are not removed within a reasonable period after written notice, County may remove them at Contractor's expense.
3. Payment of the final progress milestone payment or any retention will be made by County upon:
 - a. Submission of an invoice for satisfactory completion of the requirements of a progress milestone as defined in any applicable County schedule, and in the amount associated with the progress milestone;
 - b. Written acceptance of the work by County;
 - c. Delivery of all drawings and specifications, if required by County;
 - d. Delivery of executed full releases of any and all liens arising out of the contract; and
 - e. Delivery of an affidavit listing all persons who might otherwise be entitled to file, claim or maintain a lien of any kind or character, and containing an averment that all of the said persons have been paid in full.
4. If any person refuses to furnish an actual release or receipt in full, Contractor may furnish a bond satisfactory to County to indemnify County against any claim or lien at no cost to County.
5. Acceptance by Contractor of payment of the final progress milestone payment by County will constitute a waiver, release and discharge of any and all claims and demands of any kind or character which Contractor then has, or can subsequently acquire against County, its successors and assigns, for or on account of any matter or thing arising out of, or in any manner connected with, the performance of the contract. However, payment for the final progress milestone by the County will not constitute a waiver, release or discharge of any claims or demands which County then has, or can subsequently acquire, against Contractor, its successors and assigns, for or on account of any matter or thing arising out of, or in any manner connected with, the performance of the contract.

H. PAYROLL SUBMISSION

If Davis-Bacon or Prevailing Wages are applicable to the Project, original Weekly Certified Payrolls in the format required by Harris County must be submitted by all contractors, and subcontractors as applicable, on a weekly basis to Harris County. The Prime Contractor is responsible for all subcontractor payroll

submittals. All contractors and subcontractors are to make available copies of cancelled checks and check stubs for comparison, if requested by Harris County.

Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following. The Statement of Compliance is found on page 2 of the WH-347 form, and additional certifications of compliance may be required by Harris County. Any Statement of Compliance is subject to the penalties provided by 18 U.S.C. § 1001, namely, a fine, possible imprisonment of not more than 5 years, or both. Accordingly, the party signing this statement should have knowledge of the facts represented as true.

I. WAGE & LABOR COMPLIANCE

If Davis-Bacon or Prevailing Wages are applicable to the Project, the U.S. Department of Labor Wage Rate poster must be displayed in a location that all workers have easy access and remain in place at all times until the project is complete. Harris County reserves the right to visit the job site and to interview any employees on any given date or time during the conduct of the work without prior notification.

Harris County may require the posting, utilization, and/or submission of the following forms or documents to verify compliance with Davis-Bacon, Prevailing Wages, and other labor requirements, which may include, but are not limited to, the following:

- **DBRA Wage Rates** – This reflects proper minimum hourly compensation, including fringe benefits, which is owed workers by all contractor/subcontractor for this project. Prime Contractors are required to post these wage rates at the job site visible to all workers.
- **Equal Employment Opportunity is the Law (EEO) Poster** – This poster will be provided by Harris County to Contractor, and must be posted at the job site in an area visible to all workers.
- **Employees Rights Under Davis-Bacon Act Poster**– This poster will be provided by Harris County to Contractor and must be posted at the job site accompanied by the wage rates, which shall be visible to all workers.
- **Quarterly Employment Data Report** – This report shall be provided by Harris County to Contractor and must be submitted by all contractors / subcontractors whose contracts and subcontracts exceed \$10,000.00 regardless of the nature and duration of contract.
- **LCP Tracker / Weekly Certified Payrolls** – Harris County shall dictate the format and frequency required of contractors / subcontractors when completing certified payrolls, which must be submitted for each week during the course of the project within five (5) working days after the end of the weekly payroll period.
- **Project Sign** – Harris County shall provide Contractor with the Project Sign requirements, if applicable, including language, formatting, size, and other specifications to be used when preparing and installing the required project sign(s).
- **Daily Work Logs** – Harris County may require submission of Daily Work Logs from the Contractor for each day during the course of the project with the corresponding Pay Request.

Harris County will ascertain that the proper wage rates are being paid to the employees in accordance with the contract documents. The Prime Contractor shall not allow work requiring a license to be performed by a worker who does not have the proper license. The Prime Contractor shall require, and shall require all its

subcontractors and lower tier subcontractors, that workers carry their license upon their persons while performing work on the Project and that such persons produce their licenses to the Harris County representative upon request. Should work requiring a license be performed by an unlicensed person despite the prohibitions of this paragraph, that person must be paid the required wage rate applicable for a licensed craftsman performing such work pursuant to the issued DBRA Wage Decision for this Project. Harris County will not recognize a worker that holds a journeyman's license in a trade as eligible for pay as an apprentice rate for work in that trade.

Apprentices may be used in any of the crafts listed in the Wage Decision, if they are currently certified in a program recognized by the Office of Apprenticeship Training, U.S. Department of Labor, providing the proper ratio between journeyman and apprentice is observed. Apprenticeship certification certificates must be supplied with the first weekly payroll upon which the apprentice's name appears. If they are not certified as an apprentice, they must be paid as a journeyman and used as an apprentice.

In the event of discrepancy between the services performed and the wages paid, it will be documented and the Prime Contractor will be so notified. Harris County reserves the right to withhold any payment due the Prime Contractor until such discrepancy is resolved and the necessary adjustment made.

J. PROMPT PAYMENT POLICY

It is the policy of the County to process contract payments efficiently and expeditiously. Pursuant to Texas Government Code 2251.021, Harris County shall ensure payments are made within 30 days of receipt of goods and/or services under the contract and after proper submission of an invoice. Payment shall be made within the 30 day time-period, provided there are not disputes between the County and the Vendor, Contractor, Subcontractor, or Supplier about the goods delivered or the service performed that causes the payment to be late; the terms of a federal contract, grant, regulation, or statute prevent the governmental entity from making a timely payment with federal funds; and/or that the invoice is not submitted in strict accordance with any instruction in the Contract relating to the payment.

A Contractor that receives a payment from Harris County must pay its subcontractor the appropriate share of the payment not later than the 10th day after the date the Contractor receives the payment. The appropriate share is overdue on the 11th day after the date the Contractor receives the payment.

K. CHANGE ORDERS

Without invalidating the Contract, changes may be made to the plans or specifications, or to decrease or increase the quantity of Work to be performed or of materials, equipment, or supplies to be furnished, pursuant to change orders executed in accordance with the procedures set forth in the General Conditions applicable to this Contract.

L. COST PLUS CONTRACTING PROHIBITED

Cost-plus-a-percentage-of-cost (CPPC) contracts are prohibited by 2 CFR 200.323(d). The cost plus a percentage of cost and percentage of construction cost methods of contracting must never be used, including in subcontracts and third-party contracts. A cost-plus contract is one that is structured to pay the contractor or subcontractor their actual costs incurred, plus a fixed percent for profit or overhead.

A cost-plus-a-percentage-of-cost (CPPC) contract is a contract containing some element that obligates Harris County or Contractor to pay a contractor or subcontractor an amount (in the form of either profit or cost), undetermined at the time the contract was made, to be incurred in the future, and based on a percentage of future costs. The inclusion of an overall contract ceiling price does not make these forms of contracts acceptable.

This type of contract is prohibited because there is no incentive for the contractor or subcontractor to keep its incurred costs low. Instead, there is a reverse incentive for the contractor or subcontractor to continue to incur additional costs in order to continue to drive the percentage of cost up. In other words, increased spending by the contractor will yield higher profits. This prohibition applies to all work, regardless of the circumstances, and applies to subcontracts of the contractor cases where the prime contract is a cost-reimbursement type contract or subject to price redetermination.

M. INFORMATION SECURITY

1. Definitions

“Breach of Security” or “Breach” means unauthorized acquisition of computerized data that compromises the security, confidentiality, or integrity of sensitive personal information including data that is encrypted if the person accessing the data has the key required to decrypt the data.

“Personal Identifying Information” or “PII” means information that alone, or in conjunction with other information, identifies an individual, as defined at Tex. Bus. & Com. Code § 521.002(1).

“Sensitive Personal Information” or “SPI” means the information categories listed at Tex. Bus. & Com. Code § 521.002(2).

2. Security and Privacy Compliance

- a. Contractor shall keep all PII and SPI received or generated under the Contract and any documents related thereto strictly confidential.
- b. Contractor shall comply with all applicable federal and state privacy and data protection laws, as well as all other applicable regulations and directives.
- c. Contractor shall implement administrative, physical, and technical safeguards to protect PII and SPI that are no less rigorous than accepted industry practices including, without limitation, the guidelines in the National Institute of Standards and Technology (“NIST”) Cybersecurity Framework Version 1.1. All such safeguards shall comply with applicable data protection and privacy laws.
- d. Harris County shall legally bind any contractors and their subcontractors to the same requirements stated herein and obligations stipulated in the Contract and documents related thereto. Contractor shall ensure that the requirements stated herein are imposed on Contractor’s subcontractor(s).
- e. Contractor shall not share PII or SPI with any third parties, except as necessary for Contractor’s performance under the Contract.

3. Data Ownership

- a. Upon termination of the Contract, Contractor shall promptly return to Harris County all Harris County-owned data possessed by Contractor and its employees, agents, or contractors, including any subcontractor. Contractor shall retain no copies or back-up records of Harris County-owned data. If such return is infeasible, as mutually determined by Harris County and Contractor, with respect to Harris County-owned data, Contractor shall limit any further use and disclosure of Data to the purposes that make the return of Harris County-owned data infeasible. In lieu of the requirements in this Section, Harris County may direct Contractor to

destroy any Harris County-owned data in Contractor's possession. Any such destruction shall be verified by Contractor and Harris County.

4. Data Mining

- a. Contractor agrees not to use PII or SPI for unrelated purposes, advertising or advertising-related services, or for any other purpose not explicitly authorized by Harris County in the Contract or any document related thereto.
- b. Contractor agrees to take all reasonably feasible physical, technical, administrative, and procedural measures to ensure that no unauthorized use of PII or SPI occurs.

5. Breach of Security

- a. Upon discovery of a Breach of Security or suspected Breach of Security by the Contractor, Contractor agrees to notify Harris County as soon as possible upon discovery of the Breach of Security or suspected Breach of Security, but in no event shall notification occur later than 24 hours after discovery.
- b. Contractor agrees to take all reasonable steps to immediately remedy a Breach of Security and prevent any further Breach of Security.

6. Right to Audit

- a. Upon the Harris County's request and to confirm Contractor's compliance with this Appendix, Contractor grants Harris County permission to perform an assessment, audit, examination, investigation, or review of all controls in the Contractor's, or any of Contractor's contractors, including any subcontractor's, physical and/or technical environment in relation to PII or SPI. Contractor agrees to fully cooperate with such assessment by providing access to knowledgeable personnel, physical premises, documentation, infrastructure, and application software that stores, processes, or transports PII or SPI. Contractor shall ensure that this clause concerning the Harris County's authority to assess, audit, examine, investigate, or review is included in any subcontract it award.

N. REMEDIES & LIQUIDATED DAMAGES FOR CERTAIN BREACHES

1. As authorized by 41 U.S.C. 1908, in instances where Contractors violate or breach contract terms, Harris County is authorized to impose administrative, contractual, or legal remedies which may provide for sanctions and penalties as appropriate.

In the event of a failure by Contractor to satisfactorily perform the services specified herein and/or a default by Contractor in abiding by the other terms and conditions of the Contract, Harris County may terminate the Contract on written notice to Contractor and Contractor shall be liable for all damages, costs, and expenses (including attorney fees) incurred by County related to this default. Such termination is in addition to and not in lieu of any other remedies that Harris County may have in law or equity. Administrative remedies for non-performance, violation or breach of contract terms, or termination of contract for default may include suspension and debarment. Harris County may assess liquidated damages for failure to meet completion deadlines, contract breaches, or performance failures of the Contractor or its Subcontractors.

2. Contractor shall be provided the opportunity to cure certain performance failures or instances of default as described in the contract documents. The legal dispute resolution process as applicable

under the Texas Civil Practice and Remedies Code shall include, but is not limited to, Texas and Civil Practice and Remedies Section 38 – Attorney’s Fees, Texas Civil Practice and Remedies Section 41 – Damages, and Texas Civil Practice and Remedies Section 154 – General Provisions. Harris County and Contractor(s) should attempt to resolve any claim for breach of contract made by Contractor, to the extent it is applicable to the Contract and not preempted by other law. Except as otherwise provided by law, nothing herein is a waiver by the County or the State of Texas of the right to seek redress in a court of law.

3. In addition, in accordance with Attachment P, *Required Contract Provisions*, liquidated damages may be applied for certain other breaches of the Contract, which may be withheld from amounts due on the Contract.

Any and all moneys collected by the Contractor as liquidated damages from its Subcontractors for any breaches in accordance with Attachment P shall be paid by the Contractor to the County. In each subcontract for Work, the Contractor shall include a provision expressly giving the County a right of action against the Subcontractor in the event such Subcontractor fails to pay any liquidated damages determined to be due and owing thereunder.

Liquidated damages received hereunder are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the County’s right to indemnification, or the Contractor’s obligation to indemnify the County, or to any other remedy provided for in this Contract or by Law.

The County may deduct and retain out of the monies which may become due hereunder, the amount of any such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages suffered by the County, the Contractor shall be liable to pay the difference.

O. TAXES

Harris County is exempt from all federal excise, state and local taxes unless otherwise stated in this document. Harris County claims exemption from all sales and/or use taxes under Texas Tax Code 151.309, as amended.

P. INSPECTION

Harris County reserves the right to inspect any item(s) or service location(s) for compliance with specifications and requirements and needs of the Contract.

The County has the right to inspect and test all items and services called for by the Contract, to the extent practicable at all times and places during the term of the Contract, which may include inspection of work in progress and wherever work is being conducted. The County shall perform inspections and tests in a manner that will not unduly delay the work.

When work is nearing completion, the Contractor shall notify the County of a specific date when the job will be ready for a final inspection. The purpose of the final inspection is to guarantee that all work called for in the Contract has been completed according to specification. If progress inspections were conducted often enough to make mid-course corrections, the final inspection should only need to catch those items which have been done since the last inspection. The final inspection will be as thorough and deliberate as the initial inspection.

If the Contractor fails to promptly perform the services again or to take the necessary action to ensure future performance in conformity with Contract requirements, the County may (1) by contract or otherwise,

perform the services and charge to the Contractor any cost incurred by the County that is directly related to the performance of such service or (2) terminate the contract for default.

Q. SAFETY

It shall be the responsibility of the Contractor to ensure, at all times during the performance of the work, to the maximum extent feasible, to protect the safety of County residents and staff, the Contractor's staff, subcontractors, and the public. This shall include, but not be limited to, compliance with all OSHA-related Federal and local laws, codes, and regulations.

The Contractor shall be entirely responsible for security and safety at the Site until it is turned over to the County. The Contractor shall comply with all Safety Guidelines and all laws of any governmental authorities for the safety of persons or property. Hazardous Materials may not be used without prior notice to, approval from, and coordination with the County. Contractor shall be responsible for any Hazardous Materials brought to the Site by Contractor, Subcontractors, suppliers or anyone else for whom Contractor is responsible. Contractors shall dispose of all Hazardous Materials in accordance with all applicable laws and Safety Guidelines relating to disposal of Hazardous Materials. Notwithstanding anything herein to the contrary, asbestos, asbestos containing products or polychlorinated biphenyl (PCB) shall not be allowed on the Site nor be used in the Work.

R. HAZARDOUS MATERIALS

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

S. SUPERVISION

The Contractor shall provide competent management for the Project, approved by County, who shall be at the Site (if applicable) and working on the Project for direction, coordination, sequencing and all other required activities, for the entire duration of and until final acceptance of the work. The approved manager or superintendent shall not be discontinued (except upon Final Completion of the Project or in the event of his or her termination of employment or disability or if the County requests a replacement to resolve incompatible working relationships) and no new individual shall be designated without prior approval of the County.

T. STAFFING REQUIREMENTS

Contractor, upon award, shall make reasonable effort to maintain stability of the staff assigned to the Project to prevent the departure of the most productive and expert resources from the Project. Contractor shall provide the County with at least 30 days' notice of any change in key personnel or staff assigned to the Contract. Personnel shall be removed from the Project upon request by the County.

U. DEBRIS / SITE CLEANUP

For any work or services which involve construction or public work, the Contractor and/or its subcontractors is responsible for cleaning all work areas daily and at the end of the work day. Contractor shall keep worksite clear of all work-generated debris which may endanger the safety of others, including the public. All work areas must be kept sanitary and clean of any trash. Debris from work must be removed from living areas. The Contractor and/or its subcontractors must examine the work area and determine any unsuitable work condition. Any required removal or replacement of this work caused by unsuitable conditions will be just cause for the Contractor to bear the expense. Notice of unsuitable conditions shall be brought to the County's attention in written form.

V. SUBCONTRACTORS

Harris County must approve the actual subcontractors prior to their use. Bidder must verify subcontractor eligibility based on factors such as past performance, proof of liability insurance, possession of a federal ID tax number, debarment status, and state licensing requirements. Contractor assumes responsibility for the performance of the subcontractor; therefore, Bidder is urged to closely scrutinize subcontractors. If a subcontractor is found to be ineligible after award of a contract, the contract shall be immediately terminated and the matter reported to HUD.

W. INSURANCE

Contractor performing services under the contract awarded pursuant to this IFB must provide the types and amounts of insurance specified in the *Minimum Insurance Requirements*, included as Attachment M. All construction contractors and construction subcontractors performing services under this contract shall also provide the types and amounts of insurance set forth in the *General Conditions* attachment, when applicable. Contractor is advised to carefully review such insurance requirements. All insurance must provide coverage for work on residential properties. By submitting a bid, Contractor acknowledges that it has reviewed the insurance provisions and takes no exceptions to the insurance requirements.

Contractor's certificate(s) shall include all subcontractors as additional insureds under its policies or subcontractors shall maintain separate insurance as determined by the Contractor, however, subcontractor's limits of liability shall not be less than \$1,000,000 per occurrence / \$2,000,000 aggregate.

Refer to Attachment M for more information on *Minimum Insurance Requirements*.

X. WAIVER OF SUBROGATION

Contractor and Contractor's insurance carrier waive any and all rights whatsoever with regard to subrogation against Harris County as an indirect party to any suit arising out of personal or property damages resulting from Contractor's performance under this agreement.

Y. WORKERS' COMPENSATION INSURANCE COVERAGE RULE 110.110

Contractor must comply with this requirement which is applicable for any building or construction contract – see the *Workers' Compensation Insurance Coverage Rule 110.110* under Attachment N for more detail.

Z. TOLL / PARKING FEES

Any and all toll/parking fees incurred by the Contractor(s) during the term of this contract will be the responsibility of Contractor.

AA. COLOR SELECTION

Determination of colors of materials is a right reserved by the using department unless otherwise specified in the bid. Unspecified colors shall be quoted as standard colors, NOT colors which require up charges or special handling. Unspecified fabrics or vinyl should be construed as medium grade. If Contractor fails to get color/material approvals prior to delivery of merchandise, the using department may refuse to accept the items and demand correct shipment without penalty, subject to other legal remedies.

BB. RECYCLED MATERIALS

Harris County encourages the use of products made of recycled materials that are EPA-designated items and shall give preference in purchasing to products made of recycled materials if the products meet

applicable specifications as to quantity, quality, and reasonableness of cost. Harris County will be the sole judge in determining product preference application. Information about this requirement and a list of EPA-designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>

CC. MATERIAL SAFETY DATA SHEETS

Under the "Hazardous Communication Act", commonly known as the "Texas Right To Know Act", Contractor must provide to the County with each delivery, material safety data sheets which are applicable to hazardous substances defined in the Act. Contractor shall furnish this documentation for any material proposed within Contractor's bid subject to the Act.

DD. FAILURE TO COMPLY

Failure to comply with any part of the provisions shall constitute a material breach of the Contract. The event of such a breach may result in compensation being withheld or suspended, termination of the Contract, or suspension or debarment of the Contractor. The Contractor shall also be liable for all damages available under 2 CFR Part 200 and statutes and regulations related to the formation and execution of the Contract.

EE. TERMINATION

1. **Termination for Convenience.** This Contract may be Terminated for Convenience due to reasons known to Harris County, i.e., program changes, changes in state-of-the-art equipment or technology, insufficient funding, etc. This type of termination is utilized when the Contractor is not in violation of the contract terms and conditions. Harris County may terminate this contract without Cause upon thirty (30) days written notice.
2. **Termination for Cause.** This Contract may be Terminated for Cause due to actions by the Contractor, i.e., failure to perform, financial difficulty, slipped schedules, etc. In certain instances, the termination settlement may include reprocurement costs to be paid by the Contractor. Harris County reserves the right to terminate this Contract for default if Contractor breaches any of the terms herein, including warranties of Contractor or if the Contractor becomes insolvent or commits acts of bankruptcy. Such right of Termination is in addition to and not in lieu of any other remedies which Harris County may have in law or equity. Default may be construed as, but not limited to, failure to deliver the proper goods and/or services within the proper amount of time, and/or to properly perform any and all services required to Harris County's satisfaction and/or to meet all other obligations and requirements.
3. **Termination for Health and Safety Violations.** Harris County shall terminate this contract immediately without prior notice if Contractor fails to perform any of its obligations in this Contract if the failure (a) created a potential threat to health or safety or (b) violated a law, ordinance, or regulation designed to protect health or safety.

FF. CONTRACT TRANSITION

In the event services end by either contract expiration or termination, it shall be incumbent upon the successful Bidder to continue services, if requested by Harris County Purchasing, until new services can be completely operational. Bidder acknowledges its responsibility to cooperate fully with the replacement Bidder and Harris County to ensure a smooth and timely transition to the replacement Bidder. Such transitional period shall not extend more than ninety (90) days beyond the expiration/termination date of the contract, or any extension thereof. Bidder shall be reimbursed for services during the transitional period at the rate in effect when the transitional period clause is invoked by Harris County. During any transition

period, all other terms and conditions of the agreement shall remain in full force and effect as originally written.

GG. SUBSTANTIAL COMPLETION

Substantial Completion of the required Work shall occur when, in the sole determination of the County, all of the applicable conditions set forth below have been satisfied:

1. Contractor has submitted written certification to the County that the project, or designated portion of project, is substantially complete, and requests a final inspection. Upon receipt of written request that project is substantially complete, the County will proceed with inspection within 10 days of receipt of request or will advise the Contractor of items that prevent the project from being designated as substantially complete.
2. Contractor has obtained and delivered to the County:
 - a. the required written approval of any agency having jurisdiction over the work (if applicable), and
 - b. all certificates of inspection for the work (if applicable).
3. Contractor has completed all training sessions required by the County for equipment and/or systems installed for the Project (if applicable).
4. All utilities specified or required under the Contract are connected and function properly.
5. When work is determined to be substantially complete, the County will prepare a list of deficiencies ("Punch List") to be corrected before Final Acceptance. The County will issue a Letter of Substantial Completion. If work is not determined to be substantially complete, the County will notify the Contractor in writing. After completing work, the Contractor shall resubmit certification and request a new final inspection. Contractor and the County must agree in writing upon the Final Punch List and the date for Final Acceptance of all required work, including completion of all Punch List items, or, if they are unable to agree, the County shall prepare and issue in writing to the Contractor the Final Punch List and the date of Final Acceptance.
6. All work, except the items on the Final Punch List as approved by the County's Representative, is complete in all respects and is in compliance with the Contract to the satisfaction of the County's Representative.
7. Alternatively, Substantial Completion shall occur on any date certified by the County, who shall have discretion to waive any of the foregoing conditions.

HH. PUNCH LIST

In cases of construction projects, the County shall develop a Punch List toward the end of the job. A punch list is a listing of items written as specifications, which constitute the work necessary to complete the contract. The punch list will represent work yet to be done, not additional work over and above the original or amended contract. Once the punch list has been prepared, no other work items are expected of the Contractor. If the punch list contains more than ten (10) items, the Contractor is not ready for a final inspection.

Upon completion of the inspection, the County shall issue a punch list indicating any items that must be addressed. If any of the services do not conform to Contract requirements, the County may require the

Contractor to perform the services again in conformity with contract requirements, at no increase in contract amount. When the defects in services cannot be corrected by re-performance, the County may (1) require the Contractor to take necessary action to ensure that future performance conforms to contract requirements and (2) reduce the contract price to reflect the reduced value of the services performed.

II. ACCEPTANCE

Upon completion but prior to the Acceptance of the work by Harris County, the Contractor shall submit, if applicable, a written statement of substantial compliance sealed by a professional engineer licensed in the State of Texas. The written statement of substantial compliance must acknowledge that all construction materials and operations used in the project were tested and inspected and that they comply with all the specifications applicable to the project. After all items on the Punch List (if applicable) have been satisfactorily completed, and all warranties issued, the project can be brought to final resolution. Depending on the project, the County may require written documentation that the work has been inspected and Accepted.

Final inspection and Acceptance of all work performed, reports and other deliverables will be performed by the County or its designee. The basis for Acceptance shall be compliance with the requirements and other terms and conditions of the Contract. Deliverable items that are rejected shall be corrected in accordance with applicable clauses.

JJ. TITLE TRANSFER

Title and Risk of Loss of goods shall not pass to Harris County until Harris County actually receives and takes possession of the goods at the point or points of delivery. Receiving times may vary with the using department. Generally, deliveries may be made between 8:30 a.m. and 4:00 p.m., Monday through Friday. Contractor is advised to consult Harris County Purchasing for instructions. The place of delivery shall be as directed by the County.

KK. WARRANTIES

Contractor shall furnish all data pertinent to warranties or guarantees which may apply to items in the bid. Contractor may not limit or exclude any implied warranties. Contractor warrants that product sold to the County shall conform to the standards established by the U.S. Department of Labor under the Occupational Safety and Health Act of 1970 ("OSHA"). In the event product does not conform to OSHA Standards, where applicable, Harris County may return the product for correction or replacement at Contractor's expense. If Contractor fails to make the appropriate correction within a reasonable time, Harris County may correct at Contractor's expense.

Labor, materials, and equipment furnished under the Contract shall be of the type and quality required by the Scope of Work and Contract, new (unless otherwise required or permitted by the Contract) and installed in a good and workmanlike manner and otherwise in accordance with the Contract. Contractor shall use sound construction principles and practices in the performance of the work; apply to the work a high degree of skill, care, judgment and supervision to assure that the work is performed properly and in accordance with the Contract; and ensure the work will be free from defects not inherent in the quality required or permitted.

All work performed by the Contractor shall be guaranteed for a period of **one (1)** year. Such warranty will be stipulated in the Contract between the Contractor and the County. For a period of one (1) year, the County may require the Contractor to correct defects or problems arising from his or her work under this Contract. Should the Contractor fail to do so, the County may take any necessary legal recourse as

prescribed in the Contract. A reasonable amount of time will be given to correct the problem; however, in no case will such time exceed two weeks for Contractor to respond.

LL. SEALS, LOGOS, AND FLAGS

Contractor shall not use any Federal, State, or local government agency seal, logo(s), crest, or reproduction of flags or likeness of agency officials without expressed, specific agency pre-approval in writing.

MM. SILENCE OF SPECIFICATIONS

The apparent silence of specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of specifications shall be made on the basis of this statement. The items furnished under this contract shall be new, unused of the latest product in production to commercial trade and shall be of the highest quality as to materials used and workmanship. Manufacturer furnishing these items shall be experienced in design and construction of such items and shall be an established supplier of the item.

NN. SEVERABILITY

If any section, subsection, paragraph, sentence, clause, phrase or word of these requirements or the specifications shall be held invalid, such holding shall not affect the remaining portions of these requirements and the specifications and it is hereby declared that such remaining portions would have been included in these requirements and the specifications as though the invalid portion had been omitted.

VIII. ATTACHMENTS

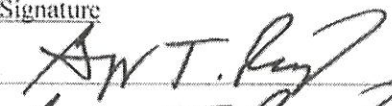
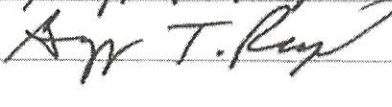
- Attachment A – Bid & Addenda Acknowledgement
- Attachment B – Bid Schedule / Pricing Form
- Attachment C – Certification Regarding Lobbying
- Attachment D – Statement of Bidder Qualifications
- Attachment E – Subcontractor Listing Form
- Attachment F – References
- Attachment G – Contractor Profile
- Attachment H – Bid Check Return Authorization Form
- Attachment I – Performance Bond for Public Works Contracts over \$100,000
- Attachment J – Performance Bond for Non-public Works Contracts over \$50,000
- Attachment K – Payment Bond
- Attachment L – Certification of Compliance with Federal Standards & Requirements
- Attachment M – Minimum Insurance Requirements
- Attachment N – Workers’ Compensation Insurance Coverage Rule 110.110

- Attachment O – Davis Bacon Current Wage Decision
- Attachment P – Required Contract Provisions
- Attachment Q – Section 3 Clause
- Attachment R – Section 3 Utilization Plan & Statement of Compliance
- Attachment S – Section 3 Business Concern Self-Certification Form
- Attachment T – Standards & Specifications
- Attachment U – Plans & Drawings
- Attachment V – General Conditions
- Attachment W – Report File
- Attachment X – Project Signs / Plaques
- Attachment Y – GLO Compliance Package
- Attachment Z – Policy of Payment

Attachment A
BID & ADDENDA ACKNOWLEDGEMENT

Addenda Acknowledgement

As required by this solicitation, the undersigned Bidder hereby acknowledges receipt of all Addenda through and including:

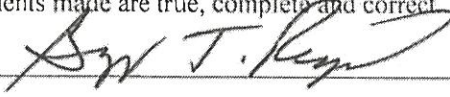
<u>Addendum Number</u>	<u>Dated</u>	<u>Signature</u>
1	6/17/2020	
2	6/22/2020	

No addenda were received

Bid Acknowledgement

This acknowledgment shall be signed, in ink, by a corporate officer, partner, or proprietor:

I certify that this Bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Bid for the same construction, service, or material and is in all respects fair and without collusion or fraud. I am authorized to sign this bid for the Bidder and agreed to abide by all conditions of this Invitation for Bid and certify that I have read and understand the bidding documents in their entirety. In signing this Acknowledgement, I attest that under this Bid I shall provide the goods and/or services requested in this Invitation for Bids according to the published provisions of this IFB. I confirm the Pricing provided to the County under this IFB and certify that all statements made are true, complete and correct.

 _____ 6/19/2020
Authorized Signature **Date**

Authorized Representative Name (First & Last): Gregg T. Reyes

Company Name: Reytec Construction Resources, Inc.

Company Address: 1901 Hollister St. Houston, TX 77080

Bidder DUNS Number: 9672191970

Telephone: 713-957-4003 Fax: 713-681-0077 e-mail: greyes@reytec.net

FOR INTERNAL USE
 Accepted by:  by KMK Date: 18 Aug 2020
 HARRIS COUNTY JUDGE LINA HIDALGO

Attachment B
BID SCHEDULE / PRICING FORM

PRICING

Bid Schedule / Pricing Form is available and submitted online through CivCast at: <https://www.civcastusa.com/>.

Bidder must provide pricing in the units requested within this IFB. Any quantities provided are based on estimates, and Bidder acknowledges that Harris County may require more or less. Where unit pricing and extended pricing differ, unit pricing governs.

Prices for all goods and/or services shall be firm for the duration of this contract. Prices shall be all inclusive. No price changes, additions, or subsequent qualifications will be honored during the course of the contract. All prices must be written in ink or typed. Pricing on all transportation, freight, drayage and other charges are to be prepaid by the successful Bidder and included in the Bid prices. If there are any additional charges of any kind, other than those mentioned above, specified or unspecified, Bidder MUST indicate the items required and attendant costs or forfeit the right to payment for such items.

MAINTENANCE

If applicable, maintenance required for equipment proposed should be available in Harris County by a manufacturer-authorized maintenance facility. Costs for this service shall be shown on the Bid Schedule / Pricing Form. If Harris County opts to include maintenance, it shall be so stated in the Scope of Work and resulting contract, and said cost shall be included. Service will commence only upon expiration of applicable warranties and should be priced accordingly, if applicable.

BID TOTALS

BASE BID	Total
SITE PREPARATION AND EARTHWORK	\$279,906.55
PAVING	\$2,616,394.75
STORM SEWER	\$7,032,860.00
WATERLINES & SANITARY SEWER	\$438,358.00
SIGNING AND PAVEMENT MARKINGS	\$23,089.10
STORM WATER POLLUTION PREVENTION PLAN	\$186,735.00
TRAFFIC CONTROL PLAN	\$781,719.30
TREE AND PROTECTION PLAN	\$80,717.50
** EXTRA WORK ITEMS	\$349,200.00
Total	\$11,788,980.20

SITE PREPARATION AND EARTHWORK						
No.	Id	Description	Unit	Qty	Unit Price	Ext Price
1	DRAWING	PROJECT SIGN	EA	2	\$650.00	\$1,300.00
2	102	CLEARING AND GRUBBING	LS	1	\$38,000.00	\$38,000.00
3	104	REMOVING OLD CONCRETE (PAVEMENT)	SY	1747	\$3.50	\$6,114.50
4	104	REMOVING OLD CONCRETE (SIDEWALK)	SY	3934	\$3.50	\$13,769.00
5	104	REMOVING OLD CONCRETE (CURB RAMP)	SY	130	\$5.00	\$650.00
6	104	REMOVING OLD CONCRETE (CURB)	LF	3489	\$1.75	\$6,105.75
7	104	REMOVING OLD CONCRETE (STONE RIPRAP)	SY	7	\$15.00	\$105.00
8	110	ROADWAY EXCAVATION INCLUDING 3" TOPSOIL	CY	2599	\$16.00	\$41,584.00
9	516	REMOVING FLEX BEAM GUARDRAIL	LF	182	\$6.00	\$1,092.00
10	465	REMOVE AND DISPOSE OF EXISTING CONCRETE OR METAL PIPE (ALL SIZES)	LF	4708	\$8.00	\$37,664.00

11	495	REMOVING OLD STRUCTURE - MANHOLES (ALL DEPTHS)	EA	5	\$350.00	\$1,750.00
12	495	REMOVING OLD STRUCTURE - INLETS	EA	50	\$215.00	\$10,750.00
13	495	REMOVING OLD STRUCTURE - HEADWALLS INCLUDING WINGWALLS	EA	28	\$380.00	\$10,640.00
14	500	REMOVE & RELOCATE TRAFFIC SIGNS, MAIL BOXES AND ROADWAY SIGNS	LS	1	\$4,200.00	\$4,200.00
15	540	REMOVE AND DISPOSE EXISTING ASPHALTIC SURFACE AND BASE MATERIAL (ALL DEPTHS)	SY	23898	\$3.00	\$71,694.00
16	561	VIDEO RECORDING CONSTRUCTION	LS	1	\$5,250.00	\$5,250.00
17	674	REMOVING PAVEMENT STRIPING & MARKINGS (4" WIDTH, ANY COLOR/DASHED) (15' OVER 40')	LF	18707	\$0.40	\$7,482.80
18	674	REMOVING PAVEMENT STRIPING & MARKINGS (8" WIDTH, ANY COLOR)	LF	90	\$0.80	\$72.00
19	674	REMOVAL OF ALL STRIPING & PAVEMENT MARKINGS (12" WIDTH & LARGER, ANY COLOR)	SF	1150	\$1.10	\$1,265.00
20	674	REMOVING PAVEMENT STRIPING AND MARKINGS (WORD)	EA	2	\$40.00	\$80.00
21	674	REMOVING PAVEMENT STRIPING AND MARKINGS (ARROW)	EA	4	\$42.00	\$168.00
22	DWG	REMOVE STEEL PLATE	EA	7	\$100.00	\$700.00
23	DWG	REMOVE AND REINSTALL MONUMENT	EA	1	\$1,050.00	\$1,050.00
24	COH 02221	REMOVE AND DISPOSE OF WATERLINES	LF	741	\$5.50	\$4,075.50
25	COH 02221	REMOVE AND DISPOSE OF SANITARY SEWER PIPE	LF	1684	\$5.00	\$8,420.00
26	COH 02221	REMOVE AND DISPOSE OF SANITARY SEWER MANHOLES	EA	5	\$375.00	\$1,875.00
27	COH 02520	REMOVE AND SALVAGE OF EXISTING FIRE HYDRANT	EA	6	\$675.00	\$4,050.00
Subtotal: \$279,906.55						

PAVING

No.	Id	Description	Unit	Qty	Unit Price	Ext Price
28	221	HYDRATED LIME (SLURRY) OR COMMERCIAL LIME SLURRY	TON	151	\$190.00	\$28,690.00
29	223	FLY ASH FOR STABILIZED SUBGRADE	TON	578	\$105.00	\$60,690.00
30	223	LIME-FLY ASH STABILIZED SUBGRADE (8" DEPTH) (2% LIME AND 8% FLY ASH)	SY	21572	\$4.00	\$86,288.00
31	360	CONCRETE PAVEMENT (10")	SY	20570	\$66.00	\$1,357,620.00
32	360	CONCRETE PAVEMENT (10") (HIGH STRENGTH)	SY	6079	\$90.00	\$547,110.00
33	433	CEMENT STABILIZED SAND, COMPLETE IN PLACE 8" THICK (SUBGRADE FOR HIGH STRENGTH)	SY	6567	\$18.00	\$118,206.00
34	530	REINFORCED CONCRETE CURB (6")	LF	9921	\$3.75	\$37,203.75
34A	530	REINFORCED CONCRETE CURB (6")(DOWELED)	LF	4232	\$6.25	\$26,450.00
35	530	REINFORCED CONCRETE SIDEWALKS (4 1/2")	SY	6121	\$47.00	\$287,687.00
36	530	ADA RAMP - TYPE 3	EA	3	\$2,050.00	\$6,150.00
37	530	ADA RAMP - TYPE 7	EA	43	\$1,250.00	\$53,750.00
38	530	ADA RAMP - TYPE 9	EA	3	\$1,750.00	\$5,250.00
39	1000	SAWCUT AND INSTALL LOOP DETECTORS, INCLUDING LOOP WIRE	LF	65	\$20.00	\$1,300.00
Subtotal:						\$2,616,394.75

STORM SEWER						
No.	Id	Description	Unit	Qty	Unit Price	Ext Price
40	429	TRENCH SAFETY SYSTEM (5' TO 10')	LF	1055	\$4.00	\$4,220.00
41	429	TRENCH SAFETY SYSTEM (10' TO 15')	LF	204	\$5.00	\$1,020.00
42	429	TRENCH SAFETY SYSTEM (15' TO 20')	LF	8634	\$1.00	\$8,634.00
43	460	REINFORCED CONCRETE PIPE, C76, CLASS III, RUBBER GASKET (18")	LF	215	\$165.00	\$35,475.00
44	460	REINFORCED CONCRETE PIPE, C76, CLASS III, RUBBER GASKET (24")	LF	1013	\$182.00	\$184,366.00
45	460	REINFORCED CONCRETE PIPE, C76, CLASS III, RUBBER GASKET (30")	LF	4	\$370.00	\$1,480.00

46	460	REINFORCED CONCRETE PIPE, C76, CLASS III, RUBBER GASKET (42")	LF	5	\$455.00	\$2,275.00
46A	460	REINFORCED CONCRETE PIPE, C76, CLASS III, RUBBER GASKET (36")	LF	20	\$160.00	\$3,200.00
47	460 & DWG	CONCRETE COLLAR (PER DETAILS IN PLANS)	EA	15	\$450.00	\$6,750.00
48	460 & DWG	PROPOSED RCP STUB-IN (PER DETAILS IN PLANS)	EA	68	\$1,000.00	\$68,000.00
49	460 & DWG	PROPOSED RCB STUB-IN (PER DETAILS IN PLANS)	EA	3	\$3,500.00	\$10,500.00
50	471	PRECAST CONCRETE STANDARD MANHOLE (ALL DEPTHS)	EA	5	\$3,000.00	\$15,000.00
51	471 & DWG	SPECIAL JUNCTION BOX	EA	1	\$45,000.00	\$45,000.00
52	472 & DWG	TYPE A INLET	EA	87	\$3,850.00	\$334,950.00
53	472	TYPE C INLET	EA	14	\$4,500.00	\$63,000.00
54	472	TYPE F INLET	EA	32	\$1,900.00	\$60,800.00
55	473	ADJUSTING MANHOLES PER PLANS	EA	16	\$1,000.00	\$16,000.00
56	473	CAPPING MANHOLES PER PLANS	EA	2	\$1,500.00	\$3,000.00
56A	473	CAPPING INLETS PER PLANS	EA	7	\$1,500.00	\$10,500.00
57	480	PRECAST RCB (4' X 3')	LF	5	\$2,000.00	\$10,000.00
58	480	PRECAST RCB (5' X 4')	LF	30	\$830.00	\$24,900.00
59	480	PRECAST RCB (7' X 5')	LF	36	\$1,350.00	\$48,600.00
60	480	PRECAST RCB (7' X 6')	LF	12	\$1,100.00	\$13,200.00
61	480	PRECAST RCB (7' X 7')	LF	4215	\$600.00	\$2,529,000.00
62	480	PRECAST RCB (9' X 8')	LF	4371	\$800.00	\$3,496,800.00
63	480	PRECAST RCB (10' X 7')	LF	14	\$2,000.00	\$28,000.00
64	DWG	OFFSITE DRAINAGE (ALL PIPES AND ALL SIZES)	LF	126	\$65.00	\$8,190.00
Subtotal: \$7,032,860.00						

WATERLINES & SANITARY SEWER

No.	Id	Description	Unit	Qty	Unit Price	Ext Price
65	COH 02511	8-INCH DIAMETER WATER LINE BY OPEN-CUT WITH RESTRAINED JOINTS	LF	398	\$90.00	\$35,820.00

66	COH 02511	8-INCH DIAMETER WATER LINE BY TRENCHLESS CONSTRUCTION WITH RESTRAINED JOINTS	LF	236	\$78.00	\$18,408.00
67	COH 02511	16-INCH DIAMETER WATER LINE BY OPEN-CUT WITH RESTRAINED JOINTS	LF	582	\$150.00	\$87,300.00
68	COH 02513	8-INCH DIAMETER WET CONNECTION	EA	14	\$1,100.00	\$15,400.00
69	COH 02513	16-INCH DIAMETER WET CONNECTION	EA	12	\$2,100.00	\$25,200.00
70	COH 02520	FIRE HYDRANT ASSEMBLY, ALL DEPTHS, INCLUDING 6-INCH DIAMETER GATE VALVE AND BOX	EA	6	\$7,500.00	\$45,000.00
71	COH 02082	4-FOOT DIAMETER SANITARY SEWER PRECAST CONCRETE MANHOLE	EA	8	\$5,150.00	\$41,200.00
72	COH 02531	10-INCH DIAMETER SANITARY SEWER, BY OPEN-CUT	LF	1678	\$95.00	\$159,410.00
73	COH 02526	REMOVE, RELOCATE, AND REINSTALL WATER METER W/NEW BOX (CONCRETE BOX IF LOCATED IN SIDEWALK) AND/OR VAULT TO FIT NEW GRADE, RECONNECT TO PROPOSED WATERLINE, COMPLETE IN PLACE	EA	7	\$660.00	\$4,620.00
74	COH 02085	ADJUST OR RELOCATE VALVE BOX, COMPLETE IN PLACE	EA	10	\$600.00	\$6,000.00
Subtotal: \$438,358.00						

SIGNING AND PAVEMENT MARKINGS

No.	Id	Description	Unit	Qty	Unit Price	Ext Price
75	624	ALUMINUM SIGNS (GROUND MOUNTED)- FURNISH & INSTALL	EA	50	\$260.00	\$13,000.00
76	660	REFLECTORIZED PAVEMENT MARKINGS TYPE I (THERMOPLASTIC) 4"YELLOW/DASHED - FURNISH & APPLIED (15' OVER 40')	LF	3232	\$0.75	\$2,424.00
77	660	REFLECTORIZED PAVEMENT MARKINGS TYPE I (THERMOPLASTIC) 4" YELLOW/SOLID - FURNISH & APPLIED	LF	2386	\$0.55	\$1,312.30

78	660	REFLECTORIZED PAVEMENT MARKINGS TYPE I (THERMOPLASTIC) 4" WHITE/DASHED (CAT TRACKS) - FURNISH & APPLIED	LF	2177	\$0.80	\$1,741.60
79	660	REFLECTORIZED PAVEMENT MARKINGS TYPE I (THERMOPLASTIC) 8" WHITE/SOLID - FURNISH & APPLIED	LF	90	\$1.70	\$153.00
80	660	REFLECTORIZED PAVEMENT MARKINGS TYPE I (THERMOPLASTIC) 12" WHITE/SOLID - FURNISH & APPLIED	LF	322	\$2.60	\$837.20
81	660	REFLECTORIZED PAVEMENT MARKINGS TYPE I (THERMOPLASTIC) 24" WHITE/SOLID - FURNISH & APPLIED	LF	359	\$5.00	\$1,795.00
82	660	REFLECTORIZED PAVEMENT MARKINGS TYPE I (THERMOPLASTIC) WORD "ONLY" - FURNISH & APPLIED	EA	2	\$150.00	\$300.00
83	660	REFLECTORIZED PAVEMENT MARKINGS TYPE I (THERMOPLASTIC) SINGLE ARROW-LEFT - FURNISH & APPLIED	EA	1	\$135.00	\$135.00
84	660	REFLECTORIZED PAVEMENT MARKINGS TYPE I (THERMOPLASTIC) SINGLE ARROW-RIGHT - FURNISH & APPLIED	EA	1	\$130.00	\$130.00
85	663	REFLECTORIZED PAVEMENT MARKERS TYPE II-C - FURNISH & INSTALL	EA	18	\$4.50	\$81.00
86	663	REFLECTORIZED PAVEMENT MARKERS TYPE II-A-A - FURNISH & INSTALL	EA	232	\$4.50	\$1,044.00
87	663	NON-REFLECTORIZED CERAMIC TRAFFIC BUTTONS (YELLOW) - FURNISH & INSTALL	EA	16	\$4.25	\$68.00
88	663	NON-REFLECTORIZED CERAMIC TRAFFIC BUTTONS (WHITE) - FURNISH & INSTALL	EA	16	\$4.25	\$68.00
Subtotal:						\$23,089.10

STORM WATER POLLUTION PREVENTION PLAN						

No.	Id	Description	Unit	Qty	Unit Price	Ext Price
89	162	SODDING FOR EROSION CONTROL (16" WIDTH)	LF	18991	\$1.00	\$18,991.00
90	165	HYDRO-MULCH SEEDING	AC	2.86	\$1,700.00	\$4,862.00
91	700	"TPDES GENERAL PERMIT AND NOI APPLICATION FEES (GENERAL CONTRACTORS AND HARRIS COUNTY NOI FEES)"	EA	2	\$375.00	\$750.00
92	719	INLET PROTECTION BARRIER (STAGE 1, WITH FILTER FABRIC; 60% OF UNIT COST FOR FURNISH AND INSTALLATION, AND 40% OF UNIT COST FOR REMOVAL)	EA	97	\$50.00	\$4,850.00
93	724	STABILIZED CONSTRUCTION ACCESS (TYPE 1-ROCK; 60% OF UNIT COST FOR FURNISH AND INSTALLATION, AND 40% OF UNIT COST FOR REMOVAL)	SY	156	\$22.00	\$3,432.00
94	730	CONCRETE TRUCK WASHOUT STRUCTURES (60% OF UNIT COST FOR FURNISH AND INSTALLATION, AND 40% OF UNIT COST FOR REMOVAL)	EA	2	\$700.00	\$1,400.00
95	741	INLET PROTECTION BARRIER (FOR STAGE II INLETS, GRAVEL BAGS; 60% OF UNIT COST FOR FURNISH AND INSTALLATION, AND 40% OF UNIT COST FOR REMOVAL)	EA	49	\$50.00	\$2,450.00
96	751	SWPPP INSPECTION AND MAINTENANCE (MIN. BID - \$6,000.)	MO	25	\$6,000.00	\$150,000.00
Subtotal:						\$186,735.00

TRAFFIC CONTROL PLAN

No.	Id	Description	Unit	Qty	Unit Price	Ext Price
97	530	6" CONCRETE CURB (SLOTTED)(DOWELED) TEMPORARY	LF	4050	\$4.75	\$19,237.50
98	665	WORK ZONE PAVEMENT MARKINGS (WHITE) 4"(SOLID)(REMOVABLE) BUTTON/MRKR - FURNISH AND APPLIED	LF	5287	\$0.50	\$2,643.50

99	665	WORK ZONE PAVEMENT MARKINGS (YELLOW) 4"(SOLID)(REMOVABLE) BUTTON/MRKR - FURNISH AND APPLIED	LF	14727	\$0.50	\$7,363.50
100	665	WORK ZONE PAVEMENT MARKINGS (WHITE) 4"(SOLID)(NON-REMOVABLE) BUTTON/MRKR - FURNISH AND APPLIED	LF	7062	\$0.40	\$2,824.80
101	671	TRAFFIC CONTROL - INSTALL, MAINTAIN, & REMOVE	MO	25	\$4,000.00	\$100,000.00
102	673	CONSTRUCTING DETOURS FOR MAINTAINING TWO WAY TRAFFIC (8" BLACKBASE OVER 6" FLY ASH STABILIZED SUBGRADE)	SY	8534	\$65.00	\$554,710.00
103	696	LOW PROFILE CONCRETE BARRIER (FURNISH AND INSTALL)	LF	2500	\$25.00	\$62,500.00
104	696	LOW PROFILE CONCRETE BARRIER (RELOCATE)	LF	1420	\$7.00	\$9,940.00
105	696	LOW PROFILE CONCRETE BARRIER (REMOVE)	LF	2500	\$9.00	\$22,500.00
Subtotal: \$781,719.30						

TREE AND PROTECTION PLAN						
No.	Id	Description	Unit	Qty	Unit Price	Ext Price
106	01562	CLEARANCE PRUNE TREE	EA	85	\$250.00	\$21,250.00
107	01562	INSTALL TREE PROTECTION FENCE	LF	1310	\$6.00	\$7,860.00
108	01562	INSTALL ROOT PRUNING TRENCH	LF	1985	\$7.50	\$14,887.50
109	01562	INSTALL CHECKERPLATE SIDEWALK CONSTRUCTION	SF	432	\$85.00	\$36,720.00
Subtotal: \$80,717.50						

** EXTRA WORK ITEMS						
No.	Id	Description	Unit	Qty	Unit Price	Ext Price
110	430	SEAL SLAB FOR STORM SEWER (6") (MIN. BID \$25/SY)	SY	500	\$25.00	\$12,500.00
111	436	WELL POINTING (MIN. BID \$25/LF)	LF	2500	\$25.00	\$62,500.00
112	501	TREE TRIMMING	LS	1	\$25,000.00	\$25,000.00

113	559	CONSTRUCTION SAFETY FENCE	LF	2000	\$4.00	\$8,000.00
114	672	OFF-DUTY UNIFORMED POLICE OFFICER - AS DIRECTED BY ENGINEER (MIN. BID \$45/HR)	HR	4160	\$45.00	\$187,200.00
115	110	EXCAVATION (SPECIAL)(MIN. BID \$10/CY)	CY	2000	\$10.00	\$20,000.00
116	130	BORROW (MIN. BID \$12/CY)	CY	2000	\$12.00	\$24,000.00
117	COH 01506	DIVERSION PUMPING	LS	1	\$10,000.00	\$10,000.00
						Subtotal: \$349,200.00

ACKNOWLEDGE ADDENDA

NAME	ACKNOWLEDGEMENT DATE
Addendum No.1	06/29/2020 16:14:33 PM
Addendum No. 1 - Revised Attachment u Plans & Drawing Half Size	06/29/2020 16:14:34 PM
Addendum No. 1 - Revised Attachment u Plans & Drawings Full Size	06/29/2020 16:14:34 PM
Addendum No. 2	06/29/2020 16:14:35 PM

REQUIRED DOWNLOADS

TYPE	NAME	DOWNLOAD DATE
Bid Docs	Attachment o - Davis Bacon Current Wage Decision	6/2/20 9:50:11 PM
Bid Docs	Attachment t Standards & Specifications	6/2/20 9:45:22 PM
Plans	Attachment u - Plans & Drawings Half Size	5/30/20 7:52:11 AM
Plans	Attachment u - Plans & Drawings Full Size	6/29/20 11:30:48 AM
Bid Docs	Attachment v - General Conditions	6/2/20 9:39:24 PM
Bid Docs	Attachment w - Report File	6/2/20 9:48:51 PM
Invitation To Bid	Bid Package	5/30/20 7:56:34 AM
Addenda	Addendum No.1	6/17/20 7:09:35 PM
Plan Revisions	Addendum No. 1 - Revised Drawing Half Size	6/29/20 11:30:52 AM
Plan Revisions	Addendum No. 1 - Revised Attachment u Drawings Full Size	6/29/20 11:30:51 AM
Other	Pre-Bid Meeting Teleconference Sign - In Sheet	6/9/20 8:42:24 AM
Other	Pre-Bid Meeting Teleconferece Sign - In Sheet Part 2	6/9/20 10:44:28 AM
Addenda	Addendum No. 2	6/22/20 8:46:08 AM

Attachment C
CERTIFICATION REGARDING LOBBYING
(To be submitted with each bid exceeding \$100,000)

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

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form- LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

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

Bidders are required to complete **Form SF-LLL - Disclosure of Lobbying Activities** to disclose lobbying activities pursuant to 31 U.S.C. 1352.

Bidder, Reytec Construction Resources, Inc., certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, Bidder understands and agrees that the provisions of 31 U.S.C. § 3801 et seq., apply to this certification and disclosure, if any.

Gregg T. Reyes President & CEO
Print Name and Title of Bidder's Authorized Official


Signature of Bidder's Authorized Official

6/22/2020
Date

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

1 of 1

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY CERTIFICATION OF FILING

Certificate Number:
2020-645637

Date Filed:
07/17/2020

Date Acknowledged:

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.
Reytec Construction Resources, Inc.
Houston, TX United States

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.
Harris County

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

20/0126

Road Construction at Neuens Road between Gessner and Blalock Road for Harris County Precinct 4 – UPIN 18104MF0UE01

4	Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
			Controlling	Intermediary
	Reyes, Gregg T.	Houston, TX United States	X	

5 Check only if there is NO Interested Party.

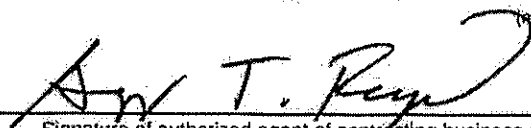
6 UNSWORN DECLARATION

My name is Gregg T. Reyes, and my date of birth is 5/18/60

My address is 1901 Hollister Street, Houston, TX, 77080, USA
(street) (city) (state) (zip code) (country)

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Harris County, State of Texas, on the 17th day of July, 2020
(month) (year)



Signature of authorized agent of contracting business entity
(Declarant)

Attachment C
CERTIFICATION REGARDING LOBBYING

1. Type of Federal Action: <input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. Report Type: <input type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change For material change only: Year _____ quarter _____ Date of last report _____
4. Name and Address of Reporting Entity: <input type="checkbox"/> Prime <input type="checkbox"/> Subawardee <input type="checkbox"/> Tier If Known:		5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime: Congressional District, if known: _____
6. Federal Department/Agency: Congressional District, if known: _____	7. Federal Program Name/Description: CFDA Number, <i>if applicable</i> _____	
8. Federal Action Number, if known: _____	9. Award Amount, if known: \$ _____	
10. a. Name and Address of Lobbying Registrant (if individual, last name, first name, MI): _____	b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI): _____	
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____	
Federal Use Only		Authorized for Local Reproduction Standard Form – LLL (Rev. 7-97)

Attachment D
STATEMENT OF BIDDER QUALIFICATIONS

This Statement of Bidder Qualifications requests information about Bidder that will be used in the evaluation of Bidder responsibility. All Bidders must complete this form in its entirety and submit with the Bid. Answers should be as thorough and definitive as possible and include all pertinent data. Failure to fully and truthfully disclose the information required may result in the disqualification of your Bid from consideration or termination of the contract, once awarded. Supplemental materials, additional pages, or requested lists providing additional information may be attached to further clarify answers.

General Information

1. Name of company/organization: Reytec Construction Resources, Inc.
2. Address of company/organization: 1901 Hollister St. Houston, TX 77080
3. Home office address (if other than above): _____
4. Telephone No: 713-957-4003 Fax No.: 713-681-0077
5. Type of business entity (corporation, partnership, sole proprietorship, etc.): Corporation
 - A. If your organization is a corporation, please provide on a separate sheet(s), detailing the following: Date of incorporation, State of incorporation, Names of President, Vice-president, Secretary, and Treasurer.
 - B. If your organization is a partnership or individually owned, please attach a list detailing the following: Date of organization, Name of owner(s) or partners.
6. Place of incorporation (if applicable): 1901 Hollister St. Houston, TX 77080
7. Type of work performed by your company: Civil Construction
8. Year founded/established: 1996
9. Has your organization been in business under its present name for at least five (5) years? YES NO
 - A. If not, please explain why. _____
10. Primary individual to contact: Gregg T. Reyes

Litigation Record

Have you or any member of your organization or team brought any claim, litigation, or arbitration against Harris County or any other Federal, State or Local Government during the last five (5) years?

YES NO

If yes, attach a list of any claims, lawsuits, or requested arbitrations and their final outcome.

Has Harris County or any other Federal, State or Local brought any claim or litigation against you or any member of your organization or team during the last five (5) years?

YES NO

If yes, attach a list of any claims, lawsuits, or requested arbitrations and their final outcome.

Has you or any member of your organization or team filed any lawsuits or requested arbitration with regards to any contracts within the last five (5) years?

YES NO

If yes, attach a list of any lawsuits or requested arbitrations and their final outcome.

Are there any administrative proceedings, claims, lawsuits, or other exposures pending against you or any member of your organization or team?

YES NO

Attachment D
STATEMENT OF BIDDER QUALIFICATIONS

If yes, explain: _____

Have any subcontractors, in which your organization has some ownership, filed any lawsuits or requested arbitration with regards to any contracts within the last five (5) years?

YES NO

If yes, explain: _____

Have you or any member of your organization or team to be assigned to this engagement been terminated (for cause or otherwise) from any work being performed for Harris County or any other Federal, State or Local Government, or Private Entity?

YES NO

If yes, explain: _____

Have you ever failed to complete any work awarded to you? YES NO

If yes, explain, indicating what was not completed and the reasoning: _____

Have you ever defaulted on a contract? YES NO

If yes, explain: _____

Experience Record

How many years has your organization been providing the services identified in this IFB to the following types of entities?

Government (Public) Entities: 20 years

Private (Commercial) Entities: 12 years

List three to five (3-5) similar projects as the one specified in this solicitation that your organization has completed over the last five (5) years. For each project, as applicable, provide the name, nature of the project, size (SF), location, cost, completion date, owner and architect. Attach additional pages as necessary:

1.	31,396,192.36	Post Oak Blvd Reconstruction	04/2019	Uptown Redevelopment Authority, 1980 Post Oak Blvd, Houston, TX
2.	3,969,868.00	Drainage Improvements for Pine Forest Subdivision	07/2018	City of Katy, 2107 City West Blvd, Houston TX
3.	726,710.39	Grovecrest Road Improvements	02/2020	Mustang Cat. 5596 Burr Oak Dr. Houston TX
4.	7,705,515.50	Bissonnet Reconstruction - Buffalo Speedway	07/2019	Upper Kirby Redevelopment Authorit, 6161 Savoy, Houston TX
5.				

List the major projects your organization has in progress, giving the name and location of the project as well as nature of the type of services you are providing. Provide dollar amount of contract, type of work, percent complete, estimated completion date, and owner information for each project:

\$ Amount of Contract	Type of Work	Est. Date of Completion	Name and Address of Owner
1. 18,794,957.00	Briar Channel and Straw Improvements	11/2020	Memorial City Authority, 9610 Long Point, Houston TX
2. 15,765,706.00	Reconstruction of Holmes Road	12/2020	City of Houston, 611 Walker, Houston TX
3. 9,085,576.85	North Post Oak BRT Connection	08/2020	METRO, 1900 Main Street, Houston TX
4. 11,327,025.00	NEWPP Yard Pipe	08/2021	PLW Waterworks, 1725 Hughes Landing, The Woodlands, TX

Attachment D
STATEMENT OF BIDDER QUALIFICATIONS

Describe your organization's concepts for working in a team relationship with the owner and user groups during the completion of projects similar to that identified in this IFB. Identify which of the project(s) listed on Attachment F, *References*, best exemplify these concepts and experiences. Attach additional pages as necessary:

Reytec is a full-service, utility/infrastructure contractor headquartered in Houston with offices in Austin and Corpus Christi, Texas. Founded in 1996, the firm rapidly developed a reputation for construction excellence in all phases of infrastructure and heavy underground utility contracting. Reytec's list of satisfied, repeat clients are a direct result of the firm's focus on safety, quality workmanship, on-time performance, competitive pricing, and a fluid communication with stakeholders. Post Oak Blvd is one of our projects that
~~best exemplifies the quality of our performance and the satisfaction of our client.~~

Please list categories of work that your organization normally performs with its own forces.

1. Installation Storm Sewer (Open cut)
2. Sanitary Sewer
3. Water Lines
4. Pavement, Sidewalks, driveways, crosswalks

Please list subcontractors in which your organization has some ownership or relationship and list the categories of work those subcontractors normally perform.

1. Traffic Control - Batterson, Stripes Line
2. Electric Work - Pfeiffer & Son, Reliable, Traffic System Construction
3. Landscape - Lone Star, Land PRO, J.Kru Land Services
4. Inlet Protection - Environmental Allies, Double Oak

Portions of work Bidder proposes to sublet in case of award of contract, including amount and type:

1. <u>Stripping, Signing</u>	<u>\$ 21,510.25</u>
2. <u>Electric work - Installation of Loop Detectors</u>	<u>\$ 1,500.00</u>
3. <u>Landscape - Hydromulch, Trees, Sodding</u>	<u>\$ 35,000.00</u>

List of Surety Bonds in Force on the above incomplete work:

\$ Amount of Contract	Amount of Bond	Name of Surety Company
1. <u>18,794,957.00</u>	<u>1,879,495.70</u>	<u>Travelers Casualty and Surety Company of America</u>
2. <u>15,795,706.00</u>	<u>1,579,570.60</u>	<u>Travelers Casualty and Surety Company of America</u>
3. <u>9,085,576.85</u>	<u>454,278.84</u>	<u>Travelers Casualty and Surety Company of America</u>
4. <u>11,327,025.00</u>	<u>226,540.50</u>	<u>Travelers Casualty and Surety Company of America</u>

Equipment Schedule (if applicable)

List of equipment owned by Bidder that is in serviceable condition and available for use:

1. _____
2. See attachment
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Attachment D
STATEMENT OF BIDDER QUALIFICATIONS

Dated this day 29th of June 2020
(Name of Organization)

By: President & CEO
(Title)

Submitted by Reytec Construction Resources, Inc.

an individual
a partnership
 a corporation

with principal office at 1901 Hollister Street, Houston, Texas 77080
(Full Address or City, State)

To be filled in by Corporation:
Date incorporated 2/14/1996
Under the laws of Texas State.

To be filled in by Partnership
Date formed _____
State whether partnership is general, limited or associated

Executive Officer Gregg T. Reyes

List Members:

State of Texas

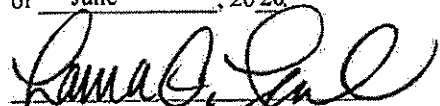
County of Harris

Gregg T. Reyes, being duly sworn, deposes and attests that he/she is
(Name of Bidder's Representative)

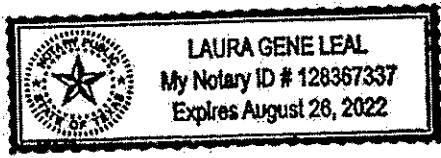
President & CEO of Reytec Constructions Resources, Inc.
(Position Title) (Name of Organization)

and that: (1) the Bidder bidding this work and the contractors / subcontractors anticipated to perform the work are properly licensed, as applicable, and shall provide proof of said licensure needed to complete the scope of work; (2) the answers to the foregoing questions on the attached/associated forms and all statements therein are correct to the best of their knowledge; (3) the experience record and the schedule of equipment are made part of this affidavit as though written in full herein; and (4) all statements and answers to the questions given in the above-mentioned experience record and schedule of equipment are true and correct.

Gregg T. Reyes, sworn to before me this 29th day
(Name of Bidder's Representative)
of June, 2020


Notary Public

(Seal) 08/26/2022
My Commission Expires





Construction Resources, Inc.

COMPANY OWNED EQUIPMENT

BH25	CAT	2012	420 IT
BH31	CAT	2013	420 FIT
BH33	CAT	2016	420 FIT
BH34	CAT	2017	420 FIT
BRM02	BROCE	2005	RJ 350
BRM03	BROCE	2005	RJ 350
BRM04	BROCE	2007	RJ 350
BRM05	BROCE	2007	RJ 350
BRM06	BROCE	2009	RJ 350
BRM07	BROCE	2012	CR 350
BRM08	BROCE	2011	RCT 350
CMR04	INGERSOLL- RAND	2004	SD-105 DX (84")I.D.Combo w/sheepsfoot
CMR09	CAT	2008	CS-54 (72" W/ SHEEP FOOT ATTACHMENT)
CMR13	WACKER	2010	RT 82 SC VIBRATORY TRENCH ROLLER W/ REMOTE
CMR14	CAT	2009	CB24 DOUBLE SMOOTH DRUM ROLLER (ASPHALT 47" wide)
CMR16	CAT	2014	CS44 SMOOTH DRUM ROLLER (66")
CMR17	DYNAPAC	2013	CC122 DOUBLE DRUM ROLLER (ASPHALT)
CMR18	DYNAPAC	2014	CA2500D (60")
CMR19	CAT		CP44/CP433 Cat Vib, pad foot Comp. 1 year warrenty
CMR20	WAKER-NEUSON	2019	32" TRENCH ROLLER REMOTE CONTROLLED
CMR21	WACKER-NEUSON	2019	32" TRENCH ROLLER REMOTE CONTROLLED
CMR22	CAT	TBD	CS44 SMOOTH DRUM ROLLER (66") W/PADFOOT ATTACHMENT
DZR15	CAT	2014	D5K- XL TRACK TYPE
DZR16	CAT	2014	D4K- XL TRACK TYPE
DZR17	CAT	2014	D6T- XW TRACK TYPE
DZR18	CAT	2013	D4K- XL CRAWLER
DZR19	JOHN DEERE	2016	550K DOZER
DZR20	CAT	2017	D5K2- XL CRAWLER
DZR21	CAT	2019	D5K
DZR22	CAT	2019	D5K
DZR23	CAT	2015	D5KLGP OR 2346 hours
EXC19	CAT	1992	245-B
EXC37	CAT	2013	328 DL ZERO- TURN
EXC40	CAT	2014	349EL
EXC41	CAT	2014	314EL CR Rubber Track



Construction Resources, Inc.

EXC42	CAT	2014	349EL
EXC43	CAT	2014	328DL CR
EXC46	CAT	2015	329FL (plumbed for Breaker) 5ft Bucket
EXC47	JOHN DEERE	2015	85G
EXC48	JOHN DEERE	2014	290GLC
EXC49	CAT	2016	320EL RR
EXC50	CAT	2016	314EL CR
EXC51	CAT	2016	326 FL
EXC52	CAT	2016	336FL
EXC54	CAT	2016	315FL
EXC55	JOHN DEERE	2017	85G WITH RUBBER TRACKS
EXC56	CAT	2016	315FL
EXC57	JOHN DEERE	2017	85G WITH RUBBER TRACKS
EXC58	JOHN DEERE	2018	85G WITH RUBBER TRACKS W/ breaking hammer
EXC59	CAT	2018	352F
EXC60	CAT	2018	308E2
EXC61	CAT	2019	325 Rubber Tracks (We installed)
EXC62	CAT	2019	336
EXC63	CAT	2019	315
EXC64	CAT	2019	320-07
EXC65	CAT	2019	320-07
EXC66	CAT	2019	326-LR LONG REACH
EXC67	CAT	2019	352 HEX AM-N BCF3 12' 10" REACH 74"&48" BUCKET
EXC68	CAT	2019	352
EXC69	CAT	2019	352F W'74" BUCKET
EXC70	CAT	2019	336 07B GC HEX 10' 6" STICK QUICK COUP. 48" BUCKET
EXC71	CAT	2019	336 07B GC HEX 10' 6" STICK QUICK COUP. 60" BUCKET
MG03	CASE		65E MOTORGRADER
MG04	JOHN DEERE	2013	670G MOTORGRADER
MILLO2	CAT	2017	PM622
MEXC07	CAT	2013	305.5D-CR *PLUMBED FOR BREAKER
MEXC08	CAT	2014	305.5D-CR *PLUMBED FOR BREAKER
MEXC09	CAT	2017	305-PLUMBED FOR HAMMER
MEXC10	CAT	2018	305-E2 HYDRALIC MINI EXCAVATOR
MEXC11	CAT	2016	305.5-E2 HYDRALIC MINI EXCAVATOR
MEXC12	CAT	2018	305-E2 HYDRALIC MINI EXCAVATOR
MEXC13	CAT	2016	305-E2 HYDRALIC MINI EXCAVATOR
MIX04	CAT	2016	RM-300
MIX05	CAT	TBD	RM-300
SSL04	CATERPILLAR	2014	299D
SSL05	CATERPILLAR	2015	272D



Construction Resources, Inc.

SSL06	CATERPILLAR	2015	299D XHP
WL01	KOMATSU	2002	WA180
WL14	CATERPILLAR	2012	938K
WL15	CATERPILLAR	2013	938K (SHORTY)
WL17	CATERPILLAR	2014	938G
WL18	JOHN DEERE	2015	524K
WL19	CATERPILLAR	2014	924K
WL21	CATERPILLAR	2016	926M
WL22	JOHN DEERE	2015	544K
WL23	CATERPILLAR	2018	926M
WL24	CATERPILLAR	2018	950GC
WL25	CATERPILLAR	2018	938M
WL26	CATERPILLAR	2019	938M
WL27	CATERPILLAR	2017	USED 930M 2,800 HRS ON ORDER

5. a) Corporation Details

Date of Incorporation - 2/14/1996

State of Incorporation - Texas

President - Gregg T. Reyes

Corporate Secretary - Steven K. Aranda

Treasurer - Steven K. Aranda

Bidder Licensing / Certifications

Neuens Rd. Improvements from Gessner Rd. to Blalock Rd.

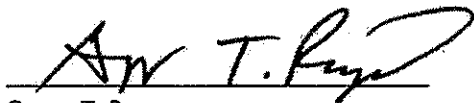
Reytec is a full-service, utility and infrastructure contractor headquartered in Houston with offices in Austin and Corpus Christi, Texas. Founded in 1996, the firm rapidly developed a reputation for excellence in construction in all phases of infrastructure and heavy underground utility contracting.

Reytec Construction Resources, Inc. is known for:

- Successful and long-standing relationships with the Port of Houston.
- Past partnering successes over the last 16 years.
- Over 24 years of construction infrastructure experience, with the majority of in the City of Houston, utilizing a local workforce of more than 170 employees.
- Permanent focus on safety, quality workmanship, on-time performance, and competitive pricing.
- Company has constructed numerous storm sewer, waterline, tunnel, street, utility, and large drainage projects.

Reytec Construction Resources, Inc. express its understanding of the scope work for this project, its complexities and challenges, as well as the philosophy and experience in dealing with similar projects.

To perform the scope of work of Neuens Road Improvements Project, no licensing or certification is required.



Gregg T. Reyes
President & CEO
Reytec Construction, Inc.

Attachment E
SUBCONTRACTOR LISTING FORM

Contractor must provide information below for any potential subcontractors, professionals, suppliers, and vendors used in connection with the project. The County reserves the right to reject proposed subcontractors on any reasonable basis. Harris County must approve the actual subcontractors prior to their use (add additional pages if necessary):

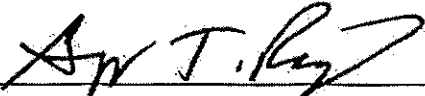
Company Name: <u>Traffic Signs & Lines LLC</u>	Industry: <u>Traffic Signs & Stripping</u>
DUNS #: <u>N/A</u>	Name of Principal: <u>Jose Medrano</u>
Approximate Contract Value \$ <u>21,510.25</u>	Start & End of Contract _____
Certified HUB / MWBE: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Certified Section 3: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Work to be performed: <u>Stripping & Signing</u>	

Company Name: <u>Lone Star</u>	Industry: <u>Landscape</u>
DUNS #: <u>N/A</u>	Name of Principal: <u>Nino Cervantes</u>
Approximate Contract Value \$ <u>35,000.00</u>	Start & End of Contract _____
Certified HUB / MWBE: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Certified Section 3: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Work to be performed: <u>Clearing & Grubbing, Tree removal, Hydromulch, Sodding</u>	

Company Name: <u>Pfeiffer & Son, Ltd.</u>	Industry: <u>Power and Communication Line Construction</u>
DUNS #: <u>N/A</u>	Name of Principal: <u>Charles L. Pfeiffer</u>
Approximate Contract Value \$ <u>1,500.00</u>	Start & End of Contract _____
Certified HUB / MWBE: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Certified Section 3: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Work to be performed: <u>Sawcut and Install Loop Detectors, including Loop Wire</u>	

Contractor shall be responsible for ensuring any Subcontractors used are properly licensed, insured, and authorized to work under government contracts by checking state, local, and federal debarment lists and shall obtain and submit licenses for any subcontractors if the work being performed requires licensing in accordance with state or federal law. A final Subcontractor Listing Form will be required prior to contract award. If any of the required information changes throughout the term of the contract, Contractor must submit a revision to the County for approval.

I will not be subcontracting any portion of the contract and will be fulfilling the entire contract with my own resources.

Signature of Contractor: 
Print Name: Gregg T. Reyes

Attachment F
REFERENCES

Reference #1

Organization Name: Uptown Development Authority

Contact Name/Telephone No.: Robert Taube / 713.416.5680

E-mail Address: rtaube@uptown-houston.com

Address: 1980 Post Oak Blvd, Suite 1700, Houston, TX 77056

Services provided: _____

Street reconstruction of Post Oak Blvd. from Westheimer Road to San Felipe. Work included installation of 3,000 LF of 42" Sanitary Sewer, 1,000 LF of 6' by 6' RCB, 1,000 LF of 24" water main, 6,000 LF 12" water line, 43,000 SY of 11" Pavement, and installation of hardscape including 11-foot- wide sidewalks, bus platforms, paver, upscale landscaping including over 400 large-diameter trees and +50,000 SF of special pavers, traffic signals, and communication. All work was completed to City of Houston Specifications.

Reference #2

Organization Name: Gauge Engineering

Contact Name/Telephone No.: Muhammed Ali / 713.254.5946

E-mail Address: mali@gaugeengineering.com

Address: 3200 Wilcrest Dr., Suite 220, Houston TX 77042

Services provided: _____

Briar Branch Channel and Straw Improvements:

Storm sewer & channel improvements. Pavement.

Reference #3

Organization Name: City of Houston

Contact Name/Telephone No.: Jody Craze / 832.395.2392

E-mail Address: jody.craze@houston.tx.gov

Address: 611 Walker, Houston TX 77002

Services provided: _____

Small Diameter Water Lines above Grade Crossings - South Sector

Small Diameter Water Lines - North Sector

Kirby Drive

Holmes Road Improvements Project

Attachment F
REFERENCES

Reference #4

Organization Name: Upper Kirby Redevelopment Authority

Contact Name/Telephone No.: Lee Cisneros / 281.400.3603

E-mail Address: lee@upperkirby.org

Address: 3015 Richmond Avenue, Suite 250, Houston, TX 77098

Services provided: _____

Bissonnet Reconstruction - Buffalo Speedway to Kirby Dr Project

Westheimer Road Reconstruction - Kirby Dr. to Shepherd Dr. Project

Reference #5

Organization Name: Aurora Technical Services, LLC

Contact Name/Telephone No.: Rafael Ortega / 713.582.2595

E-mail Address: rortega@auroratechservices.com

Address: 2121 Sage Road, Suite 150, Houston TX 77056

Services provided: _____

Post Oak Blvd

Reference #6

Organization Name: METRO

Contact Name/Telephone No.: Michael Krantz / 713.739.4092

E-mail Address: michael.krantz@ridemetro.org

Address: 1900 Main Street, Houston TX 77208

Services provided: _____

North Post Oak BRT Connection Project

THE AMERICAN INSTITUTE OF ARCHITECTS

AIA Document A310

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, That we Reytec Construction Resources, Inc.

1901 Hollister St., Houston, TX 77080

as Principal, hereinafter called the Principal, and Travelers Casualty and Surety Company of America

One Tower Square, Hartford, CT 06183

a corporation duly organized under the laws of the State of CT

as Surety, hereinafter called the Surety, are held and firmly bound unto Harris County

as Obligee, hereinafter called the Obligee, in the sum of Five Percent Of The Total Amount Bid

Dollars (\$5%)),

for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for ROAD CONSTRUCTION AT NEUENS ROAD FROM GESSNER TO BLALOCK ROAD

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount of which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this 22nd day of June 2020

[Signature]
(Witness)

Reytec Construction Resources, Inc.
[Signature]
(Title) Gregg T. Reyes
President

[Signature]
(Witness)

Travelers Casualty and Surety Company of America
[Signature]
(Title) Jessica M. Jackson
Attorney-in-fact



**Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company**

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Jessica M Jackson** of **SPRING Texas**, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this 3rd day of February, 2017.



State of Connecticut

City of Hartford ss.

By: 
Robert L. Raney, Senior Vice President

On this the 3rd day of February, 2017, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.

My Commission expires the 30th day of June, 2021




Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

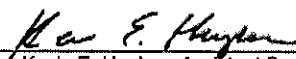
FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 22nd day of June, 2020




Kevin E. Hughes, Assistant Secretary

**To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.**

Attachment G
CONTRACTOR PROFILE

(To be submitted within fifteen (15) working days after being notified as apparent low bidder.)

Project Name: _____ Project No. _____

Name of Contractor _____ Contractor's FED Tax ID# _____ DUNS # _____

Name of Subcontractor _____ Subcontractor's FED Tax ID# _____ DUNS # _____

Category of Trade (e.g. Carpentry, Electrical, Plumbing, etc.)

Type of Contract:

- Construction Professional Non-professional Services Supplies Equipment
 Architectural / Engineering

Name of Principle Owner(s) _____

Name of Contact Person _____

Company Address _____

Phone _____

Email _____

Estimated Amount of Contract or Subcontract: \$ _____

Women Owned: Yes No

Minority Owned: Yes No

Section 3 Business: Yes No (if yes, must attach the Harris County Section 3 Business Concern Self-Certification form)

Racial/Ethnic Codes:

- White American
 Black/African American
 Asian/Pacific American
 Native American
 Hispanic Americans
 Hasidic Jews
 Multi-racial _____

Signature of Contractor

Date

Attachment H

BID CHECK RETURN AUTHORIZATION FORM

Bidder must complete this form and attach to bid check. All bid checks must be for the required amount and be payable to Harris County, not payable to any individual.

If a bid, the County Clerk may retain the bid checks of the three lowest Bidders until after the award and approval of the contract, receipt of a performance bond, and, if required, receipt of a payment bond. The County Clerk shall return the bid checks of all other Bidders at any time within seventy-two (72) hours following the opening of bids. If an IFB, all bid checks will be retained by the Office of the Purchasing Agent until after the award and approval of the contract, receipt of a performance bond, and, if required, receipt of a payment bond.

Authorization is hereby granted for Harris County to return the bid check via regular mail without liability of any kind or nature to the address listed below if:

1. we are an unsuccessful Bidder, or
2. a performance bond, and payment bond, if required, has replaced the bid check, or
3. upon completion of contract.

Bid _____ for:

Cashier's Check Number _____, Drawn on

Bank of _____, Dated _____
in

the amount of \$ _____.

Name: _____

Business Address: _____

Signature: _____

Mailing Address: _____

City & State: _____ Zip Code: _____

Telephone: _____ Email: _____

For Use of County Clerk/Purchasing Agent Only:

Date Check Mailed: _____ By: _____

Ledger Number: _____ Dept: _____

Attachment I

PERFORMANCE BOND FOR PUBLIC WORKS CONTRACTS OVER \$100,000

BOND NO. _____

Public Works Contracts Over \$100,000 – Pursuant to Texas Government Code 2253.001, et. seq, as amended

STATE OF TEXAS
COUNTY OF HARRIS

KNOW ALL MEN BY THE PRESENTS:

That _____ address: _____ phone: _____, hereinafter called the Principal;
and _____ address: _____ phone: _____, a corporation;
existing under and by virtue of the laws of the State of _____ and authorized to do an indemnifying business
in the State of Texas, and whose principal office is located in the City of _____ State of
_____, whose registered agent residing in the State of Texas, authorized to accept service in all suits and actions brought
within said State, is (name): _____ address: _____ hereinafter
called Surety, are held and firmly bound unto the County of Harris, State of Texas, in the full sum of _____ Dollars
(\$ _____) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators
executors successors and assigns, jointly and severally, firmly by these presents. WHEREAS, the Principal has entered
into a certain written contract with the Obligee, dated the ___ day of ___, 20___ to:

Job No.

which contract is hereby referred to and made a part hereof as fully and to the same extent as fully and to the same extent
as if copied at length herein.

The Principal and the Surety hereon each agree, bind and obligate himself and themselves to pay to the County of
Harris, Texas, all loss or damage to it occasioned by reason of failure of the Principal to comply strictly with each and
every provision contained in said contract and agreement, and further agree, bind and obligate themselves to save and keep
harmless the County of Harris from any and all damages expense and claims of every kind and character which the County
of Harris may suffer directly or indirectly, as a result of the execution of the contract herein secured.

If the said Principal shall fail to comply with any of the contract to such an extent that it shall be forfeited or
abandoned by him, or declared abandoned or suspended by the County, then said Surety shall have the right and privilege
within five (5) days after the date of notice of such action from the County, to assume control of the contract and all work
thereunder and to sublet or complete it in strict conformity with the provisions of said contract; and provided, further, that
failure on the part of the Surety to do so within said five (5) days will work an immediate forfeiture of all right to thereafter
assume control of the contract and the work thereunder. Failure of the County to give the Surety notice of any default
neglect, or omission of the Principal shall not diminish the obligations of the Surety in any respect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Texas Government Code
2253.001, et. seq, as amended, and all liabilities of this bond shall be determined in accordance with the provisions of said
article to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this ___ day
of _____, 20___.

(Principal)

I certify that the Commissioner's
Court approved this Bond on
_____.

(Corporate Surety)

Deputy County Clerk

By: _____
(Attorney-in-fact)

Address: _____

Phone: _____

Attachment K

PAYMENT BOND

Texas Department of Insurance 1-800-578-4677

BOND NUMBER _____

Pursuant to Texas Government Code 2253.001, et. seq, as amended

STATE OF TEXAS
COUNTY OF HARRIS

KNOW ALL MEN BY THESE PRESENTS:

That _____, address: _____, phone: (____) _____,
Hereinafter called the Principle; and _____, mailing address:
_____, physical address:
_____, phone: _____, a corporation;
existing under and by virtue of the laws of the State of _____ and authorized to do an indemnifying
business in the State of Texas, and whose principal office is located in the City of _____, State
of _____, whose registered agent residing in the State of Texas, authorized to accept service in
all suits and actions brought within said State, is (individual's name): _____,
mailing address: _____, physical address:
_____, phone:

_____, hereinafter called Surety, are held and firmly bound unto the County of Harris, State of
Texas, in the full sum of _____ Dollars _____ for the payment whereof,
the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly
and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Oblige, dated the ___ day of ___, 20 ___,
for Job _____, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied
at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all
claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said
contract, then, this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of, Texas Government Code 2253.001, et.
seq, as amended, and all liabilities of this bond shall be determined in accordance with the provisions of said article to the
same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of
_____, 20 _____.

Accepted and Approved on behalf of Harris County _____ on
_____, 20 _____

(Principal)

By: _____

(Corporate Surety)

Countersignature: _____

By: _____ (Attorney-in-fact)

Agency Name: _____

Address: _____

License No.: _____

Phone No.: _____

Attachment L

CERTIFICATION OF COMPLIANCE WITH FEDERAL STANDARDS & REQUIREMENTS

The undersigned [Bidder] certifies, to the best of his or her knowledge that Reytec Construction Resources, Inc., Bidder company or legal entity responding to this IFB, understands and is in compliance with the applicable federal standards and regulatory requirements, including but not limited to those specified in Title 2 Code of Federal Regulations 200.326 and 2 C.F.R. 200 Appendix II, Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards, and those listed under *Required Contract Provisions* (Attachment P), and agrees to pass through these requirements to its subcontractors and third-party contractors who will perform work on or are relevant to this contract, as applicable. **Bidder must initial by each regulatory requirement and sign below.**

- ATV A. **ACCESS TO RECORDS & RECORD RETENTION** – Bidder agrees to comply with 2 CFR 200.336 and provide Harris County, the State of Texas, the Texas General Land Office (GLO), the U.S. Department of Housing and Urban Development (HUD), the FEMA Administrator, the Inspectors General, the Comptroller General of the United States, or any of their pass-through entities or authorized representatives access to any books, documents, papers, and records of the successful Bidder(s) which are directly pertinent to this contract/project for the purposes of making/responding to audits, examinations, excerpts, and transcriptions. Successful Bidder shall maintain all records pertaining to the project for seven (7) years after receiving final payment and after all other pending matters have been closed.
- ATV B. **ACCESSIBILITY** – Bidder agrees to comply with all federal, state and local laws and regulations which prohibit recipients of federal funding from discriminating against individuals with disabilities. Applicable laws and regulations with which Bidder must comply shall include, but are not limited to, the following: Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. Section 794) (24 CFR Parts 8-9); the Architectural Barriers Act of 1968 (42 U.S.C. 4151-4157); the Uniform Federal Accessibility Standards (Appendix A to 24 CFR Part 40 and Appendix A to 41 CFR Part 101-19, subpart 101-19.6); the Americans with Disabilities Act (42 U.S.C. 12131; 47 U.S.C. 155, 201, 218, and 225); Texas Administrative Code, Title 10, Chapter 60, Subchapter (B) the Texas Architectural Barriers Act (TABAA); the Architectural Barriers (AB) Rules; and the Texas Accessibility Standards (TAS).
- ATV C. **BYRD ANTI-LOBBYING AGREEMENT** – Bidder submitting bids exceeding \$100,000 agree to comply with CFR 200 APPENDIX II (J) and 24 CFR 570.303, and shall file the required certification (see Attachment C, *Certification Regarding Lobbying*) under 31 U.S.C. 1352.
- ATV D. **CIVIL RIGHTS ACT OF 1964 (TITLE VI 42 U.S.C. § 2000D)** – Bidder agrees to comply with Title VI of the Civil Rights Act of 1964, Section 109 of the Community Development Act of 1974, Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. Section 794) (24 CFR Parts 8-9), and the Americans with Disabilities Act of 1990 (42 U.S.C. 12131; 47 U.S.C. 155, 201, 218, and 225), which prohibits Contractors from excluding or denying individuals benefits or participation in this project on the basis of race, color, religion, national origin, sex, or disability. The provisions require that no person in the United States shall on the ground of race, color, national origin or sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with community development funds made available pursuant to these Acts.
- ATV E. **CLEAN AIR ACT & THE FEDERAL WATER POLLUTION CONTROL ACT** – If at any time during the contract term funding to contract exceeds \$150,000, Bidder agrees to comply with all provisions of the Clean Air Act (42 U.S.C. 85) and Section 308 of the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended. Bidder agrees it shall not expend such funds by making use of subcontracting with facilities included on the Environmental Protection Agency List of Violating Facilities as per Section 306 of the Clean Air Act, Section 508 of The Clean Water Act, Executive Order 11738, and Environmental Protection Agency Regulations 40 CFR.

Attachment L

CERTIFICATION OF COMPLIANCE WITH FEDERAL STANDARDS & REQUIREMENTS

For any subcontractors under this contract receiving contracts in excess of \$150,000 Bidder agrees to include a provision that requires compliance with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 85) and Section 308 of the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

ATN F. **CONTRACT WORK HOURS & SAFETY STANDARDS ACT** – Bidder agrees to comply with the Contract Work Hours and Safety Standards Act. For any contract awarded under this contract opportunity in excess of \$100,000, that contract shall be a covered transaction for purposes of compliance with the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5).

ATN G. **COPELAND "ANTI-KICKBACK" ACT** – Bidder agrees to comply with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each vendor, contractor, subcontractor, or subrecipient shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled.

ATN H. **COST PLUS CONTRACTING PROHIBITED** – Bidder agrees to comply with the prohibition against cost-plus-a-percentage-of-cost (CPPC) contracting. Pursuant to 2 CFR 200.323(d), Bidder agrees to never use cost plus a percentage of cost and percentage of construction cost methods of contracting, including in subcontracts and third-party contracts. A cost-plus contract is one that is structured to pay the contractor or subcontractor their actual costs incurred, plus a fixed percent for profit or overhead.

ATN I. **DAVIS BACON & RELATED ACTS** – When applicable, Bidder agrees to comply with the Davis Bacon and Related Acts, and the requirements shall be applicable to any labor or mechanic work completed in connection with this contract which fall under the Davis Bacon Act. Any Contractor awarded under this contract is required to comply with the Davis Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR part 3 and part 6). In accordance with the statute, Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week.

ATN J. **DEBARMENT AND SUSPENSION** – Bidder affirms that it is not debarred nor suspended from receiving federally-funded awards. Non-federal entities and contractors are subject to the debarment and suspension regulations implementing Executive Order 12549, Debarment and Suspension (1986) and Executive Order 12689, Debarment and Suspension (1989) at 2 C.F.R. Part 180 and the Department of Homeland Security's regulations at 2 C.F.R. Part 3000 (Nonprocurement Debarment and Suspension). These regulations restrict awards, sub-awards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities.

ATN K. **ENERGY EFFICIENCY** – Bidder agrees to comply with the standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201).

ATN L. **EQUAL EMPLOYMENT OPPORTUNITY** – Bidder agrees to comply with the Equal Opportunity clause provided under 41 C.F.R. § 60-1.4(b), in accordance with Executive Order 11246, Equal Employment Opportunity (30 Fed. Reg. 12319, 12935, 3 C.F.R. Part, 1964-1965 Comp., p. 339), as amended by Executive

Attachment L

CERTIFICATION OF COMPLIANCE WITH FEDERAL STANDARDS & REQUIREMENTS

Order 11375, Amending Executive Order 11246 Relating to Equal Employment Opportunity, and implementing regulations at 41 C.F.R. Part 60 (Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor).

Bidder agrees it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. Bidder agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin.

ATN M.

EQUAL EMPLOYMENT OPPORTUNITY FOR WORKERS WITH DISABILITIES – Bidder agrees to comply with the requirements of the equal opportunity clause at 41 CFR 60-741.5(a). This clause prohibits discrimination against qualified individuals on the basis of disability, and requires affirmative action by the Contractor to employ and advance in employment qualified individuals with disabilities.

Bidder agrees to include the terms of this clause in every subcontract or purchase order in excess of \$15,000 unless exempted by rules, regulations, or orders of the Secretary, so that such provisions will be binding upon each subcontractor or vendor.

ATN N.

EQUAL EMPLOYMENT OPPORTUNITY FOR VETERANS – Bidder agrees to comply with required Equal Employment Opportunity for VEVRAA Protected Veterans provisions (41 CFR 60.300). Bidder agrees it shall not discriminate against any employee or applicant for employment because he or she is a disabled veteran, recently separated veteran, active duty wartime or campaign badge veteran, or Armed Forces service medal veteran in regard to any position for which the employee or applicant for employment is qualified. Bidder agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals without discrimination based on their status as a protected veteran in all employment practices.

Bidder shall include the Equal Employment Opportunity for VEVRAA Protected Veterans clause in each of its covered Government contracts or subcontracts (and modifications, renewals, or extensions thereof if not included in the original contract).

ATN O.

FAIR LABOR STANDARDS ACT – Bidder agrees to comply with the Fair Labor Standards Act of 1938 (29 U.S.C. Section 201 et seq.). Bidder warrants and represents that it will pay all its workers all monies earned by its workers including, but not limited to regular wages, any overtime compensation, or any additional payments pursuant to the Fair Labor Standards Act, 29 United States Code (U.S.C.) Section 207 9a(1), as amended; the Texas Pay Day Act; the Equal Pay Act; Title VII of the Civil Rights Act of 1964, 42 U.S.C. Section 2000, et al., as amended; or any provisions of the Texas Labor Code Ann., as amended.

ATN P.

FLOOD DISASTER PROTECTION ACT OF 1973 – Bidder agrees to comply with the provisions in 24 CFR 570.605, Section 202(a) of the Flood Disaster Protection Act of 1973 (42 U.S.C. 4106), and the regulations in 44 CFR Parts 59-79.

ATN Q.

GREEN BUILDING – Bidder agrees to comply with local codes and national building codes for any work involving rehabilitation or construction, including design. When contract is funded, in whole or in part, by HUD funding, Bidder agrees to comply with applicable Green Building standards to the maximum extent feasible. Green Building standards may apply to single-family properties, multifamily properties, or both and may include, but are not limited to best practices defined under LEED, Enterprise Green Communities, or NAHB National Green Building Standards and may include specific measures for water conservation, energy efficiency, and indoor air quality. Bidder agrees to comply with the following standards, as applicable:

- 2009 ICC International Energy Conservation Code (IECC)
- ASHRAE 90.1-2007, which sets minimum energy standards for buildings except low-rise residential buildings

Attachment L

CERTIFICATION OF COMPLIANCE WITH FEDERAL STANDARDS & REQUIREMENTS

- ASHRAE 62.1-2010 and 62.2-2010, which set minimum standards for ventilation for indoor air quality for common areas in mid- and high-rise buildings, and low-rise residential buildings, respectively.
- New or replacement residential housing, when funded by CDBG-DR grants, must adhere to Green Building standards, including Energy Star Certified Homes or Energy Star for Multifamily High Rise and other applicable green building requirements.
- Moderate residential housing rehabilitation, when funded by CDBG-DR grants, must comply with the Community Planning & Development (CPD) Retrofit Checklist and provide Energy Star appliances, Water Sense or FEMP products if replaced.

ATW R. **HOLD HARMLESS AGREEMENT** – Bidder agrees to indemnify, defend, and hold harmless Harris County from all claims for personal injury, death and/or property damage resulting directly or indirectly from contractor's performance. The successful Bidder shall procure and maintain, with respect to the subject matter of this Invitation for Bids, appropriate insurance coverage including, at a minimum, public liability and property damage with adequate limits to cover contractor's liability as may arise directly or indirectly from work performed under terms of this Invitation for Bids. Certification of such coverage must be provided to the County upon request.

ATW S. **LEAD BASED PAINT** – Bidder agrees to comply with the provisions found in 24 CFR 570.608, the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846), the Residential Lead Based Paint Hazard Reduction Act of 1992 (U.S.C. 4851-4856, and 24 CFR Part 35, subparts A, B, J, K, and R. This Article 2(f) is to be included in all subcontracts, for work in connection with this Agreement, which relate to residential structures.

ATW T. **NON-COLLUSION** – Bidder agrees to comply with The Sherman Act, which prohibits any agreement among competitors to fix prices, rig bids, or engage in other anticompetitive activity. Collusion, bid rigging, or other anticompetitive activity is considered a felony. Bidder agrees that it has not in any way directly or indirectly; Colluded, conspired, or agreed with any other person, firm, corporation, Bidder or potential Bidder to the amount of this Bid or the terms or conditions of this Bid; Paid or agreed to pay any other person, firm, corporation Bidder or potential Bidder any money or anything of value in return for assistance in procuring or attempting to procure a contract or in return for establishing the prices in the attached Bid or the Bid of any other Bidder; or Assembled in coordination with any other organization in an attempt to fix the price of the work.

ATW U. **PARTICIPATION BY MINORITY & WOMEN-OWNED BUSINESS ENTERPRISES** – Bidder agrees to comply with the Minority and Women-owned Business Enterprise participation requirements under 2 CFR 200.321. Contractors who are awarded contracts with the County are required to take all affirmative steps necessary to subcontract with Minority and Women-owned Business Enterprises (MWBEs).

ATW V. **POTENTIAL CONFLICT OF INTEREST** – In accordance with 2 CFR 200.112, Bidder agrees to comply with disclosure requirements pursuant to Texas Local Government Code, Chapter 176. Bidder agrees not to use funds to directly or indirectly pay any person for influencing or attempting to influence any public employee or official in connection with the awarding of any contract or the extension, continuation, renewal, amendment or modification of any contract. By law, the Conflict of Interest Questionnaire (provided by the Texas Ethics Commission at www.ethics.state.tx.us) must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date Bidder becomes aware of facts that require the statement to be filed.

ATW W. **PREVAILING WAGES** – Bidder agrees to comply with Texas Government Code (TGC) 2258, Prevailing Wage Rates. In accordance with the statute, Contractors shall be required to pay wages to laborers and mechanics at a rate not less than the local prevailing wages, or Davis Bacon wages, as applicable. If both Texas

Attachment L

CERTIFICATION OF COMPLIANCE WITH FEDERAL STANDARDS & REQUIREMENTS

prevailing wages and Davis Bacon provide rates for a particular class, Contractors must pay the greater wage rate.

ATW X. **PROCUREMENT OF RECOVERED MATERIALS** – Bidder agrees to comply with Section 6002 of the Solid Waste Disposal Act, Pub. L. No. 89-272 (1965) (codified as amended by the Resource Conservation and Recovery Act at 42 U.S.C. § 6962). As such, any contractors awarded under this contract opportunities are subject to the requirements of Section 6002.

ATW Y. **PROGRAM FRAUD & FALSE OR FRAUDULENT STATEMENT OR RELATED ACTS** – Bidder agrees to comply with 31 U.S.C. Chapter 38, *Administrative Remedies for False Claims and Statements*, which applies to the activities and actions of the Contractor and its subcontractors pertaining to any matter resulting from the contract.

ATW Z. **RESTRICTIONS ON PUBLIC BUILDINGS & PUBLIC WORKS PROJECTS** – The Bidder certifies by the submission of its bid that it:

- Is not a Contractor of a foreign country included on the USTR list.
- Has not and will not enter into any subcontract with a subcontractor of a foreign country included on the USTR list.
- Will not provide any product of a foreign country included on the USTR list.

ATW AA. **SECTION 3 ACT OF 1968** – Bidder agrees to comply with the provisions of 12 U.S.C. 1701u and 24 CFR 135. For any HUD-funded contract with an anticipated value in excess of \$100,000, the contract shall be considered a covered transaction for purposes of compliance with the Section 3 Act of 1968. Contractor must include the Section 3 Clause (Attachment Q, *Section 3 Clause*) in its entirety, in every subcontract subject to compliance with regulations in 24 CFR 135. **DISCLAIMER: THIS SOLICITATION DOES INVOLVE HUD FUNDING AND THEREFORE SECTION 3 DOES APPLY.**

If requested by Harris County, Bidder agrees to provide their policy and/or documentation verifying compliance with each of the above listed regulatory requirements.

Gregg T. Reyes President & CEO

Print Name and Title of Bidder's Authorized Official

ATW T. Reyes

6/19/2020

Signature of Bidder's Authorized Official

Date

Attachment M

MINIMUM INSURANCE REQUIREMENTS

During the term of the Contract, the Contractor at its sole expense shall provide primary commercial insurance of such type and with such terms and limits as may be reasonably associated with the Contract. As a minimum, the Contractor shall provide and maintain the following coverage and limits:

- A. **Workers Compensation**, as required by the laws of Texas, **and Employers' Liability**, as well as All States, USL&H and other endorsements if applicable to the project, and in accordance with state law.

Employers' Liability

- Each Accident: \$1,000,000
- Disease—Each Employee: \$1,000,000
- Policy Limit: \$1,000,000

- B. **Commercial General Liability**, including but not limited to the coverage indicated below. Coverage shall not contain any restrictive endorsements nor exclude or limit Products/Completed Operations, Contractual Liability, or Cross Liability. Where exposure exists, the County may require coverage for watercraft, blasting, collapse, explosions, blowout, cratering, underground damage, pollution, or other coverage. *Harris County shall be named Additional Insured on primary/non-contributory basis.*

- Each Occurrence: \$1,000,000
- Personal and Advertising Injury: \$1,000,000
- Products/Completed Operations: \$1,000,000
- General Aggregate (per project): \$2,000,000

- C. **Automobile Liability**, including coverage for all owned, hired, and non-owned vehicles used in connection with the Contract. *Harris County shall be named Additional Insured on primary/non-contributory basis.*

- Combined Single Limit-Each Accident: \$1,000,000

- D. **Umbrella/Excess Liability** (*Harris County shall be named Additional Insured on primary/non-contributory basis*)

- Each Occurrence/Aggregate: \$1,000,000

- E. **Professional/Errors & Omissions Liability** (if applicable)

- Each Occurrence/Aggregate: \$1,000,000

The County reserves the right to require additional insurance if necessary. Coverage shall be issued by companies licensed (by TDI) to do business in Texas, unless said coverage is not available or economically feasible except through an excess or surplus lines company, in which case the company should be registered to do business in Texas. Companies shall have an A.M. Best rating of at least A-VII. Contractor shall furnish evidence of such insurance to the County in the form of unaltered insurance certificates. If any part of the contract is sublet, insurance shall be provided by or on behalf of any subcontractor, and shall be sufficient to cover their portion of the contract. Contractor shall furnish evidence of such insurance to the County as well.

Policies of insurance required by the contract shall waive all rights of subrogation against the County, its officers, employees and agents. If any applicable insurance policies are cancelled, materially changed, or non-renewed, contractor shall give written notice to the County at least 30 days prior to such effective date and within 30 days thereafter, shall provide evidence of suitable replacement policies. Failure to keep in force the required insurance coverage may result in termination of the contract. Upon request, certified copies of original insurance policies shall be furnished to the County. The requirements stipulated in this attachment do not establish limits of contractor liability.

Attachment N

WORKERS' COMPENSATION INSURANCE COVERAGE RULE 110.110

If this bid package is for a building or construction contract, all of the provisions of this rule as shown below apply. Since this is a mandatory requirement, cost increases should not be experienced because of the need to comply with the Texas Workers' Compensation Law. For additional information contact the Texas Workers' Compensation Commission, Southfield Building, 400 S. IH-35, Austin, Texas 78704-7491, (512) 440-3618.

A. Definitions:

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

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

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

- B. The Contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.
- C. The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.
- D. If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.
- E. The Contractor shall obtain from each person providing services on a project, and provide to the governmental entity:
- (1) A certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - (2) No later than seven (7) days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- F. The Contractor shall retain all required certificates of coverage for the duration of the project and for one (1) year thereafter.
- G. The Contractor shall notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

Attachment N

WORKERS' COMPENSATION INSURANCE COVERAGE RULE 110.110

- H. The Contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- I. The Contractor shall contractually require each person with whom it contracts to provide services on a project to:
- (1) Provide coverage, based on 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 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 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 (1) year thereafter.
 - (6) Notify the government entity in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - (7) Contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.
- J. By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- K. The Contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the Contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the governmental entity.

Revised 4/02

Attachment O

DAVIS BACON CURRENT WAGE DECISION

Current Davis Bacon Wage Decision is attached

For prospective vendors downloading this IFB from CivCast at <https://www.civcastusa.com/>, the Davis-Bacon Current Wage Decision may also be picked up between 7:30 a.m. and 4:30 p.m., Monday through Friday at the Office of the Purchasing Agent, 1001 Preston, Suite 670, Houston, TX.

Attachment P

REQUIRED CONTRACT PROVISIONS

The Part 200 Uniform Requirements require that non-Federal entities' contracts contain the applicable provisions described in Appendix II to Part 200 — "Contract Provisions for Non-Federal Entity Contracts Under Federal Awards." Violations of law will be referred to the proper authority in the applicable jurisdiction. All Prime Contractors awarded contracts by Harris County which are federally funded, in whole or in part, are required to comply with the provisions below. Additionally, Prime Contractors with Harris County are required to include the provisions below in any contracts executed with subcontractors performing the scope of work and shall pass these requirements on to its subcontractors and third-party contractors, as applicable. In addition to other provisions required by the relevant Federal agency, State of Texas, or Harris County, all contracts made by Harris County under the Federal award shall contain provisions covering the following, as applicable.

ACCESS TO RECORDS & RECORD RETENTION (2 CFR 200.336)

Contractor must provide Harris County, the State of Texas, the Texas General Land Office (GLO), the U.S. Department of Housing and Urban Development (HUD), the FEMA Administrator, the Inspectors General, the Comptroller General of the United States, or any of their pass-through entities or authorized representatives access to any books, documents, papers, and records of the Contractor and its subcontractors which are directly pertinent to this contract/project for the purposes of making/responding to audits, examinations, excerpts, and transcriptions. The right also includes timely and reasonable access to the Contractor's personnel for the purpose of interview and discussion related to such documents. Contractor must keep records within Harris County or note in bid that records will be available within the boundaries of Harris County to those representatives within twenty-four (24) hours of request by the County. Contractor must maintain all records pertaining to the project for seven (7) years after receiving final payment and after all other pending matters have been closed.

ACCESSIBILITY (24 CFR 570.614) & SECTION 504 (29 U.S.C. Section 794 and 24 CFR Parts 8-9)

Contractor shall comply with all federal, state and local laws and regulations which prohibit recipients of federal funding from discriminating against individuals with disabilities. Applicable laws and regulations with which Contractor shall comply shall include, but are not limited to, the following: Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. Section 794) (24 CFR Parts 8-9); Title II of the Americans with Disabilities Act of 1990; the Architectural Barriers Act of 1968 (42 U.S.C. 4151-4157); the Uniform Federal Accessibility Standards (Appendix A to 24 CFR Part 40 and Appendix A to 41 CFR Part 101-19, subpart 101-19.6); the Americans with Disabilities Act (42 U.S.C. 12131; 47 U.S.C. 155, 201, 218, and 225); Texas Administrative Code, Title 10, Chapter 60, Subchapter (B) the Texas Architectural Barriers Act (TABAA); the Architectural Barriers (AB) Rules; and the Texas Accessibility Standards (TAS).

BYRD ANTI-LOBBYING AGREEMENT (2 CFR 200 APPENDIX II (J) AND 24 CFR 570.303)

Pursuant to 31 U.S.C.A. § 1352 (2003), if at any time during the contract term funding to contract exceeds \$100,000.00, the Contractor shall file with the County the Federal Standard Form LLL titled "Disclosure Form to Report Lobbying."

Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-federal award.

Attachment P

REQUIRED CONTRACT PROVISIONS

CIVIL RIGHTS ACT OF 1964 (Title VI 42 U.S.C. § 2000d)

Title VI of the Civil Rights Act of 1964, Section 109 of the Community Development Act of 1974, Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. Section 794) (24 CFR Parts 8-9), and the Americans with Disabilities Act of 1990 (42 U.S.C. 12131; 47 U.S.C. 155, 201, 218, and 225), prohibits Contractors from excluding or denying individuals benefits or participation in this project on the basis of race, color, religion, national origin, sex, or disability. The provisions require that no person in the United States shall on the ground of race, color, religion, national origin, sex, or disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with community development funds made available pursuant to these Acts.

For purposes of this Part “program or activity” is defined as any function conducted by an identifiable administrative unit of the recipient, or private Contractor receiving community development funds or loans from the recipient. “Funded in whole or in part with community development funds” means that community development funds in any amount in the form of grants or proceeds from HUD guaranteed loans have been transferred by the recipient or a subrecipient to an identifiable administrative unit and disbursed in a program or activity. A Contractor may not, under any program or activity to which the regulations of this Part may apply directly or through contractual or other arrangements, on the grounds of race, color, national origin, or sex:

- a. Deny any facilities, services, financial aid or other benefits provided under the program or activity;
- b. Provide any facilities, services, financial aid or other benefits, which are different, or are provided in a different form from that provided to others under the program or activity;
- c. Subject to segregated or separate treatment in any facility in, or in any matter of process related to receipt of any service or benefit under the program or activity;
- d. Restrict in any way access to, or in the enjoyment of any advantage or privilege enjoyed by others in connection with facilities, services, financial aid or other benefits under the program or activity;
- e. Treat an individual differently from others in determining whether the individual satisfies any admission, enrollment, eligibility, membership, or other requirement or condition which the individual must meet in order to be provided any facilities, services or other benefit provided under the program or activity; and
- f. Deny an opportunity to participate in a program or activity as an employee.

CLEAN AIR ACT (2 CFR Appendix II to Part 200 (G))

Pursuant to 2 CFR Appendix II to Part 200 (G), if at any time during the contract term funding to contract exceeds \$150,000, the Contractor must comply with all provisions of the Clean Air Act (42 U.S.C. 85) and Section 308 of the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended. Contractors securing a contract in excess of \$150,000.00 shall not expend such funds by making use of subcontracting with facilities included on the Environmental Protection Agency List of Violating Facilities as per Section 306 of the Clean Air Act, Section 508 of The Clean Water Act, Executive Order 11738, and Environmental Protection Agency Regulations 40 CFR.

For any subcontractors under this contract receiving contracts in excess of \$150,000 Contractor is required to include a provision that requires compliance with all applicable standards, orders or regulations issued pursuant

Attachment P

REQUIRED CONTRACT PROVISIONS

to the Clean Air Act (42 U.S.C. 85) and Section 308 Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (2 CFR Appendix II to Part 200 (E))

Pursuant to 2 CFR 200 Appendix II (E), if at any time during the contract term funding to contract exceeds \$100,000, the Contractor must comply with the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence

- (1) Overtime Requirements – No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

Attachment P

REQUIRED CONTRACT PROVISIONS

- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

COPELAND “ANTI-KICKBACK” ACT (40 U.S.C. 3145)

Pursuant to 2 CFR Appendix II to Part 200 (D), Contractor must comply with the provisions of the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each vendor, contractor, subcontractor, or subrecipient shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. Contractor shall include this provision in all contracts between itself and any subcontractors in connection with the services performed under this Contract. Harris County shall report all suspected or reported violations to the Federal awarding agency.

COST PLUS CONTRACTING PROHIBITED (2 CFR 200.323(D))

Cost-plus-a-percentage-of-cost (CPPC) contracts are prohibited by 2 CFR 200.323(d). The cost plus a percentage of cost and percentage of construction cost methods of contracting must never be used, including in subcontracts and third-party contracts. A cost-plus contract is one that is structured to pay the contractor or subcontractor their actual costs incurred, plus a fixed percent for profit or overhead.

A cost-plus-a-percentage-of-cost (CPPC) contract is a contract containing some element that obligates Harris County or Contractor to pay a contractor or subcontractor an amount (in the form of either profit or cost), undetermined at the time the contract was made, to be incurred in the future, and based on a percentage of future costs. The inclusion of an overall contract ceiling price does not make these forms of contracts acceptable.

This type of contract is prohibited because there is no incentive for the contractor or subcontractor to keep its incurred costs low. Instead, there is a reverse incentive for the contractor or subcontractor to continue to incur additional costs in order to continue to drive the percentage of cost up. In other words, increased spending by the contractor will yield higher profits. This prohibition applies to all work, regardless of the circumstances, and applies to subcontracts of the contractor cases where the prime contract is a cost-reimbursement type contract or subject to price redetermination.

DAVIS BACON AND RELATED ACTS (2 CFR 200 APPENDIX II (D))

Pursuant to 2 CFR 200 Appendix II (D), for any contract in excess of \$2,000, Contractor must comply with the Davis Bacon and Related Acts, and the requirements shall be applicable to any labor or mechanic work completed in connection with this contract which fall under the Davis Bacon Act. Any Contractor awarded under this contract is required to comply with the Davis Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR part 5) and with the Copeland “Anti-Kickback” Act (18 U.S.C. 874; 40 U.S.C. 3145) as supplemented in Department of Labor regulations (29 CFR part 3). In accordance with the statute, Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week.

Attachment P

REQUIRED CONTRACT PROVISIONS

If Davis Bacon is applicable, Harris County will provide a copy of the current *Davis Bacon Wage Decision* with the solicitation. The decision to award a contract or subcontract shall be conditioned upon the acceptance of the wage determination. Contractor shall submit certified payroll of contractor and all subcontractors on a weekly basis in the format required by the County. At County's request, Contractor shall make available and shall require its subcontractors to make available, copies of cancelled checks and check stubs for comparisons by the County or its agents.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii)) and the Davis Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following. The Statement of Compliance can be found on page 2 of the WH-347 form, and/or additional certifications of compliance may be required by Harris County. Any Statement of Compliance is subject to the penalties provided by 18 U.S.C. § 1001, namely, a fine, possible imprisonment of not more than 5 years, or both. Accordingly, the party signing the statement should have knowledge of the facts represented as true.

Contractor must include this provision in all contracts between itself and any subcontractors in connection with the services performed under this Contract. Harris County shall report all suspected or reported violations to the Federal awarding agency, as applicable.

DEBARMENT / SUSPENSION AND VOLUNTARY EXCLUSION (2 CFR Appendix II to Part 200 (I))

Pursuant to 2 CFR Appendix II to Part 200 (I), a Contract meeting the definition in 2 C.F.R. § 180.220 must not be made to parties listed on the System for Award Management (SAM) Exclusion lists, in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

Pursuant to Executive Orders 12549 and 12689, a contract award shall not be made to parties listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235). SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. A contract award must not be made to parties listed in the SAM Exclusions. SAM exclusions can be accessed at www.sam.gov.

Additionally, no contracts shall be awarded to any Contractor that has been debarred, suspended, or otherwise excluded from or ineligible for participation in any federal programs, including but not limited to the

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Department of Health and Human Work (DHHS), Office of Inspector General (OIG) - List of Excluded Individuals & Entities (LEIE); U.S. General Services Administration (GSA) – Excluded Parties List System (EPLS); All States (50) Health & Human Work Commission Medicaid OIG Sanction List; Government Terrorist Watch List (OFAC / Patriot Act); Department of Commerce, Bureau of Industry and Security, Denied Persons List; and Department of Homeland Security, Immigration and Customs Enforcement (ICE) Most Wanted.

This contract is a covered transaction for purposes of compliance with Title 2 C.F.R. parts 180 and 3000, and as such the Contractor is required to verify that none of the contractor, its principals (as defined at 2 C.F.R. § 180.995), or its affiliates (as defined at 2 C.F.R. § 180.905) are excluded (as defined at 2 C.F.R. § 180.940) or disqualified (as defined at 2 C.F.R. § 180.935). These regulations restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities (See 2 C.F.R. Part 200, Appendix II). The Contractor must comply with 2 C.F.R. part 180, subpart C and 2 C.F.R. part 3000, subpart C and shall include this requirement and similar certification in all contracts between itself and any subcontractors in connection with the services performed under this Contract.

The Contractor confirms that it is eligible or otherwise not disqualified or prohibited from participation in federal or state assistance programs under Executive Order 12549, *Debarment and Suspension*. Additionally, the Contractor warrants that it is not debarred, suspended, or otherwise excluded from or ineligible for participation in any federal programs, including but not limited to the following: Department of Health and Human Work (DHHS), Office of Inspector General (OIG) - List of Excluded Individuals & Entities (LEIE); U.S. General Services Administration (GSA) – Excluded Parties List System (EPLS); All States (50) Health & Human Work Commission Medicaid OIG Sanction List; Government Terrorist Watch List (OFAC / Patriot Act); Department of Commerce, Bureau of Industry and Security, Denied Persons List; and Department of Homeland Security, Immigration and Customs Enforcement (ICE) Most Wanted. Harris County reserves the right to verify any contractor's status and document instances of debarment, suspension, or other ineligibility.

Contractor shall verify that all subcontractors performing work under this Contract are not debarred, disqualified, or otherwise prohibited from participation in accordance with the requirements above. The Contractor further must notify Harris County in writing immediately if Contractor or its subcontractors are not in compliance with Executive Order 12549 during the term of this contract. Contractor shall include this provision in all contracts between itself and any subcontractors in connection with the services performed under this Contract.

If it is found that the Contractor did not comply or is not in compliance with Executive Order 12549 (2 C.F.R. part 180, subpart C and 2 C.F.R. part 3000, subpart C), the Contractor may be subject to available remedies, including but not limited to, refunding Harris County for any payments made to the Contractor while ineligible, and also acknowledges that the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

ENERGY EFFICIENCY (42 U.S.C. 6201 and 2 CFR 200 APPENDIX II (H))

Contractor must comply with the mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201). Contractor must include this provision in all contracts between itself and any subcontractors in connection with the services performed under this Contract.

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EQUAL EMPLOYMENT OPPORTUNITY (41 CFR 60-1.4(b) and 2 CFR 200 APPENDIX II (C))

Contractor must comply with, and incorporate or cause to be incorporated into any contract for construction work, or modification thereof, the Equal Employment Opportunity provisions as follows:

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
3. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
6. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government

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contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

8. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The Contractor further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the Contractor so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The Contractor agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The Contractor further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the Contractor agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the Contractor under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such Contractor; and refer the case to the Department of Justice for appropriate legal proceedings.

Contractor must include the equal opportunity clause in each of its nonexempt subcontracts, and to require all non-exempt subcontractors to include the equal opportunity clause in each of its nonexempt subcontracts.

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EQUAL EMPLOYMENT OPPORTUNITY FOR WORKERS WITH DISABILITIES (48 CFR 52.222-36)

During the performance of this contract, the Contractor must comply with required Equal Employment Opportunity for Workers with Disabilities provisions.

Contractor shall include the following equal opportunity clause in each of its covered Government contracts or subcontracts (and modifications, renewals, or extensions thereof if not included in the original contract):

- a. Equal opportunity clause. The Contractor shall abide by the requirements of the equal opportunity clause at 41 CFR 60-741.5(a), as of March 24, 2014. This clause prohibits discrimination against qualified individuals on the basis of disability, and requires affirmative action by the Contractor to employ and advance in employment qualified individuals with disabilities.
- b. Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$15,000 unless exempted by rules, regulations, or orders of the Secretary, so that such provisions will be binding upon each subcontractor or vendor. The Contractor shall act as specified by the Director, Office of Federal Contract Compliance Programs of the U.S. Department of Labor, to enforce the terms, including action for noncompliance. Such necessary changes in language may be made as shall be appropriate to identify properly the parties and their undertakings.

EQUAL EMPLOYMENT OPPORTUNITY FOR VEVRAA PROTECTED VETERANS (41 CFR 60.300)

Harris County is an equal opportunity employer of protected veterans. During the performance of this contract, the Contractor must comply with required Equal Employment Opportunity for VEVRAA Protected Veterans provisions.

Contractor shall include the following equal opportunity clause in each of its covered Government contracts or subcontracts (and modifications, renewals, or extensions thereof if not included in the original contract):

- a. The definitions set forth in 41 CFR 60-300.2 apply to the terms used throughout this Clause, and they are incorporated herein by reference.
- b. The contractor shall not discriminate against any employee or applicant for employment because he or she is a disabled veteran, recently separated veteran, active duty wartime or campaign badge veteran, or Armed Forces service medal veteran (hereinafter collectively referred to as "protected veteran(s)") in regard to any position for which the employee or applicant for employment is qualified. The contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals without discrimination based on their status as a protected veteran in all employment practices, including the following:
 - i. Recruitment, advertising, and job application procedures.
 - ii. Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring.
 - iii. Rates of pay or any other form of compensation and changes in compensation.

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- iv. Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists.
 - v. Leaves of absence, sick leave, or any other leave.
 - vi. Fringe benefits available by virtue of employment, whether or not administered by the contractor.
 - vii. Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training.
 - viii. Activities sponsored by the contractor including social or recreational programs.
 - ix. Any other term, condition, or privilege of employment.
- c. The contractor shall immediately list all employment openings which exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract and including those occurring at an establishment of the contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, with the appropriate employment service delivery system where the opening occurs. Listing employment openings with the state workforce agency job bank or with the local employment service delivery system where the opening occurs will satisfy the requirement to list jobs with the appropriate employment service delivery system. In order to satisfy the listing requirement described herein, contractors must provide information about the job vacancy in any manner and format permitted by the appropriate employment service delivery system which will allow that system to provide priority referral of veterans protected by VEVRAA for that job vacancy. Providing information on employment openings to a privately run job service or exchange will satisfy the contractor's listing obligation if the privately run job service or exchange provides the information to the appropriate employment service delivery system in any manner and format that the employment service delivery system permits which will allow that system to provide priority referral of protected veterans.
- d. Listing of employment openings with the appropriate employment service delivery system pursuant to this clause shall be made at least concurrently with the use of any other recruitment source or effort and shall involve the normal obligations which attach to the placing of a bona fide job order, including the acceptance of referrals of veterans and nonveterans. The listing of employment openings does not require the hiring of any particular job applicants or from any particular group of job applicants, and nothing herein is intended to relieve the contractor from any requirements in Executive orders or regulations regarding nondiscrimination in employment.
- e. Whenever a contractor, other than a state or local governmental contractor, becomes contractually bound to the listing provisions in paragraphs 2 and 3 of this clause, it shall advise the employment service delivery system in each state where it has establishments that: (a) It is a Federal contractor, so that the employment service delivery systems are able to identify them as such; and (b) it desires priority referrals from the state of protected veterans for job openings at all locations within the state. The contractor shall also provide to the employment service delivery system the name and location of each hiring location within the state and the contact information for the contractor official responsible for hiring at each location. The "contractor official" may be a chief hiring official, a Human Resources

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contact, a senior management contact, or any other manager for the contractor that can verify the information set forth in the job listing and receive priority referrals from employment service delivery systems. In the event that the contractor uses any external job search organizations to assist in its hiring, the contractor shall also provide to the employment service delivery system the contact information for the job search organization(s). The disclosures required by this paragraph shall be made simultaneously with the contractor's first job listing at each employment service delivery system location after the effective date of this final rule. Should any of the information in the disclosures change since it was last reported to the employment service delivery system location, the contractor shall provide updated information simultaneously with its next job listing. As long as the contractor is contractually bound to these provisions and has so advised the employment service delivery system, there is no need to advise the employment service delivery system of subsequent contracts. The contractor may advise the employment service delivery system when it is no longer bound by this contract clause.

- f. The provisions of paragraphs 2 and 3 of this clause do not apply to the listing of employment openings which occur and are filled outside of the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, Wake Island, and the Trust Territories of the Pacific Islands.
- g. As used in this clause:
 - i. All employment openings includes all positions except executive and senior management, those positions that will be filled from within the contractor's organization, and positions lasting three days or less. This term includes full-time employment, temporary employment of more than three days' duration, and part-time employment.
 - ii. Executive and senior management means: (1) Any employee (a) compensated on a salary basis at a rate of not less than \$455 per week (or \$380 per week, if employed in American Samoa by employers other than the Federal Government), exclusive of board, lodging or other facilities; (b) whose primary duty is management of the enterprise in which the employee is employed or of a customarily recognized department or subdivision thereof; (c) who customarily and regularly directs the work of two or more other employees; and (d) who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring, firing, advancement, promotion or any other change of status of other employees are given particular weight; or (2) any employee who owns at least a bona fide 20-percent equity interest in the enterprise in which the employee is employed, regardless of whether the business is a corporate or other type of organization, and who is actively engaged in its management.
 - iii. Positions that will be filled from within the contractor's organization means employment openings for which no consideration will be given to persons outside the contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings which the contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of his or her own organization.
- h. The contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

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- i. In the event of the contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
- j. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, Office of Federal Contract Compliance Programs, provided by or through the contracting officer. Such notices shall state the rights of applicants and employees as well as the contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are protected veterans. The contractor must ensure that applicants or employees who are disabled veterans are provided the notice in a form that is accessible and understandable to the disabled veteran (e.g., providing Braille or large print versions of the notice, posting the notice for visual accessibility to persons in wheelchairs, providing the notice electronically or on computer disc, or other versions). With respect to employees who do not work at a physical location of the contractor, a contractor will satisfy its posting obligations by posting such notices in an electronic format, provided that the contractor provides computers that can access the electronic posting to such employees, or the contractor has actual knowledge that such employees otherwise are able to access the electronically posted notices. Electronic notices for employees must be posted in a conspicuous location and format on the company's intranet or sent by electronic mail to employees. An electronic posting must be used by the contractor to notify job applicants of their rights if the contractor utilizes an electronic application process. Such electronic applicant notice must be conspicuously stored with, or as part of, the electronic application.
- k. The contractor will notify each labor organization or representative of workers with which it has a collective bargaining agreement or other contract understanding that the contractor is bound by the terms of VEVRAA, and is committed to take affirmative action to employ and advance in employment, and shall not discriminate against, protected veterans.
- l. The contractor will include the provisions of this clause in every subcontract or purchase order of \$100,000 or more, unless exempted by the rules, regulations, or orders of the Secretary issued pursuant to VEVRAA so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the Director, Office of Federal Contract Compliance Programs, may direct to enforce such provisions, including action for noncompliance.
- m. The contractor must, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to their protected veteran status.
- n. The Contractor shall forfeit as a penalty to the County who administers the subject Project receiving Federal assistance, Sixty Dollars (\$60.00) for each worker, employed for each calendar day, or a portion thereof, such worker is paid less than the said stipulated rates for any work done under this Project, by him/her or by any contractor under him/her.
- o. All contractors shall keep, or cause to be kept, an accurate record showing the names of all workers, also the actual per diem wages paid to each of such workers.

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FAIR LABOR STANDARDS ACT

Contractor must comply the Fair Labor Standards Act of 1938 (29 U.S.C. Section 201 et seq.) as now or hereafter amended, which regulates wage, hour and other employment practices that govern the use of funds provided and the employment of personnel under this contract. The Contractor warrants that it will pay all its workers all monies earned by its workers including, but not limited to regular wages, any overtime compensation, or any additional payments pursuant to the Fair Labor Standards Act, 29 United States Code (U.S.C.) Section 207 9a(1), as amended; the Texas Pay Day Act; the Equal Pay Act; Title VII of the Civil Rights Act of 1964, 42 U.S.C. Section 2000, et al., as amended; or any provisions of the Texas Labor Code Ann., as amended.

FLOOD DISASTER PROTECTION ACT OF 1973 (24 CFR 570.605)

Contractor must comply with the provisions in 24 CFR 570.605, Section 202(a) of the Flood Disaster Protection Act of 1973 (42 U.S.C. 4106), and the regulations in 44 CFR Parts 59-79.

GREEN BUILDING STANDARDS

At a minimum, Contractors and subcontractors must comply with local codes and any applicable national building codes for any work involving rehabilitation or construction, including design. When a contract is funded, in whole or in part, by HUD funding, Contractors must comply with applicable Green Building standards to the maximum extent feasible. Green Building standards may apply to single-family properties, multifamily properties, or both and may include, but are not limited to best practices defined under LEED, Enterprise Green Communities, or NAHB National Green Building Standards and may include specific measures for water conservation, energy efficiency, and indoor air quality. Contractor and subcontractors must comply with the following standards, as applicable:

- 2009 ICC International Energy Conservation Code (IECC)
- ASHRAE 90.1-2007, which sets minimum energy standards for buildings except low-rise residential buildings
- ASHRAE 62.1-2010 and 62.2-2010, which set minimum standards for ventilation for indoor air quality for common areas in mid- and high-rise buildings, and low-rise residential buildings, respectively.
- New or replacement residential housing, when funded by CDBG-DR grants, must adhere to Green Building standards, including Energy Star Certified Homes or Energy Star for Multifamily High Rise and other applicable green building requirements.
- Moderate residential housing rehabilitation, when funded by CDBG-DR grants, must comply with the Community Planning & Development (CPD) Retrofit Checklist and provide Energy Star appliances, Water Sense or FEMP products if replaced.
- New or replacement residential housing, when funded by CDBG-DR grants, must adhere to Green Building standards, including Energy Star Certified Homes or Energy Star for Multifamily High Rise and other applicable green building requirements.

HOLD HARMLESS AGREEMENT

Contractor shall indemnify, defend, and hold harmless Harris County from all claims for personal injury, death and/or property damage resulting directly or indirectly from contractor's performance. Contractor shall procure and maintain, with respect to the subject matter of this Invitation for Bids, appropriate insurance coverage including, at a minimum, public liability and property damage with adequate limits to cover contractor's liability

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as may arise directly or indirectly from work performed under terms of this Invitation for Bids. Certification of such coverage must be provided to the County upon request.

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

LEAD-BASED PAINT (24 CFR 570.608)

Contractor and subcontractors must comply with the provisions found in 24 CFR 570.608, the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846), the Residential Lead Based Paint Hazard Reduction Act of 1992 (U.S.C. 4851-4856, and 24 CFR Part 35, subparts A, B, J, K, and R. This Article 2(f) is to be included in all subcontracts, for work in connection with this Contract, which relate to residential structures.

NON-COLLUSION (The Sherman Act)

Contractor must comply with the requirements of The Sherman Act, which prohibit collusion. Collusion occurs when two persons or representatives of an entity or organization make an agreement to deceive or mislead another. Such agreements are usually secretive and involve fraud or gaining an unfair advantage over a third party, competitors, consumers or others with whom they are negotiating. The collusion, therefore, makes the bargaining process inherently unfair. Collusion can involve promises of future benefits, price or wage fixing, kickbacks, or misrepresenting the independence of the relationship between the colluding parties.

The Sherman Act prohibits any agreement among competitors to fix prices, rig bids, or engage in other anticompetitive activity. Collusion, bid rigging, or other anticompetitive activity is considered a felony.

Contractor shall not in any way, directly or indirectly:

- a. Collude, conspire, or agree with any other person, firm, corporation, Bidder or potential Bidder to the amount of this Bid or the terms or conditions of this Bid.
- b. Pay or agree to pay any other person, firm, corporation Bidder or potential Bidder any money or anything of value in return for assistance in procuring or attempting to procure a contract or in return for establishing the prices in the attached Bid or the Bid of any other Bidder.
- c. Assemble in coordination with any other organization in an attempt to fix the price of the work.

Contractors are expected to report any suspected fraud, collusion, or impropriety from the inception of solicitation through the end of the contract term.

NON-SEGREGATED FACILITIES

“Prohibition of Segregated Facilities”

- a. Segregated facilities means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

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Sexual orientation has the meaning given by the Department of Labor's Office of Federal Contract Compliance Programs, and is found at www.dol.gov/ofccp/LGBT/LGBT_FAQs.html.

- b. The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.
- c. The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

PARTICIPATION BY MINORITY & WOMEN-OWNED BUSINESS ENTERPRISES (2 CFR 200.321)

Contractor must comply with the Minority and Women-owned Business Enterprise participation requirements under 2 CFR 200.321. Contractors must take all affirmative steps necessary to subcontract with Minority and Women-owned Business Enterprises (MWBEs) to assure that MWBEs are used when possible. These affirmative steps shall include:

- A. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- B. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- C. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
- D. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and
- E. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

The State of Texas maintains a Historically Underutilized Business Program, which identifies any business at least 51 percent owned by an Asian Pacific American, Black American, Hispanic American, Native American, American woman and/or Service Disabled Veteran, who reside in Texas and actively participate in the control, operations and management of the entity's affairs as a Historically Underutilized Business (also considered MWBE). Contractors who wish to check the status of a firm may visit <https://comptroller.texas.gov/purchasing/vendor/hub/>.

Contractors and subcontractors are required to facilitate Minority & Women-Owned Business Enterprise participation. Contractors are encouraged to utilize MWBEs / HUB firms as subcontractors, subconsultants, or suppliers in order to comply with the requirements and may check for firms who perform relevant work by searching <https://comptroller.texas.gov/purchasing/vendor/hub/>.

Contractor and subcontractors must facilitate Minority & Women-Owned Business Enterprise participation and take all affirmative steps to utilize MWBEs / HUB firms as subcontractors, subconsultants, or suppliers throughout the life of the Contract.

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REQUIRED CONTRACT PROVISIONS

POTENTIAL CONFLICTS OF INTEREST

Pursuant to 2 CFR 200.112, Contractor must comply with disclosure requirements in accordance with Texas Local Government Code, Chapter 176. Contractor shall not use funds to directly or indirectly pay any person for influencing or attempting to influence any public employee or official in connection with the awarding of any contract or the extension, continuation, renewal, amendment or modification of any contract. By law, the *Conflict of Interest Questionnaire* (provided by the Texas Ethics Commission at www.ethics.state.tx.us) must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the Contractor becomes aware of facts that require the statement to be filed.

This law requires persons desiring to do business with the County to disclose any gifts valued in excess of \$250 given to any County Official or the County Official's family member, or employment of any County Official or the County Official's family member during the preceding twelve (12) month period. The disclosure questionnaire must be filed with the Harris County Clerk. Refer to Texas Local Government Code, Chapter 176 for the details of this law.

An outside consultant or contractor is prohibited from submitting a bid for services on a Harris County project of which the consultant or contractor was a designer or other previous contributor, or was an affiliate, subsidiary, joint venture or was in any other manner associated by ownership to any party that was a designer or other previous contributor. If such a consultant or contractor submits a prohibited bid, that bid shall be disqualified on the basis of conflict of interest, no matter when the conflict is discovered by Harris County.

PREVAILING WAGES (2 CFR 200 APPENDIX II (D) and TGC 2258)

Pursuant to 2 CFR 200 Appendix II (D), Contractor must comply with Texas Government Code (TGC) 2258, Prevailing Wage Rates. Accordingly, Contractor must submit a certified payroll records as required, and compensate any worker employed on a public works project not less than as applicable. As noted under "Davis Bacon and Related Acts", when required by Federal program legislation, construction contracts in excess of \$2,000 awarded by Harris County shall require compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, Contractor must pay wages to laborers and mechanics at a rate not less than the local prevailing wages, or Davis Bacon wages, as applicable. If both Texas prevailing wages and Davis Bacon provide rates for a particular class, Contractors must pay the greater wage rate. In addition, Contractor must pay wages not less than once a week.

In compliance with Section 2258 of the Texas Government Code, Contractor and any subcontractor hired by Contractor for the construction of any project, shall pay not less than the rates set forth in the Schedule of Prevailing Wages attached and incorporated by reference. In submitting a Bid, Contractor warrants that it and its subcontractors shall comply with all requirements and worker ratios per the applicable Schedule of Prevailing Wages and Texas state law.

Contractor must submit certified payroll of contractor and all subcontractors on a weekly basis. At County's request, Contractor must make available and shall require its subcontractors to make available, copies of cancelled checks and check stubs for comparisons by the County or its agents. Regardless of whether Davis Bacon or Texas Prevailing Wages apply, the County reserves the right for its agents to visit the project site and to interview contractor, its subcontractors and employees of each on any date or time, as often as desired during the construction period, without prior notification.

Attachment P

REQUIRED CONTRACT PROVISIONS

Harris County will ascertain if proper wage rates are being paid to the employees as required. In the event of a discrepancy between the work performed and the wages paid, the County shall document same and notify Contractor. If, for any length of time and as determined by Harris County, discrepancies appear between the certified payrolls and the actual wage paid, the County shall require check stubs to be attached to each weekly certified payroll.

Pursuant to Texas Government Code Section 2258.051, the County reserves the right to withhold any monies due Contractor until such discrepancy is resolved and the necessary adjustment made. The Contractor shall forfeit as a penalty, in accordance with Texas Government Code Section 2258.023(b), to the County or entity who administers the subject Project receiving Federal assistance, Sixty Dollars (\$60.00) for each worker, employed for each calendar day, or a portion thereof, such worker is paid less than the said stipulated rates for any work done under this Project, by him/her or by any contractor/subcontractor under him/her.

All contractor/subcontractor shall keep, or cause to be kept, an accurate record showing the names of all workers, also the actual per diem wages paid to each of such workers. Contractor shall impose these same obligations upon its Subcontractors. Contractor understands that with weekly or monthly certified payrolls, contractor is responsible for any and all penalties that shall accrue during the month, regardless of the fact that any error could not be discovered by the Contract Compliance Officer until the following certified payroll.

PROCUREMENT OF RECOVERED MATERIALS (2 CFR 200.322)

Pursuant to 2 CFR 200.322, Contractor must comply with Section 6002 of the Solid Waste Disposal Act, Pub. L. No. 89-272 (1965) (codified as amended by the Resource Conservation and Recovery Act at 42 U.S.C. § 6962). As such, any contractors awarded under this contract opportunity is subject to the requirements of Section 6002, which include procuring only items designated in guidelines of the EPA at 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired by the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS

Contractor must comply with 31 U.S.C. Chapter 38, *Administrative Remedies for False Claims and Statements*, which shall apply to the activities and actions of the Contractor and its subcontractors pertaining to any matter resulting from the contract.

RESTRICTIONS ON PUBLIC BUILDINGS AND PUBLIC WORKS PROJECTS CERTIFICATION

- a. Definitions. The definitions pertaining to this provision are those that are set forth on the clause entitled "Restrictions on Public Works Projects." (Set out under "Contract Clauses" below.)
- b. Certification. Except as provided in paragraph (C) of this provision, by submission of its bid or proposal, Bidder certifies that it:
 - i. Is not a Contractor of a foreign country included on the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR) (see paragraph (H) of this provision);

Attachment P

REQUIRED CONTRACT PROVISIONS

- ii. Has not or will not enter into any subcontract with a subcontractor of a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR, and
 - iii. Will not provide any product of a country included on the list of foreign countries that discriminate against the U.S. firms published by the USTR.
- c. Inability to certify. A Bidder unable to certify in accordance with paragraph (b) of this provision shall submit with its offer a written explanation fully describing the reasons for its inability to make the certification.
 - d. Applicability of 18 U.S.C. 1001. This certification is paragraph (B) of this provision concerns a matter within the jurisdiction of an agency of the United States, and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18 U.S.C. 1001.
 - e. Notice. Bidder shall provide written notice to the Contracting Officer if, at any time before the contract award, Bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
 - f. Restrictions on contract award. Unless a waiver to these restrictions is granted by the Secretary of Housing and Urban Development, no contract will be awarded to a Bidder (1) who is owned or controlled by a citizen or national of a foreign country included on the list of foreign countries that discriminate against U.S. firms published by the USTR, (2) whose subcontractors are owned or controlled by citizens or national of a foreign country on the USTR list or, (3) who incorporates any product of a foreign country on the USTR list in the public works project.
 - g. USTR List. The USTR published an initial list in the Federal Register on December 30, 1987 (53 FR 49244), which identified one country-Japan. The USTR can add countries to the list, and remove countries from it, in accordance with section 109 (C) of PUB. L. 100-202.

RESTRICTIONS ON PUBLIC BUILDINGS AND PUBLIC WORKS PROJECTS

- a. Definitions. "Component", as used in this clause, means those articles, materials, and supplies incorporated directly into the product. "Contractor or subcontractor of a foreign country," as used in this clause, means any Contractor or subcontractor that is a citizen or national of a foreign country or is controlled directly or indirectly by citizens or nationals of a foreign country. A contractor or subcontractor shall be considered to be a citizen or national of a foreign country, or controlled directly or indirectly by citizens or nationals of a foreign country:
 - i. If 50 percent or more of the Contractor or subcontractor is owned by a citizen or a national of the foreign country;
 - ii. If the title to 50 percent or more of the stock of the Contractor or subcontractor is held subject to trust or fiduciary obligation in favor of citizens or nationals of the foreign country.
 - iii. If 50 percent or more of the voting power in the Contractor or subcontractor is vested in or exercisable on behalf of a citizen or national of the foreign country;

Attachment P

REQUIRED CONTRACT PROVISIONS

- iv. In the case of a partnership, if any general partner is a citizen of the foreign country;
 - v. In the case of a corporation. If its presidents or other chief executive officer or the chairman of its board of directors is a citizen of the foreign country or the majority of any number of its directors necessary to constitute a quorum are citizens of the foreign country or the corporation is organized under the laws of the foreign country or any subdivision, territory, or possession thereof; or
 - vi. In case of a contractor or subcontractor who is a joint venture, if any participant firm is a citizen or national of a foreign country or meets any of the criteria in subparagraphs (A) 1 through 5 of this clause. "Product", as used in this clause, means construction materials, i.e. articles, materials and supplies brought to the construction site for incorporation into the public works project, including permanently affixed equipment, instruments, utilities, electronic or other devices, but not including vehicles or construction equipment. In determining the origin of a product, Harris County will consider a product as produce in a foreign country if it has been assembled or manufactured in the foreign country, or if the cost of the components mined, produced, or manufactured in the foreign country exceed 50 percent of the cost of all its components.
- b. Restrictions. The Contractor shall not (1) knowingly enter into any subcontract under this contract with a subcontractor of a foreign country included on the list of countries that discriminate against U.S. firms published by the United States Trade Representative (see paragraph (C) of this clause, or (2) supply any product under this contract of a country included on the list of foreign countries that discriminate against U.S. firms published by the USTR.
 - c. USTR List. The USTR published an initial list in the Federal Register on December 30, 1987 (53 FR 49244), which identified one country-Japan. The USTR can add other countries to the list, or remove countries from it, in accordance with section 109 (C) of PUB. L. 100-102.
 - d. Certification. The Contractor may rely upon the certification of a prospective subcontractor that it is not a subcontractor of a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR and that products supplied by such subcontractor for use on the Federal public works project under this contract are not products of a foreign country included on the list of foreign countries that discriminate against U.S. firms published by the USTR, unless such Contractor has knowledge that the certification is erroneous.
 - e. Subcontractors. The Contractor shall incorporate this clause, modified only for the purpose of properly identifying the parties, in all subcontracts. This paragraph (E) shall also be incorporated in all subcontracts.

RIGHTS TO INVENTIONS (2 CFR Appendix II to Part 200 (F))

Any discovery or invention that arises during the course of the contract shall be reported to Harris County. This clause requires the Contractor to disclose promptly inventions to the County (within 2 months) after the inventor discloses it in writing to Contractor personnel responsible for patent matters. The awarding agency shall determine how rights in the invention/discovery shall be allocated consistent with "Government Patent Policy" and Title 37 C.F.R. § 401.

Attachment P

REQUIRED CONTRACT PROVISIONS

If the Federal award meets the definition of “funding agreement” under 37 C.F.R. §.401.2(a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of Title 37 C.F.R. § 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.

SECTION 109 OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974 (24 CFR 570.602)

Section 109 of the Act requires that no person in the United States shall on the grounds of race, color, national origin, religion, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance made available pursuant to the Act. Section 109 also directs that the prohibitions against discrimination on the basis of age under the Age Discrimination Act and the prohibitions against discrimination on the basis of disability under Section 504 shall apply to programs or activities receiving Federal financial assistance under Title I programs. The policies and procedures necessary to ensure enforcement of section 109 are codified in 24 CFR part 6.

SECTION 3 ACT OF 1968 (12 U.S.C. 1701u and 24 CFR Part 135) DISCLAIMER: THIS CONTRACT IS HUD-FUNDED AND THEREFORE SECTION 3 DOES APPLY TO THIS CONTRACT.

For any HUD-funded contract with a value in excess of \$100,000, Contractor and subcontractors must comply with the Section 3 Act of 1968. The purpose of Section 3 is to ensure that employment and other economic opportunities generated by certain HUD financial assistance shall, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations, be directed to low- and very low income persons, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low- and very low-income persons. Section 3 is triggered when the normal completion of construction and rehabilitation projects creates the need for new employment, contracting, or training opportunities.

For any Section 3 Covered Contracts, Contractor and subcontractors must comply with all provisions of the Section 3 Act of 1968, contained under 24 CFR 135. Contractor and subcontractors must include the Section 3 Clause in its entirety, in every subcontract subject to compliance with regulations in 24 CFR 135.

Contractor and subcontractors must assure that to the greatest extent feasible, contracts for work to be performed in connection with the project are awarded to Section 3 Business Concerns. Contractor and subcontractors must post all new hire opportunities with the local Workforce Solutions Center and/or Work-in-Texas, in accordance with 24 CFR 135. The minimum numeric goals for Section 3 utilization are:

- 30 percent of total number of new hires are Section 3 Residents (i.e. 1 out of 3 new hires);
- 10 percent of all awarded construction contracts are awarded to Section 3 Business Concerns;
- 3 percent of all awarded non-construction contracts are awarded to Section 3 Business Concerns.

Attachment P

REQUIRED CONTRACT PROVISIONS

TRANSACTIONS WITH TERRORIST ORGANIZATIONS PROHIBITED (Texas Government Code 2252.152)

Pursuant to Chapter 2252, Texas Government Code, Contractor shall certify that, at the time of execution of this Contract, neither the Contractor, nor any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the same (1) engages in business with Iran, Sudan, or any foreign terrorist organization as described in Chapters 806 or 807 of the Texas Government Code, or Subchapter F of Chapter 2252 of the Texas Government Code, or (2) is a company listed by the Texas Comptroller of Public Accounts under Sections 806.051, 807.051, or 2252.153 of the Texas Government Code.

TERMINATION FOR CAUSE & CONVENIENCE (2 CFR Appendix II to Part 200 (A) and (B))

Pursuant to 2 CFR Appendix II to Part 200 (A), Contracts for more than the simplified acquisition threshold currently set at \$150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, shall address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

Pursuant to 2 CFR Appendix II to Part 200 (B), all contracts in excess of \$10,000 shall address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement. Harris County shall have the right to terminate this contract for cause and convenience.

In the event of a failure by Contractor to satisfactorily perform the services specified herein and/or a default by Contractor in abiding by the other terms and conditions of this Contract, Harris County may terminate the Contract on written notice to Contractor and Contractor shall be liable for all damages, costs, and expenses (including attorney fees) incurred by County related to this default. Such termination is in addition to and not in lieu of any other remedies that Harris County may have in law or equity. Administrative remedies for non-performance, violation or breach of contract terms, or termination of contract for default may include suspension and debarment. Harris County may assess liquidated damages for failure to meet completion deadlines, contract breaches, or performance failures of the Contractor or its Subcontractors.

Contractor shall be provided the opportunity to cure certain performance failures or instances of default as described in the contract documents. The legal dispute resolution process as applicable under the Texas Civil Practice and Remedies Code shall include, but is not limited to, Texas and Civil Practice and Remedies Section 38 – Attorney’s Fees, Texas Civil Practice and Remedies Section 41 – Damages, and Texas Civil Practice and Remedies Section 154 – General Provisions. Harris County and Contractor(s) should attempt to resolve any claim for breach of contract made by Contractor, to the extent it is applicable to the Contract and not preempted by other law. Except as otherwise provided by law, nothing herein is a waiver by the County or the State of Texas of the right to seek redress in a court of law.

Termination provisions are included in the **Contract Requirements & Payment**, Section VIII, portion of this IFB.

VERIFICATION NOT TO BOYCOTT ISRAEL

As required by Texas Government Code Chapter 2270, Contractor verifies that it does not boycott Israel and will not boycott Israel through the term of this Contract. For purposes of this verification, “boycott Israel” means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended

Attachment P

REQUIRED CONTRACT PROVISIONS

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 made for ordinary business purposes.

VENDORS/CONTRACTORS OWING TAXES OR OTHER DEBTS

Pursuant to Texas Local Government Code 262.0276, if, during the performance of this contract, Contractor's taxes become delinquent or Contractor becomes otherwise indebted to Harris County, Harris County reserves the right to provide notice to the Auditor or Treasurer pursuant to Texas Local Government Code 154.045.

Whether or not a Contractor's taxes are delinquent will be determined by an independent review of the Tax Office records. Contractors are encouraged to visit the Tax Office website at www.hctax.net, set up a portfolio of their accounts and make their own initial determination of the status of their tax accounts. Contractors who believe a delinquency is reflected in error must contact the Tax Office to correct any errors or discrepancies prior to submitting their bid in order to ensure that their bid will be considered. Furthermore, if, during the performance of this contract, a Contractor's taxes become delinquent or a vendor becomes otherwise indebted to Harris County, Harris County reserves the right to provide notice to the Auditor or Treasurer pursuant to Texas Local Government Code §154.045. This policy is effective for all bids due on or after November 1, 2009.

WHISTLEBLOWER PROTECTION ACT

Contractor, subcontractors, and employees working on this Project shall be subject 41 U.S. Code § 4712, which requires that an employee of a contractor, subcontractor, grantee, or subgrantee or personal services contractor may not be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing information that the employee reasonably believes is evidence of gross mismanagement of a Federal contract or grant, a gross waste of Federal funds, an abuse of authority relating to a Federal contract or grant, a substantial and specific danger to public health or safety, or a violation of law, rule, or regulation related to a Federal contract (including the competition for or negotiation of a contract) or grant.

The Contractor shall inform its employees and subcontractors in writing, in the predominant language of the workforce, of employee whistleblower rights and protections under 41 U.S.C. 4712, as described in section 3.908 of the Federal Acquisition Regulation. The Contractor shall insert the substance of this clause, including this paragraph, in all subcontracts providing services for this Project.

Attachment Q
SECTION 3 CLAUSE

24 CFR 135.38 Section 3 Clause

All Section 3 covered contracts must include the following clause (referred to as the Section 3 Clause):

A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

G. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and sub contracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).



Attachment R
HARRIS COUNTY

SECTION 3 UTILIZATION PLAN & STATEMENT OF COMPLIANCE

CONTRACTOR INFORMATION					
Business Name	Reytec Construction Resources, Inc.	Prime	Sub	Certified Section 3 Business Concern	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Business Address	1901 Hollister St. Houston, TX 77080		Business Email	greyes@reytec.net	
Project Title / Project #	Road Construction al Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 - UPIN 18104MFOUEO 1		Contract Amount	\$ 11,788,980.20	

PART I: SECTION 3 REQUIREMENTS

Section 3 is a provision of the Housing and Urban Development Act of 1968. The purpose of Section 3 is to ensure that employment and other economic opportunities generated by certain HUD financial assistance shall, to the greatest extent feasible, be directed to low- and very low-income persons. Good faith efforts toward reaching Section 3 numeric goals are not optional, and the requirements of Section 3 apply to both contractors and subcontractors.

Section 3 is triggered when HUD-funded construction and rehabilitation projects in excess of \$100,000 create the need for new employment, subcontracting, or training opportunities. **If a prime contractor anticipates using subcontractors, each subcontractor with an anticipated contract value in excess of \$100,000 is also required to submit a separate Section 3 Utilization Plan & Statement of Compliance.** If contract will not exceed \$100,000 or does not result in new employment, subcontracting, or training opportunities, then Section 3 is not triggered, and this form is not required.

A. Section 3 Hiring

Section 3 Hiring requirements are triggered by the need for new hires in the completion of a Section 3 covered contract. The Section 3 Hiring goals under 24 CFR 135.30(b)(2) require that contractors and subcontractors commit to employ Section 3 Residents¹ as 30% of the aggregate number of full-time new hires.

B. Section 3 Subcontracting

Section 3 Subcontracting requirements are triggered by the need for subcontracts in the completion of a Section 3 covered contract. The Section 3 Subcontracting goals under 24 CFR 135.30(c) require contractors and subcontractors to make the effort to award contracts, to the greatest extent feasible, to Section 3 Business Concerns² as follows:

- Building Trades Contracts (construction): At least 10% of the total dollar amount of all Section 3 covered contracts for building trades work arising in connection with construction projects.
- Other Contracts (non-construction): At least 3% of the total dollar amount of all other Section 3 covered contracts. This might include professional service contracts such as architectural, engineering, or legal services related to construction or rehabilitation projects.

PART II: SECTION 3 TRIGGER

I do not anticipate hiring any new permanent, temporary, or seasonal employees on this contract.

I do not anticipate subcontracting any portion of the work on this contract.

IF CONTRACTOR DOES NOT ANTICIPATE THE NEED FOR ANY HIRING OR SUBCONTRACTING, BOTH BOXES MUST BE CHECKED ABOVE AND CONTRACTOR SHOULD SKIP TO PART VIII: STATEMENT OF COMPLIANCE ON THE FINAL PAGE

¹ A "Section 3 resident" is a public housing resident or individual who resides in Harris County and who is a low- or very low-income person (defined as families whose incomes do not exceed 80% of the median income for the area). Please refer to the HUD Income Limits for more information.

² A "Section 3 Business Concern" is a business: 1) That is 51 percent or more owned by Section 3 Resident; 2) Whose permanent, full-time employees include persons, at least 30 percent of whom are currently Section 3 residents; or 3) That provides evidence of a commitment to subcontract in excess of 25 percent of the dollar award of all subcontractors to be awarded to Section 3 Business Concerns.



Attachment R
HARRIS COUNTY

SECTION 3 UTILIZATION PLAN & STATEMENT OF COMPLIANCE

IF CONTRACTOR OR SUBCONTRACTOR DOES ANTICIPATE THE NEED TO CONDUCT ANY HIRING OR SUBCONTRACTING, THE SECTIONS BELOW MUST BE COMPLETED

PART III: HIRING PLAN & COMMITMENT

Contractors and subcontractors awarded Section 3 covered contracts with an anticipated contract value in excess of \$100,000 and who will need to make additional hires to complete the contract must demonstrate compliance by committing to employ Section 3 residents as 30% of the aggregate number of new hires. Contractors and subcontractors are required to fill out this section in its entirety and must list all anticipated employment positions for this contract.

If awarded a contract, contractor is required to provide an updated listing of its workforce for the project, which shall be subject to approval by Harris County. Any changes to that workforce during the contract will constitute new hires. Contractor is hereby informed that it must notify Harris County of any new hire opportunities that arise during the life of the contract. NOTE: If hiring is anticipated and this section is not completed, contractor may be deemed non-compliant.

HIRING PLAN				
Column 1	Column 2	Column 3	Column 4	Column 5
Job Titles	Total # of Employees Needed for each Job Title	Total # of Employees Currently Employed at each Job Title	Total # of New Hires Needed for each Job Title	Total # of New Hires Expected to be Section 3 Residents
<i>List all Job Titles that are needed to complete the entire scope of work under the contract.</i>	<i>List how many employees are needed for the contract under each Job Title.</i>	<i>List how many employees are currently employed under each Job Title who are anticipated to work on the contract.</i>	<i>List how many of these positions are currently open and will need to be filled under the contract.</i>	<i>List the number of Section 3 hires you will commit to for each position.</i>
<i>Example: Laborer</i>	<i>8</i>	<i>5</i>	<i>3</i>	<i>1</i>

Use an additional sheet if required

Based on the table above, outline the total number of new hires needed and percentage of new hires that will be Section 3 Residents:

HIRING COMMITMENT	
Total Number of New Hires Needed (Total of Column 4)	
Percentage of New Hires that will be Section 3 (Total of Column 5 ÷ Total of Column 4 × 100 = % of New Hires)	



Attachment R
HARRIS COUNTY

SECTION 3 UTILIZATION PLAN & STATEMENT OF COMPLIANCE

PART IV: SUBCONTRACTING PLAN & COMMITMENT

Contractors and subcontractors awarded Section 3 covered contracts with an anticipated contract value in excess of \$100,000 and who will need to subcontract any aspect of the contract must comply with Section 3 subcontracting requirements. Contractors and subcontractors must demonstrate compliance by providing at least 10% of construction-related and at least 3% of non-construction related contract opportunities to Section 3 Businesses. Contractors and subcontractors must complete the Subcontracting Plan below by listing all proposed subcontractors and amounts.

If the contractor completing this form, or any of its subcontractors, qualifies as a Section 3 Business Concern, the associated **Section 3 Business Concern Self-Certification** form must be completed and attached to this Plan for each contractor and/or subcontractor.

NOTE: If subcontracting is anticipated and this section is not completed, contractor's submission may be deemed non-compliant.

SUBCONTRACTING PLAN				
Subcontractor Name	Work to be performed (Building trade or Other)	Section 3 Business?	Contract Amount	% of Total Contract
Pfeiffer & Son, Ltda.	Install Loop Detectors	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	\$ 1,500.00	0.00012 %
Lone Star	Clearing & Grubbing, Tree removal	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	\$ 35,000.00	0.003 %
Traffic Signs & Lines LLC	Signs & Stripping	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	\$21,510.25	0.002 %
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		

Use an additional sheet if required

Based on the table above, outline the total dollar value and percentage of contracts that will be subcontracted to Section 3 Business Concerns.

SUBCONTRACTING COMMITMENT	
Total Amount to be Subcontracted to Section 3 Business Concerns	\$
Percentage of Total Value of Contract to be Subcontracted to Section 3 Business Concerns	%



Attachment R
HARRIS COUNTY

SECTION 3 UTILIZATION PLAN & STATEMENT OF COMPLIANCE

PART V. CONTRACTOR RESPONSIBILITIES

Contractors, and subcontractors when applicable, must actively facilitate compliance with Section 3 by directing hiring, training, and subcontracting opportunities to Section 3 Residents and Section 3 Business Concerns to the greatest extent feasible. Following the "typical" procedures for hiring or subcontracting is not sufficient for compliance with Section 3.

A. Efforts "To the Greatest Extent Feasible"

Contractors and subcontractors will have fulfilled their responsibility when they can provide evidence that extra or additional efforts were made, which may include, but are not limited to the following:

- Advertising the employment or subcontracting opportunities in a local community newspaper or a newspaper of general circulation.
- Publicizing the employment or subcontracting opportunities by posting flyers at local community centers, Housing Authorities, HUD-housing developments, or transitional housing.
- Contacting homeless service agencies or community organizations in HUD-assisted neighborhoods to request the assistance of these organizations in notifying Section 3 Residents of the training and employment opportunities.
- Contacting the local workforce development board, business assistance agencies, local chambers of commerce, community colleges, business development organizations, and other community development advocates and organizations to advertise employment and subcontracting opportunities.
- Posting hiring or subcontracting opportunities on job sites. Posters or signs must provide contact information for the contractor and a brief description on how to apply or obtain additional information.
- Holding job informational meetings for residents and contractors.
- Outreach to Section 3 Business Concerns, providing the firms with notice of subcontracting opportunities.
- Prior to engaging subcontractors for a project, making efforts to contract with Section 3 Business Concerns.

Contractors who have been found to have completed the hiring process or who have engaged subcontractors without adhering to the necessary Section 3 regulations, or without notifying Harris County, may be found in default of their contract and subject to penalties.

B. Changes

If contractors' or subcontractors' hiring or subcontracting needs change, or if the scope of work changes at any point during the contract, the Harris County compliance monitor must be notified. Any changes to the Section 3 Utilization Plan must be approved by Harris County via an amended Section 3 Utilization Plan, when applicable.

C. Documentation & Reports

Contractors and subcontractors are responsible for documenting actions taken to comply with Section 3 requirements, including all results and impediments. Contractors and subcontractors that fail to meet the minimum numerical goals bear the burden of demonstrating why it was not feasible. Such justifications must describe the efforts that were taken, barriers encountered, and other relevant information. Contractors must maintain on file all records, and backup documentation, related to efforts to comply with Section 3 hiring and subcontracting requirements for seven (7) years after receiving final payment and after all other pending matters have been closed. Documentation and records may include, but are not limited to printed advertisements (newspapers, trade publications, and etc.), job postings, mailouts, notices, flyers, publications, etc., in connection with this contract. Contractor must, upon request, provide such records to Harris County, its staff, or its designees.

Contractors and subcontractors must submit reports on its Section 3 compliance status and its efforts regarding Section 3 implementation using the Harris County prescribed processes, reporting methods, and form(s). Reports may require information on contractor's actual Section 3 hiring and subcontracting activity, listing of new hires, employee data, copies of executed contracts, and any relevant documentation. Contractor must provide reports in the frequency required by Harris County.



Attachment R HARRIS COUNTY

SECTION 3 UTILIZATION PLAN & STATEMENT OF COMPLIANCE

PART VI: OTHER ECONOMIC OPPORTUNITIES

In the event contractor, or subcontractor when applicable, is unable to meet the hiring and/or subcontracting requirements, or can demonstrate that it has attempted, to the greatest extent feasible, to comply with the Section 3 requirements, contractor may propose "Other Economic Opportunities". These opportunities may be exercised only with prior Harris County approval and satisfactory documentation explaining why hiring or subcontracting requirements could not be fulfilled.

Contractors proposing Other Economic Opportunities must submit a detailed written narrative to Harris County for review and approval. Examples of Other Economic Opportunities may include:

- Scholarships for Section 3 Residents
- Sponsoring the enrollment of Section 3 Residents into training or apprenticeship programs
- Providing training programs for Section 3 Residents
- Providing mentorship programs for Section 3 Residents
- Providing paid internships for Section 3 Residents
- Providing Section 3 Business Concerns with tools to enable them to successfully compete for contract opportunities, such as bonding and insurance assistance
- A combination of Other Economic Opportunities as approved by Harris County.

Other Economic Opportunities are subject to verification and approval by Harris County. Contractors interested in providing Other Economic Opportunities as a means to comply with Section 3 requirements are encouraged to review 24 CFR 135.40 for more detail.

PART VII: COMPLIANCE CURE PROCESS AND SANCTIONS

Noncompliance with Section 3 means failure by contractors or subcontractors to comply with the requirements of Section 3 and Harris County's Section 3 Policy. Once the Section 3 requirement has been triggered, contractors and subcontractors are required to comply with hiring and/or subcontracting efforts from award through contract conclusion. Contractors and subcontractors must comply with efforts identified in their Section 3 Utilization Plan & Statement of Compliance, which must be approved by Harris County, or must demonstrate why compliance is infeasible.

Harris County may, at its discretion, execute the following remedies for noncompliance:

1. Based on the first observation or report of noncompliance with Section 3, the contractor or subcontractor will be sent a written notice informing them of their specific deficiencies and the means by which these deficiencies may be corrected.
2. The contractor or subcontractor shall have up to 30 days, at the County's discretion, to remedy any deficiencies and achieve compliance, or provide written justification, in the format required by Harris County, on why it is unable to comply.
3. Should the Contractor fail to achieve compliance or provide sufficient justification within the required timeframe, Harris County may elect to terminate the contract.
4. Continuing failure or refusal by the contractor or subcontractor to comply with the regulations of Section 3 may result in the application of sanctions, which may include termination of the contract for default, and debarment, suspension, or denial of future HUD-assisted contracts.
5. Noncompliance may be reported to the HUD local field office.

Additional information on compliance with Section 3 may be found under 24 CFR 135 and in the Harris County Section 3 Policy.



Attachment R
HARRIS COUNTY

SECTION 3 UTILIZATION PLAN & STATEMENT OF COMPLIANCE

PART VIII: STATEMENT OF COMPLIANCE

I understand the responsibilities under Section 3 of the Housing and Urban Development Act of 1968, 12 U.S.C. § 1701u and 24 CFR 135.1 – 24 CFR 135.92, and hereby agree to perform my duties in full compliance with these statutory provisions and in accordance with the contract. I agree to incorporate the full Section 3 Clause directly into all contracts and subcontracts and to pass through these requirements to my subcontractors and third-party contractors who will perform work on or are relevant to this contract, as applicable. I understand that noncompliance with the Section 3 regulations and this Section 3 Utilization Plan & Statement of Compliance may result in Harris County and/or HUD implementing appropriate sanctions including termination of this contract for default, and debarment, suspension, or denial of future HUD-assisted contracts.

I verify that any vacant employment positions, including training positions, shall not be filled to circumvent my obligations under 24 CFR Part 135. I further verify that any subcontracting opportunities under this contract shall not be executed so as to circumvent my obligations under 24 CFR Part 135.

I understand that the information contained in this Section 3 Utilization Plan may require verification and I agree to provide additional documents verifying this information if requested.

I hereby certify under penalty of perjury that the foregoing is true and correct. I understand that providing false representation herein constitutes an act of fraud. False, misleading, or inaccurate information may result in disqualification or debarment as a contractor for Harris County.

Reytec Construction Resources, Inc.

Gregg T. Reyes

Business Name

Name of Authorized Officer

Signature

Gregg T. Reyes

6/19/2020

Date

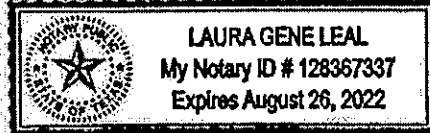
NAME OF NOTARY (PRINT OR TYPE)

STATE OF: Texas COUNTY OF: Harris ON THIS
19th DAY OF June 2020 BEFORE ME APPEARED

Gregg T. Reyes TO ME PERSONALLY KNOWN WHO, BEING DULY SWORN, DID EXECUTE THE FOREGOING AFFIDAVIT, AND DID STATE THAT HE OR SHE WAS PROPERLY AUTHORIZED BY THE PRIME CONTRACTOR TO EXECUTE THIS AFFIDAVIT AND DID SO AS HIS OR HER FREE ACT AND DEED.

NOTARY PUBLIC: Laura Gene Leal (SEAL)

COMMISSION EXPIRES: 08/26/2022



INTERNAL HARRIS COUNTY APPROVAL:

Compliance Monitor Signature

Date



**Attachment S
HARRIS COUNTY BUSINESS CONCERN
SELF-CERTIFICATION FORM**

Business Name: Reytec Construction Resources, Inc.		Business Principal Name:	
Address: 1901 Hollister Street		City: Houston	Zip Code: 77080
Email: greyes@reytec.net		Phone #: 713.957.4003	
Type of Business Entity: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Joint Venture <input type="checkbox"/> Other			

Section 3 Business Criteria: A business is eligible for Section 3 Business status if it meets any one of the following criteria. **Check** all that apply:

- My business is 51 percent or more owned by a Section 3 resident or residents;
- Thirty percent or more of my permanent, full-time employees are Section 3 residents; or within three years of the date of first employment with the business concern were Section 3 residents; or
- I can provide evidence of a commitment to subcontract in excess of 25 percent of the amount of all subcontracts to Section 3 businesses: (a) that are 51 percent or more owned by public housing residents or (b) that has 30 percent or more of their permanent, full-time employees as public housing residents.

Appropriate documentation must be attached as evidence of Section 3 eligibility (As defined by 24 CFR 135.5)

Business Concerns claiming status as a Section 3 Resident-owned enterprise must submit the following:

- Section 3 Resident Self-Certification Form verifying Section 3 Resident status of owner(s)
Additional evidence and supporting documentation may be required, including but not limited to proof of Public Housing Assistance (PHA) lease, evidence of participation in other public program(s), Housing Assistance Payment Contract (HAP) Award or benefit notification letter, proof of other public assistance, etc.

Business Concerns claiming Section 3 status by claiming at least 30 percent of their workforce are Section 3 Residents must submit all of the following documents:

- List of all current full-time employees List of all current employees certified as Section 3 Residents
- Evidence of employee Section 3 resident status (including Section 3 Resident Self-Certification forms)
- Evidence of employee Section 3 Resident status less than 3 years from date of employment

Business Concerns claiming Section 3 status by subcontracting 25 percent of the dollar awarded to qualified Section 3 Business Concern(s) must submit all of the following documents:

- List of subcontracted Section 3 Business Concern(s), contact information, and subcontract dollar amounts
- Evidence of subcontractors Section 3 Business Concern status (including Section 3 Business Self-Certification forms)

I understand that the information above may require verification and I agree to provide additional documents verifying this information if requested. I hereby certify under penalty of perjury that the foregoing is true and correct. I understand that providing false representation herein constitutes an act of fraud. False, misleading, or inaccurate information may result in disqualification or debarment as a contractor for Harris County, which may be grounds for termination of contracts that resulted from this certification.

Gregg T. Reyes 6/17/2020
 Print Name Signature Date

For County Use Only

Contract / Project: _____ **Department:** _____ **Date:** _____

Pursuant to 24 CFR 135.36(e), a Section 3 business concern seeking a contract shall submit to Harris County, its contractors and/or subcontractors (as applicable), if requested, sufficient evidence to demonstrate that the Business Concern is responsible and has the ability to perform successfully under the terms and conditions of the proposed contract. The ability to perform successfully under the terms and conditions of the proposed contract is required of all contractors subject to the procurement standards of 2 CFR 200.318(h)
 Warning: HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1010, 1012; 31 U.S.C. 3729, 3802)

Business & Contact Information

BUSINESS NAME **Traffic Signs & Lines, LLC**

OWNER **Jose Medrano**

ADDRESS **914 Broadway Ave.** [Map This Address](#)
 Houston, TX 77506

PHONE **832-830-6950**

FAX **832-487-4406**

EMAIL **trafficsignsandlines@yahoo.com**

WEBSITE **<https://www.trafficsignsandlines.com>**

Certification Information

CERTIFYING AGENCY **City of Houston**

CERTIFICATION TYPE **DBE - Disadvantaged Business Enterprise**

CERTIFIED BUSINESS DESCRIPTION **Traffic Signs, Permanent and Temporary Pavement Marking**

Commodity Codes

Code	Description
NAICS 237310	Highway, Street, and Bridge Construction
NAICS 237310	Parking lot marking and line painting
NAICS 238210	Traffic signal installation

Additional Information

CATEGORY **Construction Services & Equipment**

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

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

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

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

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

OFFICE USE ONLY

Date Received

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

Reytec Construction Resources, Inc.

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

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

Name of Officer

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

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

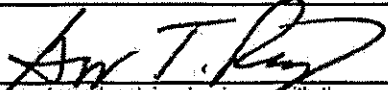
Yes No

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

Yes No

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

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

7


Signature of vendor doing business with the governmental entity

6/22/19

Date



Statement of Conflicts

Reytec Construction Resources, Inc. strives to maintain the highest standards of integrity and quality, and it is vital that the public and clients be confident of our commitment. Accordingly, we ratified that our company and its key employees have NO conflict of interest in contracting with Harris County.

A handwritten signature in black ink, appearing to read "Gregg T. Reyes", is written over a horizontal line.

Gregg T. Reyes
President & CEO
Reytec Construction, Inc.



www.isam.gov



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LogIn.gov/FAQs

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▲ **Alerts:** SOG will be down for scheduled maintenance starting 06/27/2020 from 8:00 AM to 12:00 PM.

▲ **Alert:** Note it is important to maintain the ISAM account information. SOG registration may otherwise be more difficult. Please contact ISAM.

Search Results

- Your search results represent the broadest set of records that match your search criteria. You may get entry registration records that are still in progress or have been published, but not yet activated. Check the status of each record.
- Of note, some entities choose to opt out of public display. Even if they are registered in ISAM, you will not see their entry registration records in a public search. You can only see them if you log in as Federal Government user.
- You can refine your search results. If you used the Quick Search, select the search filter on this page. If you used one of the Advanced Search options, select the Edit Search button.
- If you want to perform a new search, use the Clear button to remove your current search results. If you are logged in with your ISAM user account, you can save your search criteria to run again later using the Save Search button.
- NOTE: PLEASE READ THE IMPORTANT WARNINGS ABOUT SEARCHING FOR EXCLUSION RECORDS.**

Current Search Terms: REYTEC CONSTRUCTION RESOURCES, INC.*

Clear Search

Total records: 0

Result Page:

Save PDF

Export Results

Order by

Descend: ▼

Print

FILTER RESULTS

Your search for REYTEC CONSTRUCTION RESOURCES, INC.* returned the following results.

No records found.

By Record Status

Active

Inactive

By Record Type

Entry Expirations

Exclusions

Apply Filters

Result Page:

Save PDF

Export Results

Print

GSA

ISAM P-20200424-105

WWW1

- Search Events
- Data Access
- Check Status
- About
- Help
- FAPUS.gov
- Accessibility
- Privacy Policy
- GSA.gov
- USA.gov



8:26 AM

6/22/2020



REYTCO-01

K KENVIN

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
6/22/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER American Global LLC 25700 I-45 North Suite 140 Spring, TX 77386	CONTACT NAME: Karyn Kenvin PHONE (A/C, No, Ext): (832) 941-1810 FAX (A/C, No): (516) 387-1170 E-MAIL ADDRESS: info@americanglobal.com													
	<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A : Charter Oak Fire Insurance Company</td> <td>25615</td> </tr> <tr> <td>INSURER B : Travelers Property Cas. Co. of America</td> <td>25674</td> </tr> <tr> <td>INSURER C : Steadfast Insurance Company</td> <td>26387</td> </tr> <tr> <td>INSURER D : Texas Mutual Insurance Company</td> <td>22945</td> </tr> <tr> <td>INSURER E : Westchester Surplus Lines Insurance Co.</td> <td>10172</td> </tr> <tr> <td>INSURER F : Ironshore Specialty Insurance Company</td> <td>25445</td> </tr> </tbody> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A : Charter Oak Fire Insurance Company	25615	INSURER B : Travelers Property Cas. Co. of America	25674	INSURER C : Steadfast Insurance Company	26387	INSURER D : Texas Mutual Insurance Company	22945	INSURER E : Westchester Surplus Lines Insurance Co.	10172	INSURER F : Ironshore Specialty Insurance Company
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INSURED Reytec Construction Resources, Inc. 1901 Hollister Houston, TX 77080														

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL ISUBR INSD WVP	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GENTL AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:		CO-0P952334	10/16/2019	10/16/2020	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COM/OP AGG \$ 4,000,000
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY		810-0P807813	10/16/2019	10/16/2020	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	<input type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$		SXS 0927433-00	10/16/2019	10/16/2020	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	0001295501	10/16/2019	10/16/2020	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
E	Excess Liability		G71751399001	10/16/2019	10/16/2020	Occurrence/Aggregate \$ 4,000,000
F	Pollution Liability		004230300	10/16/2019	10/16/2020	Aggregate \$ 7,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 - UPIN 18104MF0UE01
 Harris County is Included as Additional Insured in accordance with the policy provisions of the General Liability, Auto Liability and Umbrella/Excess Liability Policies. A Waiver of Subrogation is granted in favor of Harris County in accordance with the policy provisions of the General Liability, Auto Liability, Umbrella/Excess Liability and Workers' Compensation policies. General Liability, Auto Liability and Umbrella/Excess Policies evidenced herein are Primary to other insurance available to the Additional Insureds, but only in accordance with the Policy Provisions. 30 day notice of cancellation applies in accordance with policy provisions.

CERTIFICATE HOLDER**CANCELLATION**

Harris County
 1001 Preston Street
 Houston, TX 77002

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

American Global LLC

Attachment T
STANDARDS & SPECIFICATIONS
(24 Pages)

For prospective vendors downloading this IFB from CivCast at <https://bids.hctx.net/bsa/login.jsp>, the Standards and Specifications may also be picked up between 7:30 a.m. and 4:30 p.m., Monday through Friday at the Office of the Purchasing Agent, 1001 Preston, Suite 670, Houston, TX.

**Preparer's Certification for
Specifications, Special Specifications, Special
Provisions, Estimate and Specification Data**

**FOR:
Neuens Road Improvements
From Gessner Road to Blalock Road
UPIN No. 18104MF0UE01, Precinct 4**

Special Note:

The following items developed per the published Construction Drawings have been verified and included in the Purchasing Department's Bid Specification Package which can be located at <https://bids.hctx.net/bs/>. The items include:

- Pricing/Delivery Information
- Scope of Work
- Special Provision to Standard Specifications
- Special Specifications
- Supplement to General Requirements
- Contract Time



Paul M. Baxter
5/20/20

Table of Contents

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- II. General Notice to Contractors
- III. General Notes
- IV. Notice to Contractors – TBPE Policy
- V. Notice to Contractors – Material Hauling
- VI. Notice to Contractors – SWQ & Environmental Issues
- VII. Notice to Contractors – SS 01562 Tree and Plant Protection Specs

NEUENS ROAD FROM GESSNER ROAD TO BLALOCK ROAD

The scope of the Neuens Road Improvement projects consists of removing the existing 2-lane undivided asphalt roadway and constructing a 2-lane concrete roadway. The improvements also include the construction of 9'x8' RCB and 7'x7' RCB storm sewer, special junction box, and 5'x4' RCB outfall into an existing detention pond. Existing sanitary sewer lines and manholes and existing waterlines, fire hydrants, and water valves will be relocated or adjusted. Proposed 5 ft. and 6 ft. sidewalks will be constructed throughout the project limits, along with ADA Ramps.

The proposed roadway will be a curb and gutter section with proposed Type F backless inlets, and Type A grate inlets in proposed roadside ditches that will drain into existing storm sewer trunklines, and outfall into an existing detention pond.

The proposed pavement for Neuens Road will be 10-inch jointed reinforced concrete pavement with 8-inch lime-fly ash stabilized subgrade (2% Lime/8% Fly-Ash).

Driveways will be reconstructed with concrete per Harris County standards.

GENERAL NOTICE TO CONTRACTORS

In accordance with House Bill 1059, a minimum of 25% of the work to be performed on this project shall be performed by the Bidder.

Special Notice: By law, the original price on firm fixed price contracts may not be increased by more than 25%. The original price may not be decreased by 18% or more without the consent of the contractor. Please monitor additions to your contract - additions in excess of 25% will not be paid under any circumstances.

On public works projects, all contractors shall supply a list of all suppliers and subcontractors with addresses and phone numbers, prior to work commencing.

At the time of the scheduled preconstruction meeting, the successful bidder shall supply to the County a list of representatives signed by an Officer of the Company who are authorized to sign official documents, i.e., Purchase Orders, Change Orders, Final Estimates, etc.

In determining who is a responsible bidder, Harris County may take into account the past performance of the bidder on Harris County projects. Commissioners Court adopted a written definition and criteria for determining the performance of a contractor which may be considered in determining the responsibility of a bidder.

Harris County is using an internet-based Construction Program Management Software, e-Builder to maintain consistent administrative and technical control for its projects throughout the County. The Contractor is required to use e-Builder on this project in accordance with procedures provided by the County.

At no cost to the Contractor, the County will provide system login account(s) and provide training for Contractor personnel. The Contractor must update e-Builder with any new or changed information within 24 hours of that information becoming known to Contractor. The Contractor must have access to a computer with internet access and a scanner to use eBuilder.

GENERAL NOTES

1. In the computation of contract time, Saturdays, Sundays, and Holidays are included, however, there is sufficient time in Monday through Friday for the completion of the project. Therefore, any work on Saturdays, Sundays, and Holidays must be approved 48 hours in advance by the County Engineer.

**Notice to Contractors
of
Texas Board of Professional Engineers Policy Advisory Regarding Procurement of Engineering
Services By General Construction Contractors for Governmental Public Works Projects**

On August 20, 2009, the Texas Board of Professional Engineers adopted a document entitled “Texas Board of Professional Engineers Policy Advisory Regarding Procurement of Engineering Services by a general Contractor for Governmental Public Works Projects”. A copy of said Advisory is attached for information should the Contractor decide to obtain any professional engineering services in accomplishing this Project.

Texas Board of Professional Engineers
Policy Advisory Regarding Procurement of Engineering Services by General Construction Contractors for
Governmental Public Works Projects

August 20, 2009

Definitions:

Project Professional Engineer – Engineer(s) or engineering firms retained by a governmental entity to perform engineering services for a specific public works project.

General Construction Contractor – Private entity retained by a governmental entity to construct a public works project designed by the Project Professional Engineer.

Other Professional Engineers – Engineer(s) or engineering firms which may be retained by the General Construction Contractor or his subcontractors or vendors to fulfill engineering requirements of the project during the construction phase.

Background: The Dallas – Ft. Worth International Airport Board (DFWIAB) has requested clarification on the Texas Board of Professional Engineers' (Board) interpretation of the Professional Services Procurement Act (PSPA) requirements contained in the Texas Engineering Practice Act (Act). In the course of complex public works projects, the need often arises for Other Professional Engineers to be engaged to perform tasks unforeseen by the Project Professional Engineers or tasks not authorized to be performed by the Project Professional Engineers since they would involve dictating the General Construction Contractor's means and methods of construction. Examples of such engineering tasks include but are not limited to:

- 1) Trench safety plans.
- 2) Traffic control plans.
- 3) Temporary construction structures (crane foundations, for example).

Applicable Board Rules from the Act:

§137.53 Engineer Standards of Compliance with Professional Services Procurement Act

(a) A licensed engineer shall not submit or request, orally or in writing, a competitive bid to perform professional engineering services for a governmental entity unless specifically authorized by state law and shall report to the board any requests from governmental entities and/or their representatives that request a bid or cost and/or pricing information or any other information from which pricing or cost can be derived prior to selection based on demonstrated competence and qualifications to perform the services.

(b) For the purposes of this section, competitive bidding to perform engineering services includes, but is not limited to, the submission of any monetary cost information in the initial step of selecting qualified engineers. Cost information or other information from which cost can be derived must not be submitted until the second step of negotiating a contract at a fair and reasonable cost.

(c) This section does not prohibit competitive bidding in the private sector.

Source Note: The provisions of this §137.53 amended to be effective June 4, 2007.

§137.79 Standards for Compliance with Professional Services Procurement Act

When procuring professional engineering services, a governmental entity and/or its representative(s) shall comply with the requirements of Subchapter A, Chapter 2254, Texas Government Code and shall select and award on the basis of demonstrated competence and qualifications to perform the services for a fair and reasonable price and shall not select services or award contracts on the basis of competitive bidding.

Adopted by the Texas Board of Professional Engineers August 20, 2009

Source Note: The provisions of this §137.79 amended to be effective December 21, 2008.

Analysis of Board Rules, Texas Administrative Code, Title 22, Part 6, Chapter 137: A reading of Board Rule 137.53 reveals that no language exists specific to the selection of Other Professional Engineers that may be required during the construction phase of the project and that would be selected by a General Construction Contractor. Rule 137.53 is specific, however, in that all professional engineers must not divulge cost information prior to being selected solely on their qualifications. The rule also requires licensed professional engineers to report to the Board any instance where a governmental entity and/or their representative requests cost information prior to the qualification based selection phase. The board would interpret a General Construction Contractor to be a representative of the governmental entity. Similarly, Board Rule 137.79 requires that governmental entities or their representatives use qualification based selection processes.

Process: If professional engineering services are required during the course of the project, the public entity or the General Construction Contractor must use qualification based selection to procure all engineering services regardless of when the services are required. The following language is used by the DFWIAB in their contract documents to communicate this requirement to their contractors and representatives:

Ancillary/ Integral Professional Services: In selecting an architect, engineer or land surveyor, etc., to provide professional services, if any, that are required by the specifications, bidder shall not do so on the basis of competitive bids but shall make such selection on the basis of demonstrated competence and qualifications to perform the services in the manner provided by Section 2254.004 of the Texas Government Code and so shall certify to the Board (DFWIAB) with its bid.

The above contract language covers instances where a General Construction Contractor's means and methods would trigger the requirement for Other Professional Engineering services that were not performed by the Project Professional Engineers. Examples include traffic control plans for contractor controlled disruptions of normal traffic, or instances where Other Professional Engineering services would be sought to build a temporary crane foundation. The General Construction Contractor would use a qualification based selection process to select Other Professional Engineers and would certify in writing to the governmental entity that the QBS process was followed and no pricing or costing data was used in the process.

Limitations: The QBS process performed by General Construction Contractors described in this policy advisory is intended only for those limited instances where:

- 1) Engineering decisions or designs performed by the governmental entity's Project Professional Engineer would interfere with the contractor's means and methods of construction or
- 2) Unforeseen construction issues necessitate the services of Other Professional Engineers in the course of the project.

Adopted by the Texas Board of Professional Engineers August 20, 2009

SPECIAL NOTICE TO CONTRACTORS

In the hauling of construction materials, excavation equipment or other items required in the completion of this project, the attention of prospective bidders is directed to ordinances and regulations of local, municipal, or county governments which limit the type or the gross weight of motor vehicle or construction equipment operating on public roads and streets or which restrict the use of such equipment on certain streets.

It will be the responsibility of prospective bidders to investigate any limitations in routing, size of equipment, or gross vehicle weights which may be subject to regulations by local governmental jurisdictions.

Attention of prospective bidders is also invited to the provisions of City of Houston Ordinance No. 62-888, dated June 20, 1962, which requires the licensing of vehicles which are used in the transportation of earth, sand, shell, gravel and similar construction or excavated materials.

Approved by Harris County Commissioners' Court July 23, 1962, Vol. 51.

NOTICE TO CONTRACTORS ON STORM WATER QUALITY AND ENVIRONMENTAL ISSUES

In addition to the regulatory requirements stated in the General Conditions, the Contractor shall recognize and comply with the following:

SECTION 1. STORM WATER POLLUTION PREVENTION PLANS

A. COVERAGE

Coverage under the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000 for storm water discharges associated with construction activities is required for a project that disturbs 1 acre or greater (or is a part of a larger common plan of development with the potential to disturb 1 acre or greater). Coverage requires the preparation, implementation, inspection, and maintenance of a Storm Water Pollution Prevention Plan (SWPPP), in accordance with the TPDES General Permit.

B. PROJECT CLASSIFICATION

This project is classified as one of three categories listed below. The Contractor shall be responsible for the storm water quality items, accordingly.

1. **“Construction Sites That Do Not Require TPDES General Permit Coverage”**

The project disturbs less than 1 acre (and is not part of a common plan of development with the potential to disturb 1 acre or more); therefore, coverage under the TPDES General Permit is not required. However, the Contractor shall implement good housekeeping measures to minimize the potential for pollutants, associated with the construction activities, to enter the storm sewer system. Item 725, “General Source Controls”, shall be implemented by the Contractor, as well as any other erosion, sedimentation, and pollution controls shown in the plans and project manual.

or

2. **“Small Construction Sites”**

The project disturbs 1 acre or more, but less than 5 acres, (or is part of a common plan of development with the potential to disturb 1 acre or more); therefore, coverage under the TPDES General Permit is required. The Contractor shall implement, inspect, and maintain the Storm Water Pollution Prevention Plan shown in the plans and project manual. Certification of a TCEQ Small Construction Site Notice (CSN) in accordance with Part II.E.2 of the TPDES General Permit is required. **The Contractor, as a primary operator, as defined by TPDES General Permit, shall certify one Construction Site Notice (CSN) and provide this to Harris County at the time that the contract is awarded.** Harris County (owner), as primary operator, **as defined by TPDES General Permit, shall certify a second Construction Site Notice (CSN) at the time**

the contract is awarded. After the project is awarded, Harris County shall provide copies of the two certified Construction Site Notices (CSN) to the Contractor, and send copies to the local storm sewer operator for notification purposes. Prior to commencing construction activities, the Contractor shall laminate and post the notices on the project site in a location where they are readily available for public viewing. The Contractor shall maintain the posted notices until after completion of the construction activities and final stabilization of the project site as defined by the TPDES General Permit. When the project is completed and stabilization is achieved, as defined by the TPDES General Permit, then the Contractor shall note the date that the Small Construction Site Notice was removed from the project site. A copy of the completed Small Construction Site Notice shall be provided to the Engineer with the SWPPP records. The County shall then notify the local storm sewer operator that storm water associated with construction activities is no longer being discharged from the site.

or

3. **“Large Construction Sites”**

The project disturbs 5 acres or greater (or is part of a common plan of development with the potential to disturb 5 acres or more); therefore, coverage under the TPDES General Permit is required. The Contractor shall implement, inspect, and maintain the Storm Water Pollution Prevention Plan shown in the plans and project manual. Certification of a Notice of Intent (NOI) in accordance with Part II.E.3 of the TPDES General Permit is required and shall be completed in accordance with Harris County Specification Item Number 700. The Contractor shall not commence with any earth disturbing activities on the project site until:

- at least seven (7) days after submittal of the NOI (Harris County & Contractors) via U.S. Postal Service, or if Utilizing electronic submittal, prior to commencing construction activities,
- copies of signed NOI's are submitted to any municipal separate storm sewer system (MS4) receiving discharge, at least seven (7) days prior to commencing construction activities. Contractor shall list in the SWPPP the names and addresses of all MS4 operators receiving a copy.
- copies of the Certified NOI's are posted in a publicly accessible location (copies shall be laminated or placed in weather resistant display case),
- and copies (Harris County & Primary Contractors) of construction site notice for large sites (CSN) are posted in a publicly accessible location. After construction activities are complete and final stabilization is achieved (as defined by the TPDES General Permit), the Contractor shall certify one Notice of Termination (NOT) form and provide it to Harris County. Harris County shall certify a second NOT form. Harris County shall submit the two NOTs to the TCEQ and the local storm sewer system operator. After the NOTs have been submitted to the TCEQ, then the Contractor shall remove all temporary SWPPP controls, cease SWPPP inspections, and deliver copies of all SWPPP records to the Engineer who shall archive them

for a minimum of three years. The final payment to the Contractor may be held until all SWPPP records are received by the Engineer.

SECTION 2. STORM WATER QUALITY MANAGEMENT PLANS

A. COVERAGE

If this project meets the definition of “new development” or “significant redevelopment” as defined in the Harris County regulations or City of Houston ordinance on storm water quality and the project is not “grandfathered” or “exempt” as defined by the regulation or ordinance, then a Storm Water Quality Management Plan (SWQMP) is required for the project, as shown in the construction plans.

B. CLASSIFICATION

This project is classified as one of three categories listed below. The Contractor shall be responsible for the storm water quality items, accordingly.

1. “SWQ Permit Within Unincorporated Harris County”

If a Storm Water Quality Management Plan with permanent storm water quality controls is shown in the construction plans and the project is located in unincorporated Harris County, then a *Storm Water Quality Management Plan* is required prior to the start of construction. Prior to the start of construction, the Engineer shall submit the plans and Written Storm Water Quality Management Plan to the Harris County Permits Group and obtain the *necessary signatures acknowledging acceptance of the Storm Water Quality Management Plan*. The Contractor shall construct the SWQMP structural controls in accordance with the construction plans, and maintain the SWQMP structural controls until completion of the project and until the Engineer can certify that the SWQMP structural controls are constructed in accordance with the plans.

or

2. “SWQ Permit Within City of Houston”

If a Storm Water Quality Management Plan with permanent storm water quality controls is shown in the construction plans and the project is located in the jurisdiction of the City of Houston, then a *Storm Water Quality Management Permit* is required prior to the start of construction. Prior to the start of construction, the Engineer shall submit to the City of Houston the construction plans, the *City of Houston Storm Water Quality Management Plan Application for Permit*, and all other related documents shown on the permit application and obtain the *Storm Water Quality Management Permit*. **Prior to the start of construction, the Contractor shall post a performance bond to the City of Houston for the construction of the storm water quality structural controls.** The Contractor shall post a copy of the issued permit on the project site, construct the SWQMP structural controls in accordance with the construction plans, and maintain the SWQMP structural controls until completion of the project and until the Engineer can certify that the SWQMP structural controls are constructed in accordance with the plans.

The Engineer shall submit the *Storm Water Quality Permit As-built Certificate* to the City of Houston and Harris County shall begin implementation of the SWQMP.

or

3. **“Grandfathered or Exempt from SWQ Permit” or “Storm Water Quality Bank”**

If a Storm Water Quality Management Plan, or permanent storm water quality feature, is not shown in the construction plans, then a *Storm Water Quality Management Permit* is not required prior to the start of construction because it is grandfathered, exempt, or has provided storm water quality measures through the Storm Water Quality Bank.

SECTION 3. OTHER ENVIRONMENTAL ISSUES

A. **BIOLOGICAL ISSUES**

In accordance with requirements under the federal Migratory Bird Treaty Act, if in the course of construction, a bird rookery, an identified special migratory bird habitat, or a nesting site is discovered on the project site, then the Contractor shall cease work in the area and immediately notify the Engineer.

In accordance with the Federal Endangered Species Act and the Texas Parks and Wildlife Code, if a biological mitigation plan for specially protected flora and fauna species has been provided within the construction plans, then the Contractor shall comply with all requirements noted within the plan.

B. **WATERS OF THE UNITED STATES INCLUDING ADJACENT WETLANDS**

In accordance with Section 404 and Section 401 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, waters of the United States including adjacent wetlands shall not be impacted by the Contractor unless a Department of the Army Permit has been obtained from the U.S. Army Corps of Engineers for the project.

If Harris County has obtained a Department of the Army Permit for this project, a copy of the permit is provided in the project manual. The Contractor shall comply with all requirements of the Department of the Army Permit. The Contractor shall not impact any waters of the United States and adjacent wetlands greater than the area and volume shown in the permit. If the Contractor impacts waters of the United States including adjacent wetlands on the project site that exceeds the area and volume shown in the permit, then the Contractor shall be responsible for any violations that may be issued by the regulatory agencies. If the Contractor deems it necessary to impact waters of the United States including adjacent wetlands that exceed the permit, then the Contractor must first notify the Engineer and the Engineer may obtain the necessary regulatory clearances prior to allowing the additional impacts to occur.

During construction of the project, if the Contractor uses off-site areas (not owned by Harris County) for placement of borrow material, disposal of construction debris, staging of construction materials, usage as a field office, or other types of construction related activities, then the Contractor shall be solely responsible for obtaining all environmental permits for the off-site activity, as well

as providing all environmental controls and compensatory mitigation requested by the permitting agency. If a regulatory violation occurs as a result of this off-site activity, then the Contractor shall be solely responsible for this violation.

C. STATE OWNED SUBMERGED LANDS

The Contractor shall not impact submerged lands regulated under the authority of the Texas General Land Office, or other local agency, without an easement agreement. If an easement agreement is necessary for the construction activities, then the easement agreement shall be obtained by Harris County.

D. CULTURAL RESOURCES

In accordance with the National Historic Preservation Act and the Antiquities Code of Texas, the Contractor shall not remove or disturb, or cause or permit to be removed or disturbed, any historical, archeological, architectural, or other cultural artifacts, relics, vestiges, remains, or objects of antiquity from the project site. In the event that such items are discovered on the project during construction activities, the Contractor shall immediately notify the Engineer. The site and the potentially significant material shall be protected by the Contractor from further disturbance until a professional examination of them can be made and/or until clearance to proceed with construction has been provided by the Engineer.

E. HAZARDOUS AND PETROLEUM SUBSTANCES

If during the course of construction, the Contractor discovers hazardous or petroleum substances or wastes on the project site, then the Contractor shall immediately cease work in the area and remove all personnel from the area. The contractor shall temporarily close the area to the public, as well; temporary fencing or caution tape shall be installed around the area. The Contractor shall notify the Engineer immediately. Work in the area shall not be permitted until the Engineer has determined that safety and environmental issues have been properly addressed.

**SECTION 01562
TREE AND PLANT PROTECTION**

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Tree and plant protection
- B. Minimum qualifications of Arborist.

1.02 MEASUREMENT AND PAYMENT

- A. Payment for Clearance pruning shall be paid for each tree pruned.
- B. Payment for Tree Protection Fence shall be paid on a per linear foot installed basis.
- C. Payment for Root Pruning Trench shall be paid on a per linear foot installed basis.
- D. Payment for Zero Curb Cutback will be on a per linear foot basis.
- E. Payment for Checker Plate will be on a square foot basis.
- F. Payment for Hand dig water service tap & lead or fittings shall be paid per each excavation pit required to be dug by hand.

1.03 PROJECT CONDITIONS

- A. Preserve and protect existing trees and plants to remain from foliage, branch, trunk, or root damage that could result from construction operations.
- B. Prevent following types of damage:
 - 1. Compaction of root zone by foot or vehicular traffic, or material storage.
 - 2. Trunk damage from equipment operations, material storage, or from nailing or bolting.
 - 3. Trunk and branch damage caused by ropes or guy wires.
 - 4. Root or soil contamination from spilled solvents, gasoline, paint, lime slurry, and other noxious materials.

5. Branch damage due to improper pruning or trimming.
6. Damage from lack of water due to:
 - a. Cutting or altering natural water migration patterns near root zones.
 - b. Failure to provide adequate watering.
7. Damage from alteration of soil pH caused by depositing lime, concrete, plaster, or other base materials near root zones.
8. Cutting of roots larger than one inch in diameter.

1.04 DAMAGE ASSESSMENT

- A. When trees other than those designated for removal are destroyed or damaged as a result of construction operations, remove and replace with same size, species, and variety up to and including 8 inches in trunk diameter. Trees larger than 8 inches in diameter shall be replaced with an 8-inch diameter tree of the same species and variety and total contract amount will be reduced by an amount determined from the following formula: $0.7854 \times D^2 \times \125.00 where D is diameter in inches of tree or shrub trunk measured 12 inches above grade for that portion of the tree which is greater than 8 inches in diameter. Approval must be applied for and approved by the Harris County prior to removal of any tree not scheduled for removal in the tree treatment schedule.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Pruning Paint: Black latex, water-based paint, free of all petroleum products.
- B. Fertilizer/Root stimulant: Root stimulant shall be a root stimulant that contains at a minimum the following ingredients: Ectomycorrhizal Fungi, VA Mycorrhizal (VAM) Fungi, *Rhizosphere Bacillus spp.*, Kelp Meal, Humic Acid, and Soluble Yucca. Fertilizer shall be Davey ArborGreen Pro.
- C. Tree Protection Fencing: Orange, plastic mesh fencing, 4 feet in height with 6 feet high “T” posts installed 10 feet on centers as per drawings.
- D. Plastic Root/Soil Protection: Clear polyethylene sheeting, minimum 6 mil. thickness.
- E. Sandy Loam Backfill: a loam consisting of less than 7 percent clay, less than 50 percent silt, and between 43 and 50 percent sand

PART 3 – EXECUTION

3.01 PROTECTION OF EXISTING TREES AND SHRUBS

- A. Site preparation work and/or construction work shall not begin in any area where tree preservation measures have not been completed and approved by Harris County.
- B. Protect exposed roots and root zone areas from contamination from stabilization materials and concrete using plastic root/soil protection (polyethylene).
- C. Cover exposed roots within 4 hours to reduce damage caused by desiccation. Roots may be covered with soil, mulch, polyethylene, or wet burlap to help protect them from drying.
- D. Designate limited areas as concrete washout areas. Locate concrete washout areas away from root zones.
- E. Install root pruning trenching where designated in tree treatment schedule and shown on the tree protection drawings. Trees scheduled for root pruning are called out specifically in the treatment schedule. Trench shall be located 2 ft. from the edge of proposed waterline or sanitary sewer for trees called out for root pruning for water or fittings, or sanitary sewer in the treatment schedule, 2 ft. from edge of proposed storm sewer pipe for trees called out for root pruning for storm in the treatment schedule, 30” back of proposed curb for trees called out for root pruning for street where zero curb cutback is not also called out, at back of proposed curb where zero curb cutback is called out in same location as root pruning, and at edge of sidewalk for trees called out for root pruning for sidewalk. Trench locations shown on tree preservation plan are drawn to scale and should be located in field as drawn on plan. Exact locations shall be approved in the field by the engineer and/or Harris County prior to installation. Trenching depth shall be a minimum of 2 ft. deep and a maximum of 6 inches wide for water, fittings, sanitary sewer, storm, and street. Trenching depth shall be to the anticipated bottom of sidewalk and base material for sidewalk root pruning; roots lower than sidewalk shall not be pruned. All roots shall be cut by trencher, chainsaw, or handsaw to the specified depth. Roots shall be cut cleanly, and not ripped, torn, or chopped. Trench shall be backfilled and compacted immediately after trenching. Trench shall be installed prior to any clearing and grubbing, excavation for underground, or any other site work.
- F. Install tree protection fencing around each tree to be preserved as indicated in the tree treatment schedule and on the tree protection plan.

1. Each tree to be preserved shall be protected with a tree protection fence. The fencing shall be continuous between posts, shall be pulled taut prior to securing to posts, and shall be firmly attached to the posts with a minimum of 4 wire ties.
 2. All tree protection fencing shall be installed prior to site work or construction activity. The fence shall be placed in a continuous alignment as shown on the tree protection plan. Fences shown on tree protection plan are drawn to scale and shall be installed as drawn, in the field. In general fences shall be placed 30” back of existing curb or edge of pavement where root pruning or zero curb cutback is not specified, and 6” back of root pruning trench where root pruning is specified and 12” back of curb where zero curb cutback is specified. Exact locations shall be approved by Harris County and/or engineer in the field. The Fences shall be placed to protect roots, trunks, and foliage. The contractor shall not remove or relocate tree protection fencing and shall not operate within the limits shown without direct approval of Harris County. No bore pits, peep holes, service taps, or any excavation should occur in the area of the tree protection fencing for trees called out with “bore” in the Tree Treatment Schedule. The “bore” limits shall be the same as the limits of the tree protection fencing.
 3. Storage of equipment or materials will not be allowed inside a fence. Entryways and access into a protected area shall not be provided unless approved by Harris County.
 4. Damage to tree fences occurring during the progress of the work shall be repaired immediately at no additional cost to owner. Workmen shall be clearly instructed to exercise caution in performance of work near trees being preserved.
 5. Tree protection fencing shall be removed by contractor, at no additional costs, upon completion of all construction activity in each work zone area. Tree protection fencing materials used in the first two work zone areas shall be removed and utilized in subsequent work zone areas. Materials and labor shall be paid for each linear foot of fencing installed in first two work areas. All fencing installed in subsequent work zone areas shall be paid for labor only.
- G. Boring/Auguring of water lines or sanitary sewer lines
1. Water line or sanitary sewer line shall be bored/augured/horizontally drilled under critical root zone areas of trees designated with auger or bore in the tree treatment schedule. The entire area protected with tree protection fencing shall be bored. No bore pits, come through holes, peep holes, push pits, or long or short side service taps shall be allowed in the areas protected by tree protection fencing. The tree protection plan takes

into consideration the limits of auguring equipment, there should be room for adequately spaced bore pits, peep holes, come through holes, and push pits. Any changes to the location of the tree protection fencing shall be authorized by Harris County and/or Engineer.

- H. Hand digging of Service taps and leads, fire hydrants and fittings
1. Trees called out for Hand dig short side service tap are located in very close proximity to existing short side water meters. Excavating the service tap with machinery would significantly impact the tree. These short side service taps shall be excavated with manual labor to expose any roots 1" in diameter and larger. The first 24" of excavation shall be completed manually to expose the roots. Any root 1" in diameter and larger shall remain undamaged, the roots shall not be cut, nor shall the bark and cambium layer be scraped or damaged. Once the roots are exposed, if there is adequate room to utilize a mini-excavator without damaging the roots, the mini-excavator can be utilized to complete the excavation down to the water line. 1" plywood shall be placed on grade to provide root protection in the area of access of the mini-excavator. If roots 1" diameter or larger are cut or damaged, responsible party will be subject to the cost of tree removal and replacement of damaged tree on an inch for inch basis per 1.04 of this section, if required by Harris County.
 2. Trees called out for Hand dig short side or long side service lead are located in very close proximity to existing water meters. Excavating the service lead with machinery would significantly impact the tree. Short side leads shall be excavated with manual labor to expose any roots 1" in diameter and larger from the service tap to the meter. Come out holes and excavation required for long side service leads shall be excavated with manual labor to expose roots 1" in diameter and larger, from the come-out hole to the meter. In each case, all roots 1" in diameter and larger shall remain undamaged, the roots shall not be cut, nor shall the bark and cambium layer be scraped or damaged. If roots 1" diameter or larger are cut or damaged, responsible party will be subject to the cost of tree removal and replacement of damaged tree on an inch for inch basis per 1.04 of this section, if required by Harris County.
 3. Trees called out for Hand dig fire hydrant, tee, or fitting are located in very close proximity to proposed fitting. Excavating the fitting with machinery would significantly impact the tree. Excavation for fire hydrant or fitting shall be completed with manual labor to expose any roots 1" in diameter and larger. In each case, all roots

- 1” in diameter and larger shall remain undamaged, the roots shall not be cut, nor shall the bark and cambium layer be scraped or damaged. If roots 1” diameter or larger are cut or damaged, responsible party will be subject to the cost of tree removal and replacement of damaged tree on an inch for inch basis per 1.04 of this section, if required by Harris County.
4. Long side service taps shall not be located in an area specified to be bored in the tree treatment schedule. Should it be necessary to locate a long side service tap in an area specified to be bored, the excavation shall be completed as specified in paragraph 1 of this section-Hand digging short side service taps.
 5. All water meters and sanitary service leads called out on P&P drawings and visible in the field have been addressed in the Tree Protection Plan. Should any additional meters or leads be found during construction, or any new meters or leads installed beneath the canopy of any tree, or in the areas fenced for tree protection, the excavation shall be completed as specified in paragraph 1 and/or 2 of this section and paid for at the unit costs for each included in the contract.

I. Pruning of Trees

1. Trees shall be pruned in accordance with the American National Standard for tree pruning, ANSI A300 (Part 1) – 2001 Pruning Revision of ANSI A300-1995 Tree, Shrub and Other Woody Plant Maintenance – Standard Practices. Pruning shall be completed by professional arborists who has received training in proper pruning techniques.
2. Clearance prune designated trees in tree protection plan for public streets, sidewalks, and construction areas. Provide 14 feet of vertical clearance over proposed water lines, sanitary, storm and proposed street construction, from back of curb on one side to back of curb on the other side. Pruning to be installed prior to any construction activity. Contractor shall notify property owner prior to trimming or pruning any trees with trunks located on private property. Exceptions will be made for trees determined to be arboriculturally significant by Harris County. Pruning of the trees identified will be completed with approval and supervision of Harris County.
3. All cuts should be made sufficiently close to the parent limb or trunk without cutting into the branch collar or leaving a protruding stub, so that closure can readily start under normal conditions. All lateral cuts shall be made back to a lateral that is at least 1/3 the diameter of the parent limb. Clean cuts shall be made at all times.
4. Trees shall be pruned in a manner that will not destroy or alter the natural shape and character of the tree. Apply black latex paint to

all fresh wounds on Oak (Quercus) species immediately after each cut is made.

5. Pruning of trees designated in the tree protection plan with “Prune” shall include removal of dead, diseased, and/or broken limbs larger than 1” in diameter. This does not apply to trees called out with “Clearance prune”. “Clearance prune” shall include only treatment as described in item 2 above.

J. Tree Removal

1. Tree removal will be paid for as part of clearing & grubbing.
2. Trees scheduled for removal shall be sawed down and debris hauled from the site the same day. The stump shall be ground to 6” below grade and excess grindings shall be hauled from the site the same day, so that a pile of grindings is not left where the stump was ground. Enough grindings should be left so that an open hole does not remain.
3. Only those trees called out for removal in the Tree Treatment Schedule shall be removed, or otherwise damaged. Should it be determined that any additional trees must be removed, permission must be applied for and approved from Harris County prior to removal.

K. Root Stimulation

1. Deep root-stimulate designated trees. Mix fertilizer with wetting agent per label instructions.
2. Stimulate entire root zone area within the dripline of the tree and continue 10 feet beyond the dripline, leaving out areas of anticipated root loss (construction areas) and sidewalks and street pavement.
3. Mixture shall be injected into the top 10 inches of soil under pressure of 150 to 200 psi as soil conditions warrant.
4. Mix in a tank with agitation capability per label instructions. Inject the mixture on a 2.5 ft. square grid at 4 lbs. actual nitrogen per 1,000 sq. ft.

- L. Regularly water trees which have received root damage, to eliminate additional stress caused by lack of moisture. Water during periods without adequate rainfall. For example, should 1.0” of rain not be received within a week period, the trees should be thoroughly watered. March through September, water once every two weeks. October through February, water every three weeks. Water thoroughly to saturate the entire root zone area.

- M. Chemically treat tree trunks with evidence of borer activity with the appropriate approved insecticide mixed and applied per the manufacturer's product application recommendations. Trees shall be sprayed within 24 hours after observance of borer activity.
- N. Grading and filling around trees.
1. Maintain existing grade within the dripline of trees, unless otherwise indicated.
 2. Where existing grade around trees is above new finish grade, under supervision of project arborist and Harris County, carefully hand excavate within the dripline to make transition to new finish grade.
 3. Where existing grade is below new finish grade, place sandy loam soil in a single layer to make the transition to new grade. Do not compact; hand grade to required elevation. Specifically, to areas where proposed curb is higher than existing and backfill will be required and in areas where proposed curb is moving farther away from base of tree.
- O. Demolition, Forming and Pouring Sidewalks (Sidewalk on Grade)
1. Demolition of existing sidewalks, located in or adjacent to the limits of tree protection fencing, shall be completed without disturbing, cutting, or otherwise damaging tree roots and soil located beneath them.
 2. The new sidewalk shall be formed at or above the elevation of the existing sidewalk, without disturbing, cutting or otherwise damaging tree roots. Every effort has been made to address tree root and sidewalk elevation issues with information available in the field and on plan and profile sheets. The elevation of every tree root was not available, if tree roots are found to be in conflict with proposed sidewalk, project engineer, arborist and Harris County shall be consulted as to how to install sidewalks with minimal impacts to adjacent trees.
- P. Zero curb cutback & Demolition of existing curbs
1. Disturbance of tree roots or soil behind the existing and/or proposed curb within root zones of trees designated for "zero curb cutback" or "do not disturb soil & roots back of curb" shall be prohibited. If the curb cannot be removed without disturbing soil or damaging roots back of curb when using equipment for demolition, the curb shall be broken using a hand-held jackhammer and removed by hand.
 2. The exposed roots and soil shall be covered immediately after demolition with 6 mil polyethylene in order to avoid desiccation,

and contamination by the lime used for road bed stabilization. The polyethylene shall be placed so that it covers the vertical face of soil back of curb and laid back onto the grade 12 inches back of curb. The polyethylene should remain in place, across the entire area specified for zero curb cutback or do not disturb soil & roots, from the time the existing curb is demolished until the time when the new curb is formed and backfilled. The polyethylene can be pulled up from the vertical face while the road bed is being graded or mixed, to avoid catching the plastic with machinery, but shall be replaced immediately after equipment has completed. The vertical face shall not be exposed for more than 8 hours in any 24-hour period.

3. There shall be no stabilization back of curb in the zero-curb cutback areas, or forming with steel forms. The existing grade and roots back of existing curb shall not be disturbed. This will require forming of the new street with wooden forms with stakes inside forms, which may require leaving the forms in place after the street is poured. Should wooden forms be utilized, the wood shall be at minimum a 2x6. The new curb may require hand finishing, as a slip curb machine may not have adequate clearance without disturbing the roots that are to be protected with the zero curb cutback.
4. Roots extending into the street, or on top of the existing curb, in areas to be paved shall be cut and removed by hand prior to disturbance or removal with equipment. Roots shall be pruned flush with the proposed back of curb. Roots one inch in diameter and larger shall be cut in a manner to provide a smooth, clean cut surface. Cuts shall be made with the appropriate pruning shears or pruning saws. Roots shall not be chopped or broken.
5. In areas where proposed curb may be lower than existing top of curb and tree roots 2" diameter or larger are present, the soil and roots shall not be graded or laid back. The existing elevation shall be maintained, and the curb formed to meet elevation or a short elevation difference between roots and top of curb maintained.

Q. Demolition, Forming and Pouring of Drive Way Approaches

1. Demolition of existing driveway approaches located beneath the dripline of any tree shall be completed without disturbing, cutting, or otherwise damaging tree roots and soil located beneath them.
2. The new approach shall be formed at or above the elevation of the existing approach where tree roots 2" diameter or larger are present, without disturbing, cutting or otherwise damaging tree roots. Maximum drive slopes may be needed at bottom of apron to allow forming of drive over tree roots at top of drive. As with sidewalks, the elevation of every tree root was not available in

design. If tree roots are found to be in conflict with proposed approach, project engineer, arborist and Harris County shall be consulted as to how to install drive way with minimal impacts to adjacent trees.

R. Arborist Qualifications

1. Arborist - Employ qualified arborist acceptable to Harris County to complete all tree treatments. Arborist shall be normally engaged in the field and have a minimum of 5 years' experience. Qualifications of the selected arborist shall be submitted for review and approval by the project engineer and Harris County.

Attachment U
PLANS & DRAWINGS

For prospective vendors downloading this bid from CivCast at <https://www.civcastusa.com/>, the Plans and Drawings may also be picked up between 7:30 a.m. and 4:30 p.m., Monday through Friday at the Office of the Purchasing Agent, 1001 Preston, Suite 670, Houston, TX.

Attachment V
GENERAL CONDITIONS
(27 Pages)

For prospective vendors downloading this IFB from CivCast at <https://www.civcastusa.com>, the General Conditions may also be picked up between 7:30 a.m. and 4:30 p.m., Monday through Friday at the Office of the Purchasing Agent, 1001 Preston, Suite 670, Houston, TX.

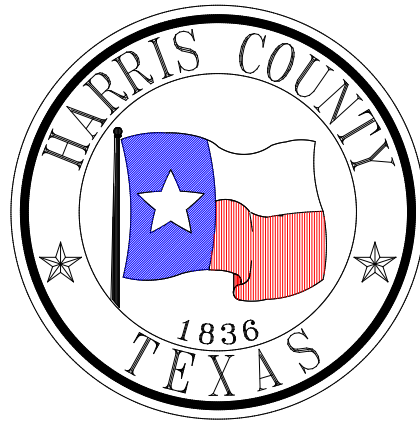
SUPPLEMENT TO HARRIS COUNTY GENERAL CONDITIONS

(FOR ROADS, BRIDGES, AND RELATED WORK)

2.14 Award of Contract. Delete the entire paragraph as written in the General Conditions and replace with:

2.14 Award of Contract. The Award, if made, will be made within ninety (90) days after the opening of the Bids, unless otherwise noted in the Bid Documents, or agreed to by the Contractor.

HARRIS COUNTY



General Conditions for Roads, Bridges and Related Work

HARRIS COUNTY
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FOR ROADS, BRIDGES AND RELATED WORK
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HARRIS COUNTY
GENERAL CONDITIONS
(FOR ROADS, BRIDGES AND RELATED WORK)

SECTION 1. DEFINITION OF TERMS

- 1.1 **Definitions.** Whenever in these General Conditions and in the other Contract Documents, the following terms are used, the intent and meaning shall be interpreted as listed below.
- 1.2 **Addendum.** A document issued before receipt of bids to clarify, revise, add to, or delete from original bidding documents, conditions of the Contract, Drawings, Specifications or previous Addenda.
- 1.3 **Agreement.** Written accord between the County and the Contractor covering the Work as described in the contract documents.
- 1.4 **Bid.** The written offer to Harris County made on the prescribed form by the Bidder to furnish the materials or equipment and/or to perform the Work or services proposed.
- 1.5 **Bid Security.** The Bid Bond, cashier's check, certified check or other deposit designated in the Specifications to be made by the Bidder, which is to accompany the Bid as a guaranty of good faith to enter into a written Contract.
- 1.6 **Bidder.** Any individual, firm, joint venture, partnership, corporation or other legal entity submitting a Bid.
- 1.7 **Bidding Documents.** Instructions to Bidders, bid form and any Addenda issued by the County to assist Bidders with Bid preparation; used in conjunction with the Contract Documents.
- 1.8 **Bonds.** Instruments of security furnished by the Contractor and its surety, as required by the Contract Documents, including bid, performance, payment and special bonds.
- 1.9 **Change Order.** A document added after the Contract execution to revise, add to, or delete from the Work and to adjust the Contract sum or Contract time.
- 1.10 **Commissioners' Court.** The Commissioners' Court of Harris County, Texas.
- 1.11 **Contract.** The standard form, consisting of the Bid to Commissioners' Court executed by the Contractor and acceptance by the County executed by the County Judge or other named person pursuant to authority granted by Commissioners' Court, that binds the County and the Contractor covering the performance of Work or services or the furnishing of materials, supplies, or equipment as proposed. The Contract shall include the Bid, Drawings, Specifications, general and special provisions, and any and all supplements thereto.
- 1.12 **Contract Documents.** The Contract, Addenda (which pertain to the Contract Documents), Contractor's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice to Proceed), the Bonds, these General Conditions, Supplementary Conditions, the Specifications and Drawings, and the Purchase Order, together with all amendments, modifications, and supplements issued pursuant to paragraph 5.6 after Contract Time commences.
- 1.13 **Contract Time.** The number of calendar days (computed as provided in paragraph 5.3) or the date stated in the Contract for the completion of the work.
- 1.14 **Contractor.** The individual, firm, joint venture, partnership, corporation or other legal entity with whom a Contract is entered into with the County.
- 1.15 **County.** Harris County, Texas, provided, however, if these General Conditions are included in

the Contract Documents of a Harris County Flood Control District project, the term "County" shall mean the Harris County Flood Control District, unless the context indicates a different meaning.

- 1.16 **County Auditor.** County Auditor of Harris County, Texas.
- 1.17 **County Judge.** County Judge of Harris County, Texas.
- 1.18 **Drawings.** The Drawings, profiles, sections, working Drawings and supplemental Drawings, or exact reproductions thereof, officially approved by Harris County, which show the location, character, dimensions and details of the Work or services to be performed or the description of the materials or equipment to be furnished, which Drawings are considered as a part of the Contract supplementary to the Specifications.
- 1.19 **Engineer.** The County Engineer or the Engineer authorized to act for and in behalf of the County.
- 1.20 **Inspector.** The authorized representative of the Engineer assigned to make detailed inspections of any or all portions of the Work and materials or equipment involved in this Contract.
- 1.21 **Notice to Proceed.** The date on which the Contractor is authorized to begin Work. The Contract Time begins to run on this date.
- 1.22 **Payment Bond.** A surety Bond in the amount of the Contract, solely for the protection of all claimants supplying labor and material in the prosecution of the work provided for in the Contract.
- 1.23 **Performance Bond.** A surety Bond in the amount of the Contract conditioned upon the faithful performance of the work in accordance with the Drawings, Specifications and Contract Documents. Said Bond is solely for the protection of the County.
- 1.24 **Product Data.** Manufacturer's standard schematic Drawings, catalog, sheets, brochures, diagrams, schedules, performance charts, illustrations and other descriptive items.
- 1.25 **Project Manual.** The documents containing, but not limited to, Bidding Documents, Contract forms, all Specifications, special provisions and these General Conditions.
- 1.26 **Project Reports.** The project-specific reports, including but not limited to, Geotechnical Report, Storm Water Quality Management Plan (SWQMP), and Storm Water Pollution Prevention Plan (SWPPP).
- 1.27 **Punch List.** A list of items with a project, prepared by the Engineer and confirmed by the Contractor, which remain to be replaced or completed in accordance with the requirements of completion of the Work.
- 1.28 **Purchasing Agent.** The Purchasing Agent of Harris County, Texas.
- 1.29 **Road Numbers.** Whenever any Road Number is used in these Specifications or any related documents, such Number shall be understood to be those assigned to such Roads on the Harris County Road Log in the office of the County Auditor and shall be understood to refer to such Log unless some other reference is clearly indicated.
- 1.30 **Sample.** A physical example furnished by the Contractor to illustrate materials, equipment or workmanship; to establish standards by which the Work will be judged.
- 1.31 **Shop Drawings.** Original Drawings prepared by the Contractor, supplier or distributor which illustrate some portion of the Work and which shows fabrication, layout, setting, or erection details.
- 1.32 **Specifications.** Those portions of the Contract Documents consisting of written technical

descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

- 1.33 **Subcontractor.** An individual, firm, joint venture, partnership, corporation or other legal entity having a contract with the Contractor or with any Subcontractor for performing a part of the Work, including those who are to furnish materials or equipment fabricated to a special design.
- 1.34 **Surety.** The legal entity which executes the Performance Bond, Payment Bond or Bid Bond, or guarantees the performance of the Bidder or Contractor.
- 1.35 **Work.** The entire completed construction or the various separately identifiable parts thereof required to be finished under the Contract Documents. Work is the result of performing services, furnishing labor, and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

SECTION 2. BIDDING AND AWARD

2.1 Intent of Drawings and Specifications. The intent of these Drawings and Specifications is to prescribe definite Work or services to be undertaken, or materials, supplies, or equipment to be furnished by the Bidder if awarded the Contract. The Contract is to be carried out under the observation of the Engineer and the Engineer's assistants unless otherwise indicated.

In the case of a construction project, the successful Bidder or Contractor shall perform all earthwork, construct all surface courses, build all structures and incidental construction, and perform extra Work, if necessary, all in accordance with the lines, grades, typical cross-sections, details and dimensions shown on the Drawings. The Contractor shall furnish, unless otherwise provided in the special provisions or in the Contract, all materials, implements, machinery, equipment, tools, supplies and labor necessary to the prosecution and completion of the Contract.

Where the Contractor is to furnish only material, supplies, or equipment, the intent is to prescribe the qualifications, quantity, rate of delivery and location of delivery point or points.

2.2 Interpretation of Drawings and Specifications. Drawings and Specifications provide graphic and written descriptions of the character and scope of the Work. Modifications in the form of Addenda or Change Orders become an integral part of the Drawings and Specifications.

The Contract Documents are complementary; what is required by any one will be binding as if required by all. The Contract Documents are intended to describe the Work. Any Work not described will not be supplied unless reasonably inferred from Contract Documents.

Drawings and Specifications are considered inseparable documents. The Contractor must rely on both documents and must perform the work according to combined intent.

Organization of Drawings and Specifications does not imply any control over the Contractor in dividing the Work among Subcontractors or in establishing the extent of the Work to be performed by any trade.

Words which have well known technical or trade meanings have those meanings in relation to materials or Work described in the Contract Documents. Where materials or equipment are specified by a trade or brand name, the intention is not to discriminate against an equal product of another manufacturer, but rather to set a definite standard of quality or performance. The Engineer will be the judge of equivalency. Any substitution of equivalent materials or equipment must be approved in writing by the Engineer. The Engineer may require a specifically designated material, equipment or process.

Materials specified by reference to other documents, such as Federal Specifications or other recognized standards, must be provided as described in the latest document in effect on the date Bids are received. Where more than one reference is made for a single material, the material may be furnished according to any one of the referred Specifications, at the Contractor's option.

Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases fully equal to approved samples. All materials furnished shall be new and free from defects and in accordance with the Specifications applying thereto.

Only Drawing dimensions or dimensions calculated from them will be used by the Contractor. Where the Work is affected by finish dimensions, the Contractor will determine and be responsible for those dimensions. On all Drawings, the figured dimensions shall govern in case of a discrepancy between the figured and scaled dimensions.

The Contractor shall take no advantage of any errors or omissions in the Drawings or Specifications. In the event of a conflict between the Drawings and the Specifications, the Specifications shall control.

- 2.3 **Reference Specifications.** When Reference is made in these Specifications to the Specifications of other agencies, organizations or departments, such Reference is made for expediency and standardization and such Specifications referred to are hereby made a part of these Specifications.
- 2.4 **Special Provisions.** Should any construction, Work or condition which is not covered by standard Specifications be anticipated on any proposed work, special provisions for such Work will be attached to, and shall be considered a part of, the Specifications. Should any special provisions conflict with the standard Specifications, the special provisions shall govern.
- 2.5 **Examination of Drawings, Specifications, Special Provisions and Site of Work.** When a Bid is submitted, it will be presumed that the Bidder has visited and carefully examined the site of the Work and has made a complete study of the Drawings, Specifications, these General Conditions, special provisions and the form of the Contract to be entered into. Information concerning soil boring and water elevations taken on the project site, if available, will be furnished upon request. This information is offered to the Bidder for information purposes only and the County will not be responsible for the information contained therein.

In the event the Contract covers materials, supplies or equipment, the Contractor is presumed to fully understand the requirements of the County.

- 2.6 **Measurement of Quantities.** All Work completed and materials furnished under the Contract shall be measured by the Engineer according to United States standard measures, unless otherwise agreed upon in writing. Where applicable, the Contractor shall furnish the County with dray tickets with each load of materials. As a minimum, the tickets shall indicate gross, tare and net weights for each load, and the location of delivery.
- 2.7 **Bid Quantities.** On other than lump sum Bid items, the quantities listed on the Bid form are approximate and are to be used only for the comparison of Bids and the preparation of the Contract. Payment on other than lump sum Bid items will be based on the unit price Bid and the actual quantities of materials furnished or Work accomplished.
- 2.8 **Bid.** Blank spaces in the Bid form must be properly filled. The phraseology of the Bid form must not be changed and no additions or deletions shall be made to the items mentioned therein. Unauthorized conditions, limitations or provisions attached to a Bid will render it void. Explanations which are not intended as limitations or changes in the Bid may be attached to the Bid over the signature of the Bidder, but no alterations or qualifications are permitted. The unit prices Bid on any items shall govern.

The unit prices written in words govern over the unit prices written in figures, and errors of extension will be corrected. If the Bidder fails to Bid on any item, the County may, at its option, reject such Bid as incomplete, or it may elect to use the lowest amount Bid on such item by other Bidders for the purpose of comparing Bids and in the preparation of the Contract, and the Bidder shall be bound by the amount of such item as though contained in its Bid in the first instance.

A Bidder may withdraw its Bid before the expiration of the time during which Bids may be submitted, without prejudice to himself, by submitting a written request for its withdrawal to the Purchasing Agent. No Bid received after the time specified in the Notice to Bidders will be considered.

Bidders are invited to be present at the opening of Bids.

The County reserves the right to reject any or all Bids, or to waive technical defects.

- 2.9 **Addenda.** The Contractor is responsible for verifying and obtaining all Addenda related to this work. Failure to include any or all Addenda in the Bid will be considered as a basis for the rejection of a Bid.

- 2.10 Form of Bid and Signature.** The Bid shall be made only on the form provided and shall be enclosed in an envelope correctly marked with the job number and description, sealed and addressed as required by the Contract Documents. The Bidder shall state in words and in figures the unit prices or the specific sums, as the case may be, for which it proposes to furnish the material, supplies or equipment or to perform the Work or services required by the Drawings and Specifications.
- 2.11 Bid Security.** Each Bid must be accompanied by Bid security made payable to the County in the amount of five percent of the Bidder's maximum Bid price and in the form of a cashier's check or a Bid Bond issued by a surety meeting the requirements of Paragraph 2.20 of the General Conditions.
- 2.12 Delivery of Bid.** Each Bid, together with the Bid Check or Bid Bond, must be placed in a sealed Bid envelope and so marked as to indicate its contents without being opened. If a Bid is to be mailed, this envelope must be placed in another envelope, which must be sealed, mailed and delivered to the Purchasing Agent. Bids are received to the hour, at the designated time, and date set for the opening thereof and must be received by the Purchasing Agent's Office by that time. Mailing of Bids is solely at the Bidder's risk and no Bid received after the time specified in the Contract Documents will be considered.
- 2.13 Tax Exemptions.** The Bidder obligates himself, if awarded the Contract, to use reasonable diligence to obtain for the County any and all exemptions from State or Federal excise or other tax and if required to pay such taxes or if such taxes are paid, to assist the County in any necessary way to obtain refund of such taxes so paid and to execute any required documents necessary to obtain refunds or to assert such exemptions.
- 2.14 Award of Contract.** The Award, if made, will be made within thirty (30) (please see supplement) days after the opening of the Bids, unless otherwise noted in the Bid Documents, or agreed to by the Contractor.
- 2.15 Competency of Bidders.** Each Bidder must be capable of performing the various items of Work or services or of furnishing the various items of materials, supplies, or equipment Bid upon. Each Bidder may be required to furnish a statement covering the experience on similar Work and such statements of its financial resources as may be deemed necessary.
- 2.16 Responsible Bidder.** Criteria utilized by Harris County for determining the lowest responsible Bid includes, but is not limited to, whether the Bidder meets the County's published specifications, the Bidder's experience, skill, ability, business judgment, financial capacity, integrity, honesty; availability of the necessary facilities, equipment materials and workers; previous performance, reputation, promptness, safety record and any other factors which could reasonably be asserted as being relevant to the Bidder's successful performance.
- 2.17 Disqualification for Collusion.** Any or all Bids may be rejected if there is reason for believing that collusion exists among the Bidders and no party in such collusion will be considered in future Bids for the same Work.
- 2.18 Material Guarantee.** Before any Contract is Awarded, the Bidder may be required to furnish a complete statement of the names and addresses of suppliers or of the origin, composition and manufacture of any or all materials to be used in the performance of its Bid, together with samples which may be subjected to the tests provided for in the Specifications to determine their quality and fitness.
- 2.19 Return of Bid Checks.** Bid Checks of the three lowest Bidders may be retained by the County Clerk until after the Award and approval of the Contract, Payment Bond and Performance Bond. These shall be returned by the County Clerk immediately after the final approval of the Contract, Performance Bond and Payment Bond, upon execution of the receipt required by the County Clerk. The Bid Checks for all other Bidders shall be returned by the County Clerk at any time within seventy-two (72) hours following the opening of Bids upon execution of

the receipt required by the County Clerk.

- 2.20 Bonds.** The prescribed form of Performance Bond and Payment Bond are available to the Bidder and it is presumed that the Bidder is familiar with them. The Bidder to whom an Award is made shall, within ten (10) calendar days from the date of the Award, execute and deliver to the County any required Performance Bond and Payment Bond, all in the prescribed form. If the Bidder to whom the Award is made fails to furnish a required Performance Bond or Payment Bond as herein provided, the County may rescind its award and acceptance of Contractor's bid and make an Award to the next lowest responsible Bidder who shall fulfill every stipulation embraced herein as if the first Award were made to it. If this should occur, the Bidder to whom the Award was first made shall at the option of the County, be required to pay to the County the difference between his Bid and that of the next lowest responsible Bidder up to the maximum amount provided in the Bid security for the project. A corporation to which an Award is made will be required to furnish evidence of the authority of the officers executing the Contract. The Performance Bond and the Payment Bond must be accompanied by a valid power of attorney or proper evidence as approved by the County, providing evidence that the person signing on behalf of the Surety is authorized to so act.

A firm or partnership to which an Award is made will be required to furnish evidence of the authority of the person executing the Bid satisfactory to the County. The Performance Bond and Payment Bond shall be on the forms prescribed by the County, for the full sum of the Contract and shall be executed by the Contractor and a surety company authorized to do business in Texas with an agency or home office in Texas. The Performance Bond and the Payment Bond must be accompanied by a valid power of attorney providing evidence that the person signing on behalf of the Surety is authorized to so act.

- 2.21 Acceptance of Bid and Bonds.** Should the Commissioners' Court be of the opinion that a Contract should be entered into and approved, it shall authorize the County Judge or other named person as agent to execute acceptance by the County of the lowest and best Bid, and shall thereupon enter its order directing the County Engineer as agent to accept and approve on behalf of the County any required Performance and Payment Bond which may be properly presented on the prescribed form and indicate such acceptance and approval on the face of such Bond. The Contract shall not become effective or binding upon the County unless and until County Auditor's certification required by law is made.

- 2.22 Purchase Order and Notice to Proceed.** The Purchasing Agent shall prepare a purchase order on the form prescribed by the County Auditor, conforming to the terms of the Contract and transmit it to the Engineer. The Purchase Order shall not be effective unless and until the County Auditor's certification as required by law is made.

The Engineer determines the start date of the project, as agreed upon with the Contractor. After the Purchase Order is issued, and not more than sixty (60) days from the date of approval of the Contract and Bond (unless otherwise agreed upon), the Engineer shall issue notification to the Contractor fixing the date that the Contractor is authorized to begin Work (Notice to Proceed).

The time fixed for performance of the Contract (Contract Time) shall begin to run from the date fixed in the Notice to Proceed.

SECTION 3. INSURANCE

MINIMUM INSURANCE REQUIREMENTS

During the term of the Contract, the Contractor at its sole expense shall provide primary commercial insurance of such type and with such terms and limits as may be reasonably associated with the Contract. As a minimum, the Contractor shall provide and maintain the following coverage and limits:

- A. Workers Compensation**, as required by the laws of Texas, **and Employers' Liability**, as well as All States, USL&H and other endorsements if applicable to the project, and in accordance with state law.

Employers' Liability

- Each Accident: \$1,000,000
- Disease—Each Employee: \$1,000,000
- Policy Limit: \$1,000,000

- B. Commercial General Liability**, including but not limited to the coverage indicated below. Coverage shall not contain any restrictive endorsements nor exclude or limit Products/Completed Operations, Contractual Liability, or Cross Liability. Where exposure exists, the County may require coverage for watercraft, blasting, collapse, explosions, blowout, cratering, underground damage, pollution, or other coverage. *Harris County shall be named Additional Insured on primary/non-contributory basis.*

- Each Occurrence: \$1,000,000
- Personal and Advertising Injury: \$1,000,000
- Products/Completed Operations: \$1,000,000
- General Aggregate (per project): \$2,000,000

- C. Automobile Liability**, including coverage for all owned, hired, and non-owned vehicles used in connection with the Contract. *Harris County shall be named Additional Insured on primary/non-contributory basis.*

- Combined Single Limit-Each Accident: \$1,000,000

- D. Umbrella/Excess Liability** (*Harris County shall be named Additional Insured on primary/non-contributory basis*)

- Each Occurrence/Aggregate: \$1,000,000

- E. Professional/Errors & Omissions Liability** (if applicable)

- Each Occurrence/Aggregate: \$1,000,000

The County reserves the right to require additional insurance if necessary. Coverage shall be issued by companies licensed (by TDI) to do business in Texas, unless said coverage is not available or economically feasible except through an excess or surplus lines company, in which case the company should be registered to do business in Texas. Companies shall have an A.M. Best rating of at least A-VII. Contractor shall furnish evidence of such insurance to the County in the form of unaltered insurance certificates. If any part of the

contract is sublet, insurance shall be provided by or on behalf of any subcontractor, and shall be sufficient to cover their portion of the contract. Contractor shall furnish evidence of such insurance to the County as well.

Policies of insurance required by the contract shall waive all rights of subrogation against the County, its officers, employees and agents. If any applicable insurance policies are cancelled, materially changed, or non-renewed, contractor shall give written notice to the County at least 30 days prior to such effective date and within 30 days thereafter, shall provide evidence of suitable replacement policies. Failure to keep in force the required insurance coverage may result in termination of the contract. Upon request, certified copies of original insurance policies shall be furnished to the County.

The requirements stipulated in this attachment do not establish limits of contractor liability.

SECTION 4. REGULATORY REQUIREMENTS

- 4.1 LAWS TO BE OBSERVED.** THE CONTRACTOR IS ASSUMED TO BE FAMILIAR WITH AND AT ALL TIMES SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, COUNTY AND CITY LAWS, ORDINANCES AND REGULATIONS IN ANY MANNER AFFECTING THE CONDUCT OF THE WORK, AND SHALL INDEMNIFY AND SAVE HARMLESS THE COUNTY AND ITS REPRESENTATIVES AGAINST ANY CLAIM ARISING FROM THE VIOLATION OF, OR FAILURE TO COMPLY WITH ANY SUCH LAWS, ORDINANCES, OR REGULATIONS, BY THE CONTRACTOR OR ITS EMPLOYEES.
- 4.2 Relations with County Officials and Employees.** All Contractors, Subcontractors and their employees are prohibited to give or lend money, services or any other thing of value, to any official, employee or representative of the County, and should it appear that this provision has been violated, Commissioners' Court, at its option, may terminate any and all Contracts that may exist between the said Contractor and the County.
- 4.3 Permits and Licenses.** The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the Work.
- 4.4 Barricades Warning Lights and Signs On Projects Involving Public Roads.** Unless provided otherwise in the Contract Documents, the Contractor is solely responsible for furnishing, erecting, and maintaining suitable barricades, warning signs, flares, barriers, cones, lights, flags, signals, flagmen and other traffic control devices as are or may be necessary to adequately protect the Work and warn, advise and safeguard the traveling public over the entire length of the project, including, but not limited to, sections of the project which the Contractor closes to traffic. The Contractor's responsibility in this regard extends for the entire duration of the project, from the start of construction until acceptance by the County. All barricades, signs and other types of devices necessary for traffic control and to protect the Work shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices."
- 4.5 Detours On Projects Involving Public Roads.** Detours and temporary structures necessary for public travel during the prosecution of the Work will be indicated in the Drawings or provided for in the Specifications and the cost included in the Bid and Contract price.
- The Contractor shall provide means of ingress and egress for residents and businesses along any closed section of the Work and shall provide property owners a means of access to a public road. No section of the Work shall be closed to traffic until so directed by the Engineer. No bridge, culvert or drainage structure shall be closed until an adequate detour has been arranged and constructed. Suitable signs indicating "Road Closed" or "Detour" shall be erected by the Contractor. All roadway construction, including transition sections and drainage culverts across all existing streets, shall be accomplished in such a manner as to allow continuous, two lane, two way traffic to be maintained at all times on the road and crossroads. If temporary detours become necessary to maintain these requirements, they shall be constructed on 6 inches of compacted limestone base with 1-1/2 inches of HMHL asphaltic surface, unless shown otherwise in the Contract Documents, as well as any necessary drainage structures. The cost of these temporary detours shall be paid for as outlined in the Item, "Constructing Detours for Maintaining Two Way Traffic."
- Where possible, construction of all drainage ditches and drainage culvert crossings shall be completed prior to main roadway construction.
- 4.6 Sanitary Provisions.** The Contractor shall provide and maintain in a neat, sanitary condition, such accommodations for the use of its employees as may be necessary to comply with the requirements of and Federal, State, County or City laws, ordinances or regulations.
- 4.7 Safety and Health Standards.** The Contractor shall observe and comply with all safety and health standards and to all legislation and amendments enacted for the safety and health

of Contractor's employees. Such safety and health standards shall apply to all Subcontractors and the Contractor shall be responsible for initiating, maintaining, supervising and inspecting safety programs, safety systems and safety precautions, including, but not limited to, trench safety requirements, in connection with the Work.

- 4.8 Environmental Protection.** The Contractor shall be responsible for compliance with all applicable environmental protection requirements, codes, regulations, laws and ordinances.

The Contractor shall recognize the environmental requirements of the project. Disturbed areas shall be strictly limited to boundaries established by the Engineer. Particular attention is drawn to the avoidance of any pollution of any "on-site" streams, sewers, wells or other water sources.

Contractor shall prevent erosion of soil and excess runoff of surface or subsurface water from the construction site during the construction period. To retain existing drainage patterns external to the construction site, the Contractor shall construct temporary ground cover as needed to control conditions. The Contractor shall legally dispose of all solid waste materials and other materials to be removed from the site by transporting to disposal areas that are approved by State and local authorities. No burning shall be permitted unless otherwise noted. All Work shall be performed in such a manner as may be required to avoid pollution of the air by dust or other contaminants. The Contractor shall control excessive noise at the job site.

- 4.9 Cultural Artifacts.** The Contractor shall not remove or disturb, or cause or permit to be removed or disturbed, any historical, archaeological, architectural, or other cultural artifacts, relics, vestiges, remains, or objects of antiquity. In the event such items are discovered on the premises, the Contractor shall immediately notify the Engineer, and the site and the material shall be protected by the Contractor from further disturbance until a professional examination of them can be made or until clearance to proceed is authorized by the Engineer.

- 4.10 Use of Explosives.** When the use of explosives is necessary for the prosecution of the work, the Contractor shall use the utmost care not to endanger life or property. All explosives shall be stored in a secure manner and all such storage places shall be marked clearly "Dangerous," "Explosives" and shall be in the care of competent watchmen. The Contractor shall be solely responsible for damage caused by explosives.

- 4.11 Project Signs.** When required, the Contractor shall provide, install and maintain two project signs at the construction site. The borders and block style letters will be black, while the sign background and other exposed surfaces shall be white. Inscriptions shall include the name of the project, County officials and Contractors as shown on the Drawings.

- 4.12 Restroom and Field Office.** The Contractor shall provide and maintain at its own expense an on-site restroom and field office for the exclusive use of the Engineer and staff for all projects ninety (90) calendar days and over in duration. The restroom and field office shall be placed at a location satisfactory to the Engineer. The office will be a minimum of 200 square feet in size and be mounted on skids, wheels or other approved mobility. The office shall have a ceiling not less than 7' in height and shall be of weather-tight construction. The inside walls of the office shall be lined with paneling or other material approved by the Engineer and shall have no fewer than six double hung windows, a door with hasp for padlock and a floor covered in tile or other material approved by the Engineer and shall be a minimum of 8 inches above the ground. The office shall have a closet at least 3 feet wide, 1-1/2 feet deep and 7 feet in height, a sloped top stand-up height table and stool, a desk, 3 desk chairs, not less than 12 stackable or folding meeting chairs and a lockable two-drawer legal size file cabinet. The Contractor shall also provide two racks for holding Drawings and an office sign 24" X 36", painted as directed by the Engineer. All exterior openings shall be screened. Field office and restroom may be a fixed location such as an apartment or storefront as approved by the Engineer. A minimum of three parking spaces with clear and safe access must be available for use by Harris County during

normal working hours. The office shall be wired and furnished with electricity, shall be air-conditioned, heated and shall have WiFi and/or high-speed wireless internet service and contain a working telephone with a separate line and a printer/scanner for Harris County's use. The restroom must be maintained and cleaned to the approval of the Engineer, to include maintaining a supply of paper towels, toilet paper, and hand soap. The field office and restroom must be cleaned weekly or as determined by the Engineer in order to maintain a clean and safe working environment. The field office and restroom shall be completely equipped, fully functional, and ready for use on or before the first day construction begins and must be maintained for the duration of the entire project until all punch list items are completed. In the event that the field office and/or restroom are not complete and ready for use on the first day construction begins, damages will be assessed at \$200 per each day, to be assessed until they are installed and fully functional. In the event that the field office and/or restroom are not properly maintained as described above, the County shall notify the Contractor of the deficiency. If the deficiency is not corrected within three (3) days, damages shall be assessed in the amount of \$100 per each day at the discretion of the Engineer.

This building and the items furnished with the building shall remain the Contractor's property and shall be removed by the Contractor at the end of the project. No direct payment will be made for the structure or the furnishings.

SECTION 5. PROSECUTION OF THE WORK

- 5.1 Prosecution of Work.** The Contractor shall notify the Engineer at least twenty- four (24) hours before beginning work. The Contractor shall start the work at any part of the project designated by the Engineer and shall prosecute the Work at as many different points as the Engineer shall direct.
- 5.2 Construction Schedule.** For all work of one million to five million dollars, the Contractor will submit a detailed construction schedule within seven (7) days of notice to proceed and shall be updated every thirty (30) days thereafter throughout the remainder of the Contract Time. The schedule will be a bar type schedule and shall be of sufficient detail to show construction sequence, proposed start dates and estimated completion dates for major parts of the work. Projects over five million dollars require the Contractor to provide a computer based critical path method schedule within thirty (30) days from notice to proceed, and revised every thirty (30) days thereafter, to the satisfaction of the Engineer.
- 5.3 Time of Completion.** Time is of the essence of this Contract. If the Contractor fails to acceptably complete its undertaking to the County within the time specified in its Bid and Contract, the County will be damaged. The exact amount of damage is and will be difficult to ascertain exactly. Such damages shall be at the rate, or the amount hereinafter fixed. **The Contractor specially binds and obligates himself to pay such damages to the County on demand, or at its option, the County may withhold the amount thereof from any sums due the Contractor under this Contract.**

Each calendar day the Engineer, or its representative, shall record on forms furnished by the County the time worked, if any, by the Contractor. When requested by the Engineer, such records or reports shall be signed by the Contractor or its representative and the Contractor shall be entitled to a copy thereof. Failure of the Contractor to sign or to receive a copy shall not affect the result of the findings made in such reports. One copy of such report shall be filed daily with the County Auditor by the Engineer. Work shall begin on the date fixed on the Notice to Proceed. The Work will be completed and ready for Final Payment in accordance with paragraph 6.5 of the General Conditions within 825 calendar days after the date when the Contract Time commences to run. The County will suffer financial loss if the Work is not completed within the time specified herein, plus any extension thereof allowed in accordance with paragraph 5.6 of the General Conditions. The County and the Contractor recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the County if the work is not complete on time. Accordingly, instead of requiring any such proof, the County and the Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the County Two thousand-five hundred dollars (\$ 2,500.00) for each day that expires after the time specified herein for completion until the Work is complete. In case full payment for the Work shall have been made, the County shall have the right to recover from the Contractor and its surety the amount of such liquidated damages as determined under this Contract.

COMPUTATION OF CONTRACT TIME - 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 date of any such period falls on a Saturday and Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation. In the computation of contract time, Saturdays, Sundays and Holidays are included; however, there is sufficient time in Monday through Friday for the completion of the project. Therefore, any work on Saturdays, Sundays and holidays must be approved 48 hours in advance by the County Engineer.

The specified number of calendar days in which the Work is to be completed pursuant to the Contract are consecutive Gregorian calendar days inclusive of Saturdays, Sundays, and all legal holidays. A calendar day of twenty-four (24) hours measured from midnight to the next midnight shall constitute a day.

Contract Time includes calendar days to accommodate inclement weather. No additional days shall be added to the Contract Time due to inclement weather and/or wet soil conditions caused by inclement weather.

5.4 Abandonment of Work or Default of Contractor. If the Contractor fails to begin the work within the time specified; or fails to make deliveries or to provide sufficient workmen and equipment or sufficient materials to insure the prompt completion; or performs the Contract unsuitably; or neglects or refuses to remove materials or perform anew such Work as shall have been rejected as defective or unsuitable; or discontinues the prosecution of the Work; or becomes insolvent or is declared bankrupt; or commits any act of bankruptcy or insolvency; or allows any final judgment to stand against the Contractor unsatisfied for a period of forty-eight (48) hours or longer; or makes an assignment for the benefit of creditors; or fails to comply with any of the conditions of the Contract to such an extent that the Contract is forfeited or abandoned by the Contractor, or declared abandoned or suspended by the County; or if the Contractor for any other cause whatsoever shall not carry on the Work or perform the Contract in an acceptable manner, then and in that event, the Surety on the Contractor's Performance Bond shall have the right and privilege, within seven (7) days after the date of notice of such action from the County, to assume control of the Contract and all Work thereunder and to sublet or complete the Work in strict conformity with the provisions of said Contract. Failure of the Surety to do so within said seven (7) days will result in an immediate forfeiture of all right to thereafter assume control of the Contract and the Work thereunder, in which event the County shall have the right to take the prosecution of the Work out of the hands of the Contractor and to appropriate or use any or all materials and equipment on the ground as may be suitable and acceptable, and enter into an agreement for the completion of the Contract according to the terms and provisions thereof or use such other methods as in the Engineer's opinion may be required or desirable for the completion of the Contract in an acceptable manner. All costs and charges incurred by the County, together with the costs of completing the Work, shall be deducted from any money due or which may become due said Contractor. In the event the cost and expense so incurred by the County is less than the sum which would have been payable under the Contract if it had been completed by said Contractor, then the said Contractor and/or Surety shall be entitled to receive the difference. In the event such cost shall exceed the amount which would have been payable under the Contract, then the Contractor and Surety shall be liable and shall pay to the County the amount of said excess.

5.5 Termination for Convenience of the County. The County may terminate this Agreement at any time by notice in writing to the Contractor. Upon receipt of such notice, the Contractor shall stop all work. Within ninety (90) days after receipt of notice of termination, the Contractor shall submit a statement, showing in detail the work performed under this Agreement to the date of termination. The County shall then pay the Contractor that proportion of the contract price which the work actually performed under this Agreement bears to the total work called for under this Agreement less such payments as have been previously made. The County suggests that the Contractor have a similar termination provision in all its contracts inasmuch as the County will not compensate the Contractor for loss of profits or any other damage resulting from such termination.

5.6 Change Orders. The unit prices Bid shall govern for additions to, or deductions from, the Contract. If materials or labor are required for which no unit price is Bid, the price shall be that reached by agreement by the County and the Contractor after definite evidence is furnished by the Contractor to the County that the price is the current prevailing price

in the area. If the County and the Contractor cannot agree, the Engineer shall determine the price for changes.

No compensation shall be allowed under a Change Order for any person not actively engaged in the performance of the specified Work.

No extra Work shall be paid for without an approved Change Order.

If additional time is required by reason of the Change, the number of days for completion provided for in this Contract shall be adjusted at the time the Change Order is entered into, and if no adjustment is made on the Change Order form, any additional time is to be considered waived by the Contractor.

Any extension of time given shall not release the Contractor or the Surety from their Performance and Payment Bonds or from all obligations hereunder, which shall remain in full force until the discharge of the Contract.

All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 5.6 shall not exclude recovery of damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs for delay by either party).

5.7 Subcontracting. Within ten days after Contract award, the Contractor is required to furnish a list of Subcontractors proposed for principal portions of the Work. After due investigation, the Engineer shall promptly notify the Contractor of any Subcontractors who are not acceptable. Failure of the Engineer to make prompt objection will constitute acceptance of the Subcontractors. Accepted Subcontractors will not be replaced by the Contractor, without approval. The Contractor will respond to any rejection of Subcontractors by submitting an acceptable substitute. No agreement to do any part of the Work will be made between the Contractor and any Subcontractor, person or organization which has been rejected by the Engineer. Similarly, the Contractor is not required to contract with any Subcontractor, person or organization to which it has reasonable objection.

Nothing contained in the Contract Documents will create any contractual relation between the County or the Engineer and any Subcontractor.

The Contractor shall promptly make payments to all persons supplying labor and materials or furnishing it any equipment in the execution of the Contract. Neither the County nor the Engineer has any obligation to pay or see to the payment of any monies to any Subcontractor, except as may otherwise be required by law.

No Subcontractor shall, under any circumstances, relieve the Contractor of its liabilities and obligations under this Contract should such Subcontractor fail to perform the work undertaken by it in a satisfactory manner.

5.8 Character of Workmen and Equipment. Any foreman or workman employed by the Contractor or by any Subcontractor who in the opinion of the Engineer or the Engineer's authorized representative does not perform their Work in a proper and skillful manner or is disrespectful, intemperate, disorderly or otherwise objectionable shall, at the written request of the Engineer, be forthwith removed from the job site by the Contractor or any Subcontractor employing such foreman or workman and shall not be employed again on any portion of the Work without the prior written consent of the Engineer. Should the Contractor fail to remove such person or persons or fail to furnish suitable and sufficient machinery, equipment or force for the proper prosecution of the Work, the Engineer may withhold all estimates which are, or may become, due, or may suspend the Work until such workmen, engaged on special Work or skilled Work, shall be replaced by persons having sufficient experience in such Work to properly and satisfactorily perform it and operate the equipment involved and shall perform the Work in the manner prescribed in these Specifications.

5.9 **Protection Against Claims of Subcontractors Laborers Materialmen and Furnishers of Machinery Equipment and Supplies.** The Contractor shall indemnify and save the County harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, materialmen and furnishers of machinery and parts thereof, equipment, power tools and all supplies, including commissary, incurred in the furtherance of the performance of the Contract. When so desired by the County, the Contractor shall furnish satisfactory evidence that all obligations of the nature herein above designated have been paid, discharged or waived.

5.10 **Authority of Engineer.** The Work shall be done under the direct observation of the Engineer and to the Engineer's satisfaction. The Contractor shall furnish and deliver to designated delivery points all material called for under its Contract at such times and in such quantities as may be directed by the Engineer. The Engineer shall decide any and all questions which may arise as to the quality or acceptability of materials furnished, work performed, and rate of progress of the Work, and shall decide all questions which may arise as to the interpretation of the Drawings and Specifications and all questions as to the acceptable fulfillment of the Contract on the part of the Contractor. The Engineer's decisions under this provision shall be final and binding on both parties hereto.

5.11 **Cooperation of Contractor.** The Contractor shall give the Work constant attention to facilitate the progress thereof and shall cooperate with the Engineer in every way possible. The Contractor shall have at all times, regardless of how much of the Work may be sublet, a competent and reliable English-speaking superintendent on the job site authorized to receive orders and to act for the Contractor.

The Contractor shall give the Engineer at least thirty-six (36) hours notice, in writing, before requiring stakes to be set on any new portion of the Work, and the Contractor shall clearly state in such notice the exact location where such stakes are needed for immediate use.

The Contractor shall give the Engineer full opportunity to inspect the Work at all stages and where there has been any Work stoppages it shall give the Engineer at least twenty-four (24) hours notice before resuming operations. Where any gas, water, or other utility installations will be affected by the Work to be carried on by the Contractor, the Contractor must provide ample notice to the owners, operators or persons in charge so that the prosecution of the Work under this Contract is not delayed.

5.12 **Contractor's Drawings.** Supplementary Drawings, shop details, working Drawings and other data required by Contract Documents shall be furnished by the Contractor but shall not be used prior to approval. Authorized alterations will be endorsed by the Engineer on approved Drawings or shown on supplementary sheets. Shop Drawings for steel structures shall consist of shop details, erection and other working Drawings showing details, dimensions, sizes of members and other information necessary for the complete fabrication and erection of the metal work. Working Drawings of concrete structures shall consist of such detailed Drawings as may reasonable be required for the successful prosecution of the Work and which are not included in the Drawings furnished by the Engineer. These may include Drawings for false work, bracing, centering and form work, masonry layout diagrams, and diagrams for bent reinforcement. It is expressly understood that the approval of the Engineer of the Contractor's shop working Drawings is general and such approval will not relieve the Contractor of any responsibility whatsoever. The Contractor shall furnish the Engineer with such print copies of the working Drawings as may be required for approval and for construction purposes. The Contract price shall include the cost of furnishing all shop Drawings and the Contractor will be allowed no extra compensation for such Drawings.

5.13 **Record Drawings.** The Contractor shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work

Change Directives, Field Orders and written interpretations and clarifications in good order and annotated to show all 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 must be delivered to the Engineer or the County.

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

5.15 Materials and Workmanship. The Contractor shall submit samples or specimens of the materials to be furnished or used in the Work as the Engineer may require. All materials must be of specified quality and equal to approved samples, and shall be stored so as to insure the preservation of their quality and fitness for the Work. The Engineer may, at the Engineer's discretion, make test cuts at any point to determine the character of material and workmanship, and to check dimensions.

All materials not conforming to the Specifications shall be considered defective and all such materials whether in place or not shall be rejected and shall be removed immediately from the site of the Work, unless otherwise permitted by the Engineer. No rejected materials, the defects of which have been subsequently corrected, shall be used until approval has been given by the Engineer. All Work which has been rejected shall be remedied or removed and replaced in an acceptable manner by the Contractor at its own expense and no compensation shall be allowed for such removal or replacement. Upon failure of the Contractor to forthwith comply with any order of the Engineer made under the provisions of this article, the Engineer shall have the authority to remove and replace defective material or Work and to deduct the cost of removal and replacement from any monies due or to become due the Contractor.

5.16 Patented Devices, Materials and Processes. If the Contractor uses any design, material, or process covered by letters, patent or copyright, it shall provide for such use with the patentee or owner. The Contractor shall indemnify and save harmless the County from any and all claims for infringement.

5.17 Inspection. Inspectors shall be authorized to inspect all work in progress, all Work completed and all materials furnished. The Inspector shall not be authorized to revoke, alter, enlarge, relax or release any requirements of these Specifications. The Contractor shall also furnish the Engineer a statement from the Subcontractor that the Subcontractor understands the Drawings and Specifications and is properly qualified to perform such Work. No Subcontract will in any way affect the terms of the Contract between the County and the Contractor or relieve the Contractor of any of its obligations thereunder.

The Inspector shall at all times have access to all parts of the shop where material under this Contract is being manufactured. Material that does not conform to the Specifications, accepted through oversight or otherwise, may be rejected at any stage of the Work. Whenever the Contractor on installation or construction is permitted or directed to do night work, or to vary the period during which the Work is carried on each day, it shall give the Engineer due notice, so that inspections may be performed. Such Work shall be done without extra compensation. The Contractor will furnish the Engineer a schedule for this night work.

Should the Engineer require it, the Contractor shall, at any time during the construction of Work contracted for, make openings to such extent through any part of said Work as the Engineer may direct, and the Contractor shall make the same good again, to the satisfaction

of the Engineer.

Should the Work, in the opinion of the Engineer be found to be faulty in any respect, all such faulty Work shall be replaced by the Contractor.

- 5.18 Material Testing.** The County will assign a testing laboratory and will pay for testing and inspection directly, unless otherwise noted in the Specifications. Final testing and inspection may be made after the delivery of materials to the project site. Structural materials may be tested and inspected at points of origin. Should materials or construction not be in accordance with the Specifications when first tested, additional testing shall be required. If the materials or construction passes the retest, the cost of the retest will be at the County's expense. If the retest fails, the cost of the retest and all subsequent retests shall be at the Contractor's expense. Testing and retesting may be made at any time during the progress of the Work. It shall be the responsibility of the Contractor to notify the Engineer in advance as to the time of individual concrete placements. This is necessary in order to schedule the laboratory without unduly delaying construction.
- 5.19 Contractor's Responsibility for Work.** Until the acceptance of the Work by the Engineer as evidenced in writing, it shall be under the charge and care of the Contractor. The Contractor shall take every necessary precaution against injury or damage to any part thereof by the action of the elements or from any cause whether arising from the execution or non-execution of the Work. The Contractor shall rebuild, repair, restore and make good at its own expense all injuries or damages to any portion of the Work before its completion and acceptance. Contractor shall keep the premises free from accumulation of waste materials, rubbish, and other debris resulting from the Work. At the completion of the Work, Contractor shall leave the site clean and ready for its intended use by the County.
- 5.20 Removal and Rebuilding of Defective Work.** The Contractor shall remove and rebuild at its own expense any part of the work that has been improperly executed, even though it has been included in the monthly estimates. If the Contractor refuses or neglects to correct any defective work, it may be corrected by the County, at the Contractor's expense.
- 5.21 Preservation and Restoration of Property.** The Contractor shall be responsible for the preservation of the County's property along and adjacent to the project site and shall take every precaution necessary to prevent damage to pipes, conduits and other underground structures and shall protect carefully from disturbance or damage all property markers. When or where any direct or indirect damage is done to the County's, or adjacent, property by or on account of any act, omission, neglect or misconduct in the performance of the Work or in consequence of the non-performance thereof on the part of the Contractor, the Contractor shall restore, at the Contractor's own expense, such property to a condition equal to that existing before such damage was done by repairing, rebuilding or otherwise restoring same, or the Contractor will make good such damage in an acceptable manner.
- Certain trees and shrubs growing within the right-of-way shall be preserved in good condition by the Contractor at the Contractor's sole expense when designated in the Specifications or by the Engineer. The Contractor shall trim them to the extent and in the manner directed by the Engineer to remove traffic hazards.
- 5.22 Emergencies.** In emergencies affecting the safety or protection of persons or the Work or Property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the County or the Engineer, is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Engineer prompt written notice if the Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby.
- 5.23 Utility Obstruction.** All utilities (including above ground utilities and subsurface utilities) that must either be moved or adjusted, will either be removed from the site or shifted to a new

location on the site to make way for new construction. This Work will be performed by other parties; however, the Contractor shall cooperate with the utility making the changes and shall use every precaution to protect their property.

- 5.24 Guarantee.** The Contractor agrees to replace, without cost to the County, any Work found to be improper or defective and to make good all damage or other Work caused by such replacement. The guarantee period for the Work is one year from substantial completion of the project. Additional guarantees for specific items may also be required by the Specifications. The guarantees must be approved by the Engineer before acceptance and Final Payment is made.

The Contractor will supply the County with copies of all guarantees and warranties, which have been made to the Contractor by suppliers or Subcontractors, with an assignment of these guarantees and warranties to the County. Assignments will not relieve the Contractor of its responsibility in the case of a supplier's or Subcontractor's failure to fulfill guarantee or warranty provisions. If Contractor is prevented for any reason from making any such assignment to the County, the Contractor hereby gives the County permission to enforce any and all non-assignable guarantees and warranties in Contractor's name and the Contractor shall pass on to the County any benefits derived therein.

Neither final completion of the project, nor any provision in the Contract Documents relieves the Contractor of responsibility for faulty materials or workmanship during guarantee periods.

- 5.25 Substantial Completion.** When the Contractor considers the entire Work ready for its intended use he shall notify the County in writing that the entire Work is substantially complete (except for items specifically listed as incomplete) and request that the Engineer issue a Certificate of Substantial Completion. Within a reasonable time thereafter, the Parties to the Contract shall make an inspection of the Work to determine the status of completion. If the Engineer does not consider the work substantially complete, he will notify the Contractor in writing giving the reasons therefore. If the Engineer considers the work substantially complete, he will prepare a Certificate of Substantial Completion which shall fix the date of Substantial Completion. A Punch List (as defined in Section 1.26) will be attached to the Certificate of Substantial Completion. The Certificate of Substantial Completion allows for the following from the date of Substantial Completion (or as directed by the Engineer) for the Contractor to complete the Punch List items:

- Contract Seven (7) days for Work of less than one million
- Fourteen (14) days for Work of one million to five million
- Thirty (30) days for Work over five million

If the Punch List items are not completed within the allotted time, Liquidated Damages will be assessed in the amount of \$500 per day. Upon satisfactory completion of the Work, including Punch List items, the Engineer will provide final measured quantities to the Contractor. Upon receipt, the Contractor shall have thirty (30) to review and resolve any disputes regarding final payment for all Work performed.

- 5.26 Partial Utilization.** Use by the County at the County's option of any substantially completed part of the Work which (a) has specifically been identified in the Contract Documents, or (b) the County and the Contractor agree constitutes a separately functioning and usable part of the Work that can be used by the County for its intended purpose without significant interference with the Contractor's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work.

- 5.27 Project Delays.** Contractor's entitlement to an extension of the Contract Time is limited to a County-caused extension of the critical path, reduced by the Contractor's concurrent delays, and established by a proper time impact analysis. Contractor shall not be charged liquidated damages because of any delays in completion of the Work due to unforeseeable causes beyond

the control and without the fault or negligence of Contractor (or its Subcontractors or Suppliers). The County shall ascertain the facts and extent of delay and grant extension of time for completing the Work when, in its judgment, the facts justify such an extension. No time extension shall be allowed unless, and then only to the extent that, County-caused delay extends the critical path beyond the previously approved Contract Time. Contractor shall not be entitled to an adjustment in the 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. If Contractor is delayed in the performance or progress of the Work by fire, epidemic, Acts of God, acts or failures to act of utility owners not under the control of the County, or other causes not the fault of and beyond control of the County and Contractor, then Contractor shall be entitled to a time extension when the Work stopped is on the critical path. Such a non-compensable adjustment shall be Contractor's sole and exclusive remedy for such delays.

The County's liability to the Contractor for delays for which the County is responsible shall be limited to only an extension of time unless such delays were unreasonable under the circumstances. In no case shall the County be liable for any costs which are borne by the Contractor in the regular course of business, including, but not limited to, home office overhead and other ongoing costs. Damages caused by unreasonable County delay shall be based on actual costs only, no proportions or formulas shall be used to calculate any delay damages.

Contractor shall not be entitled to any extension of time unless Contractor properly notices the delay and adjustment to compensation and requests a Change Order in accordance with the Contract Documents. Contractor's failure to timely and fully comply with the change order procedures in the Contract Documents shall constitute a waiver of Contractor's right to a time extension.

SECTION 6. PAYMENT

- 6.1 Partial Payments.** At the earliest possible date after the first day of each calendar month, the Engineer will make a current estimate in writing of the materials in-place complete and the amount of Work performed during the preceding calendar month or period, and the value thereof based on the Contract price contracted for as shown in the Contract. The Engineer shall include in such estimate a summary of the number of elapsed calendar days. If the time consumed is such as to entitle the County to the payment of liquidated damages, the sums due the Contractor shall be adjusted accordingly. From the total of the amounts so ascertained shall be deducted five percent (5%) to be retained until after the completion of the entire Work to the satisfaction of the Engineer, and ninety-five percent (95%) of the amount so ascertained shall be paid to the Contractor when audited and approved by the County Auditor. No estimate other than a Final Estimate shall be made where the value of the Work performed since the last preceding payment is less than one-fourth (1/4) of the amount of the average monthly estimate to be expected as computed by dividing the amount of the Contract by the Contract Time in months.
- 6.2 Invoices.** The Contractor may be required to furnish the Engineer, copies of invoices for all materials purchased for the project.
- 6.3 Adjusting Payment.** If Change Orders diminish the amount of Work, any resulting decrease in the amount to be paid the Contractor pursuant to the Contract will not constitute the basis for a claim. If Change Orders increase the amount of Work and the Work can be classified under Contract Documents the Contract sum will be increased according to the Work actually done at established unit prices. For unit price items which increase or decrease as discussed in estimated quantities, the amount can be adjusted.
- 6.4 Defective Work.** The Engineer will have authority to disapprove or reject Work which the Engineer believes to be defective, or that the 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, whether or not the Work is fabricated, installed or completed.
- If required by the Engineer, the Contractor shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by the Engineer, remove it from the site and replace it with Work that is not defective. The Contractor shall pay all claims, costs, losses and damages caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of Work of others).
- 6.5 Acceptance and Final Payment.** The Engineer shall as soon as practicable after the completion of this Contract make a Final Estimate of the amount due the Contractor under the provisions of the Contract and submit same to the Commissioners' Court. Within thirty (30) days after approval by the Commissioners' Court and the County Auditor, the County shall pay the Contractor the amount of the estimate or Final Estimate after deducting therefrom all previous payments and all amounts to be retained under the provisions of this Contract. All prior Partial Estimates and Payments shall be subject to correction in the Final Estimate and Payment. No estimate or payment except the Final Payment shall be evidence of performance by the Contractor. No payment by the County shall be construed to be an acceptance of any defective Work or improper materials, or a release from any claim for damages. The payment of the final amount due under the Contract and the adjustments and payment of the bill rendered for any Work done in accordance with any regulations of the Contract by a Change Order form shall release the County and the Engineer from any and all

claims or liability on account of Work performed under the Contract or alterations thereof. The Contractor will examine said Final Estimate and if correct will certify under oath to the payment by it of all claims against it for labor, materials, and supplies furnished the Contractor by all persons and firms in the performance of the Contract.

- 6.6** **Auditor's Certification of Funds.** The laws governing the awarding of Contracts by the County require the approval of the County Auditor and that the County Auditor certify that funds are, or will be, available for the payment of the obligations created thereunder before such Contracts become effective. Despite any provisions in the Specifications, the Drawings or the Contract to the contrary, no change or addition of any character in the Specifications, the Drawings or the Contract which will increase the obligations of the County, or the amount to be paid by the County shall ever be binding on the County unless and until such changes or additions have been submitted to the County Auditor and the County Auditor certifies that funds are, or will be, available for the payment of such obligation.

END OF SECTION

Attachment W
REPORT FILE
(286 Pages)

For prospective vendors downloading this IFB from CivCast at <https://www.civcastusa.com/>, the Report File may also be picked up between 7:30 a.m. and 4:30 p.m., Monday through Friday at the Office of the Purchasing Agent, 1001 Preston, Suite 670, Houston, TX.

Stormwater Pollution Prevention Plan



Project Name/ Number:

Operator(s):

Harris County Engineering Department

Prepared By:

Preparation Date:

SWPPP

FORMS AND DOCUMENTS



Section 1. SWPPP Plan Sheet & Site Maps

Section 2. Operator Coordination

Section 3. Storm Water Construction Site Inspection Report

Section 4. Inspector Qualifications

Section 5. Corrective Action Log/Record Keeping Log

Section 6. SWPPP Amendment Log

Section 7. TPDES Forms (CSN, NOI & NOT)

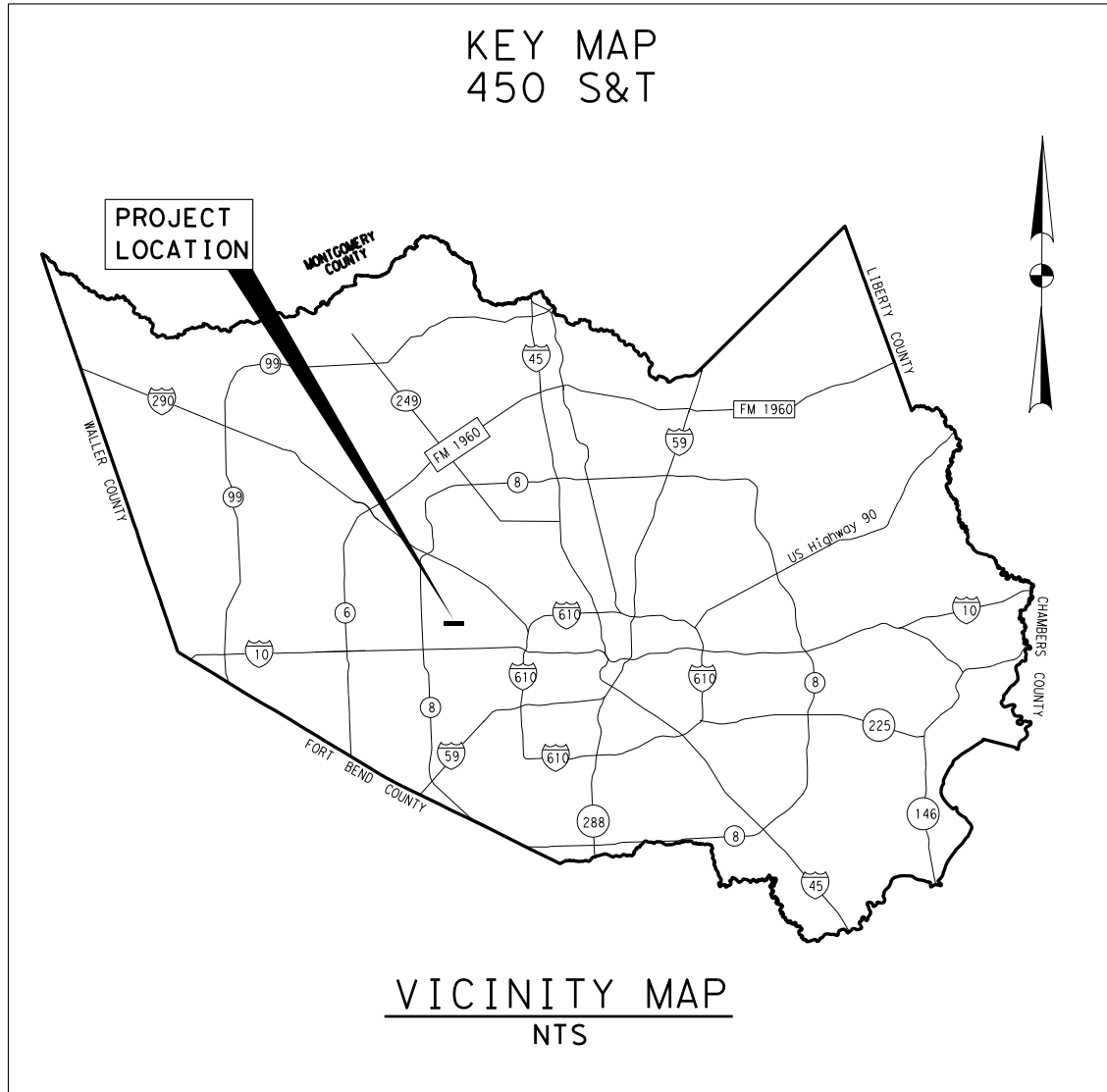
Section 8. TPDES General Permit No. TXR 150000

Section 1.

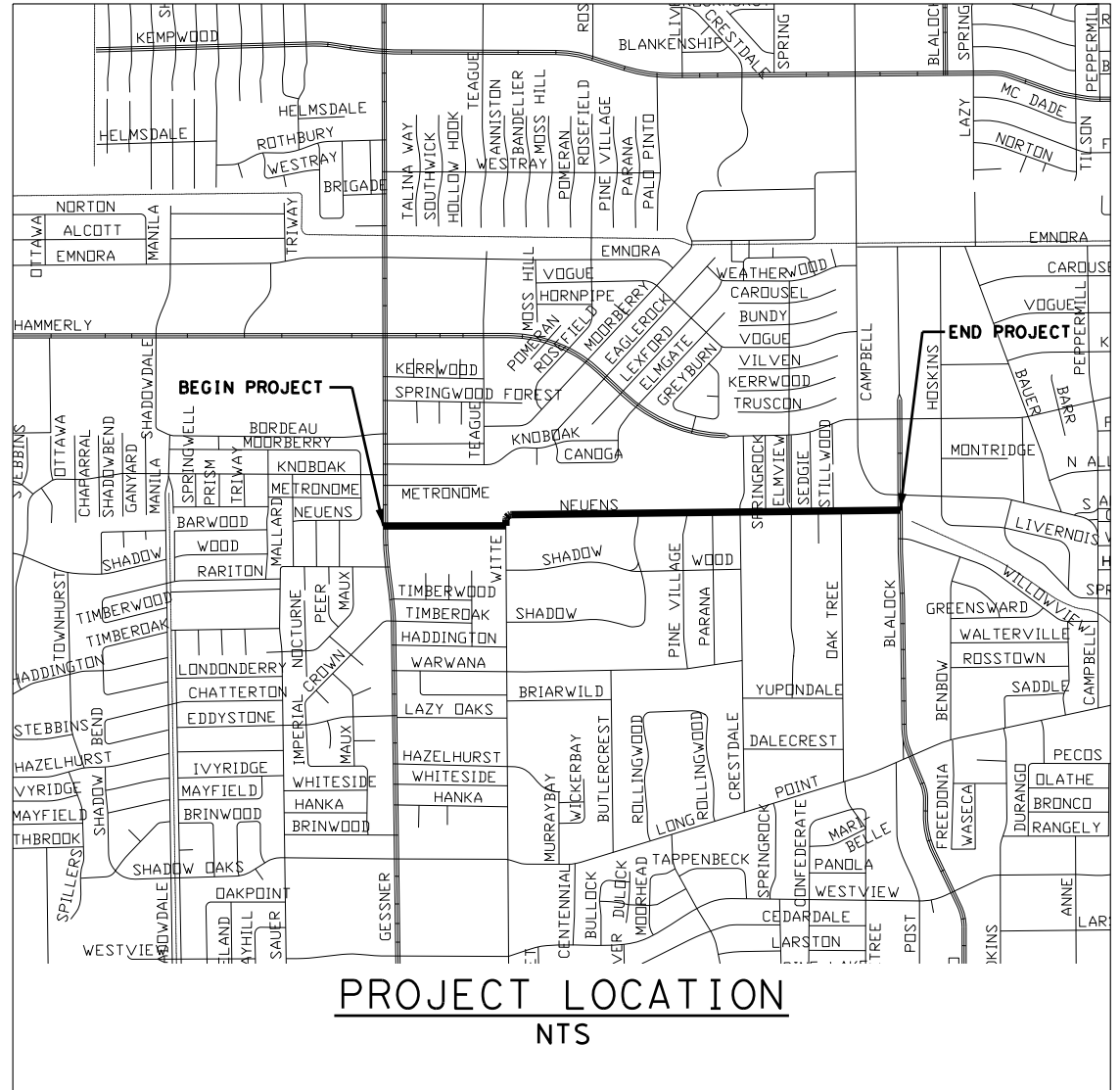
SWPPP Plan Sheet & Site Maps

Include plan sheet and site drawings in binder for Construction Phase. Do not include when submitting Report File during Design Phase.

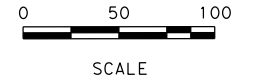
KEY MAP
450 S&T



VICINITY MAP
NTS

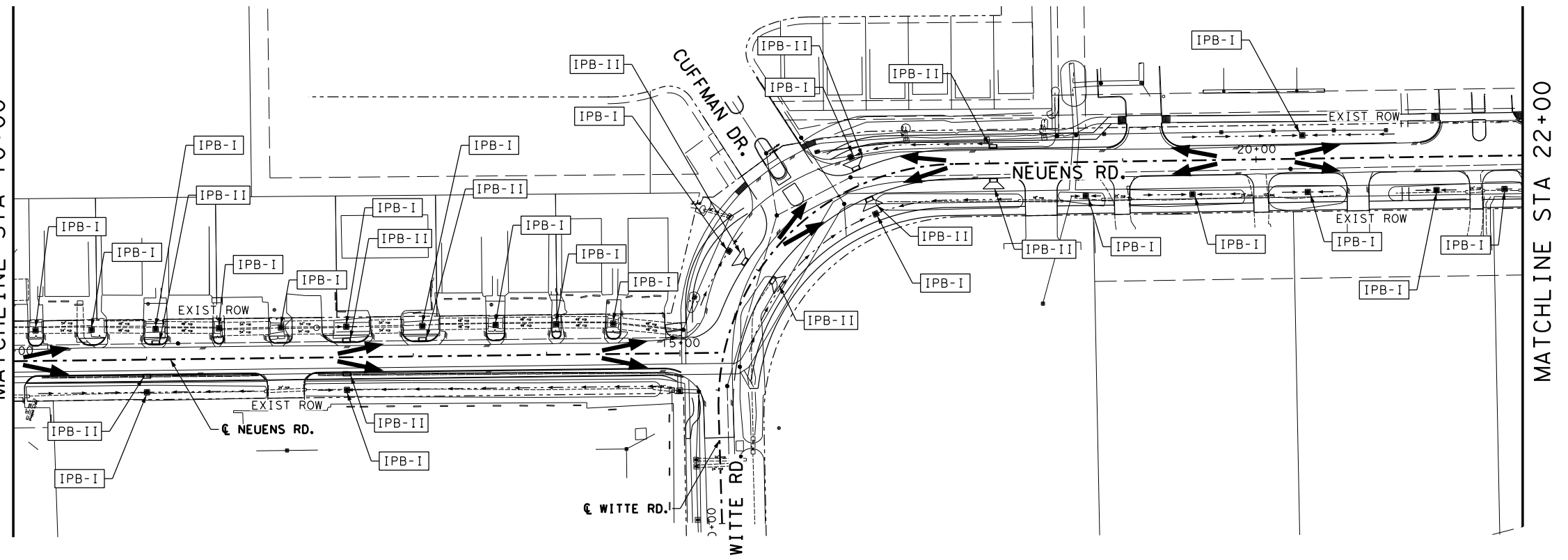
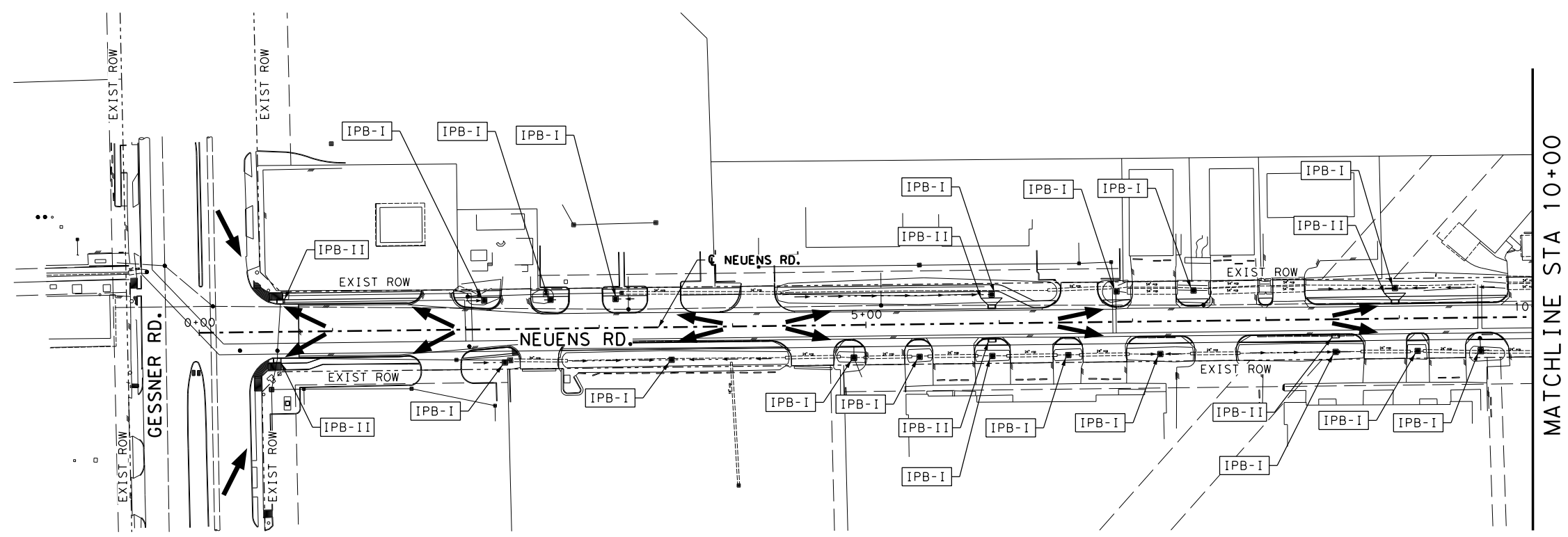


PROJECT LOCATION
NTS



- LEGEND
- ⊖ - - - ⊖ PROPOSED DITCH
 - X - (RFB) REINFORCED FILTER FABRIC BARRIER
 - SC-1 STABILIZED CONSTRUCTION ACCESS
 - IPB-I INLET PROTECTION BARRIER (STAGE I)
 - IPB-II INLET PROTECTION BARRIER (STAGE II)
 - CTW CONCRETE TRUCK WASHOUT AREA
 - (RFB 3) TYPE 3 REINFORCED ROCK FILTER DAM
 - ➔ DIRECTION OF FLOW

- NOTES:
1. SEE SW3P STANDARD SHEETS FOR DETAILS.
 2. THE CONTRACTOR SHALL REGULARLY INSPECT FILTER FABRIC FENCING, CLEAR SEDIMENT BUILD-UP AND REPAIR ANY DAMAGES THAT OCCUR DURING CONSTRUCTION.
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NO.	REVISIONS	DATE	NAME

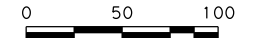
**HARRIS COUNTY
ENGINEERING DEPARTMENT**



**CivilTech
Engineering, Inc.**
11821 TELGE ROAD
CYPRESS, TEXAS 77429
PH: (281) 304-0200
FX: (281) 304-0210
REGISTRATION NO. F-382

PROJECT TITLE: NEUENS ROAD IMPROVEMENTS		
FROM GESSNER ROAD TO BLALOCK ROAD		
SHEET DESCRIPTION: STORM WATER POLLUTION PREVENTION PLAN		
DRAWN BY: ES	BEGIN TO STA 22+00	DATE: 5/19/2020
CK'D BY: PMB	SCALE: 1"=50'	SHEET NO: 138 / 207

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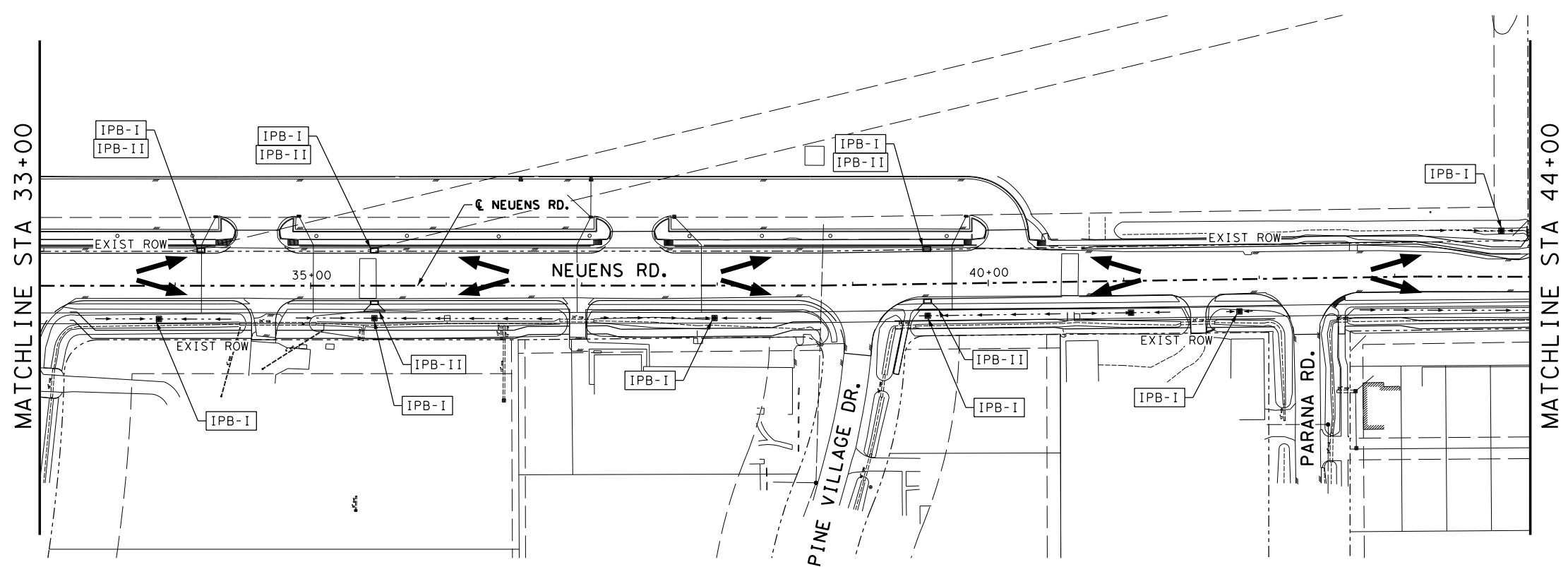
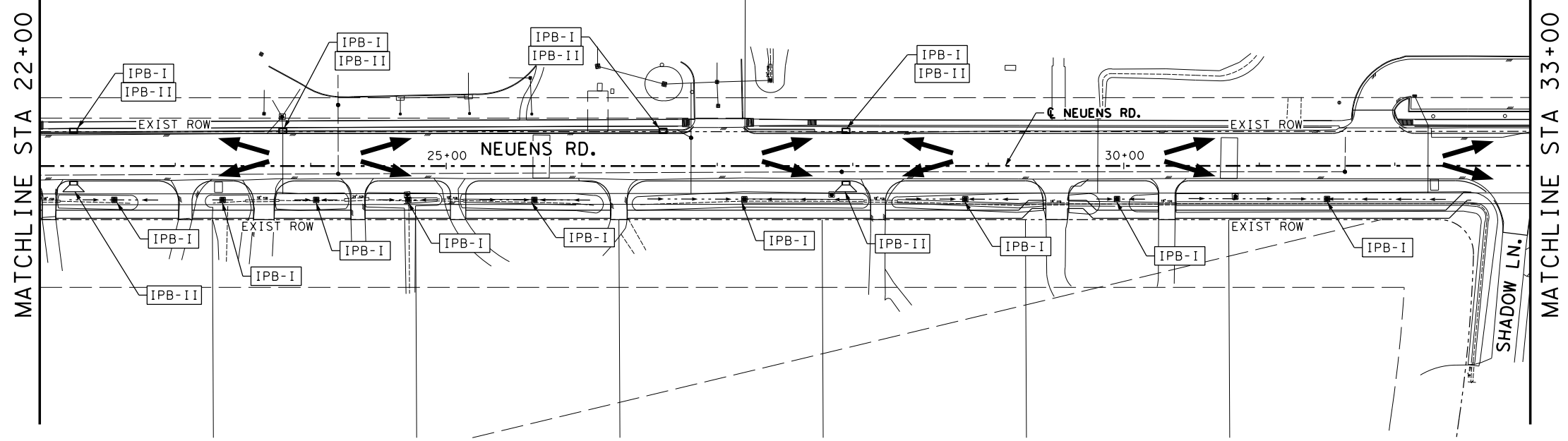


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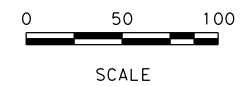
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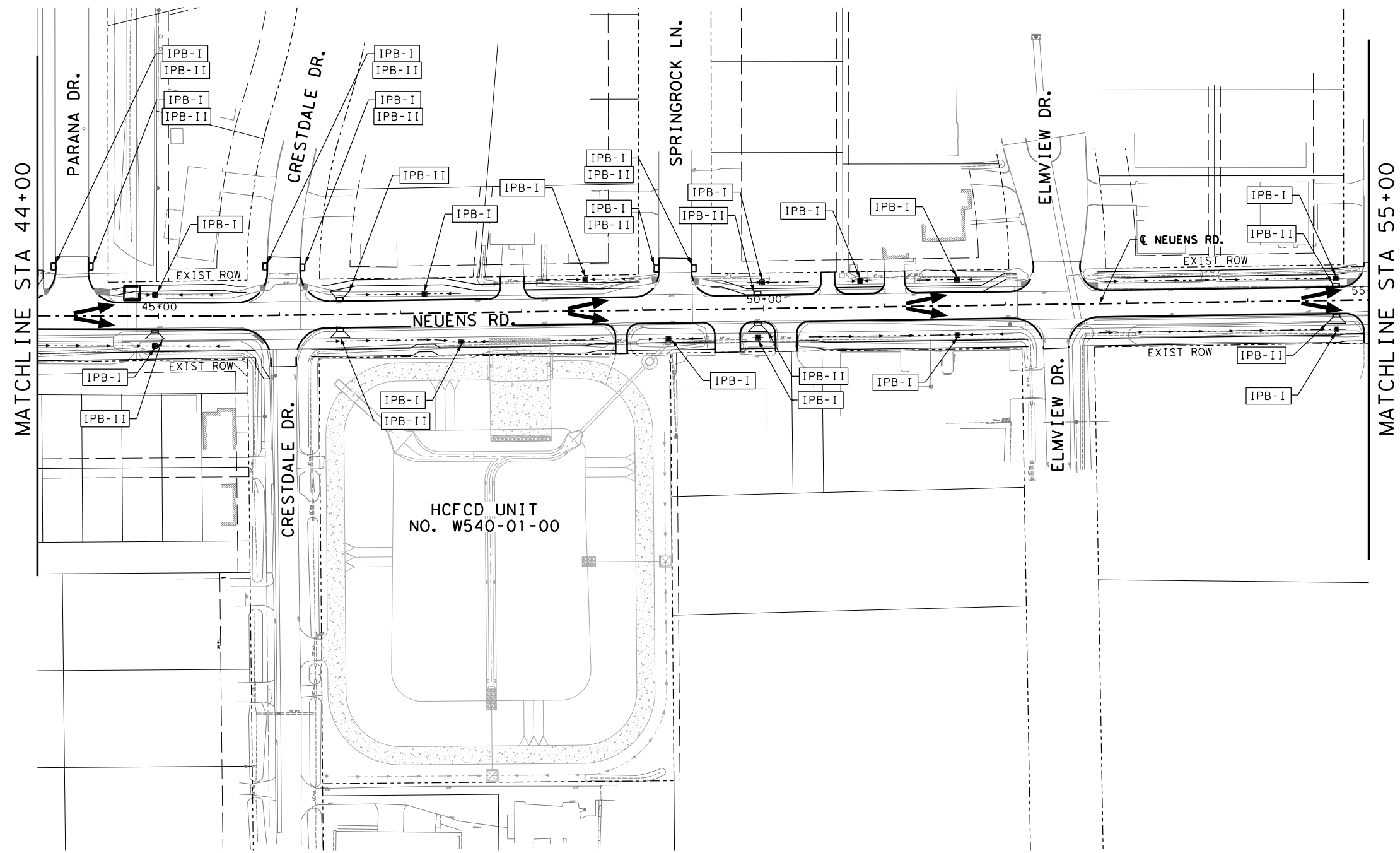
PROJECT TITLE: NEUENS ROAD IMPROVEMENTS		
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SHEET DESCRIPTION: STORM WATER POLLUTION PREVENTION PLAN		
DRAWN BY: ES	DATE: 5/19/2020	STATION: STA 22+00 TO STA 44+00
CK'D BY: PMB	SCALE: 1"=50'	SHEET NO: 139 / 207

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NO.	REVISIONS	DATE	NAME

**HARRIS COUNTY
ENGINEERING DEPARTMENT**



**CivilTech
Engineering, Inc.**
11821 TELGE ROAD
CYPRESS, TEXAS 77429
PH: (281)304-0200
FX: (281) 304-0210
REGISTRATION NO. F-382

PROJECT TITLE: NEUENS ROAD IMPROVEMENTS	
FROM GESSNER ROAD TO BLALOCK ROAD	
SHEET DESCRIPTION: STORM WATER POLLUTION PREVENTION PLAN	
DRAWN BY: ES	DATE: 5/19/2020
CK'D BY: PMB	SHEET NO: 140 / 207
SCALE: 1"=50'	

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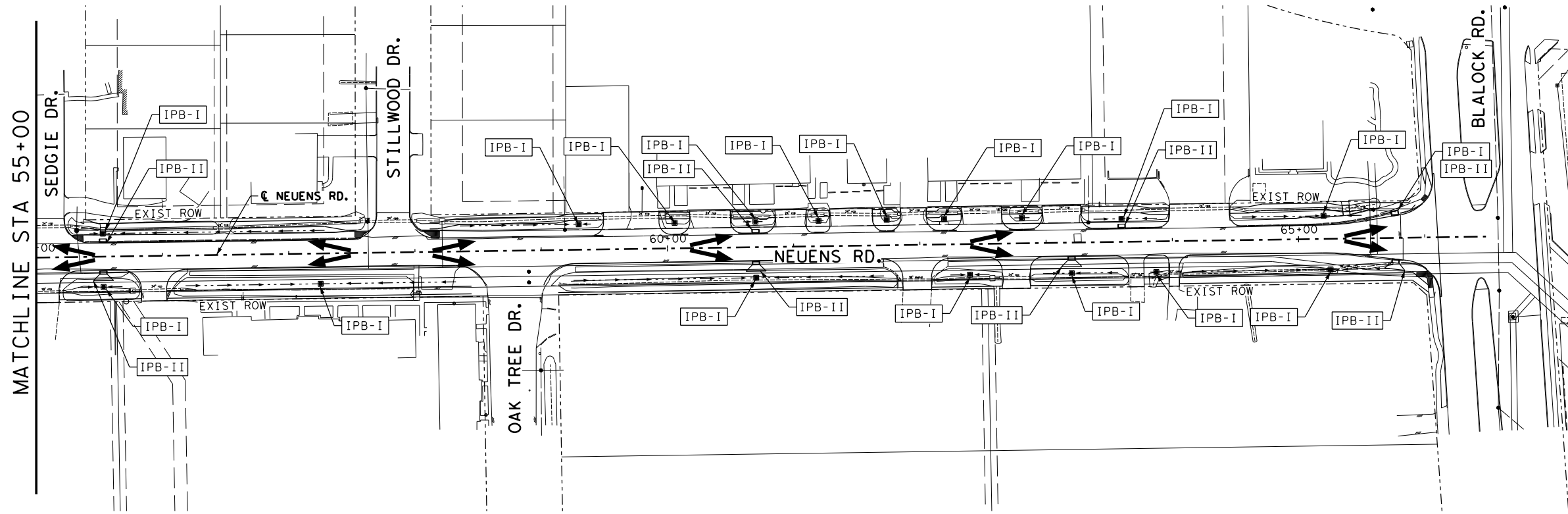
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LEGEND

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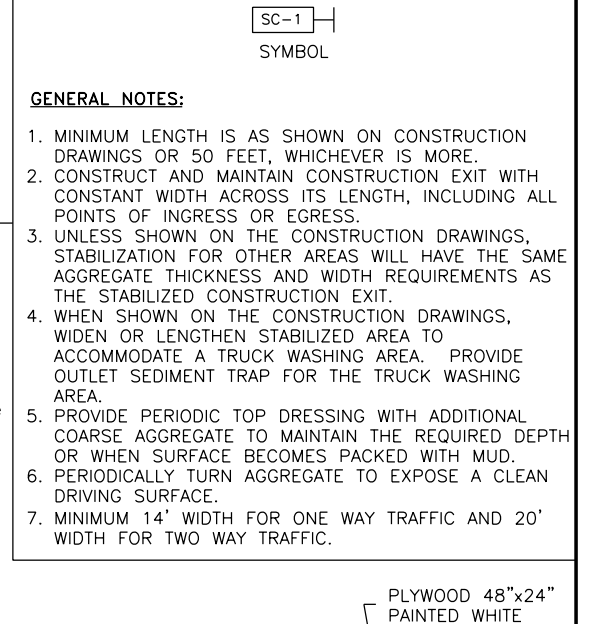
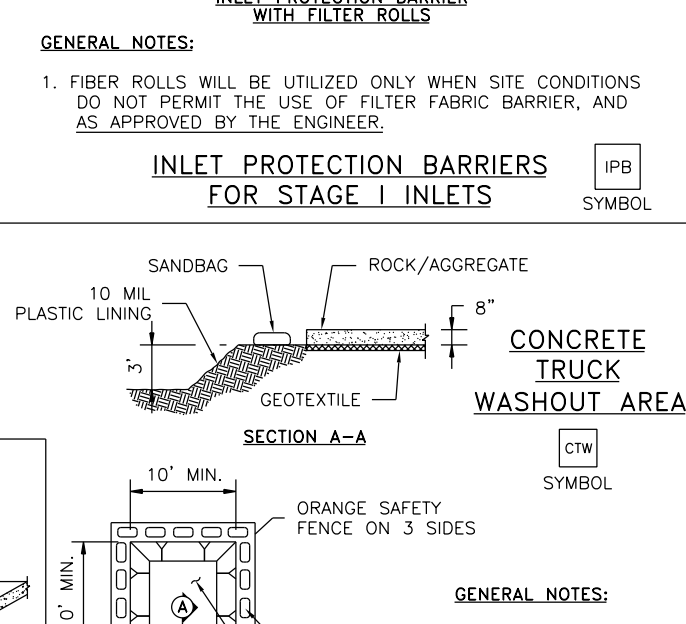
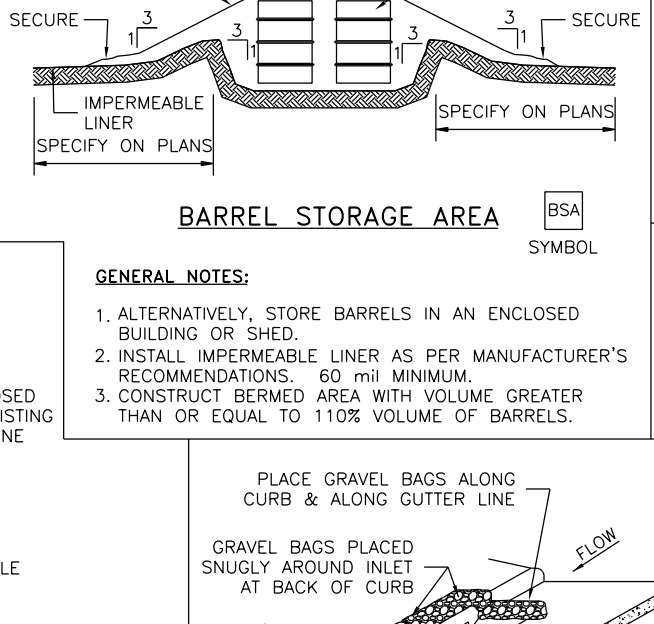
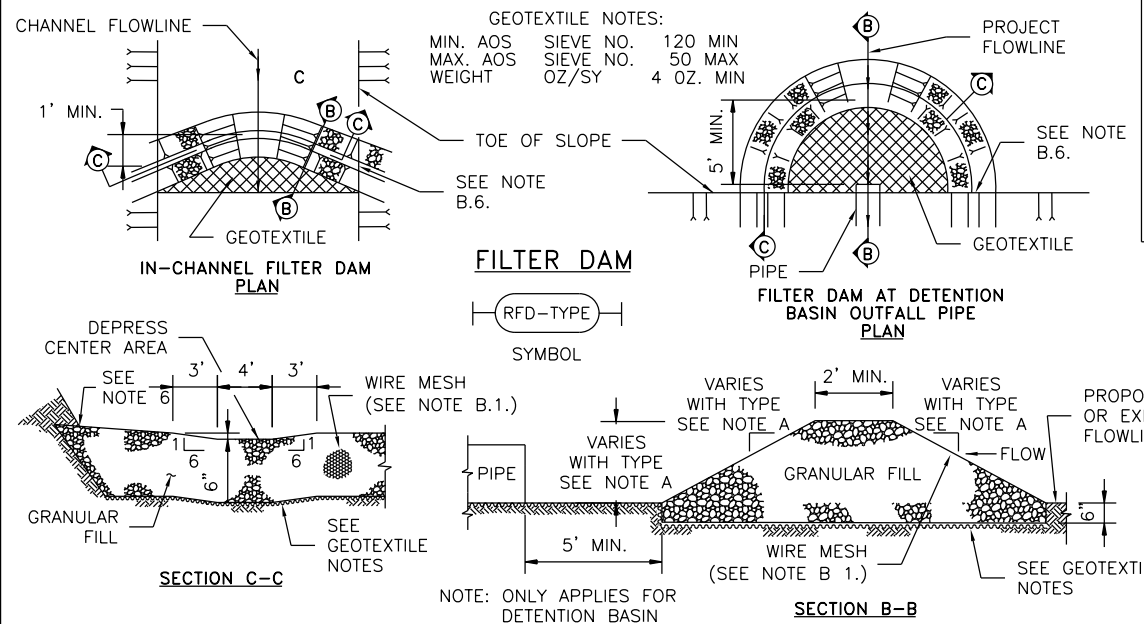
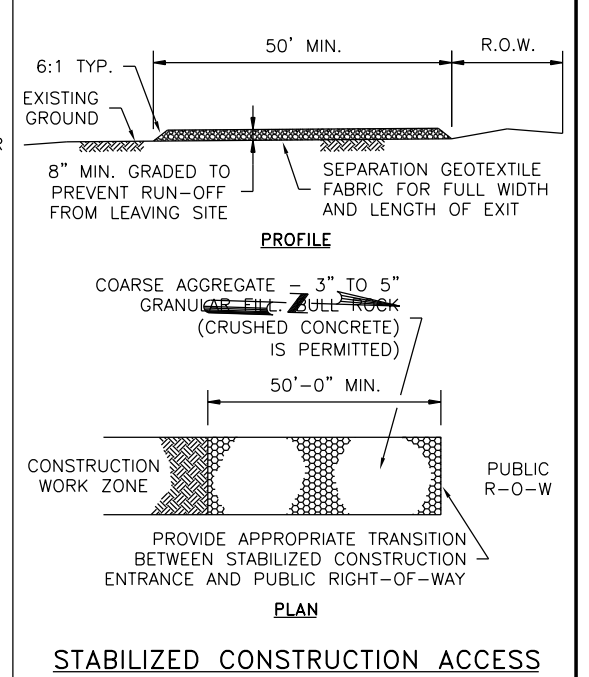
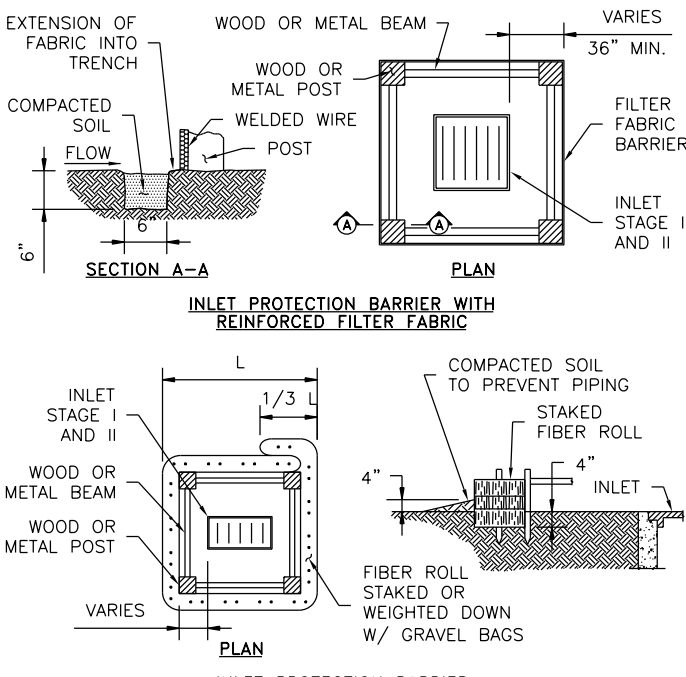
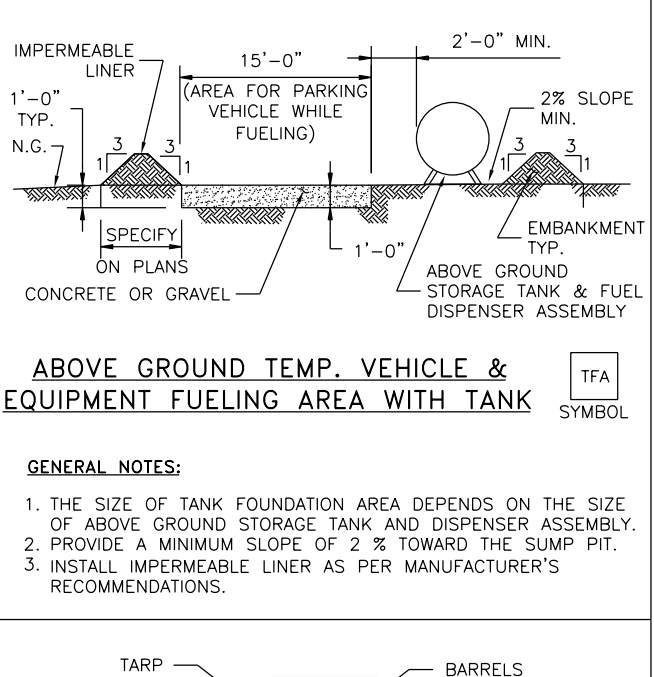
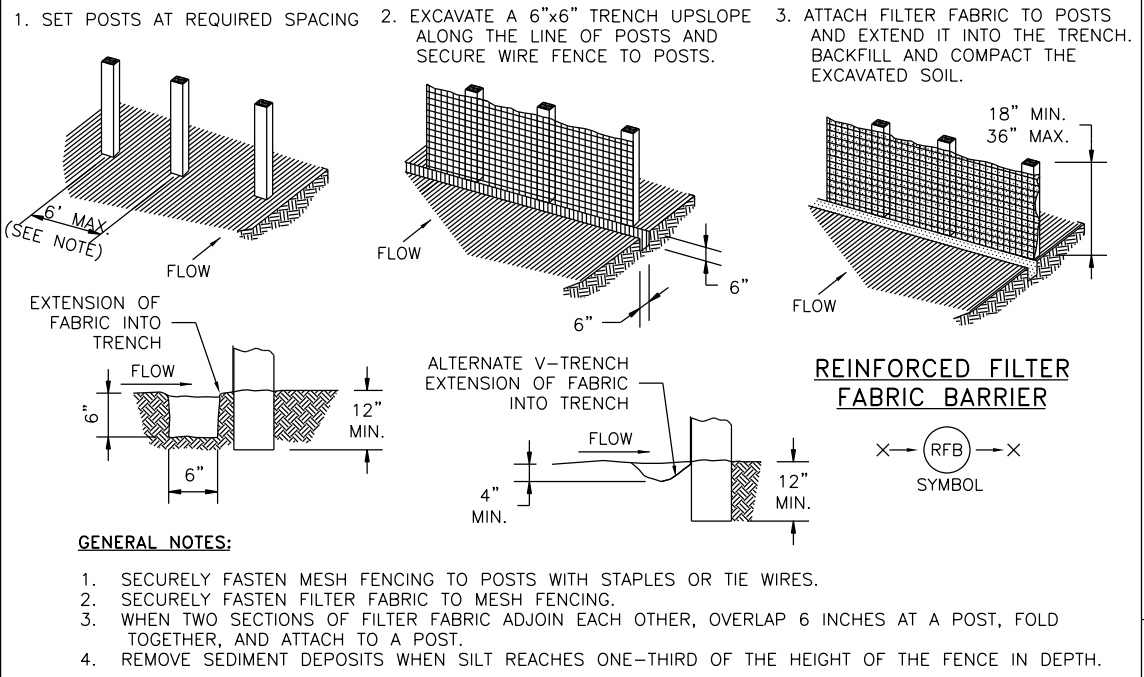
NO.	REVISIONS	DATE	NAME

**HARRIS COUNTY
ENGINEERING DEPARTMENT**



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11821 TELGE ROAD
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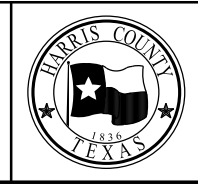
PROJECT TITLE: NEUENS ROAD IMPROVEMENTS		
FROM GESSNER ROAD TO BLALOCK ROAD		
SHEET DESCRIPTION: STORM WATER POLLUTION PREVENTION PLAN		
DRAWN BY: ES	STA 55+00 TO END	DATE: 5/19/2020
CK'D BY: PMB	SCALE: 1"=50'	SHEET NO: 141 / 207



- A. TYPES OF FILTER DAMS
1. TYPE 1 (NON-REINFORCED)
 - a. HEIGHT - 18-24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
 - b. TOP WIDTH - 2 FEET (MINIMUM)
 - c. SLOPES - 2:1 (MAXIMUM).
 2. TYPE 2 (REINFORCED)
 - a. HEIGHT - 18-36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
 - b. TOP WIDTH - 2 FEET (MINIMUM).
 - c. SLOPES - 2:1 (MAXIMUM).
 3. TYPE 3 (REINFORCED)
 - a. HEIGHT - 36-48 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
 - b. TOP WIDTH - 2 FEET (MINIMUM).
 - c. SLOPES - 3:1 (MAXIMUM).
 4. TYPE 4 (GABION)
 - a. HEIGHT - 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
 - b. TOP WIDTH - 2 FEET (MINIMUM).
 5. TYPE 5. AS SHOWN ON THE PLANS.
- B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.
1. TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
 2. PLACE GRANULAR FILL ON THE WIRE MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
 - a. 3-5 INCHES FOR ROCK FILTER DAM TYPES 1, 2 AND 4.
 - b. 4-8 INCHES FOR ROCK FILTER DAM TYPE REFER TO GRANULAR FILL IN SPECIFICATION SECTION No. 02378 RIPRAP AND GRANULAR FILL.
 3. FOLD WIRE MESH AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
 4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
 5. SEE HCFCD SPECIFICATION SECTION NO. 02364-FILTER DAMS.
 6. EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT



CivilTech Engineering, Inc.

11821 TELGE ROAD
CYPRESS, TEXAS 77429
PH: (281) 304-0200
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REGISTRATION NO. F-382

PROJECT TITLE: NEUENS ROAD IMPROVEMENTS

FROM GESSNER ROAD TO BLALOCK ROAD

SHEET DESCRIPTION: STORM WATER POLLUTION PREVENTION

DRAWN BY: ES

CK'D BY: PMB

SCALE: NTS

DATE: 5/19/2020

SHEET NO: 142 / 207

PLAN DETAILS

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STORM WATER POLLUTION PREVENTION PLAN

PROJECT NAME: NEUENS ROAD PROPOSED IMPROVEMENTS

LOCATION & LIMITS: NORTHWEST HARRIS COUNTY PRECINCT 4 FROM GESSNER ROAD TO BLALOCK ROAD.

SEE PLAN COVER SHEET FOR VICINITY MAP.

PROJECT SCOPE:

Activity (check all that apply)	
Roadway Expansion	<input type="checkbox"/>
Roadway New Construction	<input checked="" type="checkbox"/>
Underground Storm Sewer	<input checked="" type="checkbox"/>
Detention Pond	<input checked="" type="checkbox"/>
Bridge Expansion	<input type="checkbox"/>
Bridge New Construction	<input type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>

TOTAL PROJECT AREA: 2.35 Acres 6,536 Linear Feet

TOTAL AREA DISTURBED: 9.93 Acres

EXISTING CONDITIONS OF SOIL, VEGETATION, AND DRAINAGE:

EXISTING ROADWAY IS ASPHALT PAVEMENT WITH OPEN DITCHES.
 EXISTING VEGETATION INCLUDES GRASS WITHIN RIGHT-OF-WAY, WITH SOME TREES AND PRIVATELY OWNED LANDSCAPING.
 THE PROJECT IS DRAINED BY EXISTING ROADSIDE DITCHES, INLETS, AND STORM SEWERS.

PHASED CONSTRUCTION ACTIVITIES:

CONSTRUCT PROPOSED DETENTION POND INCLUDING OUTFALL PIPE, STABILIZED ACCESS ROAD, AND EMERGENCY EXTREME EVENT OVERFLOW.

DESCRIPTION OF DRAINAGE AREAS AND OUTFALLS:

REMOVE EXISTING ASPHALT ROADWAY AND CONSTRUCT A CONCRETE ROADWAY WITH CURBS, AND ADD SIDEWALKS. CONSTRUCT UNDERGROUND CONCRETE BOX CULVERTS AS IN-LINE DETENTION. RECONSTRUCT EXISTING DRIVEWAYS. CONSTRUCT OUTFALL INTO EXISTING

TCEQ 303(d) listed water

RECEIVING WATERS/CONVEYANCE:

EXISTING STORM SEWER SYSTEMS AND EXISTING HCFC DETENTION POND W540-01-00.

MAJOR SOIL DISTURBING ACTIVITIES:

ACTIVITY (CHECK ALL THAT APPLY)	
SPEC 102 – Clearing & Grubbing	<input checked="" type="checkbox"/>
SPEC 104/110/400 – Excavating	<input checked="" type="checkbox"/>
SPEC 400 – Fill	<input checked="" type="checkbox"/>
Leveling/Grading	<input checked="" type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>

NOTES:

SEE SITE PLAN FOR DETAILED PLANNING DRAWINGS.

SOIL STABILIZATION AND SEDIMENT CONTROL MEASURE:

MEASURES	TEMPORARY	PERMANENT
SPEC 164 – Seeding	<input type="checkbox"/>	<input type="checkbox"/>
SPEC 162 – Sodding	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPEC 165 – Hydro-mulch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPEC 164 – Soil Retention Blanket	<input type="checkbox"/>	<input type="checkbox"/>
SPEC 713 – Reinforced Filter Fabric Barrier	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPEC 719 – Inlet Protection Barrier	<input type="checkbox"/>	<input type="checkbox"/>
SPEC 724 – Stabilized Construction Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPEC 730 – Concrete Truck Washout Structures	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPEC 741 – Inlet Protection Barrier	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPEC 750 – Rock Filter Dam	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPEC 725 – Watering for Dust Control	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

NOTES:

If sediment escapes off site, these accumulations will be removed to minimize impact. Rock filter dams will be cleared before the reach 1/3 the height of the dam, other control measures will be cleared before their capacity has been reduced by 50%. As required in CGP TXR 150000, soil stabilization measures will be initiated in portions of the site where activities have ceased for a period exceeding 14 days. This stabilization will commence no later than the day following completion of work in these areas. If prompt repair or replacement is not feasible, the reason will be documented in the SWPPP. Records of dates for major grading activities, and initiation of stabilization measures will be maintained in the SWPPP. Daily work logs related to this section will be kept in CAPTRAC. The Harris County SWPPP detail sheet will be used when implementing BMP's and included with this document.

INSPECTION & MAINTENANCE:

Inspection and Maintenance will be performed according to SPEC 751. Inspections will be conducted at least every 7 calendar days. Inspection forms will be filed with SWPPP supporting documents. If repair or replacement of stabilization or erosion control features is necessary, it must be completed at the earliest date possible. Amendments will be tracked on the SWPPP Amendment Log. Daily work logs related to this section will be kept in CAPTRAC.

POTENTIAL POLLUTION SOURCES:

Concrete	<input checked="" type="checkbox"/>	Cleaning Solvents	<input checked="" type="checkbox"/>
Fertilizer	<input checked="" type="checkbox"/>	Curing Compounds	<input checked="" type="checkbox"/>
Pesticides	<input checked="" type="checkbox"/>	Hydraulic Fluid	<input checked="" type="checkbox"/>
Asphalt	<input type="checkbox"/>	Motor Oil	<input checked="" type="checkbox"/>
Paint	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Gasoline	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Diesel Fuel	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Sanitary Toilets	<input checked="" type="checkbox"/>		<input type="checkbox"/>

POLLUTION PREVENTION BMPS

Whenever possible all materials will be stored in their original containers in secure areas where spillage is protected from runoff. Stockpiles and work areas will be constructed in such a way to minimize the amount of sediment that enters receiving waters and wetlands. Spill prevention and control measures are included on attached site maps. Records of spills will be maintained with SWPPP supporting documents. Additional required BMPs can be found in SPEC 725. Temporary materials and structures will be removed from waterways as soon as feasible once they are no longer required.

WASTE MATERIAL:

All solid waste materials will be collected and stored in secure metal dumpsters, then transported to appropriate disposal facilities. Collection will be completed often enough to ensure that no waste materials will be lost due to overfilling of collection containers. Liquid wastes will be stored in sealed containers in designated areas and disposed of according to all applicable regulations. All wasted containers should meet all state and local requirements.

RESPONSIBLE PARTY/CONTRACTOR

Name	
Title	
Company	
Signature	

c:\pwworking\ind1r\ee89f7a2a89696\11techeno.com\dms04432\SWPP-Work Form.dgn

NO.	REVISIONS	DATE	NAME
△			
△			
△			
△			

HARRIS COUNTY ENGINEERING DEPARTMENT



**CivilTech
Engineering, Inc.**
 11821 TELGE ROAD
 CYPRESS, TEXAS 77429
 PH: (281)304-0200
 FX: (281) 304-0210
 REGISTRATION NO. F-382

PROJECT TITLE: <u>NEUENS ROAD IMPROVEMENTS</u>	
<u>FROM GESSNER ROAD TO BLALOCK ROAD</u>	
SHEET DESCRIPTION: <u>STORM WATER POLLUTION PREVENTION</u>	
DRAWN BY: ES	PLAN WORK FORM
CK'D BY: PMB	SCALE: NTS
DATE: 5/19/2020	SHEET NO: 143 / 207

Section 2.

Operator Coordination Form(s)

When a joint SWPPP is being used by multiple entities, the individual rolls of each must be clarified using the following document.

Additional Operator Coordination forms can be found on the HCED website at <http://www.eng.hctx.net/Consultants/Environmental-Services/Storm-Water-Pollution-Prevention>

OPERATOR COORDINATION FORM

Project Name:

Location:

I certify under penalty of law that I understand the terms and conditions of the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000 that authorizes the storm water discharges associated with activity from the construction site identified as part of this certification.

Responsible For:

Company	
Name	
Title	
Signature	
Date	

Section 3.

Storm Water Construction Site Inspection Reports

Additional inspection report forms can be found on the HCED website at <http://www.eng.hctx.net/Consultants/Environmental-Services/Storm-Water-Pollution-Prevention>



Harris County Engineering Department

Environmental Services Section

SWPPP Field inspection and Maintenance Form

Project Information

Project Name:	UPIN #:	TCEQ Authorization # (large projects only):	Inspection Date:
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Inspected Best Management Practice (BMP) & Areas

Disturbed Areas: Discharge Locations: Erosion Control BMPs: Sediment Control BMP:	Vehicle Entry/Exit areas Concrete Washout areas Trash Collection Areas Dust Generation Areas	Postings Material Storage/Stockpiles Sanitary Facilities Parking/Equipment Storage	Other:
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Needed Corrective Action, Maintenance, Upgrades and Additional Controls

No corrective actions needed:

Location	Issue	Suggested Action	GCP Non-Compliance

Stabilization

Location	Stabilization Measure	Date	Notes

Certification

	Name (print)	Title	Signature	Date
Inspector				
Contractor Representative				
HCED Representative				

Section 4.

SWPPP Inspector Qualifications

Document experience & qualifications information for all inspectors involved with the project.

Section 5.

Corrective Action Log/Record Keeping Log

A Corrective Action Log must be maintained to document any repairs or modifications to BMPs.

Additional Corrective Action Log forms can be found on the HCED website at <http://www.eng.hctx.net/Consultants/Environmental-Services/Storm-Water-Pollution-Prevention>

Section 6.

SWPPP Amendment Log

A Corrective Action Log must be maintained to document any changes to the SWPPP after it has been implemented.

Additional Amendment Log forms can be found on the HCED website at <http://www.eng.hctx.net/Consultants/Environmental-Services/Storm-Water-Pollution-Prevention>

Section 7.

TPDES Forms (CSN, NOI & NOT)

Include printout of completed TCEQ NOI and NOT forms from STEERS, or applicable CSN form. Both Harris County and the primary contractor must submit an individual NOI and NOT for the project. Record access information generated by STEERS below.

At time of document creation, add the following accounts for access:

All projects- Nick Russo #ER060077

Suzette Moody #ER060553

Precinct 1- Brady Johnson #ER058098

Precincts 2 & 3- Dwayne Rogers #ER060287

Precinct 4- Kathy Williams #ER060319

Notices of Intent (NOI), Notices of Change (NOC), and Notices of Termination (NOT) are submitted at <https://www3.tceq.texas.gov/steers/>

Additional Construction Site Notice (CSN) forms can be found on the HCED website at <http://www.eng.hctx.net/Consultants/Environmental-Services/Storm-Water-Pollution-Prevention>

NOI

Application Reference Number:

Application Password:

NOC

Application Reference Number:

Application Password:

NOT

Application Reference Number:

Application Password:

TCEQ STEERS Application Access Information

Application Reference Number: 367875

Application Password: bc1b5c

Texas Commission on Environmental Quality

Construction Notice of Intent

Site Information (Regulated Entity)

What is the name of the site to be authorized?	Neuens Road
Does the site have a physical address?	No

Physical Address

Because there is no physical address, describe how to locate this site:	Neuens Road from Gessner Road and Blalock Road
City	Houston
State	TX
ZIP	77080
County	HARRIS
Latitude (N) (##.#####)	29.806225
Longitude (W) (-###.#####)	-95.530597
Primary SIC Code	1611
Secondary SIC Code	
Primary NAICS Code	
Secondary NAICS Code	

Regulated Entity Site Information

What is the Regulated Entity's Number (RN)?	
What is the name of the Regulated Entity (RE)?	NEUENS ROAD
Does the RE site have a physical address?	No

Physical Address

Because there is no physical address, describe how to locate this site:	Neuens Road from Gessner Road and Blalock Road
City	Houston
State	TX
ZIP	77080
County	HARRIS
Latitude (N) (##.#####)	29.806225
Longitude (W) (-###.#####)	-95.530597
Facility NAICS Code	
What is the primary business of this entity?	Roadway

Customer (Applicant) Information

How is this applicant associated with this site?	Operator
What is the applicant's Customer Number (CN)?	CN602680423
Type of Customer	County Government

Full legal name of the applicant:

Legal Name	Harris County
Texas SOS Filing Number	
Federal Tax ID	760454514
State Franchise Tax ID	
State Sales Tax ID	
Local Tax ID	
DUNS Number	
Number of Employees	
Independently Owned and Operated?	No
I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas.	Yes

Responsible Authority Contact

Organization Name	Harris County
Prefix	MR
First	Nick
Middle	
Last	Russo
Suffix	III
Credentials	PE
Title	Environmental Compliance Officer

Responsible Authority Mailing Address

Enter new address or copy one from list:

Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	1001 PRESTON ST FL 5
Routing (such as Mail Code, Dept., or Attn:)	
City	HOUSTON
State	TX
ZIP	77002
Phone (###-###-####)	7132743667
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	

Application Contact**Person TCEQ should contact for questions about this application:**

Same as another contact?	
Organization Name	Harris County - Construction

	Programs Department
Prefix	MS
First	Julia
Middle	
Last	Bond
Suffix	
Credentials	PE
Title	Assistant Manager
Enter new address or copy one from list:	

Mailing Address

Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	1310 PRAIRIE ST STE 1102
Routing (such as Mail Code, Dept., or Attn:)	
City	HOUSTON
State	TX
ZIP	77002
Phone (###-###-####)	7132741564
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	julia.bond@hcpid.org

CNOI General Characteristics

- | | | |
|---|--|------------|
| 1 | Is the project located on Indian Country Lands? | No |
| 2 | Is your construction activity associated with a facility that, when completed, would be associated with the exploration, development, or production of oil or gas or geothermal resources? | No |
| If your activity is associated with oil and gas exploration, development, or production, you may be under jurisdiction of the Railroad Commission of Texas and may need to obtain authorization from EPA Region 6. | | |
| 3 | What is the Primary Standard Industrial Classification (SIC) Code that best describes the construction activity being conducted at the site? | 1611 |
| 4 | If applicable, what is the Secondary SIC Code(s)? | |
| 5 | What is the total number of acres disturbed? | 9.93 |
| 6 | Is the project site part of a larger common plan of development or sale? | No |
| 7 | What is the estimated start date of the project? | 07/06/2020 |
| 8 | What is the estimated end date of the project? | 08/31/2022 |
| 9 | Will concrete truck washout be performed at the site? | Yes |

10 What is the name of the first water body(s) to receive the stormwater runoff or potential runoff from the site?	Spring Branch
11 What is the segment number(s) of the classified water body(s) that the discharge will eventually reach?	1014
12 Is the discharge into a Municipal Separate Storm Sewer System (MS4)?	Yes
12.1 What is the name of the MS4 Operator?	Harris County Flood Control District
13 Are any of the surface water bodies receiving discharges from the construction site on the 2016 Texas Integrated Report of Surface Water Quality?	Yes
13.1 What is the name(s) of the impaired water body(s) receiving the discharges from the construction site?	Buffalo Bayou Above Tidal
14 Is the discharge or potential discharge within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, as defined in 30 TAC Chapter 213?	No
15 I certify that a stormwater pollution prevention plan has been developed, will be implemented prior to construction, and to the best of my knowledge and belief is compliant with any applicable local sediment and erosion control plans, as required in the general permit TXR150000. Note: For multiple operators who operate under a shared SWP3, the confirmation of an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator.	Yes
16 I certify that I have obtained a copy and understand the terms and conditions of the Construction General Permit (TXR150000).	Yes
17 I understand that a Notice of Termination (NOT) must be submitted when this authorization is no longer needed.	Yes



LARGE CONSTRUCTION SITE NOTICE

FOR THE
Texas Commission on Environmental Quality (TCEQ)
Stormwater Program
TPDES GENERAL PERMIT TXR150000

“PRIMARY OPERATOR” NOTICE

This notice applies to construction sites operating under Part I.I.E.3. of the TPDES General Permit Number TXR150000 for discharges of stormwater runoff from construction sites equal to or greater than five acres, including the larger common plan of development. The information on this notice is required in Part III.D.2. of the general permit. Additional information regarding the TCEQ stormwater permit program may be found on the internet at:

http://www.tceq.state.tx.us/nav/permits/wq_construction.html

Site-Specific TPDES Authorization Number:	
Operator Name:	
Contact Name and Phone Number:	
Project Description: <i>Physical address or description of the site's location, and estimated start date and projected end date, or date that disturbed soils will be stabilized.</i>	
Location of Stormwater Pollution Prevention Plan:	



Notice of Intent (NOI) for an Authorization for Stormwater Discharges Associated with Construction Activity under TPDES General Permit TXR150000

IMPORTANT INFORMATION

Please read and use the General Information and Instructions prior to filling out each question in the NOI form.

Use the NOI Checklist to ensure all required information is completed correctly.

Incomplete applications delay approval or result in automatic denial.

Once processed your permit authorization can be viewed by entering the following link into your internet browser: http://www2.tceq.texas.gov/wq_dpa/index.cfm or you can contact TCEQ Stormwater Processing Center at 512-239-3700.

ePERMITS

Effective September 1, 2018, this paper form must be submitted to TCEQ with a completed electronic reporting waiver form (TCEQ-20754).

To submit an NOI electronically, enter the following web address into your internet browser and follow the instructions: <https://www3.tceq.texas.gov/steers/index.cfm>

APPLICATION FEE AND PAYMENT

The application fee for submitting a paper NOI is \$325. The application fee for electronic submittal of a NOI through the TCEQ ePermits system (STEERS) is \$225.

Payment of the application fee can be submitted by mail or through the TCEQ ePay system. The payment and the NOI must be mailed to separate addresses. To access the TCEQ ePay system enter the following web address into your internet browser: <http://www.tceq.texas.gov/epay>.

Provide your payment information for verification of payment:

- If payment was mailed to TCEQ, provide the following:
 - Check/Money Order Number: [REDACTED]
 - Name printed on Check: [REDACTED]
- If payment was made via ePay, provide the following:
 - Voucher Number: [REDACTED]
 - A copy of the payment voucher is attached to this paper NOI form.

RENEWAL (This portion of the NOI is not applicable after June 3, 2018)

Is this NOI for a renewal of an existing authorization? Yes No

If you answered Yes, provide the authorization number here: TXR15

NOTE: If an authorization number is not provided, a new number will be assigned.

SECTION 1. OPERATOR (APPLICANT)

a) If the applicant is currently a customer with TCEQ, what is the Customer Number (CN) issued to this entity? CN 602680423

(Refer to Section 1.a) of the Instructions)

b) What is the Legal Name of the entity (applicant) applying for this permit? (The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal document forming the entity.)

Harris County

c) What is the contact information for the Operator (Responsible Authority)?

Prefix (Mr. Ms. Miss): Mr

First and Last Name: Nick J. Russo Suffix: III

Title: Environmental Compliance Officer Credentials:

Phone Number: 713-274-3667 Fax Number: 713-755-5295

E-mail: Nick.Russo@hcpid.org

Mailing Address: 1001 Preston, 5th Floor

City, State, and Zip Code: Houston, TX 77002

Mailing Information if outside USA:

Territory:

Country Code:

Postal Code:

d) Indicate the type of customer:

Individual

Federal Government

Limited Partnership

County Government

General Partnership

State Government

Trust

City Government

Sole Proprietorship (D.B.A.)

Other Government

Corporation

Other:

Estate

Is the applicant an independent operator? Yes No

(If a governmental entity, a subsidiary, or part of a larger corporation, check No.)

e) Number of Employees. Select the range applicable to your company.

0-20

251-500

21-100

501 or higher

101-250

f) Customer Business Tax and Filing Numbers: (**Required** for Corporations and Limited Partnerships. **Not Required** for Individuals, Government, or Sole Proprietors.)

State Franchise Tax ID Number: [REDACTED]

Federal Tax ID: 760454514

Texas Secretary of State Charter (filing) Number: [REDACTED]

DUNS Number (if known): [REDACTED]

SECTION 2. APPLICATION CONTACT

Is the application contact the same as the applicant identified above?

Yes, go to Section 3

No, complete this section

Prefix (Mr. Ms. Miss): Ms.

First and Last Name: Julia Bond

Suffix: [REDACTED]

Title: Assistant Manager

Credential: P.E.

Organization Name: Harris County - Construction Programs Department

Phone Number: 713-274-1564

Fax Number: [REDACTED]

E-mail: Julia.bond@hcpid.org

Mailing Address: 1310 Prairie, Ste. 1102

Internal Routing (Mail Code, Etc.): [REDACTED]

City, State, and Zip Code: Houston, TX 77002

Mailing information if outside USA:

Territory: [REDACTED]

Country Code: [REDACTED]

Postal Code: [REDACTED]

SECTION 3. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

a) If this is an existing permitted site, what is the Regulated Entity Number (RN) issued to this site? RN [REDACTED]

(Refer to Section 3.a) of the Instructions)

- b) Name of project or site (the name known by the community where it's located): Neuens Road Proposed Detention Pond
- c) In your own words, briefly describe the type of construction occurring at the regulated site (residential, industrial, commercial, or other): Construction of proposed detention pond
- d) County or Counties (If located in more than one): Harris County
- e) Latitude: 29° 48' 22.41" N Longitude: 95° 31' 50.15" W
- f) Site Address/Location

If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753, complete, complete *Section A*.

If the site does not have a physical address, provide a location description in *Section B*. Example: located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1.

Section A:

Street Number and Name:

City, State, and Zip Code:

Section B:

Location Description: Neuens Road west of Blalock Road in Northwest Harris County, Precinct 4.

City (or city nearest to) where the site is located: Houston, TX

Zip Code where the site is located: 77080

SECTION 4. GENERAL CHARACTERISTICS

- a) Is the project or site located on Indian Country Lands?
 - Yes, do not submit this form. You must obtain authorization through EPA Region 6.
 - No

- b) Is your construction activity associated with a facility that, when completed, would be associated with the exploration, development, or production of oil or gas or geothermal resources?
 - Yes. Note: The construction stormwater runoff may be under jurisdiction of the Railroad Commission of Texas and may need to obtain authorization through EPA Region 6.
 - No

- c) What is the Primary Standard Industrial Classification (SIC) Code that best describes the construction activity being conducted at the site? 1611
https://www.osha.gov/pls/imis/sic_manual.display?id=11&tab=group

- d) What is the Secondary SIC Code(s), if applicable?
- e) What is the total number of acres to be disturbed? 8.23
- f) Is the project part of a larger common plan of development or sale?
- Yes
- No. The total number of acres disturbed, provided in e) above, must be 5 or more. If the total number of acres disturbed is less than 5, do not submit this form. See the requirements in the general permit for small construction sites.
- g) What is the estimated Start Date of the project?
- h) What is the estimated End Date of the project?
- i) Will concrete truck washout be performed at the site? Yes No
- j) What is the name of the first water body(ies) to receive the stormwater runoff or potential runoff from the site? HCFCF Detention Pond L512-01-00
- k) What is the segment number(s) of the classified water body(ies) that the discharge will eventually reach? L112-00-00 <https://www.tceq.texas.gov/publications/gi/gi-316>
- l) Is the discharge into a Municipal Separate Storm Sewer System (MS4)?
- Yes No

If Yes, provide the name of the MS4 operator: Harris County Flood Control District

Note: The general permit requires you to send a copy of this NOI form to the MS4 operator.

- m) Is the discharge or potential discharge from the site within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, as defined in 30 TAC Chapter 213?
- Yes, complete the certification below.
- No, go to Section 5

I certify that the copy of the TCEQ-approved Plan required by the Edwards Aquifer Rule (30 TAC Chapter 213) that is included or referenced in the Stormwater Pollution Prevention Plan will be implemented. Yes

SECTION 5. NOI CERTIFICATION

- a) I certify that I have obtained a copy and understand the terms and conditions of the Construction General Permit (TXR150000). Yes
- b) I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas. Yes
- c) I understand that a Notice of Termination (NOT) must be submitted when this authorization is no longer needed. Yes
- d) I certify that a Stormwater Pollution Prevention Plan has been developed, will be implemented prior to construction and to the best of my knowledge and belief is

compliant with any applicable local sediment and erosion control plans, as required in the Construction General Permit (TXR150000). Yes

Note: For multiple operators who prepare a shared SWP3, the confirmation of an operator may be limited to its obligations under the SWP3, provided all obligations are confirmed by at least one operator.

SECTION 6. APPLICANT CERTIFICATION SIGNATURE

Operator Signatory Name: Nick J. Russo III

Operator Signatory Title: Environmental Compliance Officer

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature (use blue ink): _____ Date: _____

NOTICE OF INTENT CHECKLIST (TXR150000)

Did you complete everything? Use this checklist to be sure!

Are you ready to mail your form to TCEQ? Go to the General Information Section of the Instructions for mailing addresses.

Confirm each item (or applicable item) in this form is complete. This checklist is for use by the applicant to ensure a complete application is being submitted. **Missing information may result in denial of coverage under the general permit.** (See NOI process description in the General Information and Instructions.)

APPLICATION FEE

If paying by check:

- Check was mailed **separately** to the TCEQs Cashier's Office. (See Instructions for Cashier's address and Application address.)
- Check number and name on check is provided in this application.

If using ePay:

- The voucher number is provided in this application and a copy of the voucher is attached.

RENEWAL

- If this application is for renewal of an existing authorization, the authorization number is provided.

OPERATOR INFORMATION

- Customer Number (CN) issued by TCEQ Central Registry
- Legal name as filed to do business in Texas. (Call TX SOS 512-463-5555 to verify.)
- Name and title of responsible authority signing the application.
- Mailing address is complete & verifiable with USPS. www.usps.com
- Phone number and e-mail address
- Type of operator (entity type). Is applicant an Independent operator?
- Number of employees.
- For corporations or limited partnerships - Tax ID and SOS filing numbers.
- Application contact and address is complete & verifiable with USPS. <http://www.usps.com>

REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

- Regulated Entity Reference Number (RN) (if site is already regulated by TCEQ)
- Site/project name and construction activity description
- County
- Latitude and longitude <http://www.tceq.texas.gov/gis/sqmaview.html>

- Site Address/Location. Do not use a rural route or post office box.

GENERAL CHARACTERISTICS

- Indian Country Lands –the facility is not on Indian Country Lands.
- Construction activity related to facility associated to oil, gas, or geothermal resources
- Primary SIC Code that best describes the construction activity being conducted at the site.
www.osha.gov/oshstats/sicser.html
- Estimated starting and ending dates of the project.
- Confirmation of concrete truck washout.
- Acres disturbed is provided and qualifies for coverage through a NOI.
- Common plan of development or sale.
- Receiving water body or water bodies.
- Segment number or numbers.
- MS4 operator.
- Edwards Aquifer rule.

CERTIFICATION

- Certification statements have been checked indicating Yes.
- Signature meets 30 Texas Administrative Code (TAC) §305.44 and is original.

Instructions for Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity under TPDES General Permit (TXR150000)

GENERAL INFORMATION

Where to Send the Notice of Intent (NOI): By Regular U.S. Mail:

By Regular Mail:

TCEQ

Stormwater Processing Center (MC228)

P.O. Box 13087

Austin, Texas 78711-3087

By Overnight or Express Mail:

TCEQ

Stormwater Processing Center (MC228)

12100 Park 35 Circle

Austin, TX

Application Fee:

The application fee of \$325 is required to be paid at the time the NOI is submitted. Failure to submit payment at the time the application is filed will cause delays in acknowledgment or denial of coverage under the general permit. Payment of the fee may be made by check or money order, payable to TCEQ, or through EPAY (electronic payment through the web).

Mailed Payments:

Use the attached General Permit Payment Submittal Form. The application fee is submitted to a different address than the NOI. Read the General Permit Payment Submittal Form for further instructions, including the address to send the payment.

ePAY Electronic Payment: <http://www.tceq.texas.gov/epay>

When making the payment you must select Water Quality, and then select the fee category "General Permit Construction Storm Water Discharge NOI Application". You must include a copy of the payment voucher with your NOI. Your NOI will not be considered complete without the payment voucher.

TCEQ Contact List:

Application - status and form questions:

512-239-3700, swpermit@tceq.texas.gov

Technical questions:

512-239-4671, swgp@tceq.texas.gov

Environmental Law Division:

512-239-0600

Records Management - obtain copies of forms:

512-239-0900

Reports from databases (as available):

512-239-DATA (3282)

Cashier's office:

512-239-0357 or 512-239-0187

Notice of Intent Process:

When your NOI is received by the program, the form will be processed as follows:

- **Administrative Review:** Each item on the form will be reviewed for a complete response. In addition, the operator's legal name must be verified with Texas Secretary of State as valid and active (if applicable). The address(s) on the form must be verified with the US Postal service as receiving regular mail delivery. Do not give an overnight/express mailing address.

- **Notice of Deficiency:** If an item is incomplete or not verifiable as indicated above, a notice of deficiency (NOD) will be mailed to the operator. The operator will have 30 days to respond to the NOD. The response will be reviewed for completeness.
- **Acknowledgment of Coverage:** An Acknowledgment Certificate will be mailed to the operator. This certificate acknowledges coverage under the general permit.

or

Denial of Coverage: If the operator fails to respond to the NOD or the response is inadequate, coverage under the general permit may be denied. If coverage is denied, the operator will be notified.

General Permit (Your Permit)

For NOIs submitted **electronically** through ePermits, provisional coverage under the general permit begins immediately following confirmation of receipt of the NOI form by the TCEQ.

For **paper** NOIs, provisional coverage under the general permit begins **7 days after a completed NOI is postmarked for delivery** to the TCEQ.

You should have a copy of your general permit when submitting your application. You may view and print your permit for which you are seeking coverage, on the TCEQ web site <http://www.tceq.texas.gov>. Search using keyword TXR150000.

Change in Operator

An authorization under the general permit is not transferable. If the operator of the regulated project or site changes, the present permittee must submit a Notice of Termination and the new operator must submit a Notice of Intent. The NOT and NOI must be submitted no later than 10 days prior to the change in Operator status.

TCEQ Central Registry Core Data Form

The Core Data Form has been incorporated into this form. Do not send a Core Data Form to TCEQ. After final acknowledgment of coverage under the general permit, the program will assign a Customer Number and Regulated Entity Number, if one has not already been assigned to this customer or site.

For existing customers and sites, you can find the Customer Number and Regulated Entity Number by entering the following web address into your internet browser: <http://www15.tceq.texas.gov/crpub/> or you can contact the TCEQ Stormwater Processing Center at 512-239-3700 for assistance. On the website, you can search by your permit number, the Regulated Entity (RN) number, or the Customer Number (CN). If you do not know these numbers, you can select “Advanced Search” to search by permittee name, site address, etc.

The Customer (Permittee) is responsible for providing consistent information to the TCEQ, and for updating all CN and RN data for all authorizations as changes occur. For this permit, a Notice of Change form must be submitted to the program area.

INSTRUCTIONS FOR FILLING OUT THE NOI FORM

Renewal of General Permit. Dischargers holding active authorizations under the expired General Permit are required to submit a NOI to continue coverage. The existing permit number is required. If the permit number is not provided or has been terminated, expired, or denied a new permit number will be issued.

Section 1. Operator (Applicant)

a) Customer Number (CN)

TCEQ's Central Registry will assign each customer a number that begins with CN, followed by nine digits. **This is not a permit number, registration number, or license number.**

If the applicant is an existing TCEQ customer, the Customer Number is available at the following website: <http://www15.tceq.texas.gov/crpub/>. If the applicant is not an existing TCEQ customer, leave the space for CN blank.

b) Legal Name of Applicant

Provide the current legal name of the applicant. The name must be provided exactly as filed with the Texas Secretary of State (SOS), or on other legal documents forming the entity, as filed in the county. You may contact the SOS at 512-463-5555, for more information related to filing in Texas. If filed in the county, provide a copy of the legal documents showing the legal name.

c) Contact Information for the Applicant (Responsible Authority)

Provide information for the person signing the application in the Certification section. This person is also referred to as the Responsible Authority.

Provide a complete mailing address for receiving mail from the TCEQ. The mailing address must be recognized by the US Postal Service. You may verify the address on the following website: <https://tools.usps.com/go/ZipLookupAction!input.action>.

The phone number should provide contact to the applicant.

The fax number and e-mail address are optional and should correspond to the applicant.

d) Type of Customer (Entity Type)

Check only one box that identifies the type of entity. Use the descriptions below to identify the appropriate entity type. Note that the selected entity type also indicates the name that must be provided as an applicant for an authorization.

Individual

An individual is a customer who has not established a business, but conducts an activity that needs to be regulated by the TCEQ.

Partnership

A customer that is established as a partnership as defined by the Texas Secretary of State Office (TX SOS). If the customer is a 'General Partnership' or 'Joint Venture' filed in the county (not filed with TX SOS), the legal name of each partner forming the 'General Partnership' or 'Joint Venture' must be provided. Each 'legal entity' must apply as a co-applicant.

Trust or Estate

A trust and an estate are fiduciary relationships governing the trustee/executor with respect to the trust/estate property.

Sole Proprietorship (DBA)

A sole proprietorship is a customer that is owned by only one person and has not been incorporated. This business may:

1. be under the person's name
2. have its own name (doing business as or DBA)
3. have any number of employees.

If the customer is a Sole Proprietorship or DBA, the 'legal name' of the individual business 'owner' must be provided. The DBA name is not recognized as the 'legal name' of the entity. The DBA name may be used for the site name (regulated entity).

Corporation

A customer that meets all of these conditions:

1. is a legally incorporated entity under the laws of any state or country
2. is recognized as a corporation by the Texas Secretary of State
3. has proper operating authority to operate in Texas

The corporation's 'legal name' as filed with the Texas Secretary of State must be provided as applicant. An 'assumed' name of a corporation is not recognized as the 'legal name' of the entity.

Government

Federal, state, county, or city government (as appropriate)

The customer is either an agency of one of these levels of government or the governmental body itself. The government agency's 'legal name' must be provided as the applicant. A department name or other description of the organization is not recognized as the 'legal name'.

Other

This may include a utility district, water district, tribal government, college district, council of governments, or river authority. Provide the specific type of government.

e) Independent Entity

Check No if this customer is a subsidiary, part of a larger company, or is a governmental entity. Otherwise, check Yes.

f) Number of Employees

Check one box to show the number of employees for this customer's entire company, at all locations. This is not necessarily the number of employees at the site named in the application.

g) Customer Business Tax and Filing Numbers

These are required for Corporations and Limited Partnerships. These are not required for Individuals, Government, and Sole Proprietors.

State Franchise Tax ID Number

Corporations and limited liability companies that operate in Texas are issued a franchise tax identification number. If this customer is a corporation or limited liability company, enter the Tax ID number.

Federal Tax ID

All businesses, except for some small sole proprietors, individuals, or general partnerships should have a federal taxpayer identification number (TIN). Enter this number here. Use no prefixes, dashes, or hyphens. Sole proprietors, individuals, or general partnerships do not need to provide a federal tax ID.

TX SOS Charter (filing) Number

Corporations and Limited Partnerships required to register with the Texas Secretary of State are issued a charter or filing number. You may obtain further information by calling SOS at 512-463-5555.

DUNS Number

Most businesses have a DUNS (Data Universal Numbering System) number issued by Dun and Bradstreet Corp. If this customer has one, enter it here.

Section 2. APPLICATION CONTACT

Provide the name and contact information for the person that TCEQ can contact for additional information regarding this application.

Section 3. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

a) Regulated Entity Reference Number (RN)

The RN is issued by TCEQ's Central Registry to sites where an activity is regulated by TCEQ. This is not a permit number, registration number, or license number. Search TCEQ's Central Registry to see if the site has an assigned RN at <http://www15.tceq.texas.gov/crpub/>. If this regulated entity has not been assigned an RN, leave this space blank.

If the site of your business is part of a larger business site, an RN may already be assigned for the larger site. Use the RN assigned for the larger site.

If the site is found, provide the assigned RN and provide the information for the site to be authorized through this application. The site information for this authorization may vary from the larger site information.

An example is a chemical plant where a unit is owned or operated by a separate corporation that is accessible by the same physical address of your unit or facility. Other examples include industrial parks identified by one common address but different corporations have control of defined areas within the site. In both cases, an RN would be assigned for the physical address location and the permitted sites would be identified separately under the same RN.

b) Name of the Project or Site

Provide the name of the site or project as known by the public in the area where the site is located. The name you provide on this application will be used in the TCEQ Central Registry as the Regulated Entity name.

c) Description of Activity Regulated

In your own words, briefly describe the primary business that you are doing that requires this authorization. Do not repeat the SIC Code description.

d) County

Provide the name of the county where the site or project is located. If the site or project is located in more than one county, provide the county names as secondary.

e) Latitude and Longitude

Enter the latitude and longitude of the site in degrees, minutes, and seconds or decimal form. For help obtaining the latitude and longitude, go to:

<http://www.tceq.texas.gov/gis/sqmaview.html>.

f) Site Address/Location

If a site has an address that includes a street number and street name, enter the complete address for the site in *Section A*. If the physical address is not recognized as a USPS delivery address, you may need to validate the address with your local police (911 service) or through an online map site used to locate a site. Please confirm this to be a complete and valid address. Do not use a rural route or post office box for a site location.

If a site does not have an address that includes a street number and street name, provide a complete written location description in *Section B*. For example: "The site is located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1."

Provide the city (or nearest city) and zip code of the site location.

Section 4. GENERAL CHARACTERISTICS

a) Indian Country Lands

If your site is located on Indian Country Lands, the TCEQ does not have authority to process your application. You must obtain authorization through EPA Region 6, Dallas. Do not submit this form to TCEQ.

b) Construction activity associated with facility associated with exploration, development, or production of oil, gas, or geothermal resources

If your activity is associated with oil and gas exploration, development, or production, you may be under jurisdiction of the Railroad Commission of Texas (RRC) and may need to obtain authorization from EPA Region 6.

Construction activities associated with a facility related to oil, gas or geothermal resources may include the construction of a well site; treatment or storage facility; underground hydrocarbon or natural gas storage facility; reclamation plant; gas processing facility; compressor station; terminal facility where crude oil is stored prior to refining and at which refined products are stored solely for use at the facility; a

carbon dioxide geologic storage facility; and a gathering, transmission, or distribution pipeline that will transport crude oil or natural gas, including natural gas liquids, prior to refining of such oil or the use of the natural gas in any manufacturing process or as a residential or industrial fuel.

Where required by federal law, discharges of stormwater associated with construction activities under the RRC's jurisdiction must be authorized by the EPA and the RRC, as applicable. Activities under RRC jurisdiction include construction of a facility that, when completed, would be associated with the exploration, development, or production of oil or gas or geothermal resources, such as a well site; treatment or storage facility; underground hydrocarbon or natural gas storage facility; reclamation plant; gas processing facility; compressor station; terminal facility where crude oil is stored prior to refining and at which refined products are stored solely for use at the facility; a carbon dioxide geologic storage facility under the jurisdiction of the RRC; and a gathering, transmission, or distribution pipeline that will transport crude oil or natural gas, including natural gas liquids, prior to refining of such oil or the use of the natural gas in any manufacturing process or as a residential or industrial fuel. The RRC also has jurisdiction over stormwater from land disturbance associated with a site survey that is conducted prior to construction of a facility that would be regulated by the RRC. Under 33 U.S.C. §1342(l)(2) and §1362(24), EPA cannot require a permit for discharges of stormwater from field activities or operations associated with {oil and gas} exploration, production, processing, or treatment operations, or transmission facilities, including activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be construction activities unless the discharge is contaminated by contact with any overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site of the facility. Under §3.8 of this title (relating to Water Protection), the RRC prohibits operators from causing or allowing pollution of surface or subsurface water. Operators are encouraged to implement and maintain best management practices (BMPs) to minimize discharges of pollutants, including sediment, in stormwater during construction activities to help ensure protection of surface water quality during storm events.

For more information about the jurisdictions of the RRC and the TCEQ, read the Memorandum of Understanding (MOU) between the RRC and TCEQ at 16 Texas Administrative Code, Part 1, Chapter 3, Rule 3.30, by entering the following link into an internet browser:

[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=30](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=30) or contact the TCEQ Stormwater Team at 512-239-4671 for additional information.

c) Primary Standard Industrial Classification (SIC) Code

Provide the SIC Code that best describes the construction activity being conducted at this site.

Common SIC Codes related to construction activities include:

- 1521 - Construction of Single Family Homes
- 1522 - Construction of Residential Buildings Other than Single Family Homes
- 1541 - Construction of Industrial Buildings and Warehouses

- 1542 - Construction of Non-residential Buildings, other than Industrial Buildings and Warehouses
- 1611 - Highway and Street Construction, except Highway Construction
- 1622 - Bridge, Tunnel, and Elevated Highway Construction
- 1623 - Water, Sewer, Pipeline and Communications, and Power Line Construction

For help with SIC Codes, enter the following link into your internet browser: <http://www.osha.gov/pls/imis/sicsearch.html> or you can contact the TCEQ Small Business and Local Government Assistance Section at 800-447-2827 for assistance.

d) Secondary SIC Code

Secondary SIC Code(s) may be provided. Leave this blank if not applicable. For help with SIC Codes, enter the following link into your internet browser: <http://www.osha.gov/pls/imis/sicsearch.html> or you can contact the TCEQ Small Business and Environmental Assistance Section at 800-447-2827 for assistance.

e) Total Number of Acres Disturbed

Provide the approximate number of acres that the construction site will disturb. Construction activities that disturb less than one acre, unless they are part of a larger common plan that disturbs more than one acre, do not require permit coverage. Construction activities that disturb between one and five acres, unless they are part of a common plan that disturbs more than five acres, do not require submission of an NOI. Therefore, the estimated area of land disturbed should not be less than five, unless the project is part of a larger common plan that disturbs five or more acres. Disturbed means any clearing, grading, excavating, or other similar activities.

If you have any questions about this item, please contact the stormwater technical staff by phone at 512-239-4671 or by email at swgp@tceq.texas.gov.

f) Common Plan of Development

Construction activities that disturb less than five acres do not require submission of an NOI unless they are part of a common plan of development or for sale where the area disturbed is five or more acres. Therefore, the estimated area of land disturbed should not be less than five, unless the project is part of a larger common plan that disturbs five or more acres. Disturbed means any clearing, grading, excavating, or other similar activities.

For more information on what a common plan of development is, refer to the definition of “Common Plan of Development” in the Definitions section of the general permit or enter the following link into your internet browser:

www.tceq.texas.gov/permitting/stormwater/common_plan_of_development_steps.html

For further information, go to the TCEQ stormwater construction webpage enter the following link into your internet browser: www.tceq.texas.gov/goto/construction and search for “Additional Guidance and Quick Links”. If you have any further questions about the Common Plan of Development you can contact the TCEQ Stormwater Team at 512-239-4671 or the TCEQ Small Business and Environmental Assistance at 800-447-2827.

g) What is the estimated start date of the project?

This would be the date that any construction activity or construction support activity is initiated at the site. If renewing the permit provide the original start date of when construction activity for this project began.

h) What is the estimated end date of the project?

This is the date that any construction activity or construction support activity has ended and final stabilization has been achieved at the site. If renewing the permit, provide the estimated end date of the construction project.

i) Will concrete truck washout be performed at the site?

Indicate if you expect that operators of concrete trucks will washout concrete trucks at the construction site.

j) Identify the water body(s) receiving stormwater runoff

The stormwater may be discharged directly to a receiving stream or through a MS4 from your site. It eventually reaches a receiving water body such as a local stream or lake, possibly via a drainage ditch. You must provide the name of the water body that receives the discharge from the site (a local stream or lake).

If your site has more than one outfall you need to include the name of the first water body for each outfall, if they are different.

k) Identify the segment number(s) of the classified water body(s)

Identify the classified segment number(s) receiving a discharge directly or indirectly. Enter the following link into your internet browser to find the segment number of the classified water body where stormwater will flow from the site:

www.tceq.texas.gov/waterquality/monitoring/viewer.html or by contacting the TCEQ Water Quality Division at (512) 239-4671 for assistance.

You may also find the segment number in TCEQ publication GI-316 by entering the following link into your internet browser: www.tceq.texas.gov/publications/gi/gi-316 or by contacting the TCEQ Water Quality Division at (512) 239-4671 for assistance.

If the discharge is into an unclassified receiving water and then crosses state lines prior to entering a classified segment, select the appropriate watershed:

- 0100 (Canadian River Basin)
- 0200 (Red River Basin)
- 0300 (Sulfur River Basin)
- 0400 (Cypress Creek Basin)
- 0500 (Sabine River Basin)

Call the Water Quality Assessments section at (512) 239-4671 for further assistance.

l) Discharge into MS4 – Identify the MS4 Operator

The discharge may initially be into a municipal separate storm sewer system (MS4). If the stormwater discharge is into an MS4, provide the name of the entity that operates the MS4 where the stormwater discharges. An MS4 operator is often a city, town, county, or utility district, but possibly can be another form of government. Please note

that the Construction General Permit requires the Operator to supply the MS4 with a copy of the NOI submitted to TCEQ. For assistance, you may call the technical staff at 512-239-4671.

m) Discharges to the Edwards Aquifer Recharge Zone and Certification

The general permit requires the approved Contributing Zone Plan or Water Pollution Abatement Plan to be included or referenced as a part of the Stormwater Pollution Prevention Plan.

See maps on the TCEQ website to determine if the site is located within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer by entering the following link into an internet browser:

www.tceq.texas.gov/field/eapp/viewer.html or by contacting the TCEQ Water Quality Division at 512-239-4671 for assistance.

If the discharge or potential discharge is within the Recharge Zone, Contributing Zone, or Contributing Zone within the Transition Zone of the Edwards Aquifer, a site-specific authorization approved by the Executive Director under the Edwards Aquifer Protection Program (30 TAC Chapter 213) is required before construction can begin.

For questions regarding the Edwards Aquifer Protection Program, contact the appropriate TCEQ Regional Office. For projects in Hays, Travis and Williamson Counties: Austin Regional Office, 12100 Park 35 Circle, Austin, TX 78753, (512) 339-2929. For Projects in Bexar, Comal, Kinney, Medina and Uvalde Counties: TCEQ San Antonio Regional Office, 14250 Judson Rd., San Antonio, TX 78233-4480, (210) 490-3096.

Section 5. NOI CERTIFICATION

Note: Failure to indicate Yes to all of the certification items may result in denial of coverage under the general permit.

a) Certification of Understanding the Terms and Conditions of Construction General Permit (TXR150000)

Provisional coverage under the Construction General Permit (TXR150000) begins 7 days after the completed paper NOI is postmarked for delivery to the TCEQ. (Electronic applications submitted through ePermits have immediate provisional coverage). You must obtain a copy and read the Construction General Permit before submitting your application. You may view and print the Construction General Permit for which you are seeking coverage at the TCEQ web site by entering the following link into an internet browser: www.tceq.texas.gov/goto/construction or you may contact the TCEQ Stormwater processing Center at (512) 239-3700 for assistance.

b) Certification of Legal Name

The full legal name of the applicant as authorized to do business in Texas is required. The name must be provided exactly as filed with the Texas Secretary of State (SOS), or on other legal documents forming the entity, that is filed in the county where doing business. You may contact the SOS at 512-463 5555, for more information related to filing in Texas.

c) Understanding of Notice of Termination

A permittee shall terminate coverage under this Construction General Permit through the submittal of a NOT when the operator of the facility changes, final stabilization has been reached, the discharge becomes authorized under an individual permit, or the construction activity never began at this site.

d) Certification of Stormwater Pollution Prevention Plan

The SWP3 identifies the areas and activities that could produce contaminated runoff at your site and then tells how you will ensure that this contamination is mitigated. For example, in describing your mitigation measures, your site's plan might identify the devices that collect and filter stormwater, tell how those devices are to be maintained, and tell how frequently that maintenance is to be carried out. You must develop this plan in accordance with the TCEQ general permit requirements. This plan must be developed and implemented before you complete this NOI. The SWP3 must be available for a TCEQ investigator to review on request.

Section 6. APPLICANT CERTIFICATION SIGNATURE

The certification must bear an original signature of a person meeting the signatory requirements specified under 30 Texas Administrative Code (TAC) §305.44.

If you are a corporation:

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(1) (see below). According to this code provision, any corporate representative may sign an NOI or similar form so long as the authority to sign such a document has been delegated to that person in accordance with corporate procedures. By signing the NOI or similar form, you are certifying that such authority has been delegated to you. The TCEQ may request documentation evidencing such authority.

If you are a municipality or other government entity:

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a)(3) (see below). According to this code provision, only a ranking elected official or principal executive officer may sign an NOI or similar form. Persons such as the City Mayor or County Commissioner will be considered ranking elected officials. In order to identify the principal executive officer of your government entity, it may be beneficial to consult your city charter, county or city ordinances, or the Texas statute(s) under which your government entity was formed. An NOI or similar document that is signed by a government official who is not a ranking elected official or principal executive officer does not conform to §305.44(a)(3). The signatory requirement may not be delegated to a government representative other than those identified in the regulation. By signing the NOI or similar form, you are certifying that you are either a ranking elected official or principal executive officer as required by the administrative code. Documentation demonstrating your position as a ranking elected official or principal executive officer may be requested by the TCEQ.

If you have any questions or need additional information concerning the signatory requirements discussed above, please contact the TCEQ's Environmental Law Division at (512) 239-0600.

30 Texas Administrative Code

§305.44. Signatories to Applications

(a) All applications shall be signed as follows.

(1) For a corporation, the application shall be signed by a responsible corporate officer. For purposes of this paragraph, a responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the

corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit or post-closure order applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

(2) For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

(3) For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the EPA).

Texas Commission on Environmental Quality General Permit Payment Submittal Form

Use this form to submit your Application Fee only if you are mailing your payment.

Instructions:

- Complete items 1 through 5 below:
- Staple your check in the space provided at the bottom of this document.
- *Do not mail this form with your NOI form.*
- *Do not mail this form to the same address as your NOI.*

Mail this form and your check to either of the following:

By Regular U.S. Mail

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, TX 78711-3088

By Overnight or Express Mail

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, TX 78753

Fee Code: GPA General Permit: TXR150000

1. Check or Money Order No:
2. Amount of Check/Money Order:
3. Date of Check or Money Order:
4. Name on Check or Money Order:
5. NOI Information:

If the check is for more than one NOI, list each Project or Site (RE) Name and Physical Address exactly as provided on the NOI. **Do not submit a copy of the NOI with this form, as it could cause duplicate permit application entries!**

If there is not enough space on the form to list all of the projects or sites the authorization will cover, then attach a list of the additional sites.

Project/Site (RE) Name:

Project/Site (RE) Physical Address:

Staple the check or money order to this form in this space.



TCEQ Office Use Only
Permit No:
CN:
RN:
Region:

Notice of Termination (NOT) for Authorizations under TPDES General Permit TXR150000

IMPORTANT INFORMATION:

Please read and use the General Information and Instructions prior to filling out each question in the NOI form.

Effective September 1, 2018, this paper form can only be submitted to TCEQ with a completed and qualifying form for a waiver from electronic submittal of applications and forms.

ePermits: This form is available on our online permitting system.

Sign up for online permitting at: <https://www3.tceq.texas.gov/steers/>

What is the permit number to be terminated?

TXR15 [REDACTED]

TXRCW [REDACTED]

Section 1. OPERATOR (Permittee)

a) What is the Customer Number (CN) issued to this entity?

CN 602680423

b) What is the Legal Name of the current permittee?

Harris County

c) Provide the contact information for the Operator (Responsible Authority).

Prefix (Mr. Ms. or Miss): Mr.

First and Last Name: Nick J.Russo III

Suffix: [REDACTED]

Title: Environmental Compliance Officer

Credentials: [REDACTED]

Phone Number: 713-274-3667 Fax Number: [REDACTED]

Email: Nick.Russo@hcpid.org

Mailing Address: 1001 Preston, 5th Floor

City, State, and Zip Code: Houston, TX 77002

Country Mailing Information, if outside USA: [REDACTED]

Section 2. APPLICATION CONTACT

This is the person TCEQ will contact if additional information is needed regarding this application.

Is the application contact the same as the permittee identified above? Yes No

If Yes, go to Section 3.

If No, complete section below

Prefix (Mr. Ms. or Miss): Ms.

First and Last Name: Julia Bond

Suffix: [REDACTED]

Title: Assistant Manager

Credentials: P.E.

Phone Number: 713-274-1564 Fax Number: [REDACTED]

Email: Julia.bond@hcpid.org

Mailing Address: 1310 Prairie, Ste. 1102

City, State, and Zip Code: Houston, TX 77002

Country Mailing Information, if outside USA: [REDACTED]

Section 3. REGULATED ENTITY (RE) INFORMATION ON PROJECT OR SITE

a) TCEQ issued RE Reference Number (RN): RN [REDACTED]

b) Name of project or site as known by the local community: [REDACTED]

c) County, or counties if more than 1: Harris County

d) Latitude: [REDACTED] Longitude: [REDACTED]

e) Site Address/Location:

If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753, complete Section 3A.

If the site does not have a physical address, provide a location description in Section 3B. Example: located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1.

Section 3A: Physical Address of Project or Site:

Street Number and Name: [REDACTED]

City, State, and Zip Code: [REDACTED]

Section 3B: Site Location Description:

Location description: [REDACTED]
[REDACTED]

City where the site is located or, if not in a city, what is the nearest city: [REDACTED]

Zip Code where the site is located: [REDACTED]

Section 4. REASON FOR TERMINATION

Check the reason for termination:

- Final stabilization has been achieved on all portions of the site that are the responsibility of the Operator and all silt fences and other temporary erosion controls have been removed, or scheduled for removal as defined in the SWP3.
- Another permitted Operator has assumed control over all areas of the site that have not been finally stabilized, and temporary erosion controls that have been identified in the SWP3 have been transferred to the new Operator.

- The discharge is now authorized under an alternate TPDES permit.
- The activity never began at this site that is regulated under the general permit.

Section 5. CERTIFICATION

Signatory Name: Nick J. Russo III

Signatory Title: Environmental Compliance Officer

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature (use blue ink): _____ Date: _____

Instructions for Notice of Termination (NOT) for Authorizations under TPDES General Permit TXR150000

GENERAL INFORMATION

Where to Send the Notice of Termination (NOT):

BY REGULAR U.S. MAIL:

Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
P.O. Box 13087
Austin, Texas 78711-3087

BY OVERNIGHT/EXPRESS MAIL:

Texas Commission on Environmental Quality
Stormwater Processing Center (MC-228)
12100 Park 35 Circle
Austin, TX 78753

TCEQ Contact List:

Application status and form questions:	512-239-3700, swpermit@tceq.texas.gov
Technical questions:	512-239-4671, swgp@tceq.texas.gov
Environmental Law Division:	512-239-0600
Records Management - obtain copies of forms:	512-239-0900
Reports from databases (as available):	512-239-DATA (3282)
Cashier's office:	512-239-0357 or 512-239-0187

Notice of Termination Process:

A Notice of Termination is **effective on the date postmarked for delivery to TCEQ.**

When your NOT is received by the program, the form will be processed as follows:

- 1) Administrative Review: The form will be reviewed to confirm the following:
 - the permit number is provided;
 - the permit is active and has been approved;
 - the entity terminating the permit is the current permittee;
 - the site information matches the original permit record; and
 - the form has the required original signature with title and date.
- 2) Notice of Deficiency: If an item is incomplete or not verifiable as indicated above, a phone call will be made to the applicant to clear the deficiency. A letter will not be sent to the permittee if unable to process the form.
- 3) Confirmation of Termination: A Notice of Termination Confirmation letter will be mailed to the operator.

Change in Operator:

An authorization under the general permit is not transferable. If the operator of the regulated entity changes, the present permittee must submit a Notice of Termination and the new operator must submit a Notice of Intent. The NOT and NOI must be submitted not later than 10 days prior to the change in Operator status.

INSTRUCTIONS FOR FILLING OUT THE FORM

The majority of permit information related to the current operator and regulated entity are available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.

Section 1. Operator (Current Permittee):

- a) Customer Number (CN)
TCEQ's Central Registry assigns each customer a number that begins with CN, followed by nine digits. This is not a permit number, registration number, or license number. The Customer Number, for the current permittee, is available at the following website:
http://www2.tceq.texas.gov/wq_dpa/index.cfm.

- b) Legal Name of Operator
The operator must be the same entity as previously submitted on the original Notice of Intent for the permit number provided. The current operator name, as provided on the current authorization, is available at the following website:
http://www2.tceq.texas.gov/wq_dpa/index.cfm.

- c) Contact Information for the Operator (Responsible Authority)
Provide information for person signing the NOT application in the Certification section. This person is also referred to as the Responsible Authority.

Provide a complete mailing address for receiving mail from the TCEQ. Update the address if different than previously submitted for the Notice of Intent or Notice of Change. The mailing address must be recognized by the US Postal Service. You may verify the address on the following website: <https://tools.usps.com/go/ZipLookupAction!input.action>.

The phone number should provide contact to the operator.

The fax number and e-mail address are optional and should correspond to the operator.

Section 2. Application Contact:

Provide the name, title and contact information of the person that TCEQ can contact for additional information regarding this application.

Section 3. Regulated Entity (RE) Information on Project or Site:

- a) Regulated Entity Reference Number (RN)
A number issued by TCEQ's Central Registry to sites where an activity regulated by TCEQ. This is not a permit number, registration number, or license number. The Regulated Entity Reference Number is available at the following website:
http://www2.tceq.texas.gov/wq_dpa/index.cfm.
- b) Name of the Project or Site
Provide the name of the site as known by the public in the area where the site is located.
- c) County
Identify the county or counties in which the regulated entity is located.
- d) Latitude and Longitude
Enter the latitude and longitude of the site in degrees, minutes, and seconds or decimal form. The latitude and longitude as provided on the current authorization is available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.
- e) Site/Project (RE) Physical Address/Location Information
The physical address/location information, as provided on the current authorization, is available at the following website: http://www2.tceq.texas.gov/wq_dpa/index.cfm.

Section 3A. If a site has an address that includes a street number and street name, enter the complete address for the site. If the physical address is not recognized as a USPS delivery address, you may need to validate the address with your local police (911 service) or through an online map site used to locate the site. Please confirm this to be a complete and valid address. Do not use a rural route or post office box for a site location.

Section 3B. If a site does not have an address that includes a street number and street name, provide a complete written location description. For example: "The site is located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1."

Provide the city (or nearest city) and Zip Code of the facility location.

Section 4. Reason for Termination:

The Notice of Termination form is only for use to terminate the authorization (permit). The Permittee must indicate the specific reason for terminating by checking one of the options. If the reason is not listed then provide an attachment that explains the reason for termination.

Please read your general permit carefully to determine when to terminate your permit. Permits will not be reactivated after submitting a termination form. The termination is effective on the date postmarked for delivery to TCEQ.

Section 5. Certification:

The certification must bear an original signature of a person meeting the signatory requirements specified under 30 Texas Administrative Code §305.44.

IF YOU ARE A CORPORATION:

The regulation that controls who may sign an application form is 30 Texas Administrative Code §305.44(a), which is provided below. According to this code provision, any corporate representative may sign an NOI or similar form so long as the authority to sign such a document has been delegated to that person in accordance with corporate procedures. By signing the NOI or similar form, you are certifying that such authority has been delegated to you. The TCEQ may request documentation evidencing such authority.

IF YOU ARE A MUNICIPALITY OR OTHER GOVERNMENT ENTITY:

The regulation that controls who may sign an NOI or similar form is 30 Texas Administrative Code §305.44(a), which is provided below. According to this code provision, only a ranking elected official or principal executive officer may sign an NOI or similar form. Persons such as the City Mayor or County Commissioner will be considered ranking elected officials. In order to identify the principal executive officer of your government entity, it may be beneficial to consult your city charter, county or city ordinances, or the Texas statutes under which your government entity was formed. An NOI or similar document that is signed by a government official who is not a ranking elected official or principal executive officer does not conform to §305.44(a) (3). The signatory requirement may not be delegated to a government representative other than those identified in the regulation. By signing the NOI or similar form, you are certifying that you are either a ranking elected official or principal executive officer as required by the administrative code. Documentation demonstrating your position as a ranking elected official or principal executive officer may be requested by the TCEQ.

If you have any questions or need additional information concerning the signatory requirements discussed above, please contact the Texas Commission on Environmental Quality's Environmental Law Division at 512-239-0600.

30 Texas Administrative Code §305.44. Signatories to Applications

(a) All applications shall be signed as follows.

(1) For a corporation, the application shall be signed by a responsible corporate officer. For purposes of this paragraph, a responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit or post-closure order applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

(2) For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

(3) For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the EPA).

Section 8.

TPDES General Permit No. TXR 150000

(Dated March 5, 2018)



General Permit to Discharge Under
the Texas Pollutant Discharge
Elimination System

Stormwater Discharges Associated with
Construction Activities
TXR150000

Effective March 5, 2018

printed on
recycled paper

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Texas Commission on Environmental Quality

P.O. Box 13087, Austin, Texas 78711-3087



GENERAL PERMIT TO DISCHARGE UNDER THE
TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

This permit supersedes and replaces
TPDES General Permit No. TXR150000, issued March 5, 2013

Construction sites that discharge stormwater associated with construction activity
located in the state of Texas

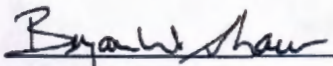
may discharge to surface water in the state

only according to monitoring requirements and other conditions set forth in this general permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ or Commission), the laws of the State of Texas, and other orders of the Commission of the TCEQ. The issuance of this general permit does not grant to the permittee the right to use private or public property for conveyance of stormwater and certain non-stormwater discharges along the discharge route. This includes property belonging to but not limited to any individual, partnership, corporation or other entity. Neither does this general permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This general permit and the authorization contained herein shall expire at midnight, five years from the permit effective date.

EFFECTIVE DATE: March 5, 2018

ISSUED DATE: 2-8-18


For the Commission

**TPDES GENERAL PERMIT NUMBER TXR150000 RELATING TO
STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION
ACTIVITIES**

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Construction General Permit

TPDES General Permit TXR150000

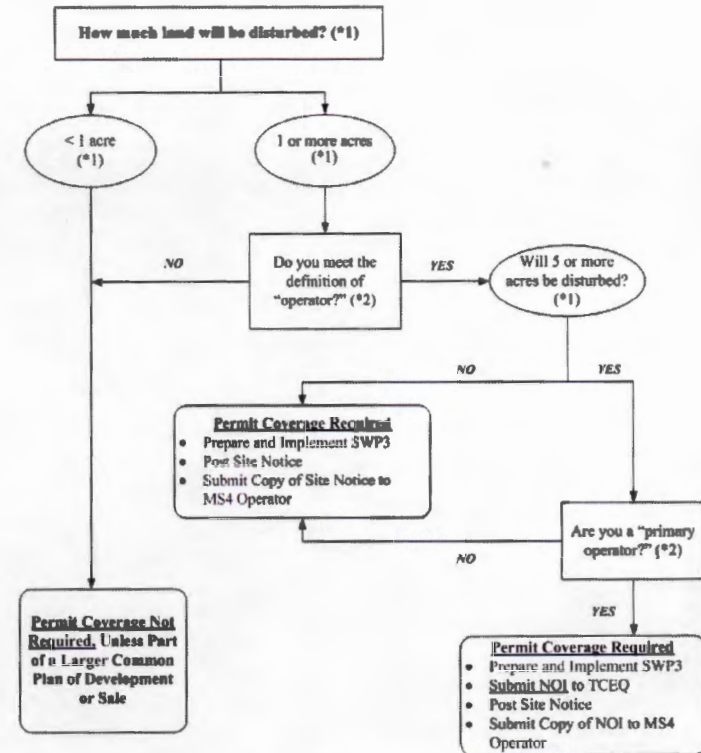
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Part I. Flow Chart and Definitions

Section A. Flow Chart to Determine Whether Coverage is Required

When calculating the acreage of land area disturbed, include the disturbed land-area of all construction and construction support activities.



(*1) To determine the size of the construction project, use the size of the entire area to be disturbed, and include the size of the larger common plan of development or sale, if the project is part of a larger project (refer to Part I.B., "Definitions," for an explanation of "common plan of development or sale").
 (*2) Refer to the definitions for "operator," "primary operator," and "secondary operator" in Part I., Section B. of this permit.

Section B. Definitions

Arid Areas - Areas with an average annual rainfall of 0 to 10 inches.

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control construction site runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Commencement of Construction - The initial disturbance of soils associated with clearing, grading, or excavation activities, as well as other construction-related activities (e.g., stockpiling of fill material, demolition).

Common Plan of Development - A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development (also known as a "common plan of development or sale") is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities. A common plan of development does not necessarily include all construction projects within the jurisdiction of a public entity (e.g., a city or university). Construction of roads or buildings in different parts of the jurisdiction would be considered separate "common plans," with only the interconnected parts of a project being considered part of a "common plan" (e.g., a building and its associated parking lot and driveways, airport runway and associated taxiways, a building complex, etc.). Where discrete construction projects occur within a larger common plan of development or sale but are located ¼ mile or more apart, and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale, provided that any interconnecting road, pipeline or utility project that is part of the same "common plan" is not included in the area to be disturbed.

Construction Activity - Includes soil disturbance activities, including clearing, grading, excavating, construction-related activity (e.g., stockpiling of fill material, demolition), and construction support activity. This does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (e.g., the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities). Regulated construction activity is defined in terms of small and large construction activity.

Construction Support Activity - A construction-related activity that specifically supports construction activity, which can involve earth disturbance or pollutant-generating activities of its own, and can include, but are not limited to, activities associated with concrete or asphalt batch plants, rock crushers, equipment staging or storage areas, chemical storage areas, material storage areas, material borrow areas, and excavated material disposal areas. Construction support activity must only directly support the construction activity authorized under this general permit.

Dewatering - The act of draining rainwater or groundwater from building foundations, vaults, and trenches.

Discharge - For the purposes of this permit, the drainage, release, or disposal of pollutants in stormwater and certain non-stormwater from areas where soil disturbing activities (e.g., clearing, grading, excavation, stockpiling of fill material, and demolition), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck wash out, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

Drought-Stricken Area - For the purposes of this permit, an area in which the National Oceanic and Atmospheric Administration's U.S. Seasonal Drought Outlook indicates for the period during which the construction will occur that any of the following conditions are

likely: (1) "Drought to persist or intensify", (2) "Drought ongoing, some improvement", (3) "Drought likely to improve, impacts ease", or (4) "Drought development likely". See http://www.cpc.ncep.noaa.gov/products/expert_assessment/drought.html.

Edwards Aquifer - As defined under Texas Administrative Code (TAC) § 213.3 of this title (relating to the Edwards Aquifer), that portion of an arcuate belt of porous, water-bearing, predominantly carbonate rocks known as the Edwards and Associated Limestones in the Balcones Fault Zone trending from west to east to northeast in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson Counties; and composed of the Salmon Peak Limestone, McKnight Formation, West Nueces Formation, Devil's River Limestone, Person Formation, Kainer Formation, Edwards Formation, and Georgetown Formation. The permeable aquifer units generally overlie the less-permeable Glen Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut Formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally.

Edwards Aquifer Recharge Zone - Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the offices of the Texas Commission on Environmental Quality (TCEQ) and the appropriate regional office. The Edwards Aquifer Map Viewer, located at http://www.tceq.texas.gov/compliance/field_ops/eapp/mapdisclaimer.html, can be used to determine where the recharge zone is located.

Edwards Aquifer Contributing Zone - The area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer. The contributing zone is located upstream (upgradient) and generally north and northwest of the recharge zone for the following counties: all areas within Kinney County, except the area within the watershed draining to Segment No. 2304 of the Rio Grande Basin; all areas within Uvalde, Medina, Bexar, and Comal Counties; all areas within Hays and Travis Counties, except the area within the watersheds draining to the Colorado River above a point 1.3 miles upstream from Tom Miller Dam, Lake Austin at the confluence of Barrow Brook Cove, Segment No. 1403 of the Colorado River Basin; and all areas within Williamson County, except the area within the watersheds draining to the Lampasas River above the dam at Stillhouse Hollow reservoir, Segment No. 1216 of the Brazos River Basin. The contributing zone is illustrated on the Edwards Aquifer map viewer at http://www.tceq.texas.gov/compliance/field_ops/eapp/mapdisclaimer.html.

Effluent Limitations Guideline (ELG) - Defined in 40 Code of Federal Regulations (CFR) § 122.2 as a regulation published by the Administrator under § 304(b) of the Clean Water Act (CWA) to adopt or revise effluent limitations.

Facility or Activity - For the purpose of this permit, referring to a construction site, the location of construction activity, or a construction support activity that is regulated under this general permit, including all contiguous land and fixtures (for example, ponds and materials stockpiles), structures, or appurtenances used at a construction site or industrial site.

Final Stabilization - A construction site status where any of the following conditions are met:

- (a) All soil disturbing activities at the site have been completed and a uniform (that is, evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

- (b) For individual lots in a residential construction site by either:
- (1) the homebuilder completing final stabilization as specified in condition (a) above; or
 - (2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization. If temporary stabilization is not feasible, then the homebuilder may fulfill this requirement by retaining perimeter controls or BMPs, and informing the homeowner of the need for removal of temporary controls and the establishment of final stabilization. Fulfillment of this requirement must be documented in the homebuilder's stormwater pollution prevention plan (SWP3).
- (c) For construction activities on land used for agricultural purposes (such as pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface water and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.
- (d) In arid, semi-arid, and drought-stricken areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:
- (1) Temporary erosion control measures (for example, degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by the operator, and
 - (2) The temporary erosion control measures are selected, designed, and installed to achieve 70% of the native background vegetative coverage within three years.

Hyperchlorination of Waterlines – Treatment of potable water lines or tanks with chlorine for disinfection purposes, typically following repair or partial replacement of the waterline or tank, and subsequently flushing the contents.

Impaired Water - A surface water body that is identified as impaired on the latest approved CWA §303(d) List or waters with an EPA-approved or established total maximum daily load (TMDL) that are found on the latest EPA approved *Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d)*, which lists the category 4 and 5 water bodies.

Indian Country Land – All land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation; (2) all dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. (40 CFR §122.2)

Indian Tribe - Any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian Reservation (40 CFR §122.2).

Infeasible – Not technologically possible, or not economically practicable and achievable in light of best industry practices. (40 CFR §450.11(b)).

Large Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total

land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.)

Linear Project – Includes the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

Low Rainfall Erosivity Waiver (LREW) - A written submission to the executive director from an operator of a construction site that is considered as small construction activity under the permit, which qualifies for a waiver from the requirements for small construction activities, only during the period of time when the calculated rainfall erosivity factor is less than five (5).

Minimize - To reduce or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer System (MS4) - A separate storm sewer system owned or operated by the United States, a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, that discharges to surface water in the state.

Notice of Change (NOC) – Written notification to the executive director from a discharger authorized under this permit, providing changes to information that was previously provided to the agency in a notice of intent form.

Notice of Intent (NOI) - A written submission to the executive director from an applicant requesting coverage under this general permit.

Notice of Termination (NOT) - A written submission to the executive director from a discharger authorized under this general permit requesting termination of coverage.

Operator - The person or persons associated with a large or small construction activity that is either a primary or secondary operator as defined below:

Primary Operator – the person or persons associated with construction activity that meets either of the following two criteria:

- (a) the person or persons have on-site operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- (b) the person or persons have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a Storm Water Pollution Prevention Plan (SWP3) for the site or other permit conditions (for example, they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Secondary Operator – The person or entity, often the property owner, whose operational control is limited to:

- (a) the employment of other operators, such as a general contractor, to perform or supervise construction activities; or

- (b) the ability to approve or disapprove changes to construction plans and specifications, but who does not have day-to-day on-site operational control over construction activities at the site.

Secondary operators must either prepare their own SWP3 or participate in a shared SWP3 that covers the areas of the construction site, where they have control over the construction plans and specifications.

If there is not a primary operator at the construction site, then the secondary operator is defined as the primary operator and must comply with the requirements for primary operators.

Outfall - For the purpose of this permit, a point source at the point where stormwater runoff associated with construction activity discharges to surface water in the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other water of the U.S. and are used to convey waters of the U.S.

Permittee - An operator authorized under this general permit. The authorization may be gained through submission of a notice of intent, by waiver, or by meeting the requirements for automatic coverage to discharge stormwater runoff and certain non-stormwater discharges from construction activity.

Point Source - Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are, or may be, discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff (40 CFR §122.2).

Pollutant - Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into any surface water in the state. The term "pollutant" does not include tail water or runoff water from irrigation or rainwater runoff from cultivated or uncultivated rangeland, pastureland, and farmland. For the purpose of this permit, the term "pollutant" includes sediment.

Pollution - The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any surface water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose (Texas Water Code (TWC) §26.001(14)).

Rainfall Erosivity Factor (R factor) - the total annual erosive potential that is due to climatic effects, and is part of the Revised Universal Soil Loss Equation (RUSLE).

Receiving Water - A "Water of the United States" as defined in 40 CFR §122.2 or a surface water in the state into which the regulated stormwater discharges.

Semi-arid Areas - areas with an average annual rainfall of 10 to 20 inches.

Separate Storm Sewer System - A conveyance or system of conveyances (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), designed or used for collecting or conveying stormwater; that is not a combined sewer, and that is not part of a publicly owned treatment works (POTW).

Small Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and

less than five (5) acres of land. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities).

Steep Slopes - Where a state, Tribe, local government, or industry technical manual (e.g. stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

Stormwater (or Stormwater Runoff) - Rainfall runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Associated with Construction Activity - Stormwater runoff, as defined above, from a construction activity.

Structural Control (or Practice) - A pollution prevention practice that requires the construction of a device, or the use of a device, to reduce or prevent pollution in stormwater runoff. Structural controls and practices may include but are not limited to: silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the State - Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state (from the mean high water mark (MHW) out 10.36 miles into the Gulf), and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or non-navigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

Temporary Stabilization - A condition where exposed soils or disturbed areas are provided a protective cover or other structural control to prevent the migration of pollutants. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either permanent stabilization can be achieved or until further construction activities take place.

Thawing Conditions - for the purposes of this permit, thawing conditions are expected based on the historical likelihood of two or more days with daytime temperatures greater than 32 F. This date can be determined by looking at historical weather data.

Note: The estimation of thawing conditions is for planning purposes only. During construction, the permittee will be required to conduct site inspections based upon actual conditions (i.e., if thawing conditions occur sooner than expected, the permittee will be required to conduct inspections at the regular frequency).

Total Maximum Daily Load (TMDL) - The total amount of a pollutant that a water body can assimilate and still meet the Texas Surface Water Quality Standards.

Turbidity - A condition of water quality characterized by the presence of suspended solids and/or organic material.

Waters of the United States - Waters of the United States or waters of the U.S. means:

- all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- all interstate waters, including interstate wetlands;

- (c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - (2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (3) which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) all impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) the territorial sea; and
- (g) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the U.S. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the U.S. (such as disposal area in wetlands) nor resulted from the impoundment of waters of the U.S. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with EPA.

Part II. Permit Applicability and Coverage

Section A. Discharges Eligible for Authorization

1. Stormwater Associated with Construction Activity

Discharges of stormwater runoff and certain non-stormwater discharges from small and large construction activities may be authorized under this general permit.

2. Discharges of Stormwater Associated with Construction Support Activities

Discharges of stormwater runoff and certain non-stormwater discharges from construction support activities as defined in Part I.B of this general permit may be authorized, provided that the following conditions are met:

- (a) the construction support activities are located within one (1) mile from the boundary of the construction site where the construction activity authorized under the permit is being conducted that requires the support of these activities;
- (b) an SWP3 is developed for the permitted construction site according to the provisions in Part III.F of this general permit, and includes appropriate controls and measures to reduce erosion and the discharge of pollutants in stormwater runoff according to the provisions in Part III.G of this general permit;
- (c) the activities are directly related to the construction site;
- (d) the activities are not a commercial operation, nor serve other unrelated construction projects; and
- (e) the activities do not continue to operate beyond the completion of the construction activity at the project it supports.

Construction support activities that operate outside the terms provided in (a) through (e) above must obtain authorization under a separate Texas Pollutant Discharge Elimination System (TPDES) permit, which may include the TPDES Multi Sector General Permit (MSGP), TXR050000 (related to stormwater discharges associated with industrial activity), an alternative general permit (if available), or an individual water quality permit.

3. Non-Stormwater Discharges

The following non-stormwater discharges from sites authorized under this general permit are also eligible for authorization under this general permit:

- (a) discharges from fire-fighting activities (fire-fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, or similar activities);
- (b) uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);
- (c) water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where detergents and soaps are not used, where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials have been removed; and if local state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;

- (d) uncontaminated water used to control dust;
- (e) potable water sources, including waterline flushings, but excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life;
- (f) uncontaminated air conditioning condensate;
- (g) uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents; and
- (h) lawn watering and similar irrigation drainage.

4. Other Permitted Discharges

Any discharge authorized under a separate National Pollutant Discharge Elimination System (NPDES), TPDES, or TCEQ permit may be combined with discharges authorized by this general permit, provided those discharges comply with the associated permit.

Section B. Concrete Truck Wash Out

The wash out of concrete trucks at regulated construction sites must be performed in accordance with the requirements of Part V of this general permit.

Section C. Limitations on Permit Coverage

1. Post Construction Discharges

Discharges that occur after construction activities have been completed, and after the construction site and any supporting activity site have undergone final stabilization, are not eligible for coverage under this general permit. Discharges originating from the sites are not authorized under this general permit following the submission of the notice of termination (NOT) or removal of the appropriate site notice, as applicable, for the regulated construction activity.

2. Prohibition of Non-Stormwater Discharges

Except as otherwise provided in Part II.A of this general permit, only discharges that are composed entirely of stormwater associated with construction activity may be authorized under this general permit.

3. Compliance with Water Quality Standards

Discharges to surface water in the state that would cause, have the reasonable potential to cause, or contribute to a violation of water quality standards or that would fail to protect and maintain existing designated uses of surface water in the state are not eligible for coverage under this general permit. The executive director may require an application for an individual permit or alternative general permit (see Parts II.H.2 and 3.) to authorize discharges to surface water in the state if the executive director determines that any activity will cause, has the reasonable potential to cause, or contribute to a violation of water quality standards or is found to cause, has the reasonable potential to cause, or contribute to, the impairment of a designated use. The executive director may also require an application for an individual permit considering factors described in Part II.H.3 of this general permit.

4. Impaired Receiving Waters and Total Maximum Daily Load (TMDL) Requirements

The permittee shall determine whether the authorized discharge is to an impaired water body on the latest EPA-approved CWA Section 303(d) List or waters with an EPA-approved or established TMDL that are found on the latest EPA-approved Texas

Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d), which lists the category 4 and 5 water bodies.

New sources or new discharges of the pollutants of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. Impaired waters are those that do not meet applicable water quality standard(s) and are listed as category 4 or 5 in the current version of the *Texas Integrated Report of Surface Water Quality*, and waterbodies listed on the CWA § 303(d) list. Pollutants of concern are those for which the water body is listed as impaired.

Discharges of the pollutants of concern to impaired water bodies for which there is a TMDL are not eligible for coverage under this general permit unless they are consistent with the approved TMDL. Permittees must incorporate the conditions and requirements applicable to their discharges into their SWP3, in order to be eligible for coverage under this general permit. For consistency with the construction stormwater-related items in an approved TMDL, the SWP3 must be consistent with any applicable condition, goal, or requirement in the TMDL, TMDL Implementation Plan (I-Plan), or as otherwise directed by the executive director.

5. Discharges to the Edwards Aquifer Recharge or Contributing Zone

Discharges cannot be authorized by this general permit where prohibited by 30 TAC Chapter 213 (relating to Edwards Aquifer). In addition, commencement of construction (i.e., the initial disturbance of soils associated with clearing, grading, or excavating activities, as well as other construction-related activities such as stockpiling of fill material and demolition) at a site regulated under 30 TAC Chapter 213, may not begin until the appropriate Edwards Aquifer Protection Plan (EAPP) has been approved by the TCEQ's Edwards Aquifer Protection Program.

- (a) For new discharges located within the Edwards Aquifer Recharge Zone, or within that area upstream from the recharge zone and defined as the Contributing Zone (CZ), operators must meet all applicable requirements of, and operate according to, 30 TAC Chapter 213 (Edwards Aquifer Rule) in addition to the provisions and requirements of this general permit.
- (b) For existing discharges located within the Edwards Aquifer Recharge Zone, the requirements of the agency-approved Water Pollution Abatement Plan (WPAP) under the Edwards Aquifer Rule is in addition to the requirements of this general permit. BMPs and maintenance schedules for structural stormwater controls, for example, may be required as a provision of the rule. All applicable requirements of the Edwards Aquifer Rule for reductions of suspended solids in stormwater runoff are in addition to the requirements in this general permit for this pollutant.
- (c) For discharges located within ten stream miles upstream of the Edwards Aquifer recharge zone, applicants shall also submit a copy of the NOI to the appropriate TCEQ regional office.

Counties: Comal, Bexar, Medina, Uvalde, and Kinney

Contact: TCEQ Water Program Manager
San Antonio Regional Office
1425 Judson Road
San Antonio, Texas 78233-4480
(210) 490-3096

Counties: Williamson, Travis, and Hays

Contact: TCEQ Water Program Manager
Austin Regional Office
12100 Park 35 Circle

Room 179, Building A
Austin, Texas 78753
(512) 339-2929

6. Discharges to Specific Watersheds and Water Quality Areas

Discharges otherwise eligible for coverage cannot be authorized by this general permit where prohibited by 30 TAC Chapter 311 (relating to Watershed Protection) for water quality areas and watersheds.

7. Protection of Streams and Watersheds by Other Governmental Entities

This general permit does not limit the authority or ability of federal, other state, or local governmental entities from placing additional or more stringent requirements on construction activities or discharges from construction activities. For example, this permit does not limit the authority of a home-rule municipality provided by Texas Local Government Code §401.002.

8. Indian Country Lands

Stormwater runoff from construction activities occurring on Indian Country lands are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES regulations, authority for these discharges must be obtained from the U.S. Environmental Protection Agency (EPA).

9. Oil and Gas Production and Transportation

Stormwater runoff from construction activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline, are not under the authority of the TCEQ and are not eligible for coverage under this general permit. Authorization for stormwater discharges from construction activities that are associated with production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline must be obtained, as required, from the U.S. EPA or the Texas Railroad Commission, as applicable. Discharge of stormwater related to construction activity, from a facility that stores both refined products intended for off-site use and crude oil in aboveground storage tanks, is regulated by the TCEQ and is eligible for coverage under this general permit.

10. Stormwater Discharges from Agricultural Activities

Stormwater discharges from agricultural activities that are not point source discharges of stormwater are not subject to TPDES permit requirements. These activities may include clearing and cultivating ground for crops, construction of fences to contain livestock, construction of stock ponds, and other similar agricultural activities. Discharges of stormwater runoff associated with the construction of facilities that are subject to TPDES regulations, such as the construction of concentrated animal feeding operations, would be point sources regulated under this general permit.

11. Endangered Species Act

Discharges that would adversely affect a listed endangered or threatened aquatic or aquatic-dependent species or its critical habitat are not authorized by this permit, unless the requirements of the Endangered Species Act are satisfied. Federal requirements related to endangered species apply to all TPDES permitted discharges and site-specific controls may be required to ensure that protection of endangered or threatened species is achieved. If a permittee has concerns over potential impacts to listed species, the permittee may contact TCEQ for additional information.

12. Other

Nothing in Part II of the general permit is intended to negate any person's ability to assert *force majeure* (act of God, war, strike, riot, or other catastrophe) defenses found in 30 TAC §70.7.

Section D. Deadlines for Obtaining Authorization to Discharge

1. Large Construction Activities

- New Construction - Discharges from sites where the commencement of construction activity occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.
- Ongoing Construction - Operators of large construction activities continuing to operate after the effective date of this permit, and authorized under the TPDES Construction General Permit TXR150000 (effective on March 5, 2013), must submit an NOI to renew authorization or a NOT to terminate coverage under this general permit within 90 days of the effective date of this general permit. During this interim or grace period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the 2013 TPDES general permit.

2. Small Construction Activities

- New Construction - Discharges from sites where the commencement of construction activity occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.
- Ongoing Construction - Discharges from ongoing small construction activities that commenced prior to the effective date of this general permit, and that do not meet the conditions to qualify for termination of this permit as described in Part II.F of this general permit, must meet the requirements to be authorized, either under this general permit or a separate TPDES permit, within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the 2013 TPDES Construction General Permit.

Section E. Obtaining Authorization to Discharge

1. Automatic Authorization for Small Construction Activities with Low Potential for Erosion:

Operators of small construction activity, as defined in Part I.B of this general permit, shall not submit an NOI for coverage, unless otherwise required by the executive director.

Operators of small construction activities, which occur in certain counties and during periods of low potential for erosion that do not meet the conditions of the waiver described in Part II.G of this general permit, may be automatically authorized under this general permit if all the following conditions are met.

- the construction activity occurs in a county and during the corresponding date range(s) listed in Appendix A;
- the construction activity is initiated and completed, including either final or temporary stabilization of all disturbed areas, within the time frame identified in Appendix A for the location of the construction site;

- (c) all temporary stabilization is adequately maintained to effectively reduce or prohibit erosion, permanent stabilization activities have been initiated, and a condition of final stabilization is completed no later than 30 days following the end date of the time frame identified in Appendix A for the location of the construction site;
- (d) the permittee signs a completed TCEQ small construction site notice for low potential for erosion, including the certification statement;
- (e) a signed and certified copy of the small construction site notice for low potential for erosion is posted at the construction site in a location where it is readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and maintained in that location until completion of the construction activity;

NOTE: Posted site notices may have a redacted signature as long as there is an original signed and certified site notice, with a viewable signature, located on-site and available for review by any applicable regulatory authority.
- (f) a copy of the signed and certified small construction site notice for low potential for erosion is provided to the operator of any MS4 receiving the discharge at least two days prior to commencement of construction activities;
- (g) discharges of stormwater runoff or other non-stormwater discharges from any supporting concrete batch plant or asphalt batch plant is separately authorized under an individual TPDES permit, another TPDES general permit, or under an individual TCEQ permit where stormwater and non-stormwater is disposed of by evaporation or irrigation (discharges are adjacent to water in the state); and
- (h) any non-stormwater discharges are either authorized under a separate permit or authorization, are not considered by TCEQ to be a wastewater, or are captured and routed for disposal at a publicly operated treatment works or licensed waste disposal facility.

If all of the conditions in (a) – (h) above are met, then the operator(s) of small construction activities with low potential for erosion are not required to develop a SWP3.

If an operator is conducting small construction activities and any of the above conditions (a) – (h) are not met, the operator cannot declare coverage under the automatic authorization for small construction activities with low potential for erosion and must meet the requirements for automatic authorization (all other) small construction activities, described below in Part II.E.2.

For small construction activities that occur during a period with a low potential for erosion, where automatic authorization under this section is not available, an operator may apply for and obtain a waiver from permitting (Low Rainfall Erosivity Waiver – LREW), as described in Part II.G of this general permit. Waivers from coverage under the LREW do not allow for any discharges of non-stormwater and the operator must ensure that discharges on non-stormwater are either authorized under a separate permit or authorization.

2. Automatic Authorization for Small Construction Activities:

Operators of small construction activities as defined in Part I.B of this general permit shall not submit an NOI for coverage, unless otherwise required by the executive director.

Operators of small construction activities, as defined in Part I.B of this general permit or as defined but who do not meet in the conditions and requirements located in Part II.E.1 above, may be automatically authorized for small construction activities, provided that they meet all of the following conditions:

- (a) develop a SWP3 according to the provisions of this general permit, that covers either the entire site or all portions of the site for which the applicant is the operator, and implement the SWP3 prior to commencing construction activities;
- (b) all operators of regulated small construction activities must post a signed and certified Small Construction site notice, the notice must be posted at the construction site in a location where it is safely and readily available for viewing by the general public, local, state, and federal authorities, at least two days prior to commencing construction activity, and maintain the notice in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities);
- (c) operators must maintain a posted site notice at the construction site until final stabilization has been achieved; and

NOTE: Posted site notices may have a redacted signature as long as there is an original signed and certified Small Construction site notice, with a viewable signature, located on-site and available for review by an applicable regulatory authority.
- (d) provide a copy of the signed and certified construction site notice to the operator of any municipal separate storm sewer system (MS4) receiving the discharge at least two days prior to commencement of construction activities.

As described in Part I.B of this general permit, large construction activities include those that will disturb less than five (5) acres of land, but that are part of a larger common plan of development or sale that will ultimately disturb five (5) or more acres of land, and must meet the requirements of Part II.E.3. below.

3. Authorization for Large Construction Activities:

Operators of large construction activities that qualify for coverage under this general permit must meet all of the following conditions:

- (a) develop a SWP3 according to the provisions of this general permit that covers either the entire site or all portions of the site where the applicant is the operator. The SWP3 must be developed and implemented prior to obtaining coverage and prior to commencing construction activities;
- (b) primary operators of large construction activities must submit an NOI prior to commencing construction activity at a construction site. A completed NOI must be submitted to TCEQ electronically using the online e-Permits system on TCEQ's website. Operators with an electronic reporting waiver must submit a completed NOI to TCEQ at least seven (7) days prior to commencing construction activity to obtain provisional coverage seven (7) days from the postmark date for delivery to the TCEQ. An authorization is no longer provisional when the executive director finds the NOI is administratively complete and an authorization number is issued to the permittee for the construction site indicated on the NOI.

If an additional primary operator is added after the initial NOI is submitted, the additional primary operator must meet the same requirements for existing primary operator(s), as indicated above.

If the primary operator changes due to responsibility at the site being transferred from one primary operator to another after the initial NOI is submitted, the new primary operator must submit a paper NOI or an electronic NOI at least ten (10)

days prior to assuming operational control of a construction site and commencing construction activity.

Operators that submit NOIs electronically must use the online e-Permits system available through the TCEQ website.

- (c) all operators of large construction activities must post a site notice in accordance with Part III.D.2 of this permit. The site notice must be located where it is safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and must be maintained in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public, local, state, and federal authorities);
- (d) two days prior to commencing construction activities, all primary operators must:
 - i. provide a copy of the signed NOI to the operator of any MS4 receiving the discharge and to any secondary construction operator, and
 - ii. list in the SWP3 the names and addresses of all MS4 operators receiving a copy;
- (e) all persons meeting the definition of "secondary operator" in Part I of this permit are hereby notified that they are regulated under this general permit, but are not required to submit an NOI, provided that a primary operator at the site has submitted an NOI, or prior to commencement of construction activities, a primary operator is required to submit an NOI and the secondary operator has provided notification to the operator(s) of the need to obtain coverage (with records of notification available upon request). Any secondary operator notified under this provision may alternatively submit an NOI under this general permit, may seek coverage under an alternative TPDES individual permit, or may seek coverage under an alternative TPDES general permit if available; and
- (f) all secondary operators of large construction activities must post a copy of the signed and certified Secondary Operator construction site notice and provide a copy of the signed and certified site notice to the operator of any MS4 receiving the discharge at least two days prior to the commencement construction activities.

NOTE: Posted site notices may have a redacted signature as long as there is an original signed and certified Secondary Operator construction site notice, with a viewable signature, located on-site and available for review by an applicable regulatory authority.

Effective September 1, 2018, applicants must submit an NOI using the online e-Permits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

4. Waivers for Small Construction Activities:

Operators of certain small construction activities may obtain a waiver from coverage under this general permit, if applicable. The requirements are outlined in Part II.G below.

5. Effective Date of Coverage

- (a) Operators of small construction activities as described in either Part II.E.1 or II.E.2 above are authorized immediately following compliance with the applicable conditions of Part II.E.1 or II.E.2. Secondary operators of large construction

activities as described in Part II.E.3 above are authorized immediately following compliance with the applicable conditions in Part II.E.3. For activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

- (b) Primary operators of large construction activities as described in Part II.E.3 above that electronically submit an NOI are authorized immediately following confirmation of receipt of the electronic form by the TCEQ, unless otherwise notified by the executive director. Operators with an electronic reporting waiver are provisionally authorized seven (7) days from the date that a completed paper NOI is postmarked for delivery to the TCEQ, unless otherwise notified by the executive director. An authorization is no longer provisional when the executive director finds the NOI is administratively complete and an authorization number is issued to the permittee for the construction site indicated on the NOI.

For construction activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction activities may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

- (c) Operators are not prohibited from submitting late NOIs or posting late notices to obtain authorization under this general permit. The TCEQ reserves the right to take appropriate enforcement action for any unpermitted activities that may have occurred between the time construction commenced and authorization was obtained.
- (d) If operators that submitted NOIs have active authorizations for construction activities that are ongoing, when the term of the current general permit expires and a new general permit is issued, a 90-day interim (grace) period is granted to provide coverage that is administratively continued until operators with active authorizations can obtain coverage under the newly issued CGP. The 90-day grace period starts on the effective date of the newly issued CGP. Deadlines for obtaining coverage for operators of small and large construction are provided in Part II.D.1 and 2 above.

6. Notice of Change (NOC)

If relevant information provided in the NOI changes, the operator that has submitted the NOI must submit an NOC to TCEQ at least fourteen (14) days before the change occurs, if possible. Where a 14-day advance notice is not possible, the operator must submit an NOC to TCEQ within 14-days of discovery of the change. If the operator becomes aware that it failed to submit any relevant facts or submitted incorrect information in an NOI, the correct information must be submitted to TCEQ in an NOC within 14 days after discovery. The NOC shall be submitted on a form provided by the executive director, or by letter if an NOC form is not available. A copy of the NOC form or letter must also be placed in the SWP3 and provided to the operator of any MS4 receiving the discharge. A list that includes the names and addresses of all MS4 operators receiving a copy of the NOC (or NOC letter) must be included in the SWP3.

Information on an NOC may include, but is not limited to, the following: a change in the description of the construction project; an increase in the number of acres disturbed (for increases of one or more acres); or the name of the operator (where the name of the operator has changed).

A transfer of operational control from one operator to another, including a transfer of the ownership of a company. Coverage under this general permit is not transferable

from one operator to another or one company to another, and may not be included in an NOC.

A transfer of ownership of a company may include, but is not limited to, the following: changes to the structure of a company, such as changing from a partnership to a corporation or changing corporation types, so that the filing number (or charter number) that is on record with the Texas Secretary of State must be changed.

An NOC is not required for notifying TCEQ of a decrease in the number of acres disturbed. This information must be included in the SWP3 and retained on site.

Effective September 1, 2018, applicants must submit an NOC using the online e-Permits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

7. Signatory Requirement for NOI Forms, Notice of Termination (NOT) Forms, NOC Letters, and Construction Site Notices

NOI forms, NOT forms, NOC letters, and Construction Site Notices that require a signature must be signed according to 30 TAC § 305.44 (relating to Signatories for Applications).

8. Contents of the NOI

The NOI form shall require, at a minimum, the following information:

- (a) the TPDES CGP authorization number for existing authorizations under this general permit, where the operator submits an NOI to renew coverage within 90 days of the effective date of this general permit;
- (b) the name, address, and telephone number of the operator filing the NOI for permit coverage;
- (c) the name (or other identifier), address, county, and latitude/longitude of the construction project or site;
- (d) the number of acres that will be disturbed by the applicant;
- (e) confirmation that the project or site will not be located on Indian Country lands;
- (f) confirmation that a SWP3 has been developed in accordance with this general permit, that it will be implemented prior to commencement of construction activities, and that it is compliant with any applicable local sediment and erosion control plans; for multiple operators who prepare a shared SWP3, the confirmation for an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator;
- (g) name of the receiving water(s);
- (h) the classified segment number for each classified segment that receives discharges from the regulated construction activity (if the discharge is not directly to a classified segment, then the classified segment number of the first classified segment that those discharges reach); and
- (i) the name of all surface waters receiving discharges from the regulated construction activity that are on the latest EPA-approved CWA § 303(d) List of impaired waters or Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d) as not meeting applicable state water quality standards.

Section F. Terminating Coverage

1. Notice of Termination (NOT) Required

Each operator that has submitted an NOI for authorization of large construction activities under this general permit must apply to terminate that authorization following the conditions described in this section of the general permit.

Authorization of large construction must be terminated by submitting an NOT on a paper form to TCEQ supplied by the executive director or electronically via the online e-Permits system available through the TCEQ website. Authorization to discharge under this general permit terminates at midnight on the day a paper NOT is postmarked for delivery to the TCEQ or immediately following confirmation of the receipt of the NOT submitted electronically by the TCEQ. Compliance with the conditions and requirements of this permit is required until an NOT is submitted.

Effective September 1, 2018, applicants must submit an NOT using the online e-Permits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

The NOT must be submitted to TCEQ, and a copy of the NOT provided to the operator of any MS4 receiving the discharge (with a list in the SWP3 of the names and addresses of all MS4 operators receiving a copy), within 30 days after any of the following conditions are met:

- (a) final stabilization has been achieved on all portions of the site that are the responsibility of the operator;
- (b) a transfer of operational control has occurred (See Section II.F.4 below); or
- (c) the operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.

2. Minimum Contents of the NOT

The NOT form shall require, at a minimum, the following information:

- (a) if authorization for construction activity was granted following submission of an NOI, the permittee's site-specific TPDES authorization number for a specific construction site;
- (b) an indication of whether final stabilization has been achieved at the site and a NOT has been submitted or if the permittee is simply no longer an operator at the site;
- (c) the name, address, and telephone number of the permittee submitting the NOT;
- (d) the name (or other identifier), address, county, and location (latitude/longitude) of the construction project or site; and
- (e) a signed certification that either all stormwater discharges requiring authorization under this general permit will no longer occur, or that the applicant is no longer the operator of the facility or construction site, and that all temporary structural erosion controls have either been removed, will be removed on a schedule defined in the SWP3, or have been transferred to a new operator if the new operator has applied for permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

3. Termination of Coverage for Small Construction Sites and for Secondary Operators at Large Construction Sites
- (a) Each operator that has obtained automatic authorization for small construction or is a secondary operator for large construction must perform the following when terminating coverage under the permit:
- remove the site notice;
 - complete the applicable portion of the site notice related to removal of the site notice; and
 - submit a copy of the completed site notice to the operator of any MS4 receiving the discharge (or provide alternative notification as allowed by the MS4 operator, with documentation of such notification included in the SWP3).
- (b) The activities described in Part II.F.3.(a) above must be completed by the operator within 30 days of meeting any of the following conditions:
- final stabilization has been achieved on all portions of the site that are the responsibility of the operator;
 - a transfer of day-to-day operational control over activities necessary to ensure compliance with the SWP3 and other permit conditions has occurred (See Section II.F.4. below); or
 - the operator has obtained alternative authorization under an individual or general TPDES permit.

Authorization to discharge under this general permit terminates immediately upon removal of the applicable site notice. Compliance with the conditions and requirements of this permit is required until the site notice is removed.

4. Transfer of Day-to-Day Operational Control

- (a) When the primary operator of a large construction activity changes or operational control over activities necessary to ensure compliance with the SWP3 and other permit conditions is transferred to another primary operator, the original operator must do the following:
- submit an NOT within ten (10) days prior to the date that responsibility for operations terminates, and the new operator must submit an NOI at least ten (10) days prior to the transfer of operational control, in accordance with condition (c) below; and
 - submit a copy of the NOT from the primary operator terminating its coverage under the permit and its operational control of the construction site and submit a copy of the NOI from the new primary operator to the operator of any MS4 receiving the discharge in accordance with Part II.F.1 above.
- (b) For transfer of operational control, operators of small construction activities and secondary operators of large construction activities who are not required to submit an NOI must do the following:
- the existing operator must remove the original site notice, and the new operator must post the required site notice prior to the transfer of operational control, in accordance with the conditions in Part II.F.4.(c) i or ii below; and
 - a copy of the site notice, which must be completed and provided to the operator of any MS4 receiving the discharge, in accordance with Part II.F.3 above.
- (c) Each operator is responsible for determining its role as an operator as defined in Part I.B and obtaining authorization under the permit, as described above in Part

- II.E. 1 - 3. Where authorization has been obtained by submitting an NOI for coverage under this general permit, permit coverage is not transferable from one operator to another. A transfer of operational control can include changes to the structure of a company, such as changing from a partnership to a corporation, or changing to a different corporation type such that a different filing (or charter) number is established with the Texas Secretary of State. A transfer of operational control can also occur when of the following criteria is met, as applicable:
- Another operator has assumed control over all areas of the site that do not meet the definition for final stabilization;
 - all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator, provided that the original permitted operator has attempted to notify the new operator in writing of the requirement to obtain permit coverage. Records of this notification (or attempt at notification) shall be retained by the operator transferring operational control to another operator in accordance with Part VI of this permit. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal; or
 - a homebuilder has purchased one or more lots from an operator who obtained coverage under this general permit for a common plan of development or sale. The homebuilder is considered a new operator and shall comply with the requirements of this permit. Under these circumstances, the homebuilder is only responsible for compliance with the general permit requirements as they apply to the lot(s) it has operational control over in a larger common plan of development, and the original operator remains responsible for common controls or discharges, and must amend its SWP3 to remove the lot(s) transferred to the homebuilder.

Section G. Waivers from Coverage

The executive director may waive the otherwise applicable requirements of this general permit for stormwater discharges from small construction activities under the terms and conditions described in this section.

1. Waiver Applicability and Coverage

Operators of small construction activities may apply for and receive a waiver from the requirements to obtain authorization under this general permit, when the calculated rainfall erosivity (R) factor for the entire period of the construction project is less than five (5).

The operator must submit either a signed paper Low Rainfall Erosivity Waiver (LREW) certification form to the TCEQ, supplied by the executive director, or complete the form electronically via the online e-Permits system available through the TCEQ website. The form is a certification by the operator that the small construction activity will commence and be completed within a period when the value of the calculated R factor is less than five (5).

The paper LREW certification form must be postmarked for delivery to the TCEQ at least seven (7) days before construction activity begins or, if submitted electronically, construction may begin at any time following the receipt of written confirmation from TCEQ that a complete electronic application was submitted and acknowledged.

This waiver from coverage does not apply to any non-stormwater discharges, including what is allowed under this permit. The operator must insure that all non-stormwater discharges are either authorized under a separate permit or authorization, or are captured and routed to an authorized treatment facility for disposal.

Effective September 1, 2018, applicants must submit an LREW using the online e-Permits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

2. Steps to Obtaining a Waiver

The construction site operator may calculate the R factor to request a waiver using the following steps:

- (a) Estimate the construction start date and the construction end date. The construction end date is the date that final stabilization will be achieved.
- (b) Find the appropriate Erosivity Index (EI) zone in Appendix B of this permit.
- (c) Find the EI percentage for the project period by adding the results for each period of the project using the table provided in Appendix D of this permit, in EPA Fact Sheet 2.1, or in USDA Handbook 703, by subtracting the start value from the end value to find the percent EI for the site.
- (d) Refer to the Isoerodent Map (Appendix C of this permit) and interpolate the annual isoerodent value for the proposed construction location.
- (e) Multiply the percent value obtained in Step (c) above by the annual isoerodent value obtained in Step (d). This is the R factor for the proposed project. If the value is less than 5, then a waiver may be obtained. If the value is five (5) or more, then a waiver may not be obtained, and the operator must obtain coverage under Part II.E.2. of this permit.

Alternatively, the operator may calculate a site-specific R factor utilizing the following online calculator: <http://ei.tamu.edu/index.html>, or using another available resource.

A copy of the LREW certification form is not required to be posted at the small construction site.

3. Effective Date of a LREW

Unless otherwise notified by the executive director, operators of small construction activities seeking coverage under a LREW are provisionally waived from the otherwise applicable requirements of this general permit seven (7) days from the date that a completed paper LREW certification form is postmarked for delivery to TCEQ, or immediately upon receiving confirmation of approval of an electronic submittal, made via the online e-Permits system available through the TCEQ website.

Effective September 1, 2018, applicants seeking coverage under a LREW must submit an application for a LREW using the online e-Permits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

4. Activities Extending Beyond the LREW Period

If a construction activity extends beyond the approved waiver period due to circumstances beyond the control of the operator, the operator must either:

- (a) recalculate the R factor using the original start date and a new projected ending date, and if the R factor is still under five (5), submit a new waiver certification form at least two (2) days before the end of the original waiver period; or
- (b) obtain authorization under this general permit according to the requirements for automatic authorization for small construction activities in Part II.E.2 of this permit, prior to the end of the approved LREW period.

Section H. Alternative TPDES Permit Coverage

1. Individual Permit Alternative

Any discharge eligible for coverage under this general permit may alternatively be authorized under an individual TPDES permit according to 30 TAC §305 (relating to Consolidated Permits). Applications for individual permit coverage must be submitted at least three hundred and thirty (330) days prior to commencement of construction activities to ensure timely authorization. Existing coverage under this general permit should not be terminated until an individual permit is issued and in effect.

2. Alternative Authorizations for Certain Discharges

Certain discharges eligible for authorization under this general permit may alternatively be authorized under a separate general permit according to 30 TAC Chapter 205 (relating to General Permits for Waste Discharges), as applicable.

3. Individual Permit Required

The executive director may require an operator of a construction site, otherwise eligible for authorization under this general permit, to apply for an individual TPDES permit in the following circumstances:

- (a) the conditions of an approved TMDL or TMDL I-Plan on the receiving water;
- (b) the activity being determined to cause, has a reasonable potential to cause, or contribute to a violation of water quality standards or being found to cause, or contribute to, the loss of a designated use of surface water in the state; and
- (c) any other consideration defined in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges) including 30 TAC Chapter 205.4(c)(3)(D), which allows the commission to deny authorization under the general permit and require an individual permit if a discharger has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director.

A discharger with a TCEQ compliance history rating of "unsatisfactory" is ineligible for coverage under this general permit. In that case, 30 TAC § 60.3 requires the executive director to deny or suspend an authorization to discharge under a general permit. However, per TWC § 26.040(h), a discharger is entitled to a hearing before the commission prior to having an authorization denied or suspended for having an "unsatisfactory" compliance history.

Denial of authorization to discharge under this general permit or suspension of a permittee's authorization under this general permit for reasons other than compliance history shall be done according to commission rules in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges).

4. Alternative Discharge Authorization

Any discharge eligible for authorization under this general permit may alternatively be authorized under a separate general permit according to 30 TAC Chapter 205 (relating to General Permits for Waste Discharges), if applicable.

Section I. Permit Expiration

1. This general permit is effective for a term not to exceed five (5) years. All active discharge authorizations expire on the date provided on page one (1) of this permit. Following public notice and comment, as provided by 30 TAC §205.3 (relating to Public Notice, Public Meetings, and Public Comment), the commission may amend,

revoke, cancel, or renew this general permit. All authorizations that are active at the time the permit term expires will be administratively continued as indicated in Part II.I.2 below and in Part II.D.1(b) and D.2(b) of this permit.

2. If the executive director publishes a notice of the intent to renew or amend this general permit before the expiration date, the permit will remain in effect for existing, authorized discharges until the commission takes final action on the permit. Upon issuance of a renewed or amended permit, permittees may be required to submit an NOI within 90 days following the effective date of the renewed or amended permit, unless that permit provides for an alternative method for obtaining authorization.
3. If the commission does not propose to reissue this general permit within 90 days before the expiration date, permittees shall apply for authorization under an individual permit or an alternative general permit. If the application for an individual permit is submitted before the expiration date, authorization under this expiring general permit remains in effect until the issuance or denial of an individual permit. No new NOIs will be accepted nor new authorizations honored under the general permit after the expiration date.

Part III. Stormwater Pollution Prevention Plans (SWP3)

All regulated construction site operators shall prepare an SWP3, prior to submittal of an NOI, to address discharges authorized under Parts II.E.2 and II.E.3 of this general permit that will reach Waters of the U.S. This includes discharges to MS4s and privately owned separate storm sewer systems that drain into surface water in the state or Waters of the U.S.

Individual operators at a site may develop separate SWP3s that cover only their portion of the project, provided reference is made to the other operators at the site. Where there is more than one SWP3 for a site, operators must coordinate to ensure that BMPs and controls are consistent and do not negate or impair the effectiveness of each other. Regardless of whether a single comprehensive SWP3 is developed or separate SWP3s are developed for each operator, it is the responsibility of each operator to ensure compliance with the terms and conditions of this general permit in the areas of the construction site where that operator has control over construction plans and specifications or day-to-day operations.

An SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater associated with construction activity and non-stormwater discharges described in Part II.A.3, in compliance with the terms and conditions of this permit.

An SWP3 must also identify any potential sources of pollution that have been determined to cause, have a reasonable potential to cause, or contribute to a violation of water quality standards or have been found to cause or contribute to the loss of a designated use of surface water in the state from discharges of stormwater from construction activities and construction support activities. Where potential sources of these pollutants are present at a construction site, the SWP3 must also contain a description of the management practices that will be used to prevent these pollutants from being discharged into surface water in the state or Waters of the U.S.

NOTE: Construction support activities can also include vehicle repair areas, fueling areas, etc. that are present at a construction site solely for the support construction activities and are only used by operators at the construction site.

The SWP3 is intended to serve as a road map for how the construction operator will comply with the effluent limits and other conditions of this permit and does not establish the effluent limits that apply to the construction site's discharges. These limits are established in Part III.G of the permit.

Section A. Shared SWP3 Development

For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site is encouraged. Operators of small and large construction activities must independently obtain authorization under this permit, but may work together with other regulated operators at the construction site to prepare and implement a single, comprehensive SWP3, which can be shared by some or all operators, for the construction activities that each of the operators are performing at the entire construction site.

1. The SWP3 must include the following:
 - (a) for small construction activities – the name of each operator that participates in the shared SWP3;
 - (b) for large construction activities - the name of each operator that participates in the shared SWP3, the general permit authorization numbers of each operator (or the date that the NOI was submitted to TCEQ by each operator that has not received an authorization number for coverage under this permit); and
 - (c) for large and small construction activities - the signature of each operator participating in the shared SWP3.
2. The SWP3 must clearly indicate which operator is responsible for satisfying each shared requirement of the SWP3. If the responsibility for satisfying a requirement is not described in the plan, then each permittee is entirely responsible for meeting the requirement within the boundaries of the construction site where they perform construction activities. The SWP3 must clearly describe responsibilities for meeting each requirement in shared or common areas.
3. The SWP3 may provide that one operator is responsible for preparation of a SWP3 in compliance with the CGP, and another operator is responsible for implementation of the SWP3 at the project site.

Section B. Responsibilities of Operators

1. Secondary Operators and Primary Operators with Control Over Construction Plans and Specifications

All secondary operators and primary operators with control over construction plans and specifications shall:

 - (a) ensure the project specifications allow or provide that adequate BMPs are developed to meet the requirements of Part III of this general permit;
 - (b) ensure that the SWP3 indicates the areas of the project where they have control over project specifications, including the ability to make modifications in specifications;
 - (c) ensure that all other operators affected by modifications in project specifications are notified in a timely manner so that those operators may modify their BMPs as necessary to remain compliant with the conditions of this general permit; and
 - (d) ensure that the SWP3 for portions of the project where they are operators indicates the name and site-specific TPDES authorization number(s) for operators with the day-to-day operational control over those activities necessary to ensure compliance with the SWP3 and other permit conditions. If a primary operator has not been authorized or has abandoned the site, the secondary operator is considered to be the responsible party and must obtain authorization

as a primary operator under the permit, until the authority for day-to-day operational control is transferred to another primary operator. The new primary operator must update or develop a new SWP3 that will reflect the transfer of operational control and include any additional updates to the SWP3 to meet requirements of the permit.

2. Primary Operators with Day-to-Day Operational Control

Primary operators with day-to-day operational control of those activities at a project that are necessary to ensure compliance with an SWP3 and other permit conditions must ensure that the SWP3 accomplishes the following requirements:

- (a) meets the requirements of this general permit for those portions of the project where they are operators;
- (b) identifies the parties responsible for implementation of BMPs described in the SWP3;
- (c) indicates areas of the project where they have operational control over day-to-day activities; and
- (d) the name and site-specific TPDES authorization number of the parties with control over project specifications, including the ability to make modifications in specifications for areas where they have operational control over day-to-day activities.

Section C. Deadlines for SWP3 Preparation, Implementation, and Compliance

The SWP3 must be prepared prior to obtaining authorization under this general permit, and implemented prior to commencing construction activities that result in soil disturbance. The SWP3 must be prepared so that it provides for compliance with the terms and conditions of this general permit.

Section D. Plan Review and Making Plans Available

1. The SWP3 must be retained on-site at the construction site or, if the site is inactive or does not have an on-site location to store the plan, a notice must be posted describing the location of the SWP3. The SWP3 must be made readily available at the time of an on-site inspection to: the executive director; a federal, state, or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; and the operator of a municipal separate storm sewer receiving discharges from the site. If the SWP3 is retained off-site, then it shall be made available as soon as reasonably possible. In most instances, it is reasonable that the SWP3 shall be made available within 24 hours of the request.
2. Operators with authorization for construction activity under this general permit must post a TCEQ site notice at the construction site at a place readily available for viewing by the general public, and local, state, and federal authorities.
 - (a) Primary and secondary operators of large construction activities must each post a TCEQ construction site notice, respective to their role as an operator at the construction site, as required above and according to requirements in Part II.E.3 of this general permit.
 - (b) Primary and secondary operators of small construction activities must post the TCEQ site notice as required in Part III.D.2.(a) above and for the specific type of small construction described in Part II.E.1 and 2 of the permit.
 - (c) If the construction project is a linear construction project, such as a pipeline or highway, the notices must be placed in a publicly accessible location near where construction is actively underway. Site notices for small and large construction

activities at these linear construction sites may be located, as necessary, along the length of the project, but must still be readily available for viewing by the general public; local, state, and federal authorities; and contain the following information:

- i. the site-specific TPDES authorization number for the project if assigned;
 - ii. the operator name, contact name, and contact phone number;
 - iii. a brief description of the project; and
 - iv. the location of the SWP3.
3. This permit does not provide the general public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the general public access to a construction site.

Section E. Revisions and Updates to SWP3s

The permittee must revise or update the SWP3 within seven days of when any of the following occurs:

1. a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants and that has not been previously addressed in the SWP3;
2. changing site conditions based on updated plans and specifications, new operators, new areas of responsibility, and changes in BMPs; or
3. results of inspections or investigations by construction site personnel authorized by the permittee, operators of a municipal separate storm sewer system receiving the discharge, authorized TCEQ personnel, or a federal, state or local agency approving sediment and erosion plans indicate the SWP3 is proving ineffective in eliminating or significantly minimizing pollutants in discharges authorized under this general permit.

Section F. Contents of SWP3

The SWP3 must be developed and implemented by primary operators of small and large construction activities and include, at a minimum, the information described in this section and must comply with the construction and development effluent guidelines in Part III, Section G of the general permit.

1. A site or project description, which includes the following information:
 - (a) a description of the nature of the construction activity;
 - (b) a list of potential pollutants and their sources;
 - (c) a description of the intended schedule or sequence of activities that will disturb soils for major portions of the site, including estimated start dates and duration of activities;
 - (d) the total number of acres of the entire property and the total number of acres where construction activities will occur, including areas where construction support activities (defined in Part I.B of this general permit) occur;
 - (e) data describing the soil or the quality of any discharge from the site;
 - (f) a map showing the general location of the site (e.g. a portion of a city or county map);
 - (g) a detailed site map (or maps) indicating the following:

- i. drainage patterns and approximate slopes anticipated after major grading activities;
- ii. areas where soil disturbance will occur;
- iii. locations of all controls and buffers, either planned or in place;
- iv. locations where temporary or permanent stabilization practices are expected to be used;
- v. locations of construction support activities, including those located off-site;
- vi. surface waters (including wetlands) either at, adjacent, or in close proximity to the site, and also indicate whether those waters are impaired;
- vii. locations where stormwater discharges from the site directly to a surface water body or a municipal separate storm sewer system;
- viii. vehicle wash areas; and
- ix. designated points on the site where vehicles will exit onto paved roads (for instance, this applies to construction transition from unstable dirt areas to exterior paved roads).

Where the amount of information required to be included on the map would result in a single map being difficult to read and interpret, the operator shall develop a series of maps that collectively include the required information.

- (h) the location and description of support activities authorized under the permittee's NOI, including asphalt plants, concrete plants, and other activities providing support to the construction site that is authorized under this general permit;
 - (i) the name of receiving waters at or near the site that may be disturbed or that may receive discharges from disturbed areas of the project;
 - (j) a copy of this TPDES general permit;
 - (k) the NOI and the acknowledgement of provisional and non-provisional authorization for primary operators of large construction sites, and the site notice for small construction sites and for secondary operators of large construction sites;
 - (l) stormwater and allowable non-stormwater discharge locations, including storm drain inlets on site and in the immediate vicinity of the construction site where construction support activities will occur; and
 - (m) locations of all pollutant-generating activities at the construction site and where construction support activities will occur, such as the following: Paving operations; concrete, paint and stucco washout and water disposal; solid waste storage and disposal; and dewatering operations.
2. A description of the BMPs that will be used to minimize pollution in runoff.

The description must identify the general timing or sequence for implementation. At a minimum, the description must include the following components:

(a) General Requirements

- i. Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.
- ii. Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.

- iii. Controls must be developed to minimize the offsite transport of litter, construction debris, and construction materials.

(b) Erosion Control and Stabilization Practices

The SWP3 must include a description of temporary and permanent erosion control and stabilization practices for the construction site, where small or large construction activity will occur. The erosion control and stabilization practices selected by the permittee must be compliant with the requirements for sediment and erosion control, located in Part III.G of this permit. The description of the SWP3 must also include a schedule of when the practices will be implemented. Site plans must ensure that existing vegetation at the construction site is preserved where it is possible.

- i. Erosion control and stabilization practices may include but are not limited to: establishment of temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, slope texturing, temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.
- ii. The following records must be maintained and either attached to or referenced in the SWP3, and made readily available upon request to the parties listed in Part III.D.1 of this general permit:
 - (A) the dates when major grading activities occur;
 - (B) the dates when construction activities temporarily or permanently cease on a portion of the site; and
 - (C) the dates when stabilization measures are initiated.
- iii. Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. Stabilization measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased. The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this requirement, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Except as provided in (A) through (D) below, these measures must be completed as soon as practicable, but no more than 14 calendar days after the initiation of soil stabilization measures:
 - (A) Where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased due to frozen conditions, non-vegetative controls must be implemented until thawing conditions (as defined in Part I.B of this general permit) are present, and vegetative stabilization measures can be initiated as soon as practicable.
 - (B) In arid areas, semi-arid areas, or drought-stricken areas, as they are defined in Part I.B of this general permit, where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased or is precluded by arid conditions, other types of erosion control and stabilization measures must be initiated at the site as soon as practicable. Where vegetative controls are infeasible due to arid conditions, and within 14 calendar days of a temporary or permanent cessation of construction activity in any portion of the site, the operator shall immediately install non-

vegetative erosion controls in areas of the construction site where construction activity is complete or has ceased. If non-vegetative controls are infeasible, the operator shall install temporary sediment controls as required in Part III.F.2.(b).iii.(C) below.

- (C) In areas where non-vegetative controls are infeasible, the operator may alternatively utilize temporary perimeter controls. The operator must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. The operator must continue to inspect the BMPs at the frequencies established in Part III.F.7.(c) for unstabilized sites.
 - (D) The requirement for permittees to initiate stabilization is triggered as soon as it is known with reasonable certainty that construction activity at the site or in certain areas of the site will be stopped for 14 or more additional calendar days. If the initiation or completion of vegetative stabilization is prevented by circumstances beyond the control of the permittee, the permittee must employ and implement alternative stabilization measures immediately. When conditions at the site changes that would allow for vegetative stabilization, then the permittee must initiate or complete vegetative stabilization as soon as practicable.
- iv. Final stabilization must be achieved prior to termination of permit coverage.
 - v. TCEQ does not expect that temporary or permanent stabilization measures to be applied to areas that are intended to be left un-vegetated or un-stabilized following construction (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials).

(c) Sediment Control Practices

The SWP3 must include a description of any sediment control practices used to remove eroded soils from stormwater runoff, including the general timing or sequence for implementation of controls.

i. Sites With Drainage Areas of Ten or More Acres

(A) Sedimentation Basin(s)

- (1) A sedimentation basin is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time. A sedimentation basin may be temporary or permanent, and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin. Capacity calculations shall be included in the SWP3.
- (2) Where rainfall data is not available or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site.

(3) If a sedimentation basin is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site. In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins.

(4) Unless infeasible, when discharging from sedimentation basins and impoundments, the permittee shall utilize outlet structures that withdraw water from the surface.

(B) Perimeter Controls: At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

ii. Controls for Sites With Drainage Areas Less than Ten Acres:

(A) Sediment traps and sediment basins may be used to control solids in stormwater runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

(B) Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided. If a calculation is performed, then the calculation shall be included in the SWP3.

(C) If sedimentation basins or impoundments are used, the permittee shall comply with the requirements in Part III.G.6 of this general permit.

3. Description of Permanent Stormwater Controls

A description of any stormwater control measures that will be installed during the construction process to control pollutants in stormwater discharges that may occur after construction operations have been completed must be included in the SWP3. Permittees are responsible for the installation and maintenance of stormwater management measures, as follows:

- (a) permittees authorized under the permit for small construction activities are responsible for the installation and maintenance of stormwater control measures prior to final stabilization of the site; or
- (b) permittees authorized under the permit for large construction activities are responsible for the installation and maintenance of stormwater control measures prior to final stabilization of the site and prior to submission of an NOT.

4. Other Required Controls and BMPs

- (a) Permittees shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and the generation of dust. The SWP3 shall include a description of controls utilized to accomplish this requirement.
 - (b) The SWP3 must include a description of construction and waste materials expected to be stored on-site and a description of controls to minimize pollutants from these materials.
 - (c) The SWP3 must include a description of potential pollutant sources in discharges of stormwater from all areas of the construction site where construction activity, including construction support activities, will be located, and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.
 - (d) Permittees shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (i.e., runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.
 - (e) Permittees shall design and utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.
 - (f) Permittees shall ensure that all other required controls and BMPs comply with all of the requirements of Part III.G of this general permit.
 - (g) For demolition of any structure with at least 10,000 square feet of floor space that was built or renovated before January 1, 1980, and the receiving waterbody is impaired for polychlorinated biphenyls (PCBs):
 - i. Implement controls to minimize the exposure of PCB-containing building materials, including paint, caulk, and pre-1980 fluorescent lighting fixtures to precipitation and to stormwater; and
 - ii. Ensure that disposal of such materials is performed in compliance with applicable state, federal, and local laws.
5. Documentation of Compliance with Approved State and Local Plans
- (a) Permittees must ensure that the SWP3 is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or stormwater management site plans or site permits approved by federal, state, or local officials.
 - (b) SWP3s must be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment erosion site plans or site permits, or stormwater management site plans or site permits approved by state or local official for which the permittee receives written notice.
 - (c) If the permittee is required to prepare a separate management plan, including but not limited to a WPAP or Contributing Zone Plan in accordance with 30 TAC Chapter 213 (related to the Edwards Aquifer), then a copy of that plan must be either included in the SWP3 or made readily available upon request to authorized personnel of the TCEQ. The permittee shall maintain a copy of the approval letter for the plan in its SWP3.
6. Maintenance Requirements
- (a) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, as soon as the permittee determines that BMPs are not operating effectively, then the permittee shall perform maintenance as necessary to maintain the continued effectiveness

- of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the SWP3 and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.
 - (b) If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the operator shall replace or modify the control as soon as practicable after making the discovery.
 - (c) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.
 - (d) If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee shall work with the owner or operator of the property to remove the sediment.
7. Inspections of Controls
- (a) Personnel provided by the permittee must inspect disturbed areas (cleared, graded, or excavated) of the construction site that do not meet the requirements of final stabilization in this general permit, all locations where stabilization measures have been implemented, areas of construction support activity covered under this permit, stormwater controls (including pollution prevention controls) for evidence of, or the potential for, the discharge of pollutants, areas where stormwater typically flows within the construction site, and points of discharge from the construction site.
 - i. Personnel conducting these inspections must be knowledgeable of this general permit, the construction activities at the site, and the SWP3 for the site.
 - ii. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC §305.128.
 - (b) Requirements for Inspections
 - i. Inspect all stormwater controls (including sediment and erosion control measures identified in the SWP3) to ensure that they are installed properly, appear to be operational, and minimizing pollutants in discharges, as intended.
 - ii. Identify locations on the construction site where new or modified stormwater controls are necessary.
 - iii. Check for signs of visible erosion and sedimentation that can be attributed to the points of discharge where discharges leave the construction site or discharge into any surface water in the state flowing within or adjacent to the construction site.
 - iv. Identify any incidents of noncompliance observed during the inspection.
 - v. Inspect locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
 - vi. If an inspection is performed when discharges from the construction site are occurring: identify all discharge points at the site, observe and document the visual quality of the discharge (i.e., color, odor, floating, settled, or

suspended solids, foam, oil sheen, and other such indicators of pollutants in stormwater).

- vii. Complete any necessary maintenance needed, based on the results of the inspection and in accordance with the requirements listed in Part III.F.6 above.
- (c) Inspection frequencies:
- i. Inspections of construction sites must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, unless as otherwise provided below in Part III.F.7.(c).ii - v below.
 - ii. Inspection frequencies must be conducted at least once every month in areas of the construction site that meet final stabilization or have been temporarily stabilized.
 - iii. Inspection frequencies for construction sites, where runoff is unlikely due to the occurrence of frozen conditions at the site, must be conducted at least once every month until thawing conditions begin to occur (See definitions for thawing conditions in Part I.B). The SWP₃ must also contain a record of the approximate beginning and ending dates of when frozen conditions occurred at the site, which resulted in inspections being conducted monthly, while those conditions persisted, instead of at the interval of once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.
 - iv. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater. The SWP₃ must also contain a record of the total rainfall measured, as well as the approximate beginning and ending dates of when drought conditions occurred at the site, which resulted in inspections being conducted monthly, while those conditions persisted, instead of at the interval of once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.
 - v. As an alternative to the inspection schedule in Part III.F.7.(c).i above, the SWP₃ may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.
 - vi. The inspection procedures described in Part III.F.7.(c).i - v above can be performed at the frequencies and under the applicable conditions indicated for each schedule option, provided that the SWP₃ reflects the current schedule and that any changes to the schedule are made in accordance with the following provisions: the inspection frequency schedule can only be changed a maximum of one time each month; the schedule change must be implemented at the beginning of a calendar month; and the reason for the schedule change documented in the SWP₃ (e.g., end of "dry" season and beginning of "wet" season).
- (d) Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may provide inspection personnel with limited access to the areas described in Part III.F.7.(a) above.
- i. Inspection of linear construction sites could require the use of vehicles that could compromise areas of temporary or permanent stabilization, cause

- additional disturbance of soils, and result in the increase the potential for erosion. In these circumstances, controls must be inspected at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, but representative inspections may be performed.
- ii. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described in Part III.F.7.(a) above. The conditions of the controls along each inspected 0.25 mile portion may be considered as representative of the condition of controls along that reach extending from the end of the 0.25 mile portion to either the end of the next 0.25 mile inspected portion, or to the end of the project, whichever occurs first.
- As an alternative to the inspection schedule described in Part III.F.7.(c).i above, the SWP₃ may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.
- iii. The SWP₃ for a linear construction site must reflect the current inspection schedule. Any changes to the inspection schedule must be made in accordance with the following provisions:
 - (A) the schedule may be changed a maximum of one time each month;
 - (B) the schedule change must be implemented at the beginning of a calendar month, and
 - (C) the reason for the schedule change must be documented in the SWP₃ (e.g., end of "dry" season and beginning of "wet" season).
- (e) In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.
- (f) Inspection Reports
- i. A report summarizing the scope of any inspection must be completed within 24-hours following the inspection. The report must also include the date(s) of the inspection and major observations relating to the implementation of the SWP₃. Major observations in the report must include: the locations of where erosion and discharges of sediment or other pollutants from the site have occurred; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.
 - ii. Actions taken as a result of inspections must be described within, and retained as a part of, the SWP₃. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP₃ and this permit. The report must be retained as part of the SWP₃ and signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).
 - iii. The names and qualifications of personnel making the inspections for the permittee may be documented once in the SWP₃ rather than being included in each report.
- (g) The SWP₃ must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP₃ must be completed

within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

8. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for all eligible non-stormwater components of the discharge, as listed in Part II.A.3 of this permit.
9. The SWP3 must include the information required in Part III.B of this general permit.
10. The SWP3 must include pollution prevention procedures that comply with Part III.G.4 of this general permit.

Section G. Erosion and Sediment Control Requirements Applicable to All Sites

Except as provided in 40 CFR §§125.30-125.32, any discharge regulated under this general permit, with the exception of sites that obtained waivers based on low rainfall erosivity, must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT).

1. *Erosion and sediment controls.* Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:
 - (a) Control stormwater volume and velocity within the site to minimize soil erosion in order to minimize pollutant discharges;
 - (b) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge point(s);
 - (c) Minimize the amount of soil exposed during construction activity;
 - (d) Minimize the disturbance of steep slopes;
 - (e) Minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
 - (f) If earth disturbance activities are located in close proximity to a surface water in the state, provide and maintain appropriate natural buffers if feasible and as necessary, around surface water in the state, depending on site-specific topography, sensitivity, and proximity to water bodies. Direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible. If providing buffers is infeasible, the permittee shall document the reason that natural buffers are infeasible and shall implement additional erosion and sediment controls to reduce sediment load;
 - (g) Preserve native topsoil at the site, unless the intended function of a specific area of the site dictates that the topsoil be disturbed or removed, or it is infeasible; and
 - (h) Minimize soil compaction. In areas of the construction site where final vegetative stabilization will occur or where infiltration practices will be installed, either:
 - i. restrict vehicle and equipment use to avoid soil compaction; or

- ii. prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible;

Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted.

- (i) TCEQ does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface water" for the purposes of triggering the buffer requirement in Part III.G.1.(f) above.
2. *Soil stabilization.* Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. In the context of this requirement, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Temporary stabilization must be completed no more than 14 calendar days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage. In arid, semi-arid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative non-vegetative stabilization measures must be employed as soon as practicable. Refer to Part III.F.2.(b) for complete erosion control and stabilization practice requirements. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed.
3. *Dewatering.* Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls.
4. *Pollution prevention measures.* Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:
 - (a) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
 - (b) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater;
 - (c) Minimize the exposure of waste materials by closing waste container lids at the end of the work day. For waste containers that do not have lids, where the container itself is not sufficiently secure enough to prevent the discharge of pollutants absent a cover and could leak, the permittee must provide either a cover (e.g., a tarp, plastic sheeting, temporary roof) to minimize exposure of wastes to precipitation, or a similarly effective means designed to minimize the discharge of pollutants (e.g., secondary containment); and
 - (d) Minimize the discharge of pollutants from spills and leaks, and implement chemical spill and leak prevention and response procedures.
5. *Prohibited discharges.* The following discharges are prohibited:

- (a) Wastewater from wash out of concrete, unless managed by an appropriate control;
 - (b) Wastewater from wash out and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
 - (c) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
 - (d) Soaps or solvents used in vehicle and equipment washing; and
 - (e) Toxic or hazardous substances from a spill or other release.
6. *Surface outlets.* When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

Part IV. Stormwater Runoff from Concrete Batch Plants

Discharges of stormwater runoff from concrete batch plants present at regulated construction sites and operated as a construction support activity may be authorized under the provisions of this general permit, provided that the following requirements are met for concrete batch plant(s) authorized under this permit. Only the discharges of stormwater runoff and non-stormwater from concrete batch plants that meet the requirements of a construction support activity can be authorized under this permit (see the requirements for "Non-Stormwater Discharges" in Part II.A.3 and "Discharges of Stormwater Associated with Construction Support Activity" in Part II.A.2).

If discharges of stormwater runoff or non-stormwater from concrete batch plants are not authorized under this general permit, then discharges must be authorized under an alternative general permit or individual permit [see the requirement in Part II.A.2.(c)].

This permit does not authorize the discharge or land disposal of any wastewater from concrete batch plants at regulated construction sites. Authorization for these wastes must be obtained under an individual permit or an alternative general permit.

Section A. Benchmark Sampling Requirements

1. Operators of concrete batch plants authorized under this general permit shall sample the stormwater runoff from the concrete batch plants according to the requirements of this section of this general permit, and must conduct evaluations on the effectiveness of the SWP3 based on the following benchmark monitoring values:

Table 1. Benchmark Parameters

Benchmark Parameter	Benchmark Value	Sampling Frequency	Sample Type
Oil and Grease (*1)	15 mg/L	1/quarter (*2) (*3)	Grab (*4)
Total Suspended Solids (*1)	50 mg/L	1/quarter (*2) (*3)	Grab (*4)
pH	6.0 - 9.0 Standard Units	1/quarter (*2) (*3)	Grab (*4)
Total Iron(*1)	1.3 mg/L	1/quarter (*2) (*3)	Grab (*4)

(*1) All analytical results for these parameters must be obtained from a laboratory that is accredited based on rules located in 30 TAC §25.4 (a) or through the National Environmental Laboratory Accreditation Program (NELAP). Analysis must be performed using sufficiently sensitive methods for analysis that comply with the rules located in 40 CFR §136.1(c) and 40 CFR §122.44(i)(1)(iv).

- (*2) When discharge occurs. Sampling is required within the first 30 minutes of discharge. If it is not practicable to take the sample, or to complete the sampling, within the first 30 minutes, sampling must be completed within the first hour of discharge. If sampling is not completed within the first 30 minutes of discharge, the reason must be documented and attached to all required reports and records of the sampling activity.
- (*3) Sampling must be conducted at least once during each of the following periods. The first sample must be collected during the first full quarter that a stormwater discharge occurs from a concrete batch plant authorized under this general permit.

- January through March
- April through June
- July through September
- October through December

For projects lasting less than one full quarter, a minimum of one sample shall be collected, provided that a stormwater discharge occurred at least once following submission of the NOI or following the date that automatic authorization was obtained under Section II.E.2, and prior to terminating coverage.

- (*4) A grab sample shall be collected from the stormwater discharge resulting from a storm event that is at least 0.1 inches of measured precipitation that occurs at least 72 hours from the previously measurable storm event. The sample shall be collected downstream of the concrete batch plant, and where the discharge exits any BMPs utilized to handle the runoff from the batch plant, prior to commingling with any other water authorized under this general permit.
2. The permittee must compare the results of sample analyses to the benchmark values above, and must include this comparison in the overall assessment of the SWP3's effectiveness. Analytical results that exceed a benchmark value are not a violation of this permit, as these values are not numeric effluent limitations. Results of analyses are indicators that modifications of the SWP3 should be assessed and may be necessary to protect water quality. The operator must investigate the cause for each exceedance and must document the results of this investigation in the SWP3 by the end of the quarter following the sampling event.

The operator's investigation must identify the following:

- (a) any additional potential sources of pollution, such as spills that might have occurred;
- (b) necessary revisions to good housekeeping measures that are part of the SWP3;
- (c) additional BMPs, including a schedule to install or implement the BMPs; and
- (d) other parts of the SWP3 that may require revisions in order to meet the goal of the benchmark values.

Background concentrations of specific pollutants may also be considered during the investigation. If the operator is able to relate the cause of the exceedance to background concentrations, then subsequent exceedances of benchmark values for that pollutant may be resolved by referencing earlier findings in the SWP3. Background concentrations may be identified by laboratory analyses of samples of stormwater run-on to the permitted facility, by laboratory analyses of samples of stormwater run-off from adjacent non-industrial areas, or by identifying the pollutant is a naturally occurring material in soils at the site.

Section B. Best Management Practices (BMPs) and SWP3 Requirements

Minimum SWP3 Requirements – The following are required in addition to other SWP3 requirements listed in this general permit, which include, but are not limited to the applicable requirements located in Part III.F.7 of this general permit, as follows:

1. Description of Potential Pollutant Sources - The SWP3 must provide a description of potential sources (activities and materials) that can cause, have a reasonable potential to cause or contribute to a violation of water quality standards or have been found to cause, or contribute to, the loss of a designated use of surface water in the state in stormwater discharges associated with concrete batch plants authorized under this permit. The SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater discharges associated with industrial activity and non-stormwater discharges (described in Part II.A.3 of this general permit), in compliance with the terms and conditions of this general permit, including the protection of water quality, and must ensure the implementation of these practices.

The following must be developed, at a minimum, in support of developing this description:

- (a) Drainage – The site map must include the following information:
 - i. the location of all outfalls for stormwater discharges associated with concrete batch plants that are authorized under this permit;
 - ii. a depiction of the drainage area and the direction of flow to the outfall(s);
 - iii. structural controls used within the drainage area(s);
 - iv. the locations of the following areas associated with concrete batch plants that are exposed to precipitation: vehicle and equipment maintenance activities (including fueling, repair, and storage areas for vehicles and equipment scheduled for maintenance); areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material processing and storage areas; and loading and unloading areas; and
 - v. the locations of the following: any bag house or other dust control device(s); recycle/sedimentation pond, clarifier or other device used for the treatment of facility wastewater (including the areas that drain to the treatment device); areas with significant materials; and areas where major spills or leaks have occurred.
- (b) Inventory of Exposed Materials – A list of materials handled at the concrete batch plant that may be exposed to stormwater and that have a potential to affect the quality of stormwater discharges associated with concrete batch plants that are authorized under this general permit.
- (c) Spills and Leaks - A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to stormwater and that drain to stormwater outfalls associated with concrete batch plants authorized under this general permit must be developed, maintained, and updated as needed.
- (d) Sampling Data - A summary of existing stormwater discharge sampling data must be maintained, if available.
2. Measures and Controls - The SWP3 must include a description of management controls to regulate pollutants identified in the SWP3's "Description of Potential Pollutant Sources" from Part IV.B.1 of this permit, and a schedule for implementation of the measures and controls. This must include, at a minimum:

- (a) Good Housekeeping - Good housekeeping measures must be developed and implemented in the area(s) associated with concrete batch plants.
 - i. Operators must prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant materials from paved portions of the site that are exposed to stormwater. Measures used to minimize the presence of these materials may include regular sweeping or other equivalent practices. These practices must be conducted at a frequency that is determined based on consideration of the amount of industrial activity occurring in the area and frequency of precipitation, and shall occur at least once per week when cement or aggregate is being handled or otherwise processed in the area.
 - ii. Operators must prevent the exposure of fine granular solids, such as cement, to stormwater. Where practicable, these materials must be stored in enclosed silos, hoppers or buildings, in covered areas, or under covering.
- (b) Spill Prevention and Response Procedures - Areas where potential spills that can contribute pollutants to stormwater runoff, and the drainage areas from these locations, must be identified in the SWP3. Where appropriate, the SWP3 must specify material handling procedures, storage requirements, and use of equipment. Procedures for cleaning up spills must be identified in the SWP3 and made available to the appropriate personnel.
- (c) Inspections - Qualified facility personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) must be identified to inspect designated equipment and areas of the facility specified in the SWP3. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC §305.128. Inspections of facilities in operation must be performed once every seven days. Inspections of facilities that are not in operation must be performed at a minimum of once per month. The current inspection frequency being implemented at the facility must be recorded in the SWP3. The inspection must take place while the facility is in operation and must, at a minimum, include all areas that are exposed to stormwater at the site, including material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, truck wash down and equipment cleaning areas. Follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections must be maintained and be made readily available for inspection upon request.
- (d) Employee Training - An employee training program must be developed to educate personnel responsible for implementing any component of the SWP3, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP3. The frequency of training must be documented in the SWP3, and at a minimum, must consist of one training prior to the initiation of operation of the concrete batch plant.
- (e) Record Keeping and Internal Reporting Procedures - A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of stormwater discharges, must be included in the SWP3. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP3.
- (f) Management of Runoff - The SWP3 shall contain a narrative consideration for reducing the volume of runoff from concrete batch plants by diverting runoff or otherwise managing runoff, including use of infiltration, detention ponds, retention ponds, or reusing of runoff.

3. Comprehensive Compliance Evaluation – At least once per year, one or more qualified personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) shall conduct a compliance evaluation of the plant. The evaluation must include the following.
- Visual examination of all areas draining stormwater associated with regulated concrete batch plants for evidence of, or the potential for, pollutants entering the drainage system. These include, but are not limited to: cleaning areas, material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, and truck wash down and equipment cleaning areas. Measures implemented to reduce pollutants in runoff (including structural controls and implementation of management practices) must be evaluated to determine if they are effective and if they are implemented in accordance with the terms of this permit and with the permittee's SWP3. The operator shall conduct a visual inspection of equipment needed to implement the SWP3, such as spill response equipment.
 - Based on the results of the evaluation, the following must be revised as appropriate within two weeks of the evaluation: the description of potential pollutant sources identified in the SWP3 (as required in Part IV.B.1, "Description of Potential Pollutant Sources"); and pollution prevention measures and controls identified in the SWP3 (as required in Part IV.B.2, "Measures and Controls"). The revisions may include a schedule for implementing the necessary changes.
 - The permittee shall prepare and include in the SWP3 a report summarizing the scope of the evaluation, the personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the SWP3, and actions taken in response to the findings of the evaluation. The report must identify any incidents of noncompliance. Where the report does not identify incidences of noncompliance, the report must contain a statement that the evaluation did not identify any incidence(s), and the report must be signed according to 30 TAC §305.128, relating to Signatories to Reports.
 - The Comprehensive Compliance Evaluation may substitute for one of the required inspections delineated in Part IV.B.2.(c) of this general permit.

Section C. Prohibition of Wastewater Discharges

Wastewater discharges associated with concrete production including wastewater disposal by land application are not authorized under this general permit. These wastewater discharges must be authorized under an alternative TCEQ water quality permit or otherwise disposed of in an authorized manner. Discharges of concrete truck wash out at construction sites may be authorized if conducted in accordance with the requirements of Part V of this general permit.

Part V. Concrete Truck Wash Out Requirements

This general permit authorizes the land disposal of wash out from concrete trucks at construction sites regulated under this general permit, provided the following requirements are met. Any discharge of concrete production waste water to surface water in the state must be authorized under a separate TCEQ general permit or individual permit.

- Discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited by this general permit.
- Concrete truck wash out water shall be disposed in areas at the construction site where structural controls have been established to prevent discharge to surface water

in the state, or to areas that have a minimal slope that allow infiltration and filtering of wash out water to prevent discharge to surface water in the state. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the construction site.

- Wash out of concrete trucks during rainfall events shall be minimized. The discharge of concrete truck wash out water is prohibited at all times, and the operator shall insure that its BMPs are sufficient to prevent the discharge of concrete truck wash out as the result of rainfall or stormwater runoff.
- The disposal of wash out water from concrete trucks, made under authorization of this general permit must not cause or contribute to groundwater contamination.
- If a SWP3 is required to be implemented, the SWP3 shall include concrete wash out areas on the associated site map.

Part VI. Retention of Records

The permittee must retain the following records for a minimum period of three (3) years from the date that a NOT is submitted as required in Part II.F.1 and 2 of this permit. For activities in which an NOT is not required, records shall be retained for a minimum period of three (3) years from the date that the operator terminates coverage under Section II.F.3 of this permit. Records include:

- A copy of the SWP3;
- All reports and actions required by this permit, including a copy of the construction site notice;
- All data used to complete the NOI, if an NOI is required for coverage under this general permit; and
- All records of submittal of forms submitted to the operator of any MS4 receiving the discharge and to the secondary operator of a large construction site, if applicable.

Part VII. Standard Permit Conditions

- The permittee has a duty to comply with all permit conditions. Failure to comply with any permit condition is a violation of the permit and statutes under which it was issued (CWA and TWC), and is grounds for enforcement action, for terminating, revoking and reissuance, or modification, or denying coverage under this general permit, or for requiring a discharger to apply for and obtain an individual TPDES permit, based on rules located in TWC §23.086, 30 TAC §305.66 and 40 CFR §122.41 (a).
- Authorization under this general permit may be modified, suspended, revoked and reissued, terminated or otherwise suspended for cause, based on rules located in TWC §23.086, 30 TAC §305.66 and 40 CFR §122.41(f). Filing a notice of planned changes or anticipated non-compliance by the permittee does not stay any permit condition. The permittee must furnish to the executive director, upon request and within a reasonable time, any information necessary for the executive director to determine whether cause exists for modifying, revoking and reissuing, terminating or, otherwise suspending authorization under this permit, based on rules located in TWC §23.086, 30 TAC §305.66 and 40 CFR §122.41 (h). Additionally, the permittee must provide to the executive director, upon request, copies of all records that the permittee is required to maintain as a condition of this general permit.
- It is not a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.

- D.** Inspection and entry shall be allowed under TWC Chapters 26-28, Texas Health and Safety Code §§361.032-361.033 and 361.037, and 40 CFR §122.41(i). The statement in TWC §26.014 that commission entry of a facility shall occur according to an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility or site, but merely describes the commission's duty to observe appropriate rules and regulations during an inspection.
- E.** The discharger is subject to administrative, civil, and criminal penalties, as applicable, under TWC Chapter 7 for violations including but not limited to the following:
1. negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under CWA §402, or any requirement imposed in a pretreatment program approved under CWA §§402(a)(3) or 402(b)(8);
 2. knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance; and
 3. knowingly violating CWA §303 and placing another person in imminent danger of death or serious bodily injury.
- F.** All reports and other information requested by the executive director must be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).
- G.** Authorization under this general permit does not convey property or water rights of any sort and does not grant any exclusive privilege.
- H.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
- I.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
- J.** The permittee shall comply with the monitoring and reporting requirements in 40 CFR §122.41(j) and (l), as applicable.
- K.** Analysis must be performed using sufficiently sensitive methods for analysis that comply with the rules located in 40 CFR §136.1(c) and 40 CFR §122.44(i)(1)(iv).

Part VIII. Fees

- A.** A fee of must be submitted along with the NOI:
1. \$325 if submitting a paper NOI, or
 2. \$225 if submitting an NOI electronically.
- B.** Fees are due upon submission of the NOI. An NOI will not be declared administratively complete unless the associated fee has been paid in full.
- C.** No separate annual fees will be assessed for this general permit. The Water Quality Annual Fee has been incorporated into the NOI fees as described above.

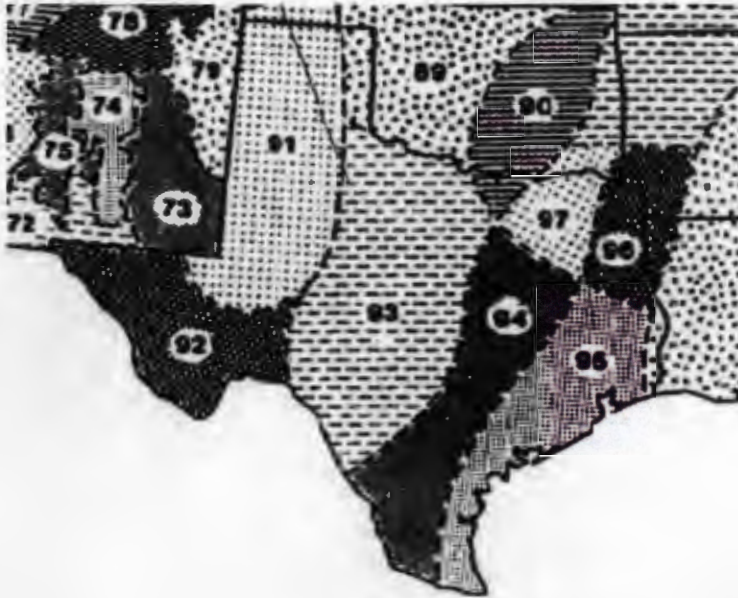
- D.** Effective September 1, 2018, applicants seeking coverage under an NOI or LREW must submit their application using the online e-Permits system available through the TCEQ website, or request and obtain a waiver from electronic reporting from the TCEQ. Waivers from electronic reporting are not transferrable and expire on the same date as the authorization to discharge.

Appendix A: Automatic Authorization
Periods of Low Erosion Potential by County – Eligible Date Ranges

Andrews: Nov. 15 - Apr. 30	Ector: Nov. 15 - Apr. 30
Archer: Dec. 15 - Feb. 14	Edwards: Dec. 15 - Feb. 14
Armstrong: Nov. 15 - Apr. 30	El Paso: Jan. 1 - Jul. 14, or May 15 - Jul. 31, or Jun. 1 - Aug. 14, or Jun. 15 - Sept. 14, or Jul. 1 - Oct. 14, or Jul. 15 - Oct. 31, or Aug. 1 - Apr. 30, or Aug. 15 - May 14, or Sept. 1 - May 30, or Oct. 1 - Jun. 14, or Nov. 1 - Jun. 30, or Nov. 15 - Jul. 14
Bailey: Nov. 1 - Apr. 30, or Nov. 15 - May 14	Fisher: Dec. 15 - Feb. 14
Baylor: Dec. 15 - Feb. 14	Floyd: Nov. 15 - Apr. 30
Borden: Nov. 15 - Apr. 30	Foard: Dec. 15 - Feb. 14
Brewster: Nov. 15 - Apr. 30	Gaines: Nov. 15 - Apr. 30
Briscoe: Nov. 15 - Apr. 30	Garza: Nov. 15 - Apr. 30
Brown: Dec. 15 - Feb. 14	Glasscock: Nov. 15 - Apr. 30
Callahan: Dec. 15 - Feb. 14	Hale: Nov. 15 - Apr. 30
Carson: Nov. 15 - Apr. 30	Hall: Feb. 1 - Mar. 30
Castro: Nov. 15 - Apr. 30	Hansford: Nov. 15 - Apr. 30
Childress: Dec. 15 - Feb. 14	Hardeman: Dec. 15 - Feb. 14
Cochran: Nov. 1 - Apr. 30, or Nov. 15 - May 14	Hartley: Nov. 15 - Apr. 30
Coke: Dec. 15 - Feb. 14	Haskell: Dec. 15 - Feb. 14
Coleman: Dec. 15 - Feb. 14	Hockley: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Collingsworth: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28	Howard: Nov. 15 - Apr. 30
Concho: Dec. 15 - Feb. 14	Hudspeth: Nov. 1 - May 14
Cottle: Dec. 15 - Feb. 14	Hutchinson: Nov. 15 - Apr. 30
Crane: Nov. 15 - Apr. 30	Irion: Dec. 15 - Feb. 14
Crockett: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30	Jeff Davis: Nov. 1 - Apr. 30 or Nov. 15 - May 14
Crosby: Nov. 15 - Apr. 30	Jones: Dec. 15 - Feb. 14
Culberson: Nov. 1 - May 14	Kent: Nov. 15 - Jan. 14 or Feb. 1 - Mar. 30
Dallam: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30	Kerr: Dec. 15 - Feb. 14
Dawson: Nov. 15 - Apr. 30	Kimble: Dec. 15 - Feb. 14
Deaf Smith: Nov. 15 - Apr. 30	King: Dec. 15 - Feb. 14
Dickens: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30	Kinney: Dec. 15 - Feb. 14
Dimmit: Dec. 15 - Feb. 14	Knox: Dec. 15 - Feb. 14
Donley: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28	Lamb: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Eastland: Dec. 15 - Feb. 14	

Loving: Nov. 1 - Apr. 30, or Nov. 15 - May 14	Scurry: Nov. 15 - Apr. 30
Lubbock: Nov. 15 - Apr. 30	Shackelford: Dec. 15 - Feb. 14
Lynn: Nov. 15 - Apr. 30	Sherman: Nov. 15 - Apr. 30
Martin: Nov. 15 - Apr. 30	Stephens: Dec. 15 - Feb. 14
Mason: Dec. 15 - Feb. 14	Sterling: Nov. 15 - Apr. 30
Maverick: Dec. 15 - Feb. 14	Stonewall: Dec. 15 - Feb. 14
McCulloch: Dec. 15 - Feb. 14	Sutton: Dec. 15 - Feb. 14
Menard: Dec. 15 - Feb. 14	Swisher: Nov. 15 - Apr. 30
Midland: Nov. 15 - Apr. 30	Taylor: Dec. 15 - Feb. 14
Mitchell: Nov. 15 - Apr. 30	Terrell: Nov. 15 - Apr. 30
Moore: Nov. 15 - Apr. 30	Terry: Nov. 15 - Apr. 30
Motley: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30	Throckmorton: Dec. 15 - Feb. 14
Nolan: Dec. 15 - Feb. 14	Tom Green: Dec. 15 - Feb. 14
Oldham: Nov. 15 - Apr. 30	Upton: Nov. 15 - Apr. 30
Parmer: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30	Uvalde: Dec. 15 - Feb. 14
Pecos: Nov. 15 - Apr. 30	Val Verde: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30
Potter: Nov. 15 - Apr. 30	Ward: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30
Presidio: Nov. 1 - Apr. 30, or Nov. 15 - May 14	Wichita: Dec. 15 - Feb. 14
Randall: Nov. 15 - Apr. 30	Wilbarger: Dec. 15 - Feb. 14
Reagan: Nov. 15 - Apr. 30	Winkler: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Real: Dec. 15 - Feb. 14	Yoakum: Nov. 1 - Apr. 30, or Nov. 15 - May 14
Reeves: Nov. 1 - Apr. 30, or Nov. 15 - May 14	Young: Dec. 15 - Feb. 14
Runnels: Dec. 15 - Feb. 14	Wheeler: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28
Schleicher: Dec. 15 - Feb. 14	Zavala: Dec. 15 - Feb. 14

Appendix B: Erosivity Index (EI) Zones in Texas



Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix C: Isoerodent Map



Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix D: Erosivity Indices for EI Zones in Texas

Periods:

EI #	1/1	1/16	1/31	2/15	3/1	3/16	3/31	4/15	4/30	5/15	5/30	6/14	6/29	7/14	7/29	8/13	8/28	9/12	9/27	10/12	10/27	11/11	11/26	12/11	12/31
89	0	1	1	2	3	4	7	2	8	27	38	48	55	62	69	76	83	90	94	97	98	99	100	100	100
90	0	1	2	3	4	6	8	13	21	29	37	46	54	60	65	69	74	81	87	92	95	97	98	99	100
91	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
92	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
93	0	1	1	2	3	4	6	8	13	25	40	49	56	62	67	72	76	80	85	91	97	98	99	99	100
94	0	1	2	4	6	8	10	15	21	29	38	47	53	57	61	65	70	76	83	88	91	94	96	98	100
95	0	1	3	5	7	9	11	14	18	27	35	41	46	51	57	62	68	73	79	84	89	93	96	98	100
96	0	2	4	6	9	12	17	23	30	37	43	49	54	58	62	66	70	74	78	82	86	90	94	97	100
97	0	1	3	5	7	10	14	20	28	37	48	56	61	64	68	72	77	81	86	89	92	95	98	99	100
106	0	3	6	9	13	17	21	27	33	38	44	49	55	61	67	71	75	78	81	84	86	90	94	97	100

* Each period begins on the date listed in the table above and lasts until the day before the following period. The final period begins on December 11 and ends on December 31.

Table adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

GEO TECHNICAL REPORT

GEOTECHNICAL INVESTIGATION
Neuens Road From Gessner Road to Blalock Road
Harris County, Texas, Precinct 4, Key Map No.: 450 S & 450 T
UPIN: 18104MF0UE01; HCFCU Unit No.: W140-00-00

SUBMITTED TO

CivilTech Engineering, Inc.
11821 Telge Road
Cypress, Texas 77429

BY

HVJ ASSOCIATES, INC.

Houston, Texas

July 12, 2019

REPORT NO. HG1810145





Houston | 6120 S. Dairy Ashford Rd.
 Austin | Houston, TX 77072-1010
 Dallas | 281.933.7388 Ph
 San Antonio | 281.933.7293 Fax
 www.hvj.com

July 12, 2019

Mr. Paul M. Baxter, PE
 Senior Project Manager
 CivilTech Engineering, Inc.
 11821 Telge Road
 Cypress, Texas 77429

Re: Geotechnical Investigation
 Neuens Road from Gessner Road to Blalock Road
 UPIN: 18104MF0UE01
 HCFCU Unit No.: W140-00-00
 Harris County, Texas
 Owner: Harris County Precinct 4
 HVJ Report No.: HG1810145

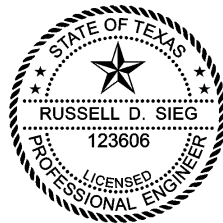
Dear Mr. Baxter:

Submitted herein is the revised report of our geotechnical study for the above referenced project. The study was conducted in general accordance with our proposal number HG1810145 dated April 20, 2018 and is subject to the limitations presented in this report. We appreciate the opportunity of working with you on this project. Please read the entire report and notify us if there are questions concerning this report or if we may be of further assistance.

Sincerely,

HVJ ASSOCIATES, INC.
 Texas Firm Registration No. F-000646

Russell Sieg



Russell D. Sieg, PE
 Project Engineer

7/12/2019

P. Dahal

Prakash Dahal, EIT
 Staff Engineer

The seal appearing on this document was authorized by Russell D. Sieg, PE 123606 on July 12, 2019. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

- Main Text – 27 pages
- Plates – 9 pages
- Appendix A – 32 pages
- Appendix B – 5 pages
- Appendix C – 13 pages
- Appendix D – 9 pages
- Appendix E – 7 pages
- Appendix F – 3 pages
- Appendix G – 4 pages
- Appendix H – 3 pages
- Appendix I – 51 pages
- Appendix J – 38 pages
- Appendix K – 5 pages

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1 EXECUTIVE SUMMARY

HVJ Associates, Inc. was retained by CivilTech Engineering, Inc. (CivilTech) to provide geotechnical services for the proposed improvements to Neuens Road from Gessner Road to Blalock Road located in north Harris County, Texas. The length of the alignment is about 1.2 miles. The project includes reconstruction of the existing two-lane asphalt roadway to two-lane concrete roadway with both open ditches and storm sewers. A 2.5-acre detention pond will also be constructed at the southeast corner of Neuens Road and Crestdale Drive.

For the roadside ditches, slope stability analysis is not required if designed in accordance with HCED Regulations for the Approval and Acceptance of Infrastructure dated July 1, 2015. The HCED Regulations (Section 6, Item 5, Parts B and E) state that grass-lined roadside ditches shall have side slopes no steeper than 3:1 and maximum depth shall not exceed 4 feet. If the roadside ditches are deeper than 4 feet, written approval must be obtained from HCED for the design, and HVJ will perform slope stability analysis with additional authorization.

The purpose of detention pond construction study is to provide recommendations for pavement reconstruction and utility installation, and detention pond construction. We understand that the invert depth of the proposed storm sewers will be close to the existing invert depth of approximately 13 to 15 feet below the existing grade, and the storm sewers will be Reinforced Concrete Boxes (RCB) with sizes up to 10'x10'. We performed sixteen soil borings to 20- to 30-foot depth below the existing grade to determine soil stratigraphy. The boring depth was extended to 30 feet due to water bearing sands encountered at the planned 25-foot termination depth according to Harris County Engineering Department (HCED) guidelines. Based on the subsurface conditions revealed by the soil borings, the findings and recommendations of this report are summarized below:

1. The soils generally consisted of firm to very stiff cohesive soils with some surficial cohesionless sandy silt layers at borings P-1 to P-4. Water-bearing sand was encountered in the borings at depths of 18 to 23 feet below existing grade.
2. The Phase I Geologic Fault Assessment is presented in Appendix I. We conclude that the potential for active surface faulting to impact the project is low since the documented Long Point Fault is located approximately 1 mile south of the proposed alignment. No other geologic faults were observed on or near the project alignment.
3. The water level readings in the piezometers were recorded between 8.0 and 19.3 feet below the existing grade. Based on the piezometer readings, we expect that groundwater may be encountered during excavation for the storm sewers in borings P-5 through P-13.
4. Based on the HCED pavement design criteria, we calculated a pavement section of 6.2-inch thick reinforced concrete pavement over 8-inch thick stabilized subgrade. However, in consultation with the project team, we recommend the standard Harris County pavement section of 10-inch thick concrete pavement over 8-inch thick stabilized subgrade as the proposed pavement section for this project.

For the stabilized subgrade, we recommend for estimation purposes that 6% lime (or 2% lime and 8% fly ash for the sandy subgrade near Borings P-1 to P-4) be used for stabilizing the

subgrade. The actual amount of lime (or lime-fly ash) shall be determined for subgrade soils by conducting laboratory tests on the exposed subgrade during construction.

5. Recommendations for RCB storm sewer installation by the open cut method is presented in Section 7 of the report. We expect that sheeting may be needed near boring P-1 at the west end of the alignment due to the sand layer from surface to 14-foot depth. Based on the piezometer readings, groundwater is expected to be encountered in excavations made for storm sewer installation in borings P-5 to P-13. It should be noted that groundwater levels will fluctuate seasonally and in response to rainfall.

A conventional pump and sump arrangement may be adequate for dewatering the clay stratum. However, complete excavation of the clay stratum is not recommended without dewatering the underlying sand layer to prevent bottom heave or a blow, particularly where the RCB size is 10'x10'. We expect that eductors may be needed to dewater the sand layer for excavation near boring P-5 at Pine Shadows Elementary School and east along the alignment to Blalock Road.

6. The proposed Detention Pond will be about 2.5 acres in area. According to the information provided by CivilTech, we understand that the proposed detention pond will be a dry basin with maximum depth of about 13 feet, and proposed side slopes of 3H:1V. It should be noted that based on the piezometer 30-day water level reading at 11.5-ft depth at the proposed detention pond, the basin may have a wet bottom if maximum depth is 13 feet.

The results of slope stability analyses indicate that a 3H:1V slope achieves the required factors of safety for the short term, rapid drawdown, and long term loading conditions. The results are shown in Section 8 of the report and in Appendix J.

Please note that this executive summary does not fully relate our findings and opinions. Those findings and opinions are only presented through our full report.

2 INTRODUCTION

2.1 Project Description

HVJ Associates, Inc. was retained by CivilTech Engineering, Inc. (CivilTech) to provide geotechnical services for the proposed improvements to Neuens Road from Gessner Road to Blalock Road located in north Harris County, Texas. The length of the alignment is about 1.2 miles. The project includes reconstruction of the existing two-lane asphalt roadway to two-lane concrete roadway with both open ditches and storm sewers. A 2.5-acre detention pond will also be constructed at the southeast corner of Neuens Road and Crestdale Drive. A Site Vicinity map is presented on Plate 1.

For the roadside ditches, slope stability analysis is not required if designed in accordance with HCED Regulations for the Approval and Acceptance of Infrastructure dated July 1, 2015. The HCED Regulations (Section 6, Item 5, Parts B and E) state that grass-lined roadside ditches shall have side slopes no steeper than 3:1 and maximum depth shall not exceed 4 feet. If the roadside ditches are deeper than 4 feet, written approval must be obtained from HCED for the design, and HVJ will perform slope stability analysis with additional authorization.

The purpose of this study is to provide recommendations for pavement reconstruction and utility installation, and detention pond construction. We understand that the invert depth of the proposed storm sewers will be close to the existing invert depth of approximately 13 to 15 feet below the existing grade, and the storm sewers will be Reinforced Concrete Boxes (RCB) with sizes up to 10'x10'. The study was performed in accordance with the Harris County Engineering Department (HCED) Guidelines for Consultants Performing Geotechnical Investigations dated January 1, 2011, HCED Regulations for the Approval and Acceptance of Infrastructure dated July 1, 2015, and Appendix D of the Harris County Flood Control District (HCFCD) Policy Criteria, and Procedure Manual, dated December 21, 2010.

2.2 Scope of Work

The objectives of this study were to gather information on subsurface conditions at the site and to provide recommendations for the proposed work as stated above. The objectives were accomplished by:

- Drilling and field testing sixteen soil borings to 20- to 30-foot depth below the existing grade to determine soil stratigraphy and to obtain samples for laboratory testing;
- Installing four piezometers to gain an understanding of the groundwater conditions along the alignment;
- Performing laboratory tests to determine physical and engineering characteristics of the soils; and
- Performing engineering analyses to develop design guidelines and recommendations for the proposed pavement, storm sewers, and detention pond.

Subsequent sections of this report contain descriptions of the field exploration, laboratory testing program, general subsurface conditions, and design and construction recommendations for the proposed improvements.

3 FIELD EXPLORATION

3.1 Geotechnical Borings

The field exploration program undertaken at the project site was performed between August 13th to August 22nd, 2018 and on January 31st, 2019. The borings were drilled using dry auger drilling techniques using a truck-mounted drill rig. The boring termination depth was extended an additional 5 feet due to water bearing sands encountered at the planned termination depths according to Harris County Engineering Department (HCED) guidelines. Four borings were converted into piezometers to record long term water level readings. The borings were backfilled with cement-bentonite grout and patched at the surface with asphalt except at the piezometer location. Approximate boring locations are presented on Plate 2.

3.2 Survey Data

Grid coordinate and elevation survey data for the boring locations was provided by CivilTech, and are summarized in the table below.

Table 3-1 – Borehole Survey Data

Boring	Drilling Depth, Feet	Ground Surface Elevation, Feet	Grid Coordinates	
			Northing	Easting
P-1 (PZ-1)	30	88.77	13856812.25	3064569.72
P-2	30	83.69	13856828.80	3065044.43
P-3	30	87.58	13856840.80	3065465.26
P-4	30	87.52	13856972.68	3065730.18
P-5	30	87.40	13856988.54	3066265.90
P-6 (PZ-2)	30	86.20	13857009.33	3066722.16
P-7	30	86.50	13857038.96	3067108.36
P-8	30	85.26	13857051.43	3067774.27
P-9	30	85.02	13857098.99	3068439.56
P-10	30	84.29	13857091.57	3068681.80
P-11	30	84.22	13857120.38	3069117.47
P-12	30	84.38	13857141.90	3069652.46
P-13 (PZ-3)	30	83.85	13857172.55	3070208.01
DP-1	20	87.05	13857040.50	3068589.87
DP-2 (PZ-4)	25	83.97	13856909.28	3068707.32
DP-3	25	83.95	13856751.17	3068840.37

Grid coordinates shown are in feet and are referenced to U.S. State Plane Texas South Central Zone, North American Datum 83. Elevations are in feet and are referenced to North American Vertical Datum (NAVD) 88.

3.3 Sampling Methods

The borings were sampled continuously to a depth of 20 feet, and at 5-foot intervals to the termination depth in the borings. Cohesive soil samples were generally obtained with a three-inch thin-walled (Shelby) tube sampler in general accordance with ASTM D-1587 standard. Each sample

was removed from the sampler in the field, carefully examined, and then classified. Cohesionless soils were generally sampled with the split spoon sampler in accordance with ASTM D-1586 standard. Suitable portions of each sample were sealed and packaged for transportation to our laboratory.

3.4 Water Level Measurements

The groundwater level in the borings were measured during drilling operations and 24 hours after drilling. Borings P-1, P-6, P-13 and DP-2 were converted into piezometers to obtain the 24-hour and 30-day water level readings. Groundwater measurements are presented in Section 5.5. The piezometer installation record and groundwater level data, along with Well Installation and Plugging reports, are provided in Appendix C.

4 LABORATORY TESTING

Selected soil samples were tested in the laboratory to determine applicable physical and engineering properties. All tests were performed according to the relevant ASTM Standards. These tests consisted of moisture content measurement, percent passing No. 200 sieve, Atterberg limits, unconfined compression (UC), unconsolidated undrained (UU), consolidated undrained (CU), standard proctor and CBR tests.

The Atterberg Limits and percent passing number 200 sieve tests were utilized to verify field classification by the Unified Soils Classification System. The UC, UU, and CU tests were performed to obtain the undrained and drained shear strength of the soil. The type and number of tests performed for this investigation are summarized in the table below.

Table 4-1 – Laboratory Test Summary

Type of Test	Number of Tests
Moisture Content (ASTM D2216)	135
Atterberg Limits (ASTM D4318)	39
Percent Passing No. 200 Sieve (ASTM D1140)	56
Unconsolidated Undrained (UU) (ASTM D2850)	27
Unconfined Compression (UC) (ASTM D2166)	19
Crumb Test (ASTM D 6572)	8
Double Hydrometer (ASTM D4221)	3
CU Triaxial (ASTM D4767)	1
Standard Proctor (ASTM D698)	1
Laboratory CBR (ASTM D1883)	1

The laboratory test results are presented on the boring logs in Appendix A. The conversion between pocket penetrometer readings obtained in the field to the shear strength parameters presented in the borings logs were obtained using a conversion factor of 1/3 (and 1/2 for HCFCD format logs). A summary of laboratory test results is provided in Appendix B.

4.1 Dispersive Tests for Cohesive Soils

Crumb and double hydrometer tests were conducted to identify the presence of dispersive soils at the project location. Crumb tests were initially assigned on selected soil samples and 3 of the soil samples that showed dispersive nature were then re-assigned for double hydrometer tests, which are more reliable than crumb tests. The test results are summarized in Table 4-2 below. Laboratory test results of crumb and double hydrometer tests are presented in Appendices D and E, respectively.

The double hydrometer tests revealed that the soils were non-dispersive, so we can conclude that the soils at the site are generally non-dispersive.

Table 4-2 – Crumb and Double Hydrometer Test Results

Boring	Depth, Feet	Sample Description	Crumb Test	Double Hydrometer Test
DP-1	2-4	Lean Clay	Dispersive	Non-dispersive
DP-1	6-8	Lean Clay	Dispersive	Non-dispersive
DP-1	12-14	Lean Clay	Non-dispersive	--
DP-2	0-2	Lean Clay	Non-dispersive	--
DP-2	10-12	Lean Clay	Non-dispersive	--
DP-3	2-4	Lean Clay	Non-dispersive	--
DP-3	8-10	Lean Clay	Non-dispersive	--
DP-3	14-16	Lean Clay	Barely-dispersive	Non-dispersive

4.2 Standard Proctor & California Bearing Ratio (CBR) Tests

One Standard Proctor and California Bearing Ratio (CBR) test were performed on the composite sample from the borings obtained along the project alignment, and the results are presented in Appendix G. In the Standard Proctor test, the maximum dry density of the composite sample which classified as sandy silty clay was 121.0 pcf at an optimum moisture content of 11.3 percent. A design CBR of 5.3 was estimated at 95% of the maximum dry density. The results of the CBR test are used to determine subgrade strength, which is discussed in Section 6.5 of the report.

4.3 Consolidated Undrained Test Results

We performed one consolidated undrained (CU) triaxial compression test to estimate the drained shear strength of the soil used in the slope stability analysis in Section 8 of the report. The effective stress and total stress parameters obtained from the CU tests are presented in Table 4-3 below. The test results are presented in Appendix F.

Table 4-3 – Consolidated Undrained Test Results

Boring No. (Depth)	Plasticity Index (PI)	Soil Description	Total Stress Parameters		Effective Stress Parameters	
			Cohesion (c_{cu})	Friction Angle (ϕ_{cu})	Cohesion (c')	Friction Angle (ϕ')
DP-1 (6'-10')	19	Lean Clay	481 psf	10.0°	417 psf	19.1°

5 SITE CHARACTERIZATION

5.1 General Geology

There are two major surface geological formations that exist in the Gulf area: the Beaumont formation and the Lissie formation. The Beaumont formation is a relatively younger formation generally found to the southeast of the Lissie formation. The Beaumont formation dips southeastward and extends beneath beach sand and waters of the Gulf of Mexico as far as the continental shelf. The project site is located in an area where the Lissie formation is typically encountered. A geology map is presented on Plate 3.

The upper Lissie formation is sometimes denoted as the Montgomery formation. The upper Lissie formation is heterogeneous, containing interbedded layers of clay, sand and silt. It was deposited in mid-Pleistocene times in shallow coastal river channels and flood plains. The clay present in the formation has been pre-consolidated by a process of desiccation. Numerous wetting and drying cycles have produced a network of randomly oriented and closely spaced joints, which are sometimes slickensided, that is, have a shiny appearance when exposed. The joint pattern strongly influences the engineering behavior of the soil.

The sand layers vary in compactness from loose to very dense, and in thickness from a fraction of an inch to many feet due to an irregular depositional environment. Sands are generally subrounded to subangular and vary from coarse to very fine, are poorly graded, and often contain significant amounts of silt-sized particles in the sand matrix. The coastal plain in this region has a complex tectonic geology, several major features of which are: Gulf Coastal geosyncline, salt domes, major sea level fluctuations during the glacial stages, subsidence and faulting activities. Most of these faulting activities have ceased for millions of years, but some are still active.

5.2 Geologic Faulting

The tectonic history of the Texas Gulf Coast includes a relatively stable depositional cycle since the Cretaceous Period (about 65 million years). During this period the area has been subjected to deposition of clays, silts, and sands resulting in over 30 thousand feet of sedimentary rocks. Underlying this clastic sequence are salt formations, which have migrated upwards to produce the typical salt dome features associated with the Texas Gulf Coast. In conjunction with salt movement, dewatering and compaction of some of the deeper sediments in the basin have resulted in the development of growth faults.

As per HCED guidelines, a Phase I Geologic Fault Assessment was performed, which is presented in Appendix I. We conclude that the potential for active surface faulting to impact the project is low since the documented Long Point Fault is located approximately 1 mile south of the proposed alignment. No other geologic faults were observed on or near the project alignment.

5.3 Existing Pavement Thickness

The existing pavement within the project area was augered prior to drilling at 7 boring locations on pavement, and the pavement thicknesses are presented in the table below.

Table 5-1 – Existing Pavement Information

Boring No.	Pavement Thickness (inch)	Base Thickness (inch)
P-1 (PZ-1)	4.5" Asphalt	9" Sand w/Shells
P-2	4" Asphalt	5" Sand w/Shells
P-3	4" Asphalt	5" Sand w/Shells
P-7	4" Asphalt	None
P-11	4" Asphalt	9" Sand w/Shells
P-12	5" Asphalt	8" Sand w/Shells
P-13 (PZ-3)	5.5" Asphalt	6.5" Sand w/Shells

5.4 Soil Stratigraphy

Our interpretation of soil and groundwater conditions at the project site is based on information obtained at the boring locations only. This information has been used as the basis for our conclusions and recommendations. Significant variations at areas not explored by the project borings may require re-evaluation of our findings and conclusions.

The soils generally consisted of firm to very stiff cohesive soils with some surficial cohesionless sandy silt layers at borings P-1 to P-4. Water-bearing sand was encountered in the borings at depths of 18 to 23 feet below existing grade. Boring logs are presented in Appendix A, and soil profiles are presented in Appendix K. It should be noted that no environmental concerns were encountered in the soil samples obtained during this investigation.

5.5 Groundwater Conditions

Groundwater observations were made during drilling and after 24 hours in all the borings. Three borings were converted into piezometers to obtain the 24-hour and 30-day water level readings. The table below summarizes the groundwater readings along with the approximate depth of the top of water-bearing sand layer.

Table 5-2 – Groundwater Observations

Boring	Top of Sand Depth, Feet	Groundwater Depth During Drilling, Feet	Groundwater Depth 24 Hours After Drilling, Feet	Groundwater Depth 30 Days After Drilling, Feet
P-1 (PZ-1)	20 – 23	25.0	20.8	19.3
P-2	20 – 23	23.0	19.4 (cave-in)	--
P-3	20 – 23	25.0	20.2 (cave-in)	--
P-4	20 – 23	23.0	20.0 (cave-in)	--
P-5	20 – 23	20.5	18.8	--
P-6 (PZ-2)	20 – 23	19.2	19.5	8.0
P-7	20 – 23	19.0	18.5	--
P-8	20 – 23	19.2	19.0	--
P-9	20 – 23	19.5	17.0	--
P-10	20 – 23	18.5	17.8 (cave-in)	--
P-11	18	17.0	16.8 (cave-in)	--
P-12	18	17.0	16.7 (cave-in)	--
P-13 (PZ-3)	20 – 23	25.0	17.1	13.0
DP-1	--	Dry	11.6	--
DP-2 (PZ-4)	18	18.0	11.6	11.5
DP-3	18	18.0	10.9	--

It should be noted that groundwater levels determined during drilling may not accurately reflect the true groundwater conditions, and therefore should only be considered as approximate. Groundwater levels measured in open standpipe piezometers are, on the other hand are more accurate; however, these readings will fluctuate seasonally and in response to rainfall.

6 PAVEMENT DESIGN RECOMMENDATIONS

6.1 General

The length of the project alignment is about 1.2 miles. The project includes reconstruction of the existing Neuens Road from the existing two-lane asphalt roadway to two-lane concrete roadway with both open ditches and storm sewers.

Based on the information provided to us by CivilTech and HCED Major Thoroughfare and Freeway Plan (2017), Neuens Road is designated as a Major Collector street. Our proposed scope of work involves analysis of the minimum pavement thickness required for Major Collector streets based on available traffic data. Pavement thickness designs were completed using DARWin software based on Sections 7 and 12 of the HCED design manual (2015) and AASHTO 1993 Pavement Design Procedure. The design inputs required include traffic, design and performance constraints and pavement layer characterization.

6.2 Traffic Data

The traffic parameters required for design include initial average daily traffic (ADT), growth rate, truck factor, and percent trucks in ADT. According to a traffic count study performed by Kimley-Horn dated July 12, 2018, the ADT for Neuens Road is approximately 4,000. TxDOT traffic count ADT data from 2012 and 2006 for Neuens Road near the middle of the proposed alignment and near Blalock Road on the east end ranged from 2,700 to 3,500, and traffic declined from 2006 to 2012. An ADT of 4,000 was considered for the proposed alignment.

The design 18-kip Equivalent Single Axle Loads (ESALs) in one direction was calculated based on an assumed 4.3% trucks in ADT (based on the highest value from the Kimley-Horn traffic count study), an assumed average truck factor of 0.66 for rigid pavement, and an assumed growth rate of 2%, resulting in a 30-year design ESALs of 802,313 for the proposed Neuens Road concrete pavement section.

6.3 Design Criteria and Performance Constraints

The design and performance constraints include reliability level, overall standard deviation, performance period, initial serviceability index after construction, and terminal serviceability index, drainage quality, load transfer across the joints, loss of support due to subbase erosion and pavement layer characterization are explained in further detail below.

Reliability Level and Overall Standard Deviation. A reliability (R) of 95 percent was selected for the pavement design performance (AASHTO Table 2.2). A mean value of the overall standard deviation (S_o) was selected to be 0.35 for Portland cement concrete pavement based on AASHTO Guide for Design of Pavement Structures.

Serviceability. The serviceability of a pavement is defined as its ability to serve the type of traffic that uses the facility. The condition of the pavement after the performance period is characterized by a Terminal Serviceability Index (P_t), which is a function of the pavement structure. A Terminal Serviceability Index of 2.5 was selected for design. The time at which a given pavement structure reaches its terminal serviceability depends on traffic volume and the original or initial serviceability (P_o), which was selected as 4.5 for Portland cement concrete pavement based on AASHTO Guide for Design of Pavement Structures. The design serviceability loss is the difference between the initial and terminal serviceability indices.

Drainage. The treatment for the expected level of drainage for a rigid pavement is through the use of a drainage coefficient, C_d . As per AASHTO Table 2.5 with excellent quality of drainage from curb and gutter and adequate storm drain system, a C_d value of 1.2 was selected for the design.

Load Transfer. The load transfer coefficient, J , is a factor used in rigid pavement design to account for the ability of a concrete pavement structure to transfer load across discontinuities, such as joints. Based on the range of values developed by AASHTO, a mean value of the load transfer coefficient (J) of 3.2 was selected for the design of jointed tied PCC shoulders or curb and gutter and load transfer at transverse joints.

Loss of Support. This factor, LS , is included in the design of rigid pavement to account for the potential loss of support arising from subbase erosion and/or differential vertical soil movement. A LS value of 1.0 was selected for stabilized subgrade.

6.4 Material Properties for Structural Design

A value of 570 psi for Mean Concrete Modulus of Rupture (S'_c) is considered appropriate for the design. A value of 3.6×10^6 psi was used for the modulus of elasticity of the concrete (E_c) using the compressive strength of concrete 3,000 psi as specified in HCED guidelines.

6.5 Subgrade Strength

The subgrade soil beneath the pavement at the locations of the borings generally consist of low plasticity sandy lean clay to clayey sand. The CBR value obtained from the lab test is 5.3 for the sandy silty clay composite sample, and the correlated subgrade resilient modulus obtained from CBR is 7,950 psi.

The composite K-value required for rigid pavement design was calculated to account for the underlying base and the potential loss of support arising from base erosion. The effective modulus of subgrade reaction (k) was calculated to be 132 pci.

6.6 Summary of Pavement Design Inputs

The estimated and/or assumed values for the design parameters are summarized below.

Table 6-1 – Pavement Design Inputs

Parameter	Value
Subgrade Resilient Modulus, M_R	7,950 psi
Stabilized Subgrade	20,000 psi
Compressive Strength of Concrete f'_c	3,000 psi
Loss of Support Factor, LS	1.0
Effective Modulus of Subgrade Reaction (k)	132 pci
Concrete Elastic Modulus, E_c	3.6×10^6 psi
Mean Concrete Modulus of Rupture, S'_c	570 psi
Load Transfer Coefficient, J	3.2
Drainage Coefficient, C_d	1.2
Design Serviceability Loss	2.0
Reliability, R	95%
Overall Standard Deviation, S_o	0.35
Design Traffic ESALs	802,313

6.7 Rigid Pavement Thickness and Load Capacity

Based on the input parameters discussed above, we calculated a 6.2-inch thick concrete pavement for the design traffic load over a 30-year design life for the two-lane roadway. However, in consultation with the project team, we recommend the standard Harris County pavement section of 10-inch thick concrete pavement over 8-inch thick stabilized subgrade as the proposed Neuens Road concrete pavement section for this project.

The DARWin outputs are presented in Appendix H. Procedures for placement of concrete should be in accordance with Harris County Specification Item 360. Procedures for preparation of subgrade are described in subsequent sections.

Reinforcing Steel Requirement. Longitudinal and transverse reinforcing steel is required to resist warping stresses in the concrete pavement section and to hold pavement cracks that develop tightly closed. In addition, reinforcement is required at pavement joints in order to prevent deflections across the joint. The amount of longitudinal and transverse steel required depends on the distance between pavement joints. Various bar sizes and spacing can be used to satisfy these reinforcement requirements, and the overall cross-sectional area of steel (A_s) required per foot of slab width can be calculated as follows:

$$A_s = \frac{FLW}{2f_s}$$

Where:

- A_s = Required cross-sectional area of reinforcing steel per foot of width
- F = Coefficient of resistance between slab and subgrade
- L = Distance between free transverse joints or between free longitudinal edges, feet
- W = Weight of pavement slab, psf
- f_s = Allowable working stress in the steel, psi

Slab Length. This refers to the joint spacing or distance, L , between free transverse or longitudinal joints.

Steel Working Stress. The allowable working stress (f_s) in steel reinforcement is a value equivalent to 75 percent of the steel yield strength. Harris County Specification Item 440 specifies that the reinforcing steel shall be a minimum Grade 60. According to information provided by Harris County Precinct 4, Grade 60 will be used for this project, and it has an allowable working stress of 45,000 psi.

Friction Factor. This factor, F , represents the frictional resistance between the bottom of the slab and the top of the underlying subbase or subgrade layer. Based on the values recommended by AASHTO, a friction factor of 1.8 can be used for the condition of stabilized soils beneath the pavement.

Steel Requirements. We have calculated the reinforcing steel required for a 6.5-inch thick concrete pavement for longitudinal joint spacing of 80 feet and transverse joint spacing of 25 feet. We estimated that the rigid pavement may be reinforced with # 5 deformed steel reinforcing bars spaced at a maximum of 30-inches center to center longitudinally and 96-inches center to center transversely. The HCED recommends that the rigid pavement may be reinforced with # 5 deformed steel reinforcing bars spaced at a maximum of 18-inch center to center longitudinally and 36-inch center-to-center transversely. Hence, we recommend the rigid pavement should be

reinforced with # 5 deformed steel reinforcing bars spaced at 18-inch center-to-center longitudinally and 36-inch center-to-center transversely. If different joint spacing is considered for this project, the design consultant should contact us to verify the reinforcement design.

6.8 Select Fill

Select fill required to replace in-situ material beyond the pavement limits or to raise the design grade should consist of lean sandy clay with a liquid limit less than 40 and a plasticity index between 8 and 20. Fill material that is used should be placed in loose lifts not exceeding eight inches and should be compacted to 95 percent of the maximum dry density as determined by ASTM D 698.

6.9 Preparation of Subgrade

When concrete pavement is placed directly on subgrade, there is a propensity of the subgrade fines to pump through the concrete joints, creating voids under the concrete and with loading result in corner cracks that can progress and cause premature failure in the concrete pavement. Stabilization of the subgrade will increase the modulus of subgrade reaction and provide subgrade stability for construction during inclement weather. Subgrade stabilization will enhance long-term pavement performance by reducing the tendency of the soil to displace from beneath pavement by pumping. The subgrade soils generally consist of low to medium plasticity sandy cohesive soils and sandy soils. We recommend using lime stabilized subgrade throughout the project alignment, with the exception of the sandy soils. We recommend lime and fly ash for subgrade stabilization for the sandy subgrade near borings P-1 to P-4. We recommend the following procedures for the subgrade preparation.

1. Clear the proposed development area. Grubbing operations should be performed to remove root systems of any trees cleared within the limits of the proposed construction.
2. Strip the surface soil to suitable depths. In areas where soft, loose or fill soils are encountered, additional stripping may be required. Stripping should extend a minimum of two feet beyond the edge of the proposed pavement.
3. Surfaces exposed after stripping should be proof-rolled to identify any underlying zones or pockets of soft soils. Such weak materials should be removed, replaced with suitable material meeting the requirements of Harris County Specifications Item 130. The material should be compacted to 95 percent of standard proctor maximum dry density (ASTM D698), in accordance with Harris County Specifications Item 205.
4. Before stabilizing the subgrade, scarify the upper 8 inches of exposed surface as required, mix with lime and fly ash and compact it to 95 percent of standard proctor maximum dry density (ASTM D698). The amount of lime and fly ash shall be determined for subgrade soils by conducting laboratory tests on the exposed subgrade material during construction. We recommend 6% lime generally, and 2% lime and 8% fly ash for the lime-fly ash stabilization areas near borings P-1 to P-4, be assumed for estimation purposes. Construction of lime-stabilized subgrade should conform to Harris County Specifications Item 220, and lime-fly ash stabilized subgrade should conform to Harris County Specifications Item 223.

7 STORM SEWER RECOMMENDATIONS

7.1 General

The length of the proposed alignment is about 1.2 miles. The project includes reconstruction of proposed alignment with storm sewers. Based on information from CivilTech, we understand that the invert depth of the storm sewers will be approximately 13 to 15 feet below the existing grade, and the storm sewers will be Reinforced Concrete Boxes (RCB) with sizes up to 10'x10'. Plan and profile information for the storm sewers was not available at the time of writing this report. Design guidelines and recommendations for the installation of RCB using open-cut techniques are discussed in the following sections.

For the roadside ditches, slope stability analysis is not required if designed in accordance with HCED Regulations for the Approval and Acceptance of Infrastructure dated July 1, 2015. The HCED Regulations (Section 6, Item 5, Parts B and E) state that grass-lined roadside ditches shall have side slopes no steeper than 3:1 and maximum depth shall not exceed 4 feet. If the roadside ditches are deeper than 4 feet, written approval must be obtained from HCED for the design, and HVJ would need to perform slope stability analysis with an additional authorization.

7.2 Geotechnical Parameters

Geotechnical design parameters for soils that may be encountered at the proposed invert depth along the project alignment are presented in the table below. Design parameters given in the table are based on field and laboratory test data obtained at boring locations at the approximate invert depth range. It must be noted that because of the nature of the soil stratigraphy at this site, parameters at locations away from the borings may vary substantially from values reported in the table.

Table 7-1 – Geotechnical Parameters for RCB Design

Boring	Approx. Invert Depth (feet)	Soil Description	Total Unit Weight (pcf)	Undrained Shear Strength (psf)	Allowable Bearing Capacity (psf)
P-1 (PZ-1)	13-15	Stiff Lean Clay	125	1800	3000
P-2	13-15	Stiff to Very Stiff Lean Clay	125	1100	1800
P-3	13-15	Very Stiff Lean Clay	125	2200	3700
P-4	13-15	Stiff to Very Stiff Lean Clay	125	1900	3200
P-5	13-15	Stiff to Very Stiff Lean Clay	125	1900	3200
P-6 (PZ-2)	13-15	Very Stiff Lean Clay	125	2600	4400
P-7	13-15	Stiff to Very Stiff Lean Clay	125	1200	2000
P-8	13-15	Stiff to Very Stiff Lean Clay	125	1500	2500
P-9	13-15	Stiff to Very Stiff Lean Clay	125	1600	2700
P-10	13-15	Stiff to Very Stiff Lean Clay	125	1600	2700
P-11	13-15	Very Stiff Lean Clay	125	2500	4200
P-12	13-15	Stiff to Very Stiff Lean Clay	125	1000	1700
P-13 (PZ-3)	13-15	Stiff to Very Stiff Lean Clay	125	1100	1800

The values shown in the above table represent our interpretation of the soil properties based on the available laboratory and field test data. The allowable bearing capacities include a factor of safety of three. These values are based on the soil data obtained at the boring locations only and may be used for the noted invert depth zone. The applied bearing pressure may be determined by:

1. Summing the load applied to the foundation, the weight of the foundation, and the weight of any soil backfill placed directly above the foundation;
2. Subtracting the weight of soil excavated from above the foundation depth; and
3. Dividing the total by the base area of the foundation.

The weight of soil may be taken as 125 pcf for soils above the water table and 63 pcf for soils below the water table. A subgrade reaction modulus (k) may be required for the structural design analysis. Based on the encountered clay subgrade material, a reaction modulus value of 75 pounds per cubic inch is recommended based on the Texas Department of Transportation (TxDOT) Culvert Rating Guide (2009), Table IV-2. These values are based on the soil data obtained at the boring location and may be used for the noted invert depth zone.

The excavations should be cut neat and clean with any soft or loose soils removed. Water should not be allowed to accumulate within the excavations. Should water accumulate, then any wet or softened soils should be removed or reworked if appropriate, and subsequently re-compacted. The owner must take care to maintain good drainage around the structure.

7.3 Traffic Load

The traffic load design provisions should be taken in accordance with Chapter 5 on the AWWA Manual M9 (2008) for Concrete Pipe. According to the AWWA manual, for a height of cover of 4 feet, a wheel load of 32 kips should be spread through a load area of 99.2 sq. ft. for an applied load of 323 psf. Loads for other heights of cover can be calculated based on Table 5-4. The load dispersion angle through fill soil may be calculated based on AWWA Manual M9, Figure 5-14. These should be checked by the designer against Sections 12.11.2.1 and 3.6.1.2.6 of the AASHTO LRFD Bridge Design Specifications, 7th Edition (2014).

7.4 Lateral Pressures on RCB Walls

The soil pressure exerted on an RCB wall is mainly a function of the type of backfill and its method of placement. Over-compaction of backfill behind walls and utilization of highly plastic expansive clay backfill are practices that generally produce the highest wall pressures and should be avoided. In these cases, horizontal earth pressures exceeding the vertical earth pressure can be expected. Design at-rest lateral pressures for walls may be calculated for each backfill type using the equivalent fluid densities for saturated level backfill. These fluid densities include groundwater table at the ground surface. The at-rest lateral earth pressures are presented in the table below.

Table 7-2 – At-Rest Equivalent Fluid Densities for Saturated Backfill

Fill Type	At-Rest Equivalent Fluid Density (pcf)
Fat Clay	128
Sandy Lean Clay	126
Sand	89

We recommend that groundwater should be assumed at the surface for the RCB structure design. The effects of traffic loads can be treated as an additional two feet of equivalent fluid extending above the finished grade.

7.5 Open Cut Bedding and Backfill

Cohesive soils were encountered in the vicinity of the foundation zone of the proposed RCB. Bedding and backfill should be performed in accordance with Harris County Standard Specification Item 481 for Reinforced Concrete Box Sewers. Soils that will be removed from the excavation will consist of fat to lean clays, and include sand near Borings P-1 to P-4. These soils may be used for backfill if they satisfy select fill criteria discussed in Section 6.8 of this report. Backfill should be compacted to 90% Standard Proctor density; except under roadway the material from two feet below subgrade should be compacted to 95% of the Standard Proctor density.

It specifies that bottom of the trench should be dry before placement of pipe. If needed, we recommend groundwater control in accordance with Harris County Standard Specification Item 436 be implemented to achieve stable trench conditions and satisfactory foundation base. Groundwater control recommendations are presented in Section 7.7 of the report.

7.6 Open Cut Excavation Considerations

This section is intended to address issues that might arise during construction. Our recommendations are intended for use as guidelines in dealing with particular soil conditions. The recommendations contained herein are not intended to dictate construction methods or sequences. Instead they are provided solely to assist designers in identifying potential construction problems related to excavation, based upon findings derived from sampling. Depending upon the final design chosen for the project, the recommendations may also be useful to personnel who observe construction activity.

Prospective contractors for the project must evaluate potential construction problems on the basis of their review of the contract documents, their own knowledge of and experience in the local area, and on the basis of similar projects in other localities, taking into account their own proposed methods and procedures.

Excavations should satisfy two requirements. First, the soils above final grade must be removed without disturbing the soil below, which will support constructed facilities. Second, the sides of the excavation must be stable to prevent damage to adjacent streets and facilities as a result of either vertical or lateral movements of the soil. In addition, a satisfactory excavation procedure must include an adequate construction dewatering system to lower and maintain the water level at least a few feet below the lowest excavation grade.

Excavation Stability. Excavations shall be shored, laid back to a stable slope or some other equivalent means may be used to provide safety for workers and adjacent structures. Earth pressures for braced excavations are presented on Plate 4. Assessment of the need for excavation sloping, use of trench boxes, or other measures required to provide a stable excavation, and the use of appropriate construction practices and/or equipment is the contractor's responsibility. The following comments are intended to represent common solutions to stability problems encountered in similar soil conditions in the Houston area, and may not be construed as excavation system design recommendations. The excavation operations shall be performed in accordance with 29 CFR Part 1926 subpart P, as amended, including rules published in the Federal Register, Vol. 54, No. 209, dated October 31, 1989, as a minimum. In addition, the provisions of legislation enacted by the

Texas Legislature should be satisfied. The table below shows the classification of soils for excavations according to OSHA standards.

Table 7-3 – OSHA Soil Classification for Excavations

Boring No.	OSHA Soil Type			
	Depth of Trench, Feet			
	0 – 5	5 – 10	10 – 15	15 – 20
P-1 (PZ-1)	C	C	C	C
P-2	C	C	C	C
P-3	C	C	C	C
P-4	C	C	C	C
P-5	B	C	C	C
P-6 (PZ-2)	B	C	C	C
P-7	B	C	C	C
P-8	B	C	C	C
P-9	B	C	C	C
P-10	B	C	C	C
P-11	B	C	C	C
P-12	B	C	C	C
P-13 (PZ-3)	B	C	C	C

In general, it is our opinion that the pressure distribution (for braced walls) should be used for design of sheeting or trench boxes. To reduce the potential for ground movement adjacent to the top of the excavation, the bracing should be preloaded in stages as the excavation is deepened. The detailed earth pressure diagrams are presented on Plates 4A-4B. We expect that sheeting may be needed near boring P-1 at the west end of the alignment due to the sand layer from surface to 14-foot depth.

The planned construction will be performed along alignments near existing utility installations (either crossing or paralleling the new alignments). The contractors should be aware of potential excavation stability problems while working in the vicinity of old trenches and the excavation system should be designed to accommodate this weak material (trench backfill).

The vertical walls of excavations should be located a safe distance from existing utilities in order to prevent movement in the soil mass behind the excavation that may adversely affect the utilities. We recommend that the horizontal distance of existing utilities should be greater than their vertical distance from the bottom of excavation.

Spoil Disposal. Spoil from construction will be generated from trench excavations. Soils that are generated from excavation along the alignment may primarily consist of low plasticity cohesive soils and cohesionless sands. The excavated soils can be used as backfill material for the storm sewers if they satisfy select fill criteria discussed in Section 6.8 of this report. Economically, other possible uses of the cohesive spoil material may be limited to land reclamation, site grading, and final cover in sanitary landfill operations.

7.7 Groundwater Control

Assessment of the need for groundwater control and installation of appropriate dewatering equipment is the contractor's responsibility at the time of construction. The following comments are intended to represent common solutions to groundwater control problems encountered in similar soil conditions in the Houston area, and may not be construed as dewatering system design recommendations.

In general, excavations are expected to encounter the clay stratum to depths of 18 to 23 feet below existing grade, except for borings P-1 to P-4. Boring P-1 had surficial sand extend to 14-foot depth, while surficial sand in P-2 to P-4 extended to 4-foot depth. Based on the 30-day piezometer readings, groundwater was encountered at depths of 8 to 19.3 feet. Groundwater seepage is expected during excavation for the RCB storm sewers in borings P-5 to P-13. A conventional pump and sump arrangement may be adequate for dewatering the clay stratum. However, complete excavation of the clay stratum is not recommended without dewatering the underlying sand layer to prevent bottom heave or a blow, particularly where the RCB size is 10'x10'. Further discussion about the potential bottom heave is discussed in Section 7.8.

Well points or eductors may be utilized to lower the groundwater level to at least three feet below the excavation level where water bearing cohesionless soils are encountered, in accordance with Harris County Standard Specification Item 436 – Well Pointing. Well points are generally not effective below about 15 feet beneath the top of the well point, and deeper dewatering requires deep wells with submersible pumps or eductors. In any case, the groundwater control system used must provide a relatively dry, stable base for construction. Control of groundwater should be accomplished in a manner that will preserve the strength of the foundation soils; will not cause instability of the excavation; and will not result in damage to existing structures. Where necessary to this purpose, the water will be lowered in advance of excavation by wells, well points or similar methods. Wells and well points should be installed with suitable screen and filter so that pumping of fines does not occur.

7.8 Heave/Blow Failures

When the hydrostatic pressure acting on the base of a relatively impermeable layer exceeds the weight of overlying soil, the bottom of the excavation rises physically and is referred as a heave or a blow (Terzaghi, Peck and Mesri, 1996). This phenomenon is expected during excavations when the piezometric level is lowered toward the excavation seepage whereas the pressure head at the base of a relatively impermeable layer remains unchanged. This is shown in the figure below.

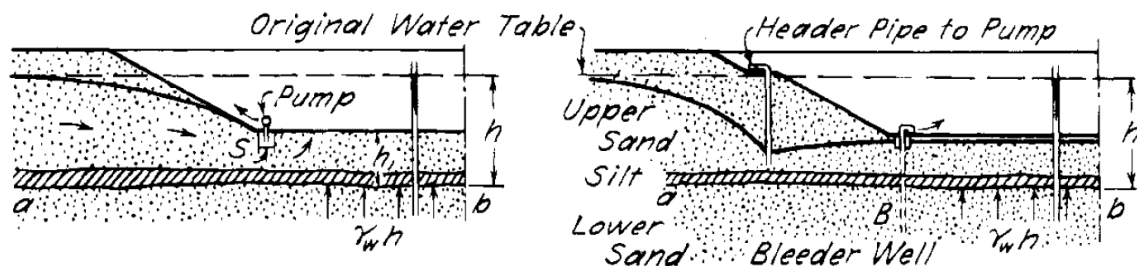


Figure 7-1 – Position of Water Table while Pumping from Sumps (left) and from Well Points (right) (After Terzaghi, Peck and Mesri, 1996)

Where,

ab = bottom of the relatively impermeable layer, feet
 h = vertical distance between ab and the original table, feet
 h_1 = vertical distance between ab and the bottom of the excavation, feet
 γ_w = unit weight of water, pcf = 62.4
 γ = total unit weight of soil, pcf = 125 pcf

In order to avoid the bottom heave or blow, the weight of overlying soil should be maintained above the hydrostatic pressure.

$$\text{Hence, } h_1\gamma > h\gamma_w$$

Water bearing sand layers were encountered below depths of 18 to 23 feet in the borings. In order to prevent the bottom heave or blow, this layer must be dewatered by means of well points prior to excavating the upper clayey soils completely. We expect that eductors may be needed for excavations near boring P-5 at Pine Shadows Elementary School and east along the alignment to Blalock Road. Multistage well points are shown below in Figure 7-2.

We have estimated the bottom elevation of the excavation that can be allowed prior to dewatering the underlying granular soil stratum and the results of our estimate are presented in Table 7-4. A safety factor of 1.3 and soil unit weight of 125 pcf were used in our calculations.

Table 7-4 – Allowable Excavation Levels to Mitigate Bottom Heave

Borings	Approximate Groundwater Depth, Feet	Bottom Depth of Relatively Impermeable Layer, Feet	Thickness of Soil Required, Feet	Allowable Excavation Depth Prior to Dewatering, Feet
P-5	8	20	7.8	12.2
P-6	8	20	7.8	12.2
P-7	8	20	7.8	12.2
P-8	8	20	7.8	12.2
P-9	8	20	7.8	12.2
P-11	13	18	3.3	14.7
P-12	13	18	3.3	14.7

It should be noted that change in groundwater levels at the time of construction may impact the elevation given above, and therefore should only be considered as approximate.

8 DETENTION BASIN SLOPE STABILITY ANALYSIS

8.1 General

Based on the Plan and Profile drawings provided by CivilTech, the proposed 2.5-acre detention pond (HCFCD Unit No. W140-00-00, Precinct 4, Key Map No. 450 S & 450 T) will be located at the southwest corner of the intersection of Neuens Road and Crestdale Drive. We understand that the proposed detention pond will be a dry basin with maximum depth of about 13 feet, and proposed side slopes of 3H:1V. We have performed slope stability analyses for the proposed detention pond slope using a conservative subsurface profile based on the plasticity indices of the onsite soils.

It should be noted that based on the piezometer 30-day water level reading at 11.5-ft depth at the proposed detention pond, the basin may have a wet bottom if maximum depth is 13 feet.

8.2 Method of Analysis and Required Factor of Safety

Slope stability analyses were conducted using the 2019 version of the SLOPE/W slope stability software program by GeoStudio, and the Morgenstern-Price method for circular rotational failure. The program calculates the factor of safety against slope failure using a two-dimensional limiting equilibrium method. The minimum HCFCD required factors of safety for the different loading conditions that are expected during the lifetime of a detention pond are shown in the table below.

Table 8-1 – HCFCD Required Factors of Safety

Loading Conditions	Minimum Factor of Safety Required
Short-Term (ST)	1.30
Rapid Drawdown (RDD)	1.25
Long-Term (LT)	1.50

The factors of safety represent the calculated resisting forces and moments divided by the calculated driving forces and moments for the various potential failure surfaces analyzed. These forces and moments are based on the estimated unit weights and shear strengths of the various soils in the slope profile. Accordingly, a factor of safety of 1.0 indicates impending failure. The larger the factor of safety is above 1.0, the lower the risk of slope failure. As a practical matter, and in consideration of the variables and uncertainties involved, the risk cannot be reduced to zero. The goal is to reduce the risk of slope failure to a reasonable and acceptable level, with due consideration of the consequences of failure.

8.3 Soil Parameters and Water Level

The soil parameters used in each case were estimated based on the field and laboratory data developed for this study, and also our experience with similar soils. Unconfined Compression (UC), Unconsolidated Undrained tests (UU), and Consolidated Undrained (CU) triaxial compression tests with pore pressure measurements were conducted to estimate the shear strength parameters for the analyses. The UC and UU tests were used to estimate the short term soil strength parameters. For long term and rapid drawdown analyses, effective stress shear strength parameters from the CU tests were used for lean clay. The rapid drawdown analysis was also performed using total stress strength parameters as per HCFCD guidelines. The consolidated undrained (CU) triaxial compression with pore pressure measurement test results are included in Appendix F, and summarized in Section 4 of the report.

The soil parameters used in each case are discussed in the following sections:

Short-Term (ST): The short-term, or end of construction case, models the initial undrained condition of the soil. For this analysis, Unconfined Compression and Unconsolidated Undrained soil parameters were used as per the HCFCD guidelines (Section 5.2, page 14). The piezometric level was conservatively assumed at the toe of the slope and extending up the slope to top of slope. A surcharge of 250 psf was assumed along the bank for construction equipment traffic loading.

Rapid Drawdown: The rapid drawdown case models the condition where high floodwater saturates and piezometrically “loads” the slope, and then quickly recedes leaving a large unbalanced piezometric head in the bank slope. This unbalanced force increases the shear stresses in the bank

soils. For this analysis, the maximum flood level was assumed at the bank elevation and the water level in the basin was “drawn down” to the permanent pool elevation for basins with wet bottom or to the toe level of the basins with dry bottom. Undrained and drained shear strength parameters were used in this analysis (including strength reduction due to weathering) for the total and effective stress analyses, respectively. Surcharge was not considered for rapid drawdown analyses per HCFCD guidelines as it is assumed there is no vehicular traffic along the bank during a rapid drawdown event.

Long-Term (LT): The long-term design case represents steady state piezometric and stress conditions. When a slope is excavated, altered stress conditions create pore pressure changes within the slope and the undrained strength of the bank soils is mobilized. With time, the soil pore pressures adjust to the imposed stress and piezometric conditions, and the bank soils rely on their available strength for long-term stability. A surcharge of 250 psf was assumed along the bank to account for the maintenance vehicle traffic. In the detention pond analysis, the piezometric level was at approximately 1-foot above toe of slope based on the 30-day piezometer reading.

The table below presents the soil parameters used for the slope stability analyses.

Table 8-2 – Drained and Undrained Soil Parameters

Borings (Location)	Depth, Feet	Soil Description	γ_s	ST (Undrained Shear Strength) c_u , psf / ϕ , deg	Plasticity Index (PI)	RDD/LT (Effective Stress Strength Parameters)		RDD (Total Stress Strength Parameters)	
			pcf			ϕ' , deg	c' , psf	ϕ , deg	c , psf
DP-1, DP-2 (PZ), DP-3	0 – 4	Sandy Lean Clay	125	800	11	19.1°	417	10.0°	481
	4 – 18	Lean Clay with Sand	125	800	27	19.1°	417	10.0°	481
	18 – 25	Sand with Silt	120	30°	--	30°	0	30°	0

Where:

- γ_s : Moist Unit Weight of Soil
- c_u : Unconsolidated Undrained Cohesion
- ϕ : Friction Angle
- c' : Consolidated Drained Cohesion
- ϕ' : Consolidated Drained Friction Angle
- c : Consolidated Undrained Cohesion
- ϕ : Consolidated Undrained Friction Angle

- ST: Short Term
- RDD: Rapid Drawdown
- LT: Long Term

Weathered Soil Parameters

The drained shear strength parameters for rapid drawdown and long term analyses were reduced as per the HCFCD’s guidelines for the top 8 feet from the surface of the slope for cohesive soils with Liquid Limit greater than 40 and Plasticity Index greater than 20 that will be exposed to wetting and drying cycles. The weathered (mobilized) soil properties used in our analysis are presented in Table 8-4 below. The shear strength was reduced based on the corresponding plasticity index (PI) (Figure 13, Mesri and Ghaffar, 1993), and as suggested by HCFCD in our past projects (Table 8-3 below) and our experience with similar soil conditions.

Table 8-3 – HCFCFCD Recommended Weathered Soil Parameters

Soil Description	Mobilized Friction Angle, ϕ' (degrees)	Mobilized Cohesion, c' (psf)
Lean Clay (CL)	$\leq 26^0$	≤ 75
Fat Clay (CH)	$\leq 18^0$	≤ 50

Table 8-4 – Weathered Soil Parameters Used in Slope Stability Analysis

Structure	Soil Type	Plasticity Index (PI)	Mobilized Shear Strength	
			ϕ' mobilized (deg)	c' mobilized (psf)
Detention Pond	Lean Clay	27	19.1°	75

8.4 Discussion of the Slope Stability Results

Based on the soil parameters and water levels discussed in Section 8.3, we analyzed the stability of the proposed slope. The results of the analyses are shown in Appendix J and summarized in the table below. The results indicate that the 3H:1V slope for the proposed 2.5-acre detention pond achieves the required factor of safety for the short term, rapid drawdown, and long term loading conditions.

Table 8-5 – Proposed Slope Stability Analysis Results

Location	Proposed Slope	Factor of Safety			
		Short Term	Rapid Drawdown (Effective Stress)	Rapid Drawdown (Total Stress)	Long Term
2.5-acre Detention Pond	3H:1V	1.6	1.28	2.08	1.8

8.5 Dispersive Soils

Dispersive soils are clays that disintegrate (lose their inter-particle bonding) in the presence of relatively pure water as a result of their chemical composition. Such soils are highly susceptible to erosion and piping and are a major cause of slope distress in areas where they occur. During our field investigation, HVJ’s on-site personnel visually observed no areas of dispersive soils at the site.

The results of the crumb and double hydrometer tests are summarized in Section 4.1 of the report and included in Appendices D and E, respectively. Crumb tests were initially assigned on selected soil samples, and the soils that showed potential to be dispersive were then re-assigned for double hydrometer tests which are more reliable than crumb tests. The 3 double hydrometer tests were non-dispersive, so we can conclude that the soils at the site are generally non-dispersive.

8.6 Erosion Protection and Slope Construction

Turf Establishment: Turf establishment following HCFCFCD Standard Specifications, Section 02921 and HCFCFCD Policy Criteria & Procedure Manual, Section 10.3 may be used as an erosion protection measure for the basin slopes. Turf establishment must be performed as quickly as practical after slope construction. According to Section 4.4.1 of the HCFCFCD manual, grass-lined channels have a maximum flow velocity of 6.0 feet per second.

Construction of backslope swale and interceptor structures should be in accordance with Section 11.1.3 of the HCFCD Policy Criteria and Procedure Manual, dated December 21, 2010 and Standard Interceptor Structure Detail Sheet.

Slope Construction: Detention basin slopes should be constructed in accordance with HCFCD Specification Section 02224. We recommend the degraded crest and any portion of the slope that is reworked be compacted to 95% standard proctor density in accordance with ASTM D698.

9 DESIGN REVIEW

HVJ Associates, Inc. should be retained to review the design and construction plans and specifications prior to release to confirm whether the geotechnical recommendations and design criteria presented herein have been properly interpreted. We also recommend materials testing verification and observation by an accredited testing laboratory to verify that construction is performed in conformance with project specifications. HVJ routinely provides materials testing verification and observation services and would be pleased to do so for this project.

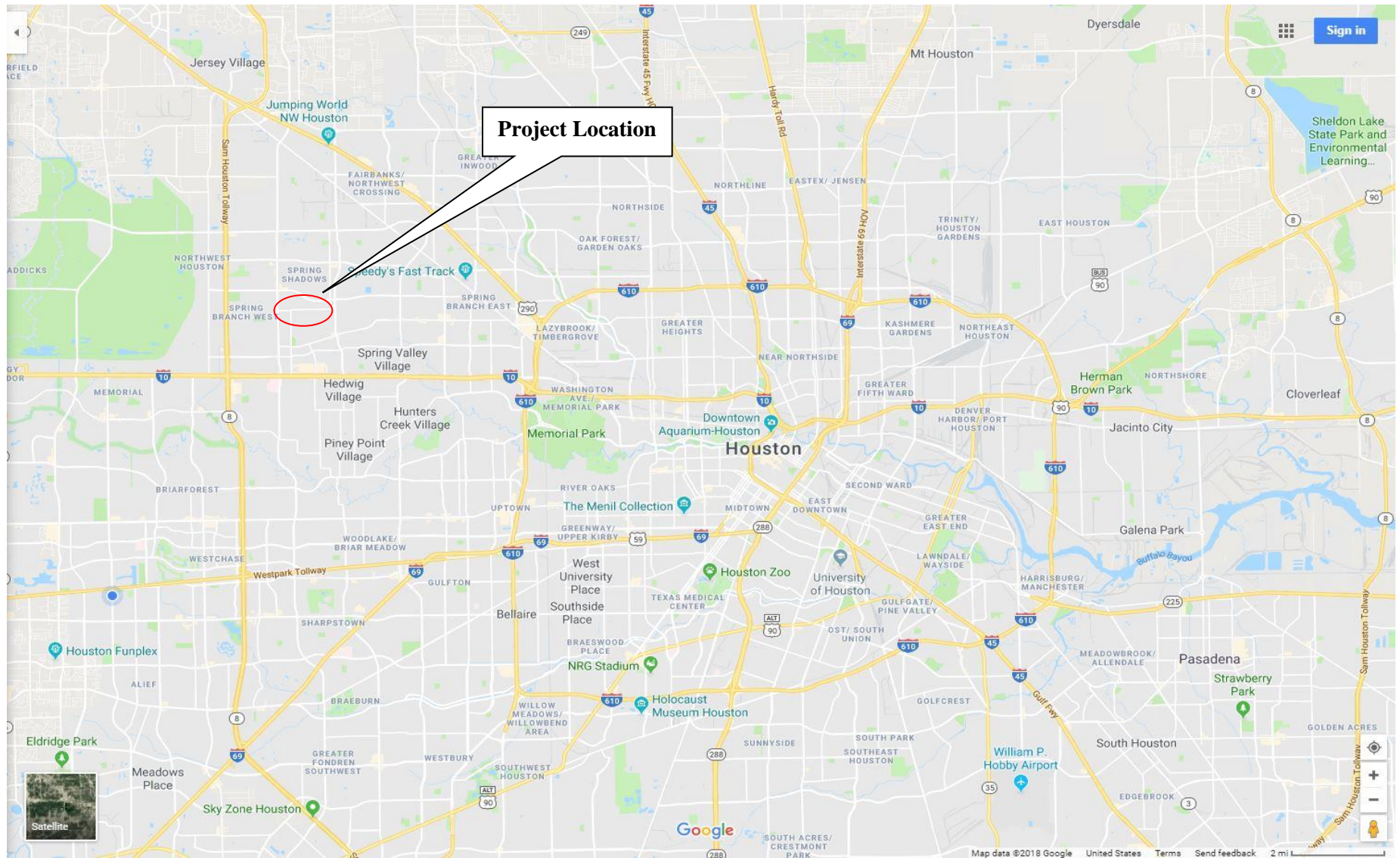
10 LIMITATIONS

This investigation was performed for the exclusive use of CivilTech Engineering, Inc. and Harris County to provide geotechnical services for the proposed improvements to Neuens Road from Gessner Road to Blalock Road project in Harris County, Texas. HVJ has endeavored to comply with generally accepted geotechnical engineering practice common in the local area. HVJ makes no warranty, express or implied. The analyses and recommendations contained in this report are based on data obtained from subsurface exploration, laboratory testing, the project information provided to us and our experience with similar soils and area conditions. The methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. Should any subsurface conditions other than those described in our boring logs be encountered, HVJ should be immediately notified so that further investigation and supplemental recommendations can be provided.

11 REFERENCES

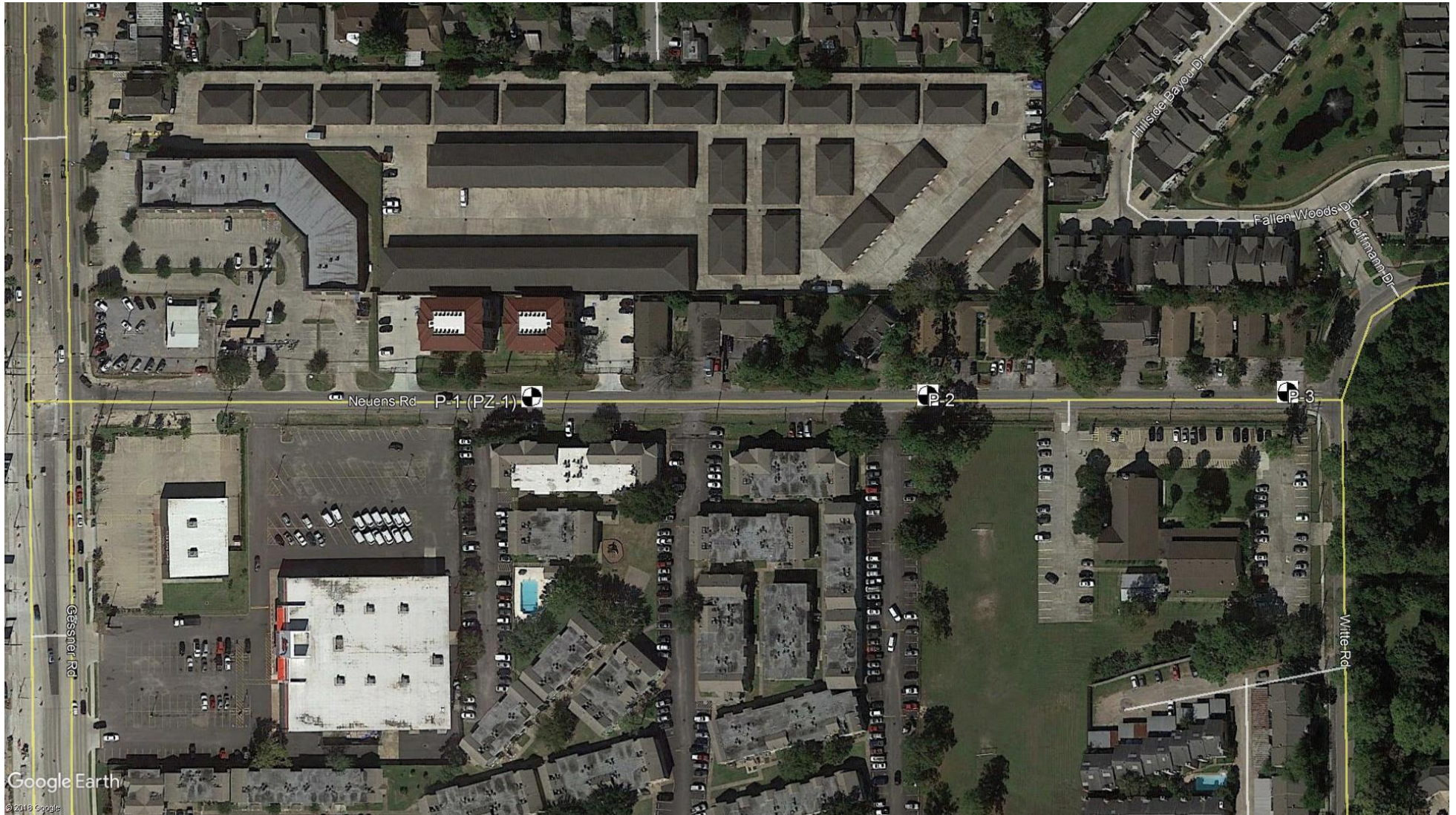
1. Mesri, G., and Abdel-Ghaffar, M. E. M. "Cohesion intercept in effective stress-stability analysis." *Journal of Geotechnical Engineering*, 1993, Vol. 119, No.8, pp. 1229-1249.
2. Harris County Engineering Department (HCED) Guidelines for Consultants Performing Geotechnical Investigations, January 1, 2011.
3. Harris County Engineering Department (HCED) Regulations for the Approval and Acceptance of Infrastructure, July 1, 2015.
4. Texas Department of Transportation (TxDOT) Culvert Rating Guide, 2009, Table IV-2.
5. Harris County Flood Control District (HCFCD) Policy Criteria, and Procedure Manual, December 21, 2010, Appendix D.

PLATES



6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

DATE: 8/23/2018	APPROVED BY: RS	PREPARED BY: PD
SITE VICINITY MAP NEUENS ROAD FROM GESSNER ROAD TO BLALOCK ROAD		
PROJECT NO.: HG1810145	DRAWING NO.: PLATE 1	



LEGEND:

 **APPROXIMATE BORING LOCATIONS**



6120 S. Dairy Ashford Road
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281.933.7388 Ph
281.933.7293 Fax

DATE: 08/23/2018

APPROVED BY:
RS

PREPARED BY:
PD

PLAN OF BORINGS
NEUENS ROAD FROM GESSNER ROAD
TO BLALOCK ROAD

PROJECT NO.:

HG1810145

DRAWING NO.:

PLATE 2A



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LEGEND:

 **APPROXIMATE BORING LOCATIONS**



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DATE: 08/23/2018

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PREPARED BY:
PD

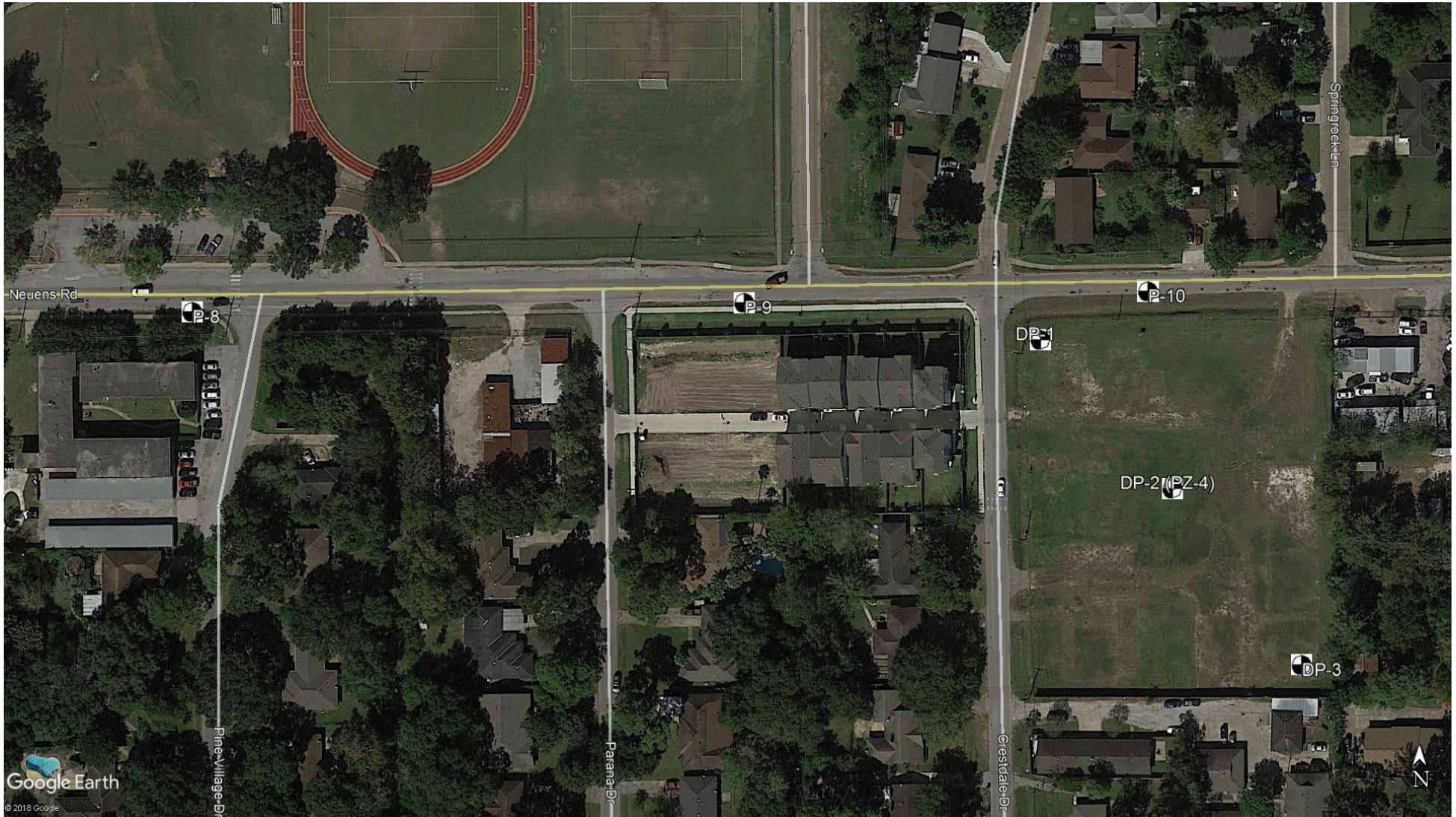
PLAN OF BORINGS
NEUENS ROAD FROM GESSNER ROAD
TO BLALOCK ROAD

PROJECT NO.:

HG1810145

DRAWING NO.:

PLATE 2B



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LEGEND:

 **APPROXIMATE BORING LOCATIONS**



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DATE: 03/20/2019	APPROVED BY: RS	PREPARED BY: RC
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PLAN OF BORINGS
NEUENS ROAD FROM GESSNER ROAD
TO BLALOCK ROAD

PROJECT NO.: HG1810145	DRAWING NO.: PLATE 2C
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LEGEND:

 **APPROXIMATE BORING LOCATIONS**



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DATE: 08/23/2018

APPROVED BY:
RS

PREPARED BY:
PD

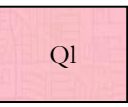
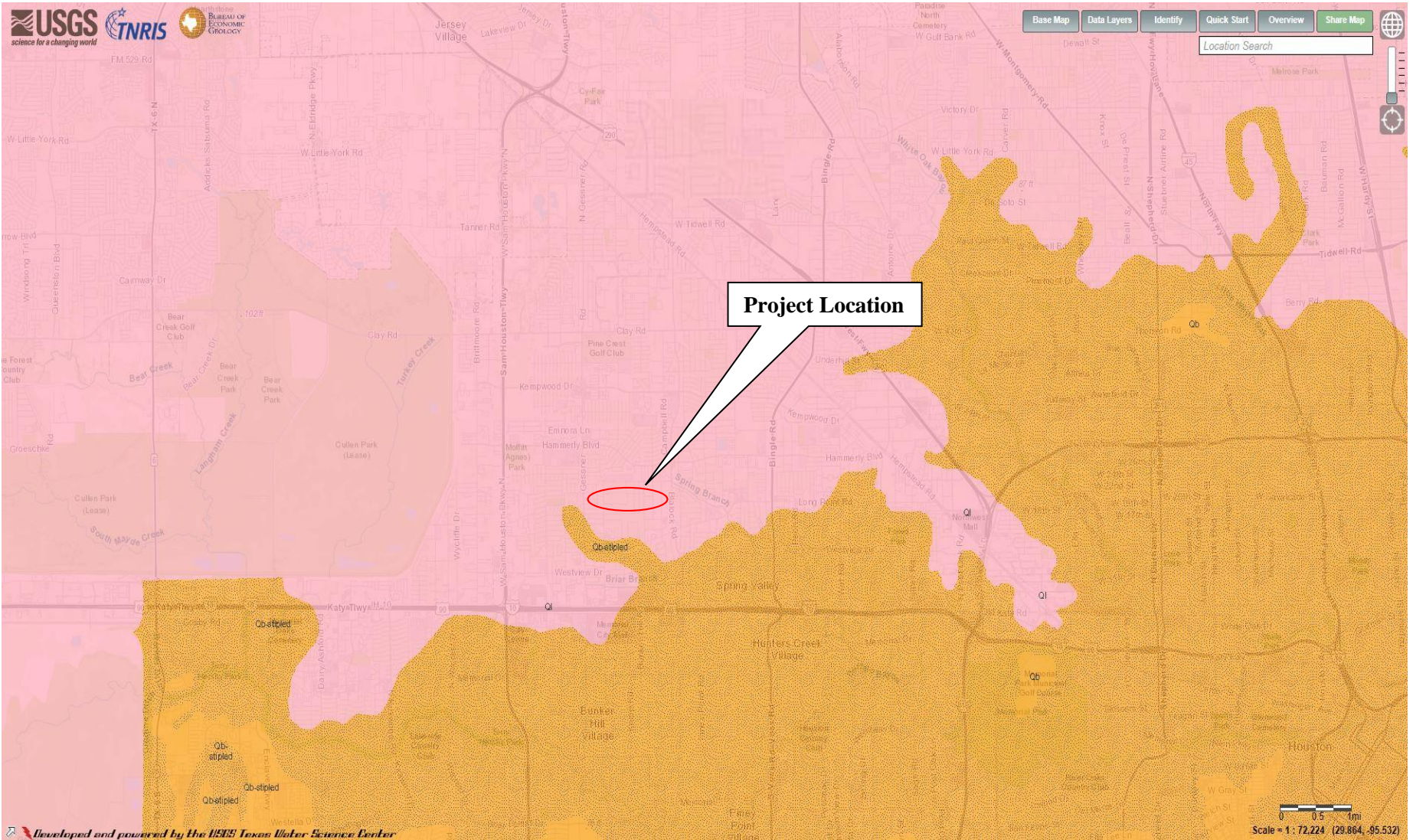
PLAN OF BORINGS
NEUENS ROAD FROM GESSNER ROAD
TO BLALOCK ROAD

PROJECT NO.:

HG1810145

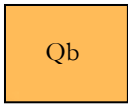
DRAWING NO.:

PLATE 2D




Ql

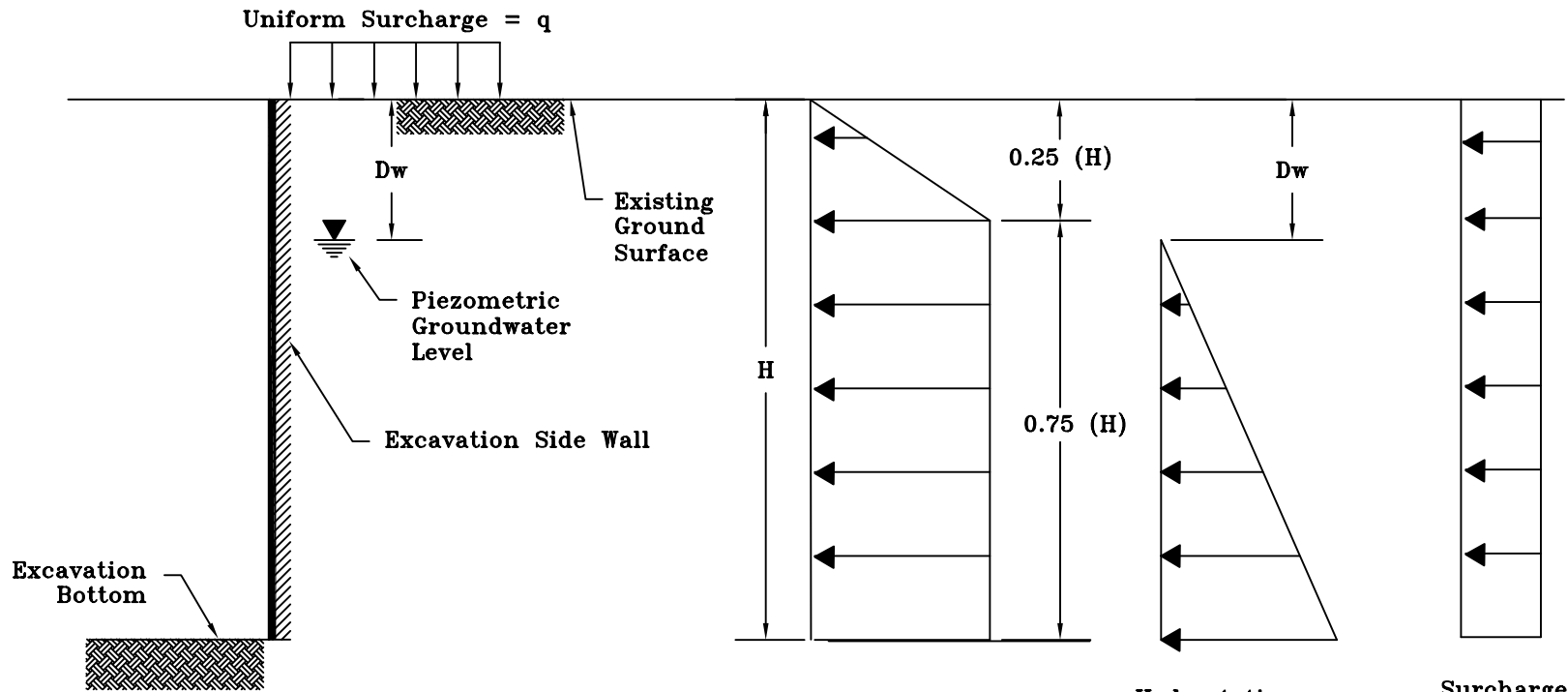
Lissie Formation: Upper part, clay, silt, sand, and very minor siliceous gravel of granule and small pebble size, gravel more abundant northwestward, locally calcareous, concretions of calcium carbonate, iron oxide, and iron-manganese oxides common in zone weathering; fluvial; surface fairly flat and featureless except for numerous rounded shallow depressions and pimple mounds. Lower part, clay, silt, sand, and minor amount of gravel; gravel slightly coarser than in upper part, non-calcareous, iron oxide concretions more abundant than in upper part; fluvial; very gently rolling; thickness \pm 200 feet.



Qb

Beaumont Formation: Mostly clay, silt, and sand; includes mainly stream channel, point-bar, natural levee, backswamp, and to a lesser extent coastal marsh and mud flat deposits; concretions of calcium carbonate, iron oxide, and iron-manganese oxides in zone of weathering; surface almost featureless, characterized by relict river channels shown by meander patterns and pimple mounds on meanderbelt ridges, separated by areas of flow, relatively smooth, featureless backswamp deposits without pimple mounds; thickness \pm 100 ft.

		6120 S. Dairy Ashford Road Houston, Texas 77072-1010 281.933.7388 Ph 281.933.7293 Fax	
DATE: 08/23/2018		APPROVED BY: RS	PREPARED BY: PD
GEOLOGIC MAP NEUENS ROAD FROM GESSNER ROAD TO BLALOCK ROAD			
PROJECT NO.: HG1810145		DRAWING NO.: PLATE 3	



Lateral Earth Pressure, P
 $P = K \delta (H)$

Hydrostatic Water Pressure, P_w
 $P_w = \delta_w (H - D_w)$

Surcharge
 $P_s = Kq$

H , (ft) = Depth to Excavation Bottom

P_s , (psf) = Surcharge loading adjacent to Excavation wall


D_w , (ft) = Depth to groundwater below Existing grade
 = Zero for temporary excavation

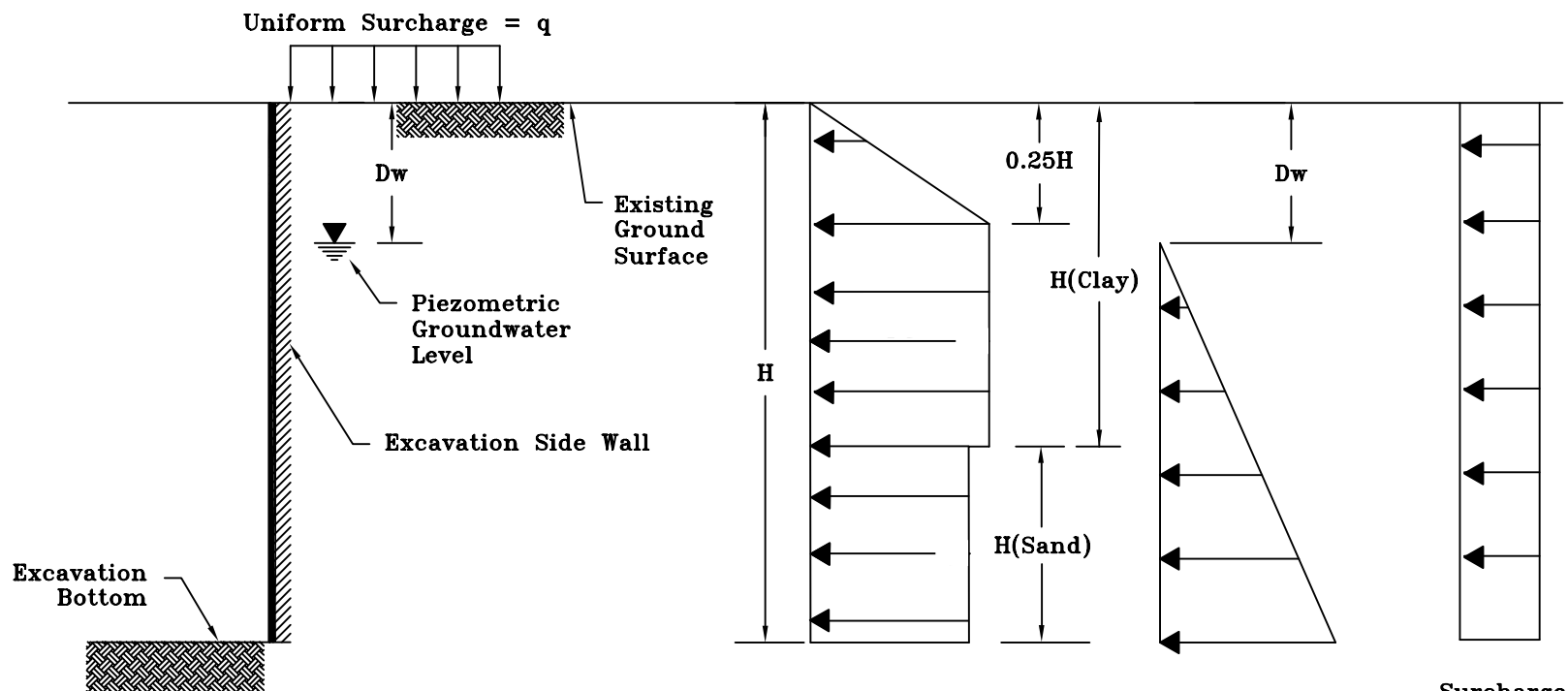
K = Lateral Earth Pressure coefficient
 = K_a "active" for short-term conditions (use 0.50)
 = K_o "at rest" for long-term conditions (use 1.0)

δ , (pcf) = Total unit weight above water table
 or submerged unit weight below groundwater level

δ_w , (pcf) = Unit weight of water = 62.4 pcf

Note: The pressure diagram shown is not appropriate for design of cantilever walls.

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	BRACED EXCAVATION LATERAL EARTH PRESSURE DIAGRAM (CLAY)	
PROJECT NO.:	HG1710003.1	DRAWING NO.:
		PLATE 4A



Lateral Earth Pressure, P
 $P = K \gamma (H)$

Hydrostatic Water Pressure, P_w
 $P_w = \gamma_w (H - D_w)$

Surcharge
 $P_s = Kq$

H , (ft) = Depth to Excavation Bottom

P_s , (psf) = Surcharge loading adjacent to Excavation wall

D_w , (ft) = Depth to groundwater below Existing grade
 = Zero for temporary excavation

γ , (pcf) = Total unit weight above water table or submerged unit weight below groundwater level

γ_w , (pcf) = Unit weight of water = 62.4 pcf

K_c = Lateral Earth Pressure coefficient of clay
 = K_a "active" for short-term conditions (use 0.50)
 = K_o "at rest" for long-term conditions (use 1.0)

K_s = Lateral Earth Pressure coefficient of sand
 = K_a "active" for short-term conditions (use 0.35)
 = K_o "at rest" for long-term conditions (use 0.50)

Note: The pressure diagram shown is not appropriate for design of cantilever walls.



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BRACED EXCAVATION
 LATERAL EARTH PRESSURE DIAGRAM (CLAY OVER SAND)

PROJECT NO.:
 HG1810145

DRAWING NO.:
 PLATE 4B

APPENDIX A

BORING LOGS AND KEYS TO TERMS & SYMBOLS

LOG OF BORING P-1 (PZ-1)

PROJECT: Neuens Road from Gessner to Blalock
 LOCATION: N: 13856812.25; E: 3064569.72
 STATION: N/A
 OFFSET: N/A
 SURFACE ELEVATION: 88.77 FT

PROJECT NO.: HG1810145
 COMPLETION DEPTH: 30 FT
 DATE: 8/16/2018

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	SAMPLER: Shelby Tube/Split Spoon		STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF						
				DRY AUGER: 0 TO 30 FT	WET ROTARY: N/A TO N/A FT								○ HAND PENETROMETER ● UNCONFINED COMPRESSION ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION △ TORVANE						
DESCRIPTION OF MATERIAL													0.5	1.0	1.5	2.0	2.5		
	0			Pavement: 4.5" Asphaltic Concrete, 9" Sand with Shells															
	5			Loose to medium dense, gray and reddish brown, SILTY SAND (SM)				24	12.8	9									
	10			-w/ roots at 10'-12'				23											
	15			Stiff to hard, gray and reddish brown, SANDY LEAN CLAY (CL)				6											
	20							6											
	25			Medium dense, brown and gray, SILTY SAND (SM)				16.6		19									
	30							18		17									
	35							64.3	116	18	37	14	23						
	40									15									
	45								119	16									
	50																		
	55																		
	60							14	11.8	22									

COH, HG1810145.GPJ 7/11/19

DEPTH TO WATER IN BORING:
 ▽ FREE WATER DURING DRILLING: 25.0 FT
 ▼ WATER DEPTH 24 HOURS AFTER DRILLING: 20.8 FT

Drilled By: Soltek Logged By: EE

HVJ Associates, Inc

PLATE A-1

LOG OF BORING P-5

PROJECT: Neuens Road from Gessner to Blalock
 LOCATION: N: 13856988.54; E: 3066265.9
 STATION: N/A
 OFFSET: N/A
 SURFACE ELEVATION: 87.4 FT

PROJECT NO.: HG1810145
 COMPLETION DEPTH: 30 FT
 DATE: 8/20/2018

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	SAMPLER: Shelby Tube/Split Spoon		STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF						
				DRY AUGER: 0 TO 30 FT	WET ROTARY: N/A TO N/A FT								○ HAND PENETROMETER	● UNCONFINED COMPRESSION	■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION	△ TORVANE	0.5	1.0	1.5
DESCRIPTION OF MATERIAL																			
	0			Very stiff, reddish brown, LEAN CLAY WITH SAND (CL) -w/ shells at 0'-1' -w/ ferrous stains at 1'-2' -w/ roots at 2'-4'		79.6		14	38	14	24								
	5			Stiff to very stiff, gray and reddish brown, SANDY LEAN CLAY (CL) -w/ calcareous nodules and ferrous stains at 6'-8'				115	15										
	10			-w/ calcareous nodules at 10'-12'															
	15			-w/ calcareous nodules at 14'-16'		68.8			34	14	20								
	20							121	17										
	25			Loose to medium dense, brown, SILTY SAND (SM) -w/ sandstone at 23'-25'		22	19.4		20										
	30			-w/ clay seams at 28'-30'		9													

COH HG1810145.GPJ 7/11/19

DEPTH TO WATER IN BORING:
 ▽ FREE WATER DURING DRILLING: 24.0 FT; AFTER 10 MIN. AT 20.5 FT
 ▼ WATER DEPTH 24 HOURS AFTER DRILLING: 18.8 FT

Drilled By: Soltek Logged By: EE

HVJ Associates, Inc

PLATE A-5

LOG OF BORING P-6 (PZ-2)

PROJECT: Neuens Road from Gessner to Blalock
 LOCATION: N: 13857009.33; E: 3066722.16
 STATION: N/A
 OFFSET: N/A
 SURFACE ELEVATION: 86.2 FT

PROJECT NO.: HG1810145
 COMPLETION DEPTH: 30 FT
 DATE: 8/21/2018

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	SAMPLER: Shelby Tube/Split Spoon DRY AUGER: 0 TO 30 FT WET ROTARY: N/A TO N/A FT	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF							
												0.5	1.0	1.5	2.0	2.5			
	0			DESCRIPTION OF MATERIAL															
85				Stiff to very stiff, brown and gray, FAT CLAY (CH) -w/ sand seams				14											
	5			-w/ ferrous stains at 4'-6'				22											
80				Stiff to very stiff, brown and gray, SANDY LEAN CLAY (CL) -w/ calcareous nodules and ferrous stains at 6'-8'		91.4	100	26	73	20	53								
	10			-w/ ferrous stains at 10'-12'				105											
75																			
	15																		
70				-w/ calcareous nodules and ferrous stains at 16'-18'		65.4		15	37	14	23								
	20																		
65																			
	25			Loose to medium dense, brown, SILTY SAND (SM)	16	22.4		23											
60																			
	30																		

COH, HG1810145.GPJ 7/11/19

DEPTH TO WATER IN BORING:
 ▽ FREE WATER DURING DRILLING: 23.0 FT; AFTER 10 MIN. AT 19.2 FT
 ▼ WATER DEPTH 24 HOURS AFTER DRILLING: 19.5 FT

LOG OF BORING P-7

PROJECT: Neuens Road from Gessner to Blalock
 LOCATION: N: 13857038.96; E: 3067108.36
 STATION: N/A
 OFFSET: N/A
 SURFACE ELEVATION: 86.5 FT

PROJECT NO.: HG1810145
 COMPLETION DEPTH: 30 FT
 DATE: 8/20/2018

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	SAMPLER: Shelby Tube/Split Spoon DRY AUGER: 0 TO 30 FT WET ROTARY: N/A TO N/A FT	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF						
												0.5	1.0	1.5	2.0	2.5		
	0			DESCRIPTION OF MATERIAL														
				4" Asphaltic Concrete														
85				Stiff to very stiff, reddish brown, SANDY LEAN CLAY (CL)		60.6		12	22	14	8							
	5				12													
80				Stiff to very stiff, gray and reddish brown, LEAN CLAY WITH SAND (CL) -w/ ferrous stains at 6'-8'		75.6		14	41	20	21							
	10																	
75							122	14										
	15			Stiff to very stiff, reddish brown and gray, SANDY LEAN CLAY (CL)		62.7		15	32	18	14							
	20							17										
	25			Medium dense, brown, SILTY SAND (SM)	17	15.0		23										
	30				13													

COH HG1810145.GPJ 7/11/19

DEPTH TO WATER IN BORING:
 ▽ FREE WATER DURING DRILLING: 23.0 FT; AFTER 10 MIN. AT 19.0 FT
 ▼ WATER DEPTH 24 HOURS AFTER DRILLING: 18.5 FT

Drilled By: Soltek Logged By: EE

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PLATE A-7

LOG OF BORING P-8

PROJECT: Neuens Road from Gessner to Blalock
 LOCATION: N: 13857051.43; E: 3067774.27
 STATION: N/A
 OFFSET: N/A
 SURFACE ELEVATION: 85.26 FT

PROJECT NO.: HG1810145
 COMPLETION DEPTH: 30 FT
 DATE: 8/20/2018

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	SAMPLER: Shelby Tube/Split Spoon		STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF					
				DRY AUGER: 0 TO 30 FT	WET ROTARY: N/A TO N/A FT								○ HAND PENETROMETER ● UNCONFINED COMPRESSION ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION △ TORVANE 0.5 1.0 1.5 2.0 2.5					
DESCRIPTION OF MATERIAL																		
85				Firm to very stiff, gray and reddish brown, LEAN CLAY WITH SAND (CL)		12			7									
						5	74.3		11	35	14	21						
	5			-w/ calcareous nodules at 4'-8'					11									
				-w/ ferrous stains at 6'-8'														
	10						78.1	113	17	40	16	24						
				-w/ ferrous stains at 10'-12'														
	15							121	17									
							80.0		17	42	16	26						
	20								18									
	25			Very dense, brown, SILTY SAND (SM) -w/ sandstone at 23'-25'		50/5"												
	30					50/5"	13.6		17									

COH HG1810145.GPJ 7/12/19

DEPTH TO WATER IN BORING:
 ▽ FREE WATER DURING DRILLING: 23.0 FT; AFTER 10 MIN. AT 19.2 FT
 ▼ WATER DEPTH 24 HOURS AFTER DRILLING: 19.0 FT

LOG OF BORING P-10

PROJECT: Neuens Road from Gessner to Blalock
 LOCATION: N: 13857091.57; E: 3068681.8
 STATION: N/A
 OFFSET: N/A
 SURFACE ELEVATION: 84.29 FT

PROJECT NO.: HG1810145
 COMPLETION DEPTH: 30 FT
 DATE: 8/21/2018

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	SAMPLER: Shelby Tube/Split Spoon		STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF								
				DRY AUGER: 0 TO 30 FT	WET ROTARY: N/A TO N/A FT								0.5	1.0	1.5	2.0	2.5				
	0			DESCRIPTION OF MATERIAL																	
				Firm to stiff, brown and gray, LEAN CLAY WITH SAND (CL)						5											
	5			Firm to hard, gray and reddish brown, SANDY LEAN CLAY (CL)				78.3	106	15	39	18	21								
				-w/ ferrous stains at 8'-10'						17											
	10									17											
									121	17											
	15									17											
								68.1	111	19	37	24	13								
	20							9		17											
								50/4"		17											
	25			Medium dense to very dense, brown, SILTY SAND (SM)				65	35.8	22											
	30							20													

DEPTH TO WATER IN BORING:
 ▽ FREE WATER DURING DRILLING: 19.0 FT; AFTER 10 MIN. AT 18.5 FT
 ▼ WATER DEPTH 24 HOURS AFTER DRILLING: ---

COH HG1810145.GPJ 7/12/19

LOG OF BORING P-11

PROJECT: Neuens Road from Gessner to Blalock
 LOCATION: N: 13857120.38; E: 3069117.47
 STATION: N/A
 OFFSET: N/A
 SURFACE ELEVATION: 84.22 FT

PROJECT NO.: HG1810145
 COMPLETION DEPTH: 30 FT
 DATE: 8/22/2018

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	SAMPLER: Shelby Tube/Split Spoon		STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF		
				DRY AUGER: 0 TO 30 FT	WET ROTARY: N/A TO N/A FT										
	0			DESCRIPTION OF MATERIAL											
				4" Asphaltic Concrete, 9" Sand w/ Shells											
				Stiff to hard, reddish brown, SANDY LEAN CLAY (CL)						15					
	5									17					
				-w/ ferrous stains at 8'-10'					117	15					
	10									15					
									128	13					
										14					
	15							55.1	125	14	34	14	20		
										17					
	20			Medium dense to dense, brown and gray, SILTY SAND (SM) -w/ clay seams at 18'-20'				34	21.3	16					
	25														
	30							11	9.8	24					

COH, HG1810145.GPJ 7/11/19

DEPTH TO WATER IN BORING:
 ▽ FREE WATER DURING DRILLING: 23.0 FT; AFTER 10 MIN. AT 17.0 FT
 ▼ WATER DEPTH 24 HOURS AFTER DRILLING: ---

Drilled By: Soltek Logged By: EE

HVJ Associates, Inc

PLATE A-11

LOG OF BORING P-12

PROJECT: Neuens Road from Gessner to Blalock
 LOCATION: N: 13857141.9; E: 3069652.46
 STATION: N/A
 OFFSET: N/A
 SURFACE ELEVATION: 84.38 FT

PROJECT NO.: HG1810145
 COMPLETION DEPTH: 30 FT
 DATE: 8/22/2018

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	SAMPLER: Shelby Tube/Split Spoon		STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF					
				DRY AUGER: 0 TO 30 FT	WET ROTARY: N/A TO N/A FT								○ HAND PENETROMETER ● UNCONFINED COMPRESSION ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION △ TORVANE 0.5 1.0 1.5 2.0 2.5					
DESCRIPTION OF MATERIAL																		
	0			5" Asphaltic Concrete, 8" Sand w/ Shells														
	5			Stiff to very stiff, brown and gray, LEAN CLAY WITH SAND (CL)					14									
	10			Firm to very stiff, brown, SANDY LEAN CLAY (CL)			82.3	120	15									
	15								18	38	14	24						
	20			Medium dense, brown, SILTY SAND (SM)			68.2	121	16	37	13	24						
	25								22									
	30						25		19									
	35						10	13.5	20									
	40								23									
	45																	
	50																	
	55																	
	60																	
	65																	
	70																	
	75																	
	80																	
	85																	
	90																	
	95																	
	100																	

DEPTH TO WATER IN BORING:
 ▽ FREE WATER DURING DRILLING: 23.0 FT; AFTER 10 MIN. AT 17.0 FT
 ▼ WATER DEPTH 24 HOURS AFTER DRILLING: ---

COH HG1810145.GPJ 7/11/19



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LOG OF BORING DP-1

DATE: 1/31/2019
SURFACE ELEVATION: 87.05 Feet

PROJECT: Neuens Road from Gessner to Blalock
Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT ● 20 40 60 80	C _u (tsf) ▲ 1.0 2.0 3.0 4.0	SS (tsf) ■ 1.0 2.0 3.0 4.0	Torvane (psf) ◆ 200 400 600 800	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			PASSING #200 SIEVE (%)	ESTIMATED ANGLE OF INTERNAL FRICTION (°) OTHER TESTS & REMARKS	
				Northing: 13857040.5 Easting: 3068589.87											Plastic Limit	Moisture Content	Liquid Limit		LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
				MATERIAL DESCRIPTION																				
0	CL				LEAN CLAY WITH SAND (CL), firm to very stiff, gray and brown to reddish brown, w/ roots at 0'-2', calcareous nodules at 2'-4', ferrous stains at 4'-12'	P=1.0					119	0.80	15.00	2			17							
5						P=0.5											17	21	13	8	71.5	Crumb: Dispersive Double Hydrometer: Non-dispersive		
10						P=2.0																		
						P=2.5					123	1.18	15.00	7			16	33	14	19	78.3	Crumb: Dispersive Double Hydrometer: Non-dispersive Effective: c'=417psf ø' = 19.1° Total: c=481psf ø = 10°		
						P=3.5																		
						P=2.5											14							
	CL				SANDY LEAN CLAY (CL), firm to very stiff, gray and brown to reddish brown, w/ ferrous stains	P=4.0					122	1.18	14.84	12			16	38	14	24	63.5	Crumb: Non-dispersive		
						P=2.0											17							
						P=3.0											20	30	15	15	53.2			
						P=1.0					116	0.70	15.00	17			18							

Water Level Est.: ▽ Measured: ▼ Perched: ▼
Water Observations: Groundwater was not encountered during drilling operations; at 11.5 feet after 24 hours.

Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
N - SPT Data (Blows/Ft)
P - Pocket Penetrometer (tsf)
T - Torvane (psf)
C_u - Undrained Cohesion (tsf)
SS - Shear Strength (P/2, tsf)

Notes:

LOG OF BORING DP-2 (PZ-4)

DATE: 1/31/2019
 SURFACE ELEVATION: 83.97 Feet



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PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT ● 20 40 60 80 ●	C _u (tsf) ▲ 1.0 2.0 3.0 4.0 ▲	SS (tsf) ■ 1.0 2.0 3.0 4.0 ■	Torvane (psf) ◆ 200 400 600 800 ◆	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°) OTHER TESTS & REMARKS
				Northing: 13856909.28 Easting: 3068707.32	MATERIAL DESCRIPTION										Plastic Limit	Moisture Content	Liquid Limit		LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	
0	CL				SANDY LEAN CLAY (CL), soft to very stiff, gray, w/ roots at 0'-2', ferrous stains at 2'-4'	P=0.5	●	▲	■							19	27	14	13	69.8	Crumb: Non-dispersive	
5	CL				LEAN CLAY WITH SAND (CL), stiff to very stiff, gray and brown to reddish brown, w/ calcareous nodules at 4'-12', ferrous stains	P=2.0		■			121	1.63	15.00	3		16						
						P=2.5		■								16						
						P=4.5		■			123	1.58	15.02	7		16	42	15	27	78.3		
						P=4.5		■								21						
						P=4.0		■			118	1.06	15.01	10		17					Crumb: Non-dispersive	
						P=1.5		■														
15	CL				SANDY LEAN CLAY (CL), very stiff to hard, gray and reddish brown, w/ ferrous stains and calcareous nodules	P=4.5		■			126	2.24	15.01	14		15	38	14	24	62.9		
						P=4.5		■								14						
20	SP SM				SAND WITH SILT (SP-SM), medium dense, gray and reddish brown	N=27	●															
						N=10	●									22					10.0	

Water Level Est.: ▾ Measured: ▾ Perched: ▾
 Water Observations: Groundwater was encountered at 38 feet during drilling operations; at 11.6 feet after 24 hours.
 Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:
 Plate A-15

SOIL SYMBOLS

Soil Types



Clay



Silt



Sand



Gravel

Modifiers



Clayey



Silty



Sandy



Cemented

Construction Materials



Asphaltic
Concrete



Stabilized
Base



Fill or
Debris



Portland
Cement
Concrete

SAMPLER TYPES



Thin Walled
Shelby Tube



No Recovery



Split Barrel



Core



Liner Tube



Jar Sample

WATER LEVEL SYMBOLS



Groundwater level after drilling in
open borehole or piezometer



Groundwater level determined during
drilling operations

SOIL GRAIN SIZE

Classification

Clay
Silt
Sand
Gravel
Cobble
Boulder

Particle Size

< 0.002 mm
0.002 - 0.075 mm
0.075 - 4.75 mm
4.75 - 75 mm
75 - 200 mm
> 200 mm

Particle Size or Sieve No. (U.S. Standard)

< 0.002 mm
0.002 mm - #200 sieve
#200 sieve - #4 sieve
#4 sieve - 3 in.
3 in. - 8 in.
> 8 in.

DENSITY OF COHESIONLESS SOILS

Descriptive Term	Penetration Resistance "N" * Blows/Foot
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	> 50

CONSISTENCY OF COHESIVE SOILS

Consistency	Undrained Shear Strength (tsf)	Penetration Resistance "N" * Blows/Foot
Very Soft	0 - 0.125	0 - 2
Soft	0.125 - 0.25	2 - 4
Firm	0.25 - 0.5	4 - 8
Stiff	0.5 - 1.0	8 - 16
Very Stiff	1.0 - 2.0	16 - 32
Hard	> 2.0	> 32

PENETRATION RESISTANCE

3/6	Blows required to penetrate each of three consecutive 6-inch increments per ASTM D-1586 *
50/4"	If more than 50 blows are required, driving is discontinued and penetration at 50 blows is noted
0/18"	Sampler penetrated full depth under weight of drill rods and hammer

* The N value is taken as the blows required to penetrate the final 12 inches

TERMS DESCRIBING SOIL STRUCTURE

<i>Slickensided</i>	Fracture planes appear polished or glossy, sometimes striated	<i>Intermixed</i>	Soil sample composed of pockets of different soil type and laminated or stratified structure is not evident
<i>Fissured</i>	Breaks along definite planes of fracture with little resistance to fracturing	<i>Calcareous</i>	Having appreciable quantities of calcium carbonate
<i>Inclusion</i>	Small pockets of different soils, such as small lenses of sand scattered through a mass of clay	<i>Ferrous</i>	Having appreciable quantities of iron
<i>Parting</i>	Inclusion less than 1/4 inch thick extending through the sample	<i>Nodule</i>	A small mass of irregular shape
<i>Seam</i>	Inclusion 1/4 inch to 3 inches thick extending through the sample		
<i>Layer</i>	Inclusion greater than 3 inches thick extending through the sample		
<i>Laminated</i>	Soil sample composed of alternating partings of different soil type		
<i>Stratified</i>	Soil sample composed of alternating seams or layers of different soil type		



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KEY TO TERMS AND SYMBOLS USED ON BORING LOGS

PROJECT NO.:

HG1810145

DRAWING NO.:

Plate A-17

APPENDIX A

BORING LOGS P-1 TO P-13 IN HCFCFCD FORMAT

LOG OF BORING P-1 (PZ-1)

DATE: 8/16/2018
 SURFACE ELEVATION: 88.77 Feet



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PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°)	OTHER TESTS & REMARKS
				Northing: 13856812.25	Easting: 3064569.72						Plastic Limit	Moisture Content	Liquid Limit		LL	PL	PI		
0					MATERIAL DESCRIPTION	● BLOW COUNT ● 20 40 60 80 ▲ C _u (tsf) ▲ 1.0 2.0 3.0 4.0 ■ SS (tsf) ■ 1.0 2.0 3.0 4.0 ◆ Torvane (psf) ◆ 200 400 600 800													
0					Pavement: 4.5" Asphaltic Concrete, 9" Sand with Shells														
0-10	SM				SILTY SAND (SM), loose to medium dense, gray and reddish brown, w/ roots at 10'-12'	N=24 N=23 N=6 N=6							9				12.8		
10-15	CL				SANDY LEAN CLAY (CL), very stiff to hard, gray and reddish brown	N=18 P=2.5 P=4.5 P=4.5	116	1.44	15	14			19	17	18	37	14	23	64.3
15-25	SM				SILTY SAND (SM), medium dense, brown and gray	N=14	119	2.44	15	17			16					11.8	
25													22						

Water Level Est.: ▽ Measured: ▽ Perched: ▽
 Water Observations: Groundwater was encountered at 25 feet during drilling operations; at 20.8 feet after 24 hours.
 Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:
 Plate A-1

LOG OF BORING P-2

DATE: 8/13/2018
 SURFACE ELEVATION: 83.69 Feet



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PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT ● 20 40 60 80	C _u (tsf) ▲ 1.0 2.0 3.0 4.0	SS (tsf) ■ 1.0 2.0 3.0 4.0	Torvane (psf) ◆ 200 400 600 800	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			PASSING #200 SIEVE (%)	ESTIMATED ANGLE OF INTERNAL FRICTION (°) OTHER TESTS & REMARKS	
				Northing: 13856828.8 Easting: 3065044.43	MATERIAL DESCRIPTION										Plastic Limit	Moisture Content	Liquid Limit		LL	PL	PI			
0					Pavement: 4" Asphaltic Concrete, 5" Sand with Shells <u>SANDY SILT (ML)</u> , medium dense, gray, w/ shells at 0'-2'																			
5					<u>SANDY LEAN CLAY (CL)</u> , firm to hard, brown and gray, w/ ferrous stains at 6'-10' and 16'-20'	N=11 P=0.75 P=3.25 P=4 P=2.5 P=2 P=4.5 P=4.5 P=4.5				120 120 111	.63 0.55 1.69	3.6 9.49 12.08	16				8 11 14 17 16 16 18 19	18 16 20	2 20	50.4 67				
25					<u>SILTY SAND (SM)</u> , medium dense to dense, gray	N=12 N=41												21			20.8			

Water Level Est.: ▽ Measured: ▽ Perched: ▽
 Water Observations: Groundwater was encountered at 23 feet during drilling operations.

Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:

LOG OF BORING P-3

DATE: 8/15/2018
 SURFACE ELEVATION: 87.58 Feet



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PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT ● 20 40 60 80 ● ▲ C _u (tsf) ▲ 1.0 2.0 3.0 4.0 ■ SS (tsf) ■ 1.0 2.0 3.0 4.0 ◆ Torvane (psf) ◆ 200 400 600 800	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°) OTHER TESTS & REMARKS	
				Northing: 13856840.8 Easting: 3065465.26	MATERIAL DESCRIPTION							Plastic Limit	Moisture Content	Liquid Limit		LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)		PASSING #200 SIEVE (%)
0					Pavement: 4" Asphaltic Concrete, 5" Sand with Shells SANDY SILTY CLAY (CL-ML), stiff, gray															
0-4	CL ML				LEAN CLAY WITH SAND (CL), very stiff to hard, brown and gray, w/ ferrous stains at 8'-12'	N=9									8	24	17	7	70.6	
4-5	CL					P=4.5									11					
5-6						P=4.5														
6-7						P=4.5														
7-8						P=4.5														
8-10						P=4.5										18	43	17	26	81.8
10-15						P=3.5		118	1.36	15.01	12				15					
15-16						P=4									15	35	16	19	76	
16-18					P=3.75		119	2.50	11.82	16				15						
18-20					P=3.5									14						
20-25					CLAYEY SAND (SC), medium dense, brown	N=24									18	23	17	6	24.5	
25-26	SC					N=24														

Water Level Est.: ▽ Measured: ▽ Perched: ▽
 Water Observations: Groundwater was encountered at 25 feet during drilling operations.
 Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:
 Plate A-3



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LOG OF BORING P-4

DATE: 8/16/2018
SURFACE ELEVATION: 87.52 Feet

PROJECT: Neuens Road from Gessner to Blalock
Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT ● 20 40 60 80 ● ▲ C _u (tsf) ▲ 1.0 2.0 3.0 4.0 ■ SS (tsf) ■ 1.0 2.0 3.0 4.0 ◆ Torvane (psf) ◆ 200 400 600 800	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°) OTHER TESTS & REMARKS
				Northing: 13856972.68 Easting: 3065730.18	MATERIAL DESCRIPTION							Plastic Limit	Moisture Content	Liquid Limit		LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)	
0	SC				CLAYEY SAND (SC), gray, w/ shells at 0'-1'	P=4.25								8	35	17	18	46.8	
5	CL				LEAN CLAY WITH SAND (CL), very stiff to hard, brown	P=4	114	1.16	2.87					12					
	CL				SANDY LEAN CLAY (CL), stiff to hard, reddish brown	P=4.5								10	30	16	14	76.3	
	CL					P=4.5								13					
	CL					P=4.5	123	0.87	1.58					9					
	CL					P=4.5								14	34	16	18	69.5	
	CL					P=4.5								17					
	CL					P=4	116	1.32	14.83	16				17					
	SM				SILTY SAND (SM), medium dense, brown	N=24								20				38.2	
						N=11													

Water Level Est.: Measured: Perched:
Water Observations: Groundwater was encountered at 23 feet during drilling operations; caved-in at 20 feet after 24 hours.

Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
N - SPT Data (Blows/Ft)
P - Pocket Penetrometer (tsf)
T - Torvane (psf)
C_u - Undrained Cohesion (tsf)
SS - Shear Strength (P/2, tsf)

Notes:



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LOG OF BORING P-5

DATE: 8/20/2018
SURFACE ELEVATION: 87.4 Feet

PROJECT: Neuens Road from Gessner to Blalock
Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT	C _u (tsf)	SS (tsf)	Torvane (psf)	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°)	OTHER TESTS & REMARKS
				Northing: 13856988.54	Easting: 3066265.9										Plastic Limit	Moisture Content	Liquid Limit		LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		
0	CL			LEAN CLAY WITH SAND (CL), hard, reddish brown, w/ shells at 0'-1', ferrous stains at 1'-2', roots at 2'-4'		P=4	20	1.0	1.0	200					55	14	38	14	24	79.6			
5	CL			SANDY LEAN CLAY (CL), very stiff to hard, gray and reddish brown, w/ calcareous nodules at 6'-8', 10'-12' and 14'-16', ferrous stains at 6'-8'		P=4.5	40	2.0	2.0	400					55	11							
10						P=4	60	3.0	3.0	600	115	1.20	8.35		55	15							
15						P=3.75	80	4.0	4.0	800					55	15	34	14	20	68.8			
20						P=2									55	15							
25	SM			SILTY SAND (SM), loose to medium dense, brown, w/ sandstone at 23'-25', clay seams at 28'-30'		P=4					121	1.75	15	17	55	17							
						P=4.5									55	20						19.4	
						N=22																	
						N=9																	

Water Level Est.: ▽ Measured: ▽ Perched: ▽
Water Observations: Groundwater was encountered at 24 feet during drilling operations; at 18.8 feet after 24 hours.

Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
N - SPT Data (Blows/Ft)
P - Pocket Penetrometer (tsf)
T - Torvane (psf)
C_u - Undrained Cohesion (tsf)
SS - Shear Strength (P/2, tsf)

Notes:

LOG OF BORING P-6 (PZ-2)

DATE: 8/21/2018
 SURFACE ELEVATION: 86.2 Feet



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PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT	C _u (tsf)	SS (tsf)	Torvane (psf)	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°)	OTHER TESTS & REMARKS
				Northing: 13857009.33	Easting: 3066722.16										Plastic Limit	Moisture Content	Liquid Limit		LL	PL	PI		
0		CH			FAT CLAY (CH) , stiff to very stiff, brown and gray, w/ sand seams at 0'-6', ferrous stains at 4'-6'	P=2.5	20	1.0	1.0	200					55	60	75	14					
5		CL			SANDY LEAN CLAY (CL) , stiff to hard, brown and gray, w/ calcareous nodules at 6'-8' and 16'-18', ferrous stains at 6'-8' and 10'-12'	P=3.5	40	2.0	2.0	400	100	0.89	24.72	26	73	20	53	26	73	20	53	91.4	
10						P=3	60	3.0	3.0	600	105	0.62	6.78	20				20					
15						P=4	80	4.0	4.0	800	129	1.90	14.92	15				15	37	14	23	65.4	
20						P=4.5								15				19					
25		SM			SILTY SAND (SM) , loose to medium dense, brown	N=16												23				22.4	
						N=7																	

Water Level Est.: ▾ Measured: ▾ Perched: ▾
 Water Observations: Groundwater was encountered at 23 feet during drilling operations; at 19.5 feet after 24 hours.
 Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:
 Plate A-6



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LOG OF BORING P-7

DATE: 8/20/2018
SURFACE ELEVATION: 86.5 Feet

PROJECT: Neuens Road from Gessner to Blalock
Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT ● 20 40 60 80	C _u (tsf) ▲ 1.0 2.0 3.0 4.0	SS (tsf) ■ 1.0 2.0 3.0 4.0	Torvane (psf) ◆ 200 400 600 800	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°), OTHER TESTS & REMARKS			
				Northing: 13857038.96	Easting: 3067108.36										Plastic Limit	Moisture Content	Liquid Limit		LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		PASSING #200 SIEVE (%)		
0					4" Asphaltic Concrete																				
		CL			SANDY LEAN CLAY (CL), stiff to very stiff, reddish brown	P=4													12	22	14	8	60.6		
5		CL			LEAN CLAY WITH SAND (CL), very stiff to hard, gray and reddish brown, w/ ferrous stains at 6'-8'	N=12													14	41	20	21	75.6		
						P=4.25																			
10						P=2.75																			
						P=3.5				122	1.79	4.94							14						
						P=3.5				127	1.76	15.02	12						15						
15		CL			SANDY LEAN CLAY (CL), very stiff, gray and reddish brown	P=2													15	32	18	14	62.7		
						P=3.75													17						
20																			18						
25		SM			SILTY SAND (SM), medium dense, brown	N=17													23					15	
						N=13																			

Water Level Est.: ▽ Measured: ▽ Perched: ▽
Water Observations: Groundwater was encountered at 23 feet during drilling operations; at 18.5 feet after 24 hours.

Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
N - SPT Data (Blows/Ft)
P - Pocket Penetrometer (tsf)
T - Torvane (psf)
C_u - Undrained Cohesion (tsf)
SS - Shear Strength (P/2, tsf)

Notes:



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LOG OF BORING P-8

PAGE 1 of 1

DATE: 8/20/2018
SURFACE ELEVATION: 85.26 Feet

PROJECT: Neuens Road from Gessner to Blalock
Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT	C _u (tsf)	SS (tsf)	Torvane (psf)	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°)	OTHER TESTS & REMARKS	
				Northing: 13857051.43	Easting: 3067774.27										Plastic Limit	Moisture Content	Liquid Limit		LL	PL	PI			PASSING #200 SIEVE (%)
0	CL			MATERIAL DESCRIPTION																				
0 - 23'				LEAN CLAY WITH SAND (CL), firm to very stiff, gray and reddish brown, w/ calcareous nodules at 4'-8', ferrous stains at 6'-8' and 10'-12'		N=12												7						
23' - 25'		SM		SILTY SAND (SM), very dense, brown, w/ sandstone at 23'-25'		N=50/5"												17						
						N=5												11	35	14	21	74.3		
						P=1.75												11						
						P=3.5																		
						P=3					113	0.55	2.72					17	40	16	24	78.1		
						P=2																		
						P=2.25					121	1.20	15.01	12				17						
						P=4												17	42	16	26	80.0		
						P=2.5																		
																		18						
																		17						13.6

Water Level Est.: ▽ Measured: ▽ Perched: ▽
Water Observations: Groundwater was encountered at 23 feet during drilling operations; at 19 feet after 24 hours.
Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
N - SPT Data (Blows/Ft)
P - Pocket Penetrometer (tsf)
T - Torvane (psf)
C_u - Undrained Cohesion (tsf)
SS - Shear Strength (P/2, tsf)

Notes: Plate A-8

LOG OF BORING P-9

DATE: 8/21/2018
 SURFACE ELEVATION: 85.02 Feet



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PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT ● 20 40 60 80 ●	C _u (tsf) ▲ 1.0 2.0 3.0 4.0 ▲	SS (tsf) ■ 1.0 2.0 3.0 4.0 ■	Torvane (psf) ◆ 200 400 600 800 ◆	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°)	OTHER TESTS & REMARKS	
				Plastic Limit	Moisture Content										Liquid Limit	LIQUID LIMIT	PLASTIC LIMIT		PLASTICITY INDEX	PASSING #200 SIEVE (%)				
					Northing: 13857098.99 Easting: 3068439.56																			
					MATERIAL DESCRIPTION																			
0	CL				LEAN CLAY WITH SAND (CL) , stiff to hard, brown and gray, w/ gravel and roots at 0'-2', ferrous stains at 2'-4', 6'-8' and 12'-14'	P=2.5					108	0.59	5.7						5					
5						P=4													20					
						P=4.5													15	43	14	29	82.9	
						P=4.5													15					
						P=4.5													15					
						P=3					114	.80	5.06						19	46	13	33	78.1	
						P=2.5													18					
						P=2.5					117	1.4	15	16					18					
																		19						
																		21						
	SM				SILTY SAND (SM) , medium dense, brown and gray	N=19																		
						N=13																		

Water Level Est.: ▾ Measured: ▾ Perched: ▾
 Water Observations: Groundwater was encountered at 22.5 feet during drilling operations; at 17 feet after 24 hours.
 Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:
 Plate A-9

LOG OF BORING P-10

DATE: 8/21/2018
 SURFACE ELEVATION: 84.29 Feet



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PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT ● 20 40 60 80	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°) OTHER TESTS & REMARKS
				Northing: 13857091.57 Easting: 3068681.8	MATERIAL DESCRIPTION							▲ C _u (tsf) ▲ 1.0 2.0 3.0 4.0	■ SS (tsf) ■ 1.0 2.0 3.0 4.0	◆ Torvane (psf) ◆ 200 400 600 800		Plastic Limit	Moisture Content	Liquid Limit	
0																			
0 - 4.5	CL				LEAN CLAY WITH SAND (CL), firm to stiff, brown and gray	P=2	106	0.28	0.85					5					
4.5 - 10	CL				SANDY LEAN CLAY (CL), stiff to hard, gray and reddish brown, w/ ferrous stains at 8'-10'	P=2 P=3.5 P=3.5							15 17 17	39	18	21	78.3		
10 - 14.5						P=2	121	0.90	4.95				17						
14.5 - 19						P=4.5 P=4.5	111	0.77	15.01	14			17 19						
19 - 21						N=9 N=50/4"							17						
21 - 25	SM				SILTY SAND (SM), medium dense to very dense, brown	N=65 N=20							22						35.8

Water Level Est.: Measured: Perched:
 Water Observations: Groundwater was encountered at 19 feet during drilling operations.
 Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:
Plate A-10

LOG OF BORING P-11

DATE: 8/22/2018
 SURFACE ELEVATION: 84.22 Feet



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PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°)	OTHER TESTS & REMARKS
				Northing: 13857120.38	Easting: 3069117.47						Plastic Limit	Moisture Content	Liquid Limit		LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		
0					LOCATION Northing: 13857120.38 Easting: 3069117.47	● BLOW COUNT ● 20 40 60 80 ▲ C _u (tsf) ▲ 1.0 2.0 3.0 4.0 ■ SS (tsf) ■ 1.0 2.0 3.0 4.0 ◆ Torvane (psf) ◆ 200 400 600 800													
					MATERIAL DESCRIPTION														
0					Pavement: 4" Asphaltic Concrete, 9" Sand with Shells														
0					<u>SANDY LEAN CLAY (CL)</u> , stiff to hard, reddish brown, w/ ferrous stains at 8'-10'														
15						P=2.5													
17						P=2.5													
15						P=4	117	0.67	3.04										
15						P=3.25													
13						P=4.5	128	1.24	3.56										
14						P=4.5													
14						P=4.5	125	2.07	15.02	14				34	14	20	55.1		
17						P=3.75													
16						N=34												21.3	
16						N=13													
24						N=11												9.8	

Water Level Est.: ▽ Measured: ▽ Perched: ▽
 Water Observations: Groundwater was encountered at 23 feet during drilling operations.

Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:

LOG OF BORING P-12

DATE: 8/22/2018
 SURFACE ELEVATION: 84.38 Feet



6120 S. Dairy Ashford Drive
 Houston, Texas 77072
 Phone (281)-933-7388
 Fax (281)-933-7293

PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT ● 20 40 60 80	DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°) OTHER TESTS & REMARKS
				Northing: 13857141.9 Easting: 3069652.46								Plastic Limit	Moisture Content	Liquid Limit		LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
				MATERIAL DESCRIPTION															
0					Pavement: 5" Asphaltic Concrete, 8" Sand with Shells														
0-4		CL			LEAN CLAY WITH SAND (CL), stiff to very stiff, brown and gray	P=1.5 P=4								14					
4-12		CL			SANDY LEAN CLAY (CL), firm to very stiff, brown	P=1.75 P=2.5 P=1		120	1.13	10.54			15	18	38	14	24	82.3	
12-22						P=2.5 P=2.25 P=3 P=4		112	0.46	10.23			19	16	37	13	24	68.2	
22-25		SM			SILTY SAND (SM), medium dense, brown	N=25 N=10		121	1.23	9.71	14		20	23				13.5	
25-28						N=24													

Water Level Est.: ∇ Measured: ∇ Perched: ∇
 Water Observations: Groundwater was encountered at 23 feet during drilling operations.

Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:

LOG OF BORING P-13 (PZ-3)

DATE: 8/22/2018
 SURFACE ELEVATION: 83.85 Feet



6120 S. Dairy Ashford Drive
 Houston, Texas 77072
 Phone (281)-933-7388
 Fax (281)-933-7293

PROJECT: Neuens Road from Gessner to Blalock
 Harris County, Texas

PROJECT NO.: HG1810145 BORING TYPE: FLIGHT AUGER

DEPTH (ft.)	SAMPLES	USC	WATER LEVEL	LOCATION		FIELD STRENGTH DATA	BLOW COUNT		DRY DENSITY (pcf)	UU SHEAR STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	Natural Moisture Content and Atterberg Limits			MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			ESTIMATED ANGLE OF INTERNAL FRICTION (°)	OTHER TESTS & REMARKS	
				Northing: 13857172.55 Easting: 3070208.01			● 20 40 60 80						Plastic Limit Moisture Content Liquid Limit				LL	PL	PI			PASSING #200 SIEVE (%)
				MATERIAL DESCRIPTION			▲ C _u (tsf) ▲ 1.0 2.0 3.0 4.0						- - - - -									
0					Pavement: 5.5" Asphaltic Concrete, 6.5" Sand with Shells																	
		CL			<u>LEAN CLAY WITH SAND (CL)</u> , stiff to hard, brown and gray	P=1	■	■	113	0.59	14.83		●	20	40	14	26	79.6				
5						P=1.25	■						●									
						P=1.5	■						●									
						P=3.75		■					●									
10						P=2.5	■						●									
						P=2.5	■		116	1.08	7.84		●									
						P=4.25		■					●	20	43	15	28	82.0				
15						P=3.5		■				14	●									
						P=2.75	■			0.65	8.56		●									
						P=3.5		■					●									
20													●									
		SM			<u>SILTY SAND (SM)</u> , dense, brown	N=50/5"		●					●									
25						N=50/5"		●					●									
						N=50/5"		●					●									

Water Level Est.: ▾ Measured: ▾ Perched: ▾
 Water Observations: Groundwater was encountered at 25 feet during drilling operations; at 17.1 feet after 24 hours.

Sample Key: SPT Shelby Tube Disturbed

Key to Abbreviations:
 N - SPT Data (Blows/Ft)
 P - Pocket Penetrometer (tsf)
 T - Torvane (psf)
 C_u - Undrained Cohesion (tsf)
 SS - Shear Strength (P/2, tsf)

Notes:

Plate A-13

APPENDIX B

SUMMARY OF LABORATORY TEST RESULTS

Company Name: HVJ Associates, Inc
 Project: Neuens Road
 Location: Harris County, Texas
 Project No. HG1810145

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	% Passing #200 Sieve	Moisture Content (%)	Wet Density (pcf)	Shear Strength (UU) (tsf)	Shear Strength (UC) (tsf)	Shear Strength (Pocket Pen) (tsf)
DP-1	1					17	139	0.8		0.33
DP-1	3	21	13	8	71.5	17				0.17
DP-1	5									0.67
DP-1	7	33	14	19	78.3	16	143	1.18		0.83
DP-1	9									1.17
DP-1	11					14				0.83
DP-1	13	38	14	24	63.5	16	142	1.18		1.33
DP-1	15					17				0.67
DP-1	17	30	15	15	53.2	20				1
DP-1	19					18	137	0.7		0.33
DP-2 (PZ-4)	1	27	14	13	69.8	19				0.17
DP-2 (PZ-4)	3					16	140	1.63		0.67
DP-2 (PZ-4)	5					16				0.83
DP-2 (PZ-4)	7	42	15	27	78.3	16	143	1.58		1.5
DP-2 (PZ-4)	9					21				1.5
DP-2 (PZ-4)	11					17	138	1.06		1.33
DP-2 (PZ-4)	13									0.5
DP-2 (PZ-4)	15	38	14	24	62.9	15	145	2.24		1.5
DP-2 (PZ-4)	17					14				1.5
DP-2 (PZ-4)	24				10	22				
DP-3	1					16				0.67
DP-3	3	26	15	11	53.4	14				0.33
DP-3	5					16	143	1.19		0.17
DP-3	7									0.5
DP-3	9	32	15	17	62.4	15	141	1.24		1.17
DP-3	11					18	138	0.4		1.5
DP-3	13									1.5
DP-3	15	38	16	22	41.2	15				1.5
DP-3	17					15	143	2.09		1.5
DP-3	19				10.2	21				
P-1 (PZ-1)	3				12.8	9				
P-1 (PZ-1)	11				16.6	19				
P-1 (PZ-1)	13					17				
P-1 (PZ-1)	15	37	14	23	64.3	18	137	1.4		0.8
P-1 (PZ-1)	17					15				1.5
P-1 (PZ-1)	19					16	138	2.4		1.5
P-1 (PZ-1)	29				11.8	22				
P-2	1	18	16	4	50.4	8				
P-2	5					11				0.3
P-2	7					14	137		0.6	1.1
P-2	9					17				1.3
P-2	11									0.8
P-2	13					16	139		0.6	0.7
P-2	15	34	14	20	67	16				1.5

Company Name: HVJ Associates, Inc
 Project: Neuens Road
 Location: Harris County, Texas
 Project No. HG1810145

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	% Passing #200 Sieve	Moisture Content (%)	Wet Density (pcf)	Shear Strength (UU) (tsf)	Shear Strength (UC) (tsf)	Shear Strength (Pocket Pen) (tsf)
P-2	17					18	131	1.7		1.5
P-2	19					19				1.5
P-2	24				20.8	21				
P-3	3	24	17	7	70.6	8				
P-3	5									1.5
P-3	7					11				1.5
P-3	9									1.5
P-3	11	43	17	26	81.8	18				1.5
P-3	13					15	136	1.4		1.2
P-3	15	35	16	19	76	15				1.3
P-3	17					15	137	2.5		1.3
P-3	19					14				1.2
P-3	24	23	17	8	24.5	18				
P-4	1	35	17	18	46.8	8				1.4
P-4	5					12	128		1.2	1.3
P-4	7	30	16	14	76.3	10				1.5
P-4	9									1.5
P-4	11					13				1.5
P-4	13					9	134		0.9	1.5
P-4	15	34	16	18	69.5	14				1.5
P-4	17					17	136	1.3		1.0
P-4	19					17				1.3
P-4	24				38.2	20				
P-5	1	38	14	24	79.6	14				1.3
P-5	3									1.5
P-5	5					11				1.5
P-5	7									1.3
P-5	9					15	132		1.2	1.3
P-5	11									0.7
P-5	13	34	14	20	68.8	15				0.9
P-5	15									1.3
P-5	17					15				1.3
P-5	19					17	142	1.8		1.5
P-5	24				19.4	20				
P-6 (PZ-2)	1					14				0.8
P-6 (PZ-2)	3					22				1.2
P-6 (PZ-2)	5	73	20	53	91.4	26	126		0.9	0.8
P-6 (PZ-2)	7					20				1.0
P-6 (PZ-2)	9					20	126		0.6	1.0
P-6 (PZ-2)	11									1.3
P-6 (PZ-2)	13					15	148	1.9		1.3
P-6 (PZ-2)	15	37	14	23	65.4	15				1.5
P-6 (PZ-2)	17									1.5
P-6 (PZ-2)	19					19				1.5

Company Name: HVJ Associates, Inc
 Project: Neuens Road
 Location: Harris County, Texas
 Project No. HG1810145

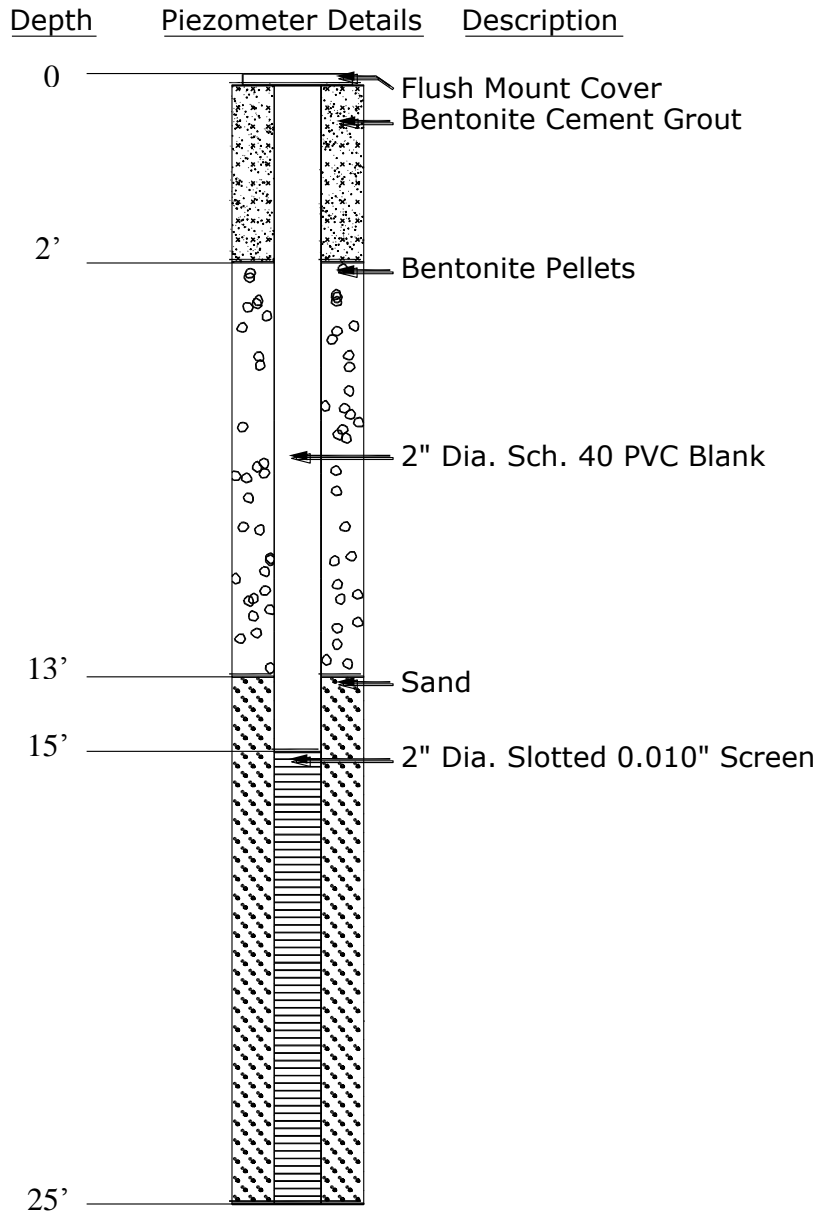
Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	% Passing #200 Sieve	Moisture Content (%)	Wet Density (pcf)	Shear Strength (UU) (tsf)	Shear Strength (UC) (tsf)	Shear Strength (Pocket Pen) (tsf)
P-6 (PZ-2)	24				22.4	23				
P-7	1.5	22	14	8	60.6	12				
P-7	3									1.3
P-7	7	41	20	21	75.6	14				1.4
P-7	9									0.9
P-7	11					14	139		1.8	1.2
P-7	13					15	146	1.8		1.2
P-7	15	32	18	14	62.7	15				0.7
P-7	17					17				1.3
P-7	19					18				
P-7	24				15	23				
P-8	1					7				
P-8	3	35	14	21	74.3	11				
P-8	5					11				0.6
P-8	7									1.2
P-8	9	40	16	24	78.1	17	132		0.6	1.0
P-8	11									0.7
P-8	13					17	142	1.2		0.8
P-8	15	42	16	26	80	17				1.3
P-8	17									0.8
P-8	19					18				
P-8	29				13.6	17				
P-9	1					5				
P-9	3					20	130		0.6	0.8
P-9	5									1.3
P-9	7	43	14	29	82.9	15				1.5
P-9	9									1.5
P-9	11					15				1.5
P-9	13	46	13	23	78.1	19	136		0.8	1.0
P-9	15					18				0.8
P-9	17					18	138	1.4		0.8
P-9	19					19				
P-9	24				23	21				
P-10	1					5				
P-10	3	39	18	21	78.3	15	122		0.3	0.7
P-10	5					17				0.7
P-10	7									1.2
P-10	9					17				1.2
P-10	11					17	142		0.9	0.7
P-10	13					17				1.5
P-10	15	37	24	13	68.1	19	132	0.8		1.5
P-10	19					17				
P-10	24				35.8	22				
P-11	1.5					15				

Company Name: HVJ Associates, Inc
 Project: Neuens Road
 Location: Harris County, Texas
 Project No. HG1810145

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	% Passing #200 Sieve	Moisture Content (%)	Wet Density (pcf)	Shear Strength (UU) (tsf)	Shear Strength (UC) (tsf)	Shear Strength (Pocket Pen) (tsf)
P-11	3									0.8
P-11	5					17				0.8
P-11	7					15	135		0.7	1.3
P-11	9					15				1.1
P-11	11					13	145		1.2	1.5
P-11	13					14				1.5
P-11	15	34	14	20	55.1	14	143	2.1		1.5
P-11	17					17				1.3
P-11	19				21.3	16				
P-11	29				9.8	24				
P-12	1.5									0.5
P-12	3					14				1.3
P-12	5					15	138		1.1	0.6
P-12	7	38	14	26	82.3	18				0.8
P-12	9					22				0.3
P-12	11									0.8
P-12	13					19	133		0.5	0.8
P-12	15	37	13	24	68.2	16	140	1.2		1.0
P-12	17									1.3
P-12	19					20				
P-12	24				13.5	23				
P-13 (PZ-3)	1.5	40	14	26	79.6	20	136		0.6	0.3
P-13 (PZ-3)	3									0.4
P-13 (PZ-3)	5					16				0.5
P-13 (PZ-3)	7									1.3
P-13 (PZ-3)	9					18				0.8
P-13 (PZ-3)	11					19	138		1.1	0.8
P-13 (PZ-3)	13	43	15	28	82	19				1.4
P-13 (PZ-3)	15					25	126	0.7		1.2
P-13 (PZ-3)	17					20				0.9
P-13 (PZ-3)	19					21				1.2
P-13 (PZ-3)	29				22.5	15				
Total		39	39	39	56	135	46	27	19	132

APPENDIX C

PIEZOMETER INSTALLATION RECORDS



Water Level Readings

Date	Depth (ft.)	Elev. (ft.)
08/17/18	20.8	N/A
09/27/18	19.3	N/A

NOTES:

- Piezometer was installed on 8/16/2018.
- See Plate 2 for boring location.



6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

**PIEZOMETER INSTALLATION REPORT
PIEZOMETER NO. P-1 (PZ-1)**

PROJECT NO.:
HG1810145

DRAWING NO.:
PLATE C-1

STATE OF TEXAS WELL REPORT for Tracking #488597

Owner: **HVJ Associates** Owner Well #: **P-1 (PZ)**
Address: **6120 S Dairy Ashford
Houston, TX 77072** Grid #: **65-12-5**
Well Location: **Neuens Rd.
Houston, TX** Latitude: **29° 48' 21.8" N**
Longitude: **095° 32' 36.1" W**
Well County: **Harris** Elevation: **No Data**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **8/16/2018** Drilling End Date: **8/16/2018**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	4	0	30

Drilling Method: **solid flight auger**

Borehole Completion: **Screened**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	0	13	Bentonite 1 Bags/Sacks

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other
concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **No Data**

Packers: **20/40 sand at 13 ft.**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

<i>Strata Depth (ft.)</i>	<i>Water Type</i>
No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Soltek LLC**
297 County Rd 2292
Cleveland, TX 77327

Driller Name: **Brian K Johnson** License Number: **59632**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
0	13	sand
13	23	sandy clay
23	30	sand

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 0.010	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #180886

Owner:	HVJ Associates	Owner Well #:	P-1 (PZ)
Address:	6120 S Dairy Ashford Houston, TX 77072	Grid #:	65-12-5
Well Location:	Neuens Rd. Houston, TX	Latitude:	29° 48' 21.8" N
Well County:	Harris	Longitude:	095° 32' 36.1" W
		Elevation:	No Data
Well Type:	Monitor		

Drilling Information

Company:	Soltek LLC	Date Drilled:	8/16/2018
Driller:	Brian K Johnson	License Number:	59632

Well Report Tracking #488597

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	4	0	30

Plugging Information

Date Plugged: **9/27/2018** Plugger:

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

<i>Dia (in.)</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
2	1	25

Plug(s) Placed in Well:

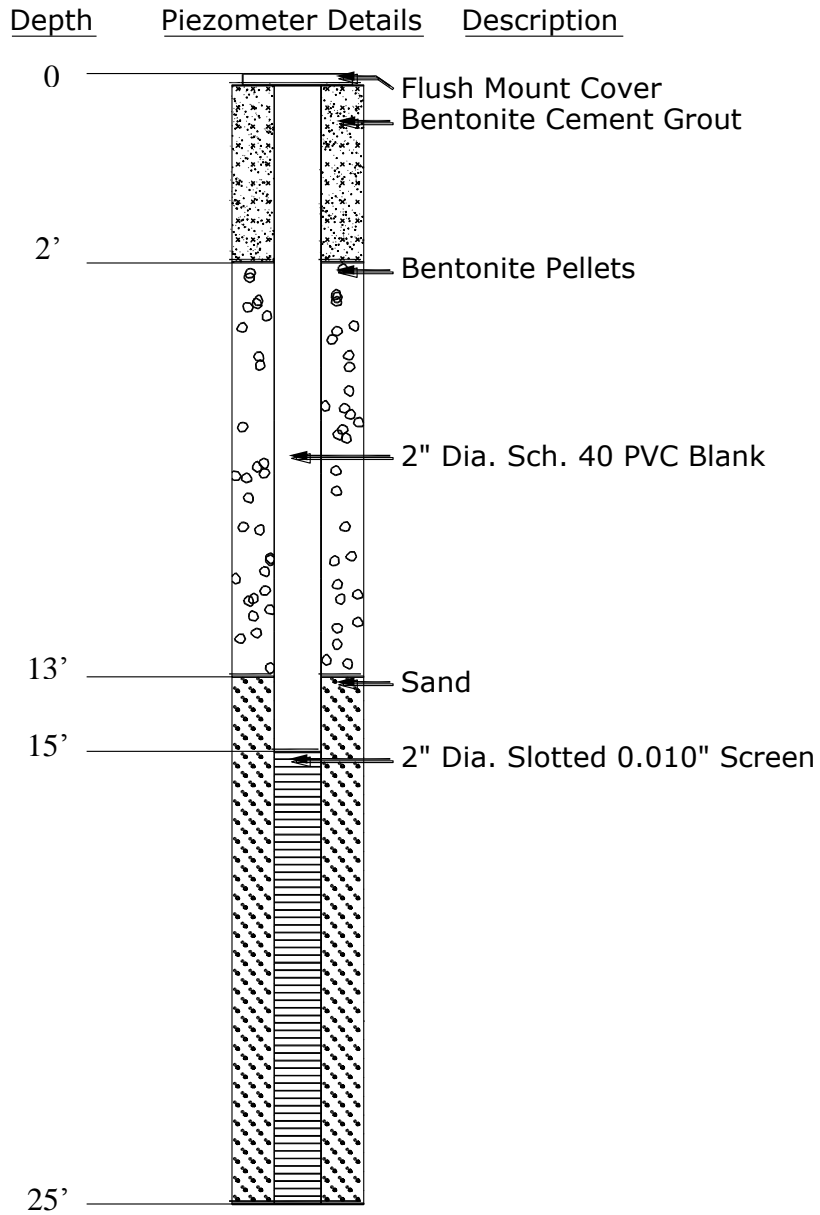
<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description (number of sacks & material)</i>
0	2	Cement 1 Bags/Sacks
2	25	Bentonite 1 Bags/Sacks

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Soltek LLC**
297 County Rd 2292
Cleveland, TX 77327

Driller Name: **Brian K Johnson** License Number: **59632**

Comments: **No Data**



Water Level Readings

Date	Depth (ft.)	Elev. (ft.)
08/22/18	19.5	N/A
09/27/18	8.0	N/A

NOTES:

- Piezometer was installed on 8/21/2018.
- See Plate 2 for boring location.



6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

**PIEZOMETER INSTALLATION REPORT
PIEZOMETER NO. P-6 (PZ-2)**

PROJECT NO.:
HG1810145

DRAWING NO.:
PLATE C-2

STATE OF TEXAS WELL REPORT for Tracking #488596

Owner: HVJ Associates	Owner Well #: P-6 (PZ-2)
Address: 6120 S Dairy Ashford Houston, TX 77072	Grid #: 65-12-6
Well Location: Neuens Rd. Houston, TX	Latitude: 29° 48' 23.1" N
Well County: Harris	Longitude: 095° 32' 11.14" W
	Elevation: No Data
Type of Work: New Well	
	Proposed Use: Monitor

Drilling Start Date: **8/21/2018** Drilling End Date: **8/21/2018**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	4	0	30

Drilling Method: **solid flight auger**

Borehole Completion: **Screened**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	0	13	Bentonite 1 Bags/Sacks

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other
concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **No Data**

Packers: **20/40 sand at 13 ft.**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

<i>Strata Depth (ft.)</i>	<i>Water Type</i>
No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Soltek LLC**
297 County Rd 2292
Cleveland, TX 77327

Driller Name: **Brian K Johnson** License Number: **59632**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
0	23	sandy clay
23	30	sand

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 0.010	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #180887

Owner:	HVJ Associates	Owner Well #:	P-6 (PZ-2)
Address:	6120 S Dairy Ashford Houston, TX 77072	Grid #:	65-12-6
Well Location:	Neuens Rd. Houston, TX	Latitude:	29° 48' 23.1" N
Well County:	Harris	Longitude:	095° 32' 11.14" W
		Elevation:	No Data

Well Type: **Monitor**

Drilling Information

Company: Soltek LLC	Date Drilled: 8/21/2018
Driller: Brian K Johnson	License Number: 59632

Well Report Tracking #488596

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	4	0	30

Plugging Information

Date Plugged: **9/27/2018** Plugger:

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

<i>Dia (in.)</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
2	1	25

Plug(s) Placed in Well:

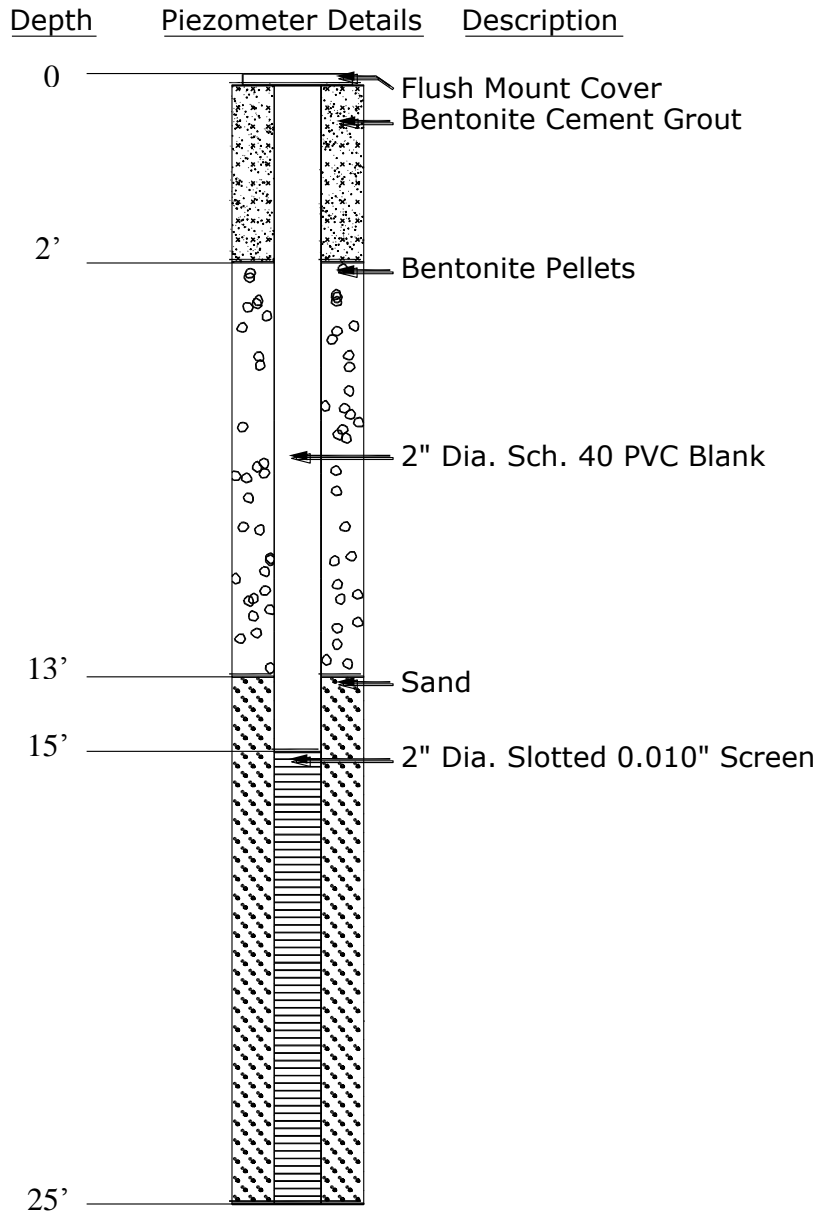
<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description (number of sacks & material)</i>
0	2	Cement 1 Bags/Sacks

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Soltek LLC**
297 County Rd 2292
Cleveland, TX 77327

Driller Name: **Brian K Johnson** License Number: **59632**

Comments: **No Data**



Water Level Readings

Date	Depth (ft.)	Elev. (ft.)
08/23/18	17.1	N/A
09/27/18	13.0	N/A

NOTES:

- Piezometer was installed on 8/22/2018.
- See Plate 2 for boring location.



6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

**PIEZOMETER INSTALLATION REPORT
PIEZOMETER NO. P-13 (PZ-3)**

PROJECT NO.:
HG1810145

DRAWING NO.:
PLATE C-3

STATE OF TEXAS WELL REPORT for Tracking #488595

Owner:	HVJ Associates	Owner Well #:	P-13 (PZ)
Address:	6120 S Dairy Ashford Houston, TX 77072	Grid #:	65-12-6
Well Location:	Neuens Rd. Houston, TX	Latitude:	29° 48' 23.6" N
Well County:	Harris	Longitude:	095° 31' 32" W
		Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Monitor

Drilling Start Date: **8/22/2018** Drilling End Date: **8/22/2018**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	4	0	30

Drilling Method: **solid flight auger**

Borehole Completion: **Screened**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	0	13	Bentonite 1 Bags/Sacks

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other
concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **No Data**

Packers: **20/40 sand at 13 ft.**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Soltek LLC**
297 County Rd 2292
Cleveland, TX 77327

Driller Name: **Brian K Johnson** License Number: **59632**

Comments: **No Data**

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
0	23	sandy clay
23	30	sand

Casing:
 BLANK PIPE & WELL SCREEN DATA

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
2	Riser	New Plastic (PVC)	40	0	15
2	Screen	New Plastic (PVC)	40 0.010	15	25

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #180888

Owner: HVJ Associates	Owner Well #: P-13 (PZ)
Address: 6120 S Dairy Ashford Houston, TX 77072	Grid #: 65-12-6
Well Location: Neuens Rd. Houston, TX	Latitude: 29° 48' 23.6" N
Well County: Harris	Longitude: 095° 31' 32" W
	Elevation: No Data

Well Type: **Monitor**

Drilling Information

Company: Soltek LLC	Date Drilled: 8/22/2018
Driller: Brian K Johnson	License Number: 59632

Well Report Tracking #488595

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	4	0	30

Plugging Information

Date Plugged: **9/27/2018** Plugger:

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

Dia (in.)	Top (ft.)	Bottom (ft.)
2	1	25

Plug(s) Placed in Well:

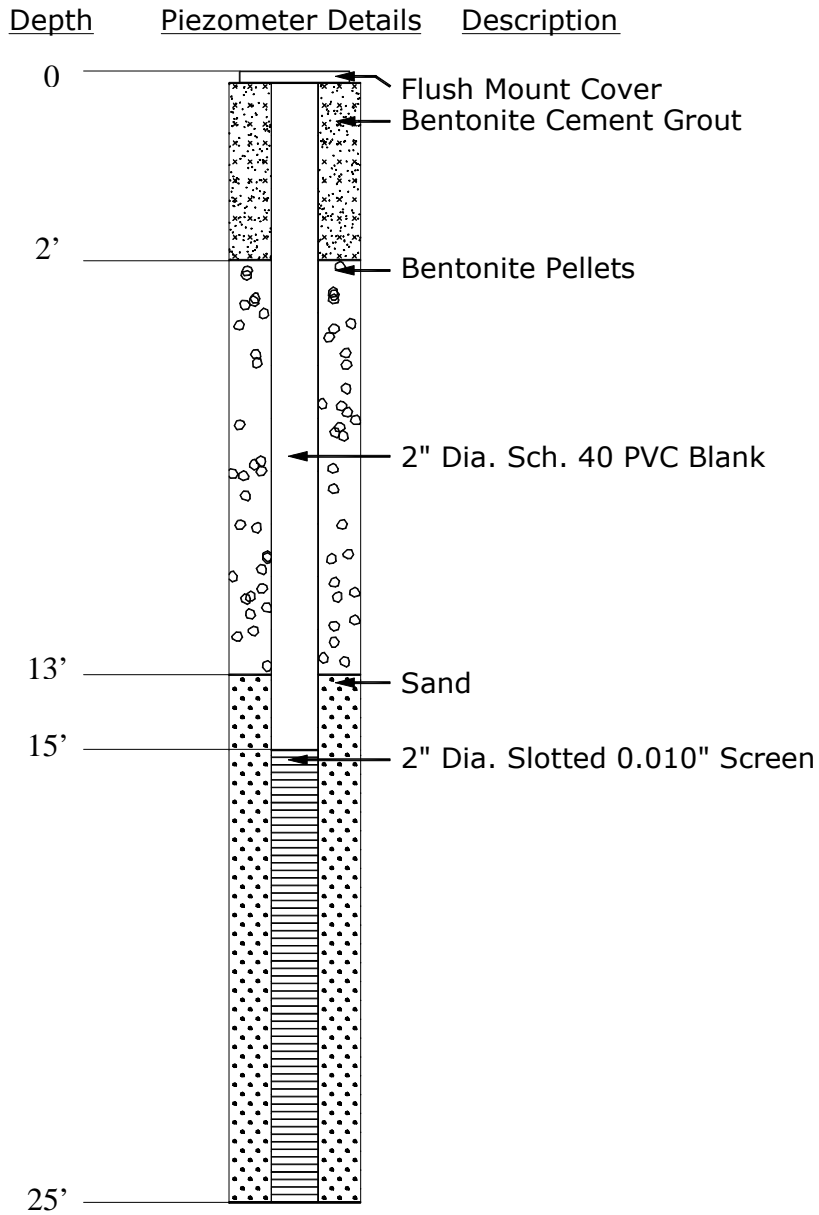
Top (ft.)	Bottom (ft.)	Description (number of sacks & material)
0	2	Cement 1 Bags/Sacks
2	25	Bentonite 1 Bags/Sacks

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Soltek LLC**
297 County Rd 2292
Cleveland, TX 77327

Driller Name: **Brian K Johnson** License Number: **59632**

Comments: **No Data**



Water Level Readings

Date	Depth (ft.)	Elev. (ft.)
02/1/19	11.6	N/A
3/5/19	11.5	N/A

NOTES:

- Piezometer was installed on 8/16/2018.
- See Plate 2 for boring location.



6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

PIEZOMETER INSTALLATION REPORT PIEZOMETER NO. DP-2 (PZ-4)

PROJECT NO.:
HG1810145

DRAWING NO.:
PLATE C-4

APPENDIX D

CRUMB TEST RESULTS



HVJ Associates, Inc.
CRUMB TEST (ASTM D6572)

Project No.: HG1810145 Project Name: Neuens Road Location.: Houston
 Boring No.: DP-1 Sample No.: 2 Depth: 2-4'

Visual Classification: light brown silty sandy clay Color: _____

Moisture Content of Sample:		<input checked="" type="checkbox"/> as-received	<input type="checkbox"/> in situ	<input type="checkbox"/> air-dried
Tare Number	Wet Mass + Tare (g)	Dry Mass + Tare (g)	Tare Mass (g)	Water Content (%)
J2	158.9	136.98	8.24	17

Specimen Identification:	1	Specimen Identification:	2	Specimen Identification:	3						
Spec Cont. Identification:	2	Spec Cont. Identification:	14	Spec Cont. Identification:	4						
Method:	X	Natural	Method:	X	Natural	Method:	X	Natural			
		Remolded			Remolded			Remolded			
Water Type:	X	Distilled	Water Type:	X	Distilled	Water Type:	X	Distilled			
		Type IV			Type IV			Type IV			
Initial Water Temp (°C):	22.2	Initial Water Temp (°C):	22.2	Initial Water Temp (°C):	22.2						
Start Time (hh:mm:ss):	6:00:00	Start Time (hh:mm:ss):	6:00:00	Start Time (hh:mm:ss):	6:00:00						
Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)
2 min ± 15 s	6:02	3	22.2	2 min ± 15 s	6:02	3	22.2	2 min ± 15 s	6:02	3	22.2
1h ± 8 min	7:00	3	22.2	1h ± 8 min	7:00	3	22.2	1h ± 8 min	7:00	3	22.2
6 h ± 45 min	11:30	3	22.2	6 h ± 45 min	11:30	3	22.2	6 h ± 45 min	11:30	3	22.2
Dispersive Classification	3			Dispersive Classification	3			Dispersive Classification	3		
Additional water added to remold the specimen (Method B):				Additional water added to remold the specimen (Method B):				Additional water added to remold the specimen (Method B):			

Remarks: Soil is dispersive (1=non-dispersive 2=barely dispersive 3=dispersive 4=very dispersive)

Prepared by: KC Tested By: KC Input by: KC Reviewed by: SW
 Date: 2/11/19 Date: 2/11/19 Date: 2/11/19 Date: 2/19/19



HVJ Associates, Inc.
CRUMB TEST (ASTM D6572)

Project No.: HG1810145 Project Name: Neuens Road Location.: Houston
 Boring No.: DP-1 Sample No.: 4 Depth: 6-8'

Visual Classification: light brown, light grey sandy clay Color: _____

Moisture Content of Sample:		<input checked="" type="checkbox"/> as-received	<input type="checkbox"/> in situ	<input type="checkbox"/> air-dried
Tare Number	Wet Mass + Tare (g)	Dry Mass + Tare (g)	Tare Mass (g)	Water Content (%)
J4	85.37	74.85	8.18	16

Specimen Identification:		1	Specimen Identification:		2	Specimen Identification:		3			
Spec Cont. Identification:		1	Spec Cont. Identification:		10	Spec Cont. Identification:		12			
Method:	<input checked="" type="checkbox"/> Natural	Method:	<input checked="" type="checkbox"/> Natural	Method:	<input checked="" type="checkbox"/> Natural						
	<input type="checkbox"/> Remolded		<input type="checkbox"/> Remolded		<input type="checkbox"/> Remolded						
Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled						
	<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV						
Initial Water Temp (°C):		22.2	Initial Water Temp (°C):		22.2	Initial Water Temp (°C):		22.2			
Start Time (hh:mm:ss):		6:00:00	Start Time (hh:mm:ss):		6:00:00	Start Time (hh:mm:ss):		6:00:00			
Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)
2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2
1h ± 8 min	7:00	1	22.2	1h ± 8 min	7:00	2	22.2	1h ± 8 min	7:00	2	22.2
6 h ± 45 min	11:30	1	22.2	6 h ± 45 min	11:30	1	22.2	6 h ± 45 min	11:30	4	22.2
Dispersive Classification		1	Dispersive Classification		1	Dispersive Classification		4			
Additional water added to remold the specimen (Method B):			Additional water added to remold the specimen (Method B):			Additional water added to remold the specimen (Method B):					

Remarks: Soil is very dispersive (1=non-dispersive 2=barely dispersive 3=dispersive 4=very dispersive)

Prepared by: KC Tested By: KC Input by: KC Reviewed by: SW
 Date: 2/11/19 Date: 2/11/19 Date: 2/11/19 Date: 2/19/19



HVJ Associates, Inc.
CRUMB TEST (ASTM D6572)

Project No.: HG1810145 Project Name: Neuens Road Location.: Houston
 Boring No.: DP-1 Sample No.: 7 Depth: 12-14'

Visual Classification: light brown, light grey sandy clay Color: _____

Moisture Content of Sample:		<input checked="" type="checkbox"/> as-received	<input type="checkbox"/> in situ	<input type="checkbox"/> air-dried
Tare Number	Wet Mass + Tare (g)	Dry Mass + Tare (g)	Tare Mass (g)	Water Content (%)
J6	121.11	105.95	8.16	16

Specimen Identification:	1	Specimen Identification:	2	Specimen Identification:	3						
Spec Cont. Identification:	13	Spec Cont. Identification:	4	Spec Cont. Identification:	8						
Method:	<input checked="" type="checkbox"/> Natural	Method:	<input checked="" type="checkbox"/> Natural	Method:	<input checked="" type="checkbox"/> Natural						
	<input type="checkbox"/> Remolded		<input type="checkbox"/> Remolded		<input type="checkbox"/> Remolded						
Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled						
	<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV						
Initial Water Temp (°C):	<u>22.2</u>	Initial Water Temp (°C):	<u>22.2</u>	Initial Water Temp (°C):	<u>22.2</u>						
Start Time (hh:mm:ss):	<u>6:00:00</u>	Start Time (hh:mm:ss):	<u>6:00:00</u>	Start Time (hh:mm:ss):	<u>6:00:00</u>						
Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)
2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2
1h ± 8 min	7:00	1	22.2	1h ± 8 min	7:00	2	22.2	1h ± 8 min	7:00	1	22.2
6 h ± 45 min	11:30	1	22.2	6 h ± 45 min	11:30	1	22.2	6 h ± 45 min	11:30	1	22.2
Dispersive Classification	1	Dispersive Classification	1	Dispersive Classification	1						
Additional water added to remold the specimen (Method B):		Additional water added to remold the specimen (Method B):		Additional water added to remold the specimen (Method B):							

Remarks: Soil is non-dispersive (1=non-dispersive 2=barely dispersive 3=dispersive 4=very dispersive)

Prepared by: KC
 Date: 2/11/19

Tested By: KC
 Date: 2/11/19

Input by: KC
 Date: 2/11/19

Reviewed by: SW
 Date: 2/19/19



HVJ Associates, Inc.
CRUMB TEST (ASTM D6572)

Project No.: HG1810145 Project Name: Neuens Road Location.: Houston
 Boring No.: DP-2 Sample No.: 1 Depth: 0-2'

Visual Classification: brown sandy clay / clayey sand Color: _____

Moisture Content of Sample:		<input checked="" type="checkbox"/> as-received	<input type="checkbox"/> in situ	<input type="checkbox"/> air-dried
Tare Number	Wet Mass + Tare (g)	Dry Mass + Tare (g)	Tare Mass (g)	Water Content (%)
Hi11	102.59	87.8	8.24	19

Specimen Identification:	1	Specimen Identification:	2	Specimen Identification:	3						
Spec Cont. Identification:	9	Spec Cont. Identification:	8	Spec Cont. Identification:	13						
Method:	<input checked="" type="checkbox"/> Natural	Method:	<input checked="" type="checkbox"/> Natural	Method:	<input checked="" type="checkbox"/> Natural						
	<input type="checkbox"/> Remolded		<input type="checkbox"/> Remolded		<input type="checkbox"/> Remolded						
Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled						
	<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV						
Initial Water Temp (°C):	<u>22.2</u>	Initial Water Temp (°C):	<u>22.2</u>	Initial Water Temp (°C):	<u>22.2</u>						
Start Time (hh:mm:ss):	<u>6:00:00</u>	Start Time (hh:mm:ss):	<u>6:00:00</u>	Start Time (hh:mm:ss):	<u>6:00:00</u>						
Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)
2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2
1h ± 8 min	7:00	1	22.2	1h ± 8 min	7:00	2	22.2	1h ± 8 min	7:00	1	22.2
6 h ± 45 min	11:15	1	22.2	6 h ± 45 min	11:15	1	22.2	6 h ± 45 min	11:15	1	22.2
Dispersive Classification	1	Dispersive Classification	1	Dispersive Classification	1						
Additional water added to remold the specimen (Method B):		Additional water added to remold the specimen (Method B):		Additional water added to remold the specimen (Method B):							

Remarks: Soil is non-dispersive (1=non-dispersive 2=barely dispersive 3=dispersive 4=very dispersive)

Prepared by: KC Tested By: KC Input by: KC Reviewed by: SW
 Date: 2/11/19 Date: 2/11/19 Date: 2/11/19 Date: 2/19/19



HVJ Associates, Inc.
CRUMB TEST (ASTM D6572)

Project No.: HG1810145 Project Name: Neuens Road Location.: Houston
 Boring No.: DP-2 Sample No.: 6 Depth: 10-12'

Visual Classification: light grey, light brown sandy clay Color: _____

Moisture Content of Sample:		<input checked="" type="checkbox"/> as-received	<input type="checkbox"/> in situ	<input type="checkbox"/> air-dried
Tare Number	Wet Mass + Tare (g)	Dry Mass + Tare (g)	Tare Mass (g)	Water Content (%)
56	156.6	138.37	30.02	17

Specimen Identification:	1	Specimen Identification:	2	Specimen Identification:	3						
Spec Cont. Identification:	4	Spec Cont. Identification:	13	Spec Cont. Identification:	2						
Method:	<input checked="" type="checkbox"/> Natural	Method:	<input checked="" type="checkbox"/> Natural	Method:	<input checked="" type="checkbox"/> Natural						
	<input type="checkbox"/> Remolded		<input type="checkbox"/> Remolded		<input type="checkbox"/> Remolded						
Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled						
	<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV						
Initial Water Temp (°C):	<u>22.2</u>	Initial Water Temp (°C):	<u>22.2</u>	Initial Water Temp (°C):	<u>22.2</u>						
Start Time (hh:mm:ss):	<u>6:00:00</u>	Start Time (hh:mm:ss):	<u>6:00:00</u>	Start Time (hh:mm:ss):	<u>6:00:00</u>						
Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)
2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2
1h ± 8 min	7:00	1	22.2	1h ± 8 min	7:00	2	22.2	1h ± 8 min	7:00	1	22.2
6 h ± 45 min	11:30	1	22.2	6 h ± 45 min	11:30	1	22.2	6 h ± 45 min	11:30	1	22.2
Dispersive Classification	1			Dispersive Classification	1			Dispersive Classification	1		
Additional water added to remold the specimen (Method B):				Additional water added to remold the specimen (Method B):				Additional water added to remold the specimen (Method B):			

Remarks: Soil is non-dispersive (1=non-dispersive 2=barely dispersive 3=dispersive 4=very dispersive)

Prepared by: KC Tested By: KC Input by: KC Reviewed by: SW
 Date: 2/11/19 Date: 2/11/19 Date: 2/11/19 Date: 2/19/19



HVJ Associates, Inc.
CRUMB TEST (ASTM D6572)

Project No.: HG1810145 Project Name: Neuens Road Location.: Houston
 Boring No.: DP-3 Sample No.: 2 Depth: 2-4'

Visual Classification: light grey sandy clay with calcareous deposits Color: _____

Moisture Content of Sample:		<input checked="" type="checkbox"/> as-received	<input type="checkbox"/> in situ	<input type="checkbox"/> air-dried
Tare Number	Wet Mass + Tare (g)	Dry Mass + Tare (g)	Tare Mass (g)	Water Content (%)
AB	145.5	129.16	8.92	14

Specimen Identification:	1	Specimen Identification:	2	Specimen Identification:	3						
Spec Cont. Identification:	14	Spec Cont. Identification:	2	Spec Cont. Identification:	4						
Method:	<input type="checkbox"/> Natural	Method:	<input type="checkbox"/> Natural	Method:	<input type="checkbox"/> Natural						
	<input checked="" type="checkbox"/> Remolded		<input checked="" type="checkbox"/> Remolded		<input checked="" type="checkbox"/> Remolded						
Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled	Water Type:	<input checked="" type="checkbox"/> Distilled						
	<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV		<input type="checkbox"/> Type IV						
Initial Water Temp (°C):	<u>22.2</u>	Initial Water Temp (°C):	<u>22.2</u>	Initial Water Temp (°C):	<u>22.2</u>						
Start Time (hh:mm:ss):	<u>6:00:00</u>	Start Time (hh:mm:ss):	<u>6:00:00</u>	Start Time (hh:mm:ss):	<u>6:00:00</u>						
Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)
2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2
1h ± 8 min	7:00	1	22.2	1h ± 8 min	7:00	2	22.2	1h ± 8 min	7:00	1	22.2
6 h ± 45 min	11:15	1	22.2	6 h ± 45 min	11:15	1	22.2	6 h ± 45 min	11:15	1	22.2
Dispersive Classification	1	Dispersive Classification	1	Dispersive Classification	1						
Additional water added to remold the specimen (Method B):		Additional water added to remold the specimen (Method B):		Additional water added to remold the specimen (Method B):							

Remarks: Soil is non-dispersive (1=non-dispersive 2=barely dispersive 3=dispersive 4=very dispersive)

Prepared by: KC Tested By: KC Input by: KC Reviewed by: SW
 Date: 2/11/19 Date: 2/11/19 Date: 2/11/19 Date: 2/19/19



HVJ Associates, Inc.
CRUMB TEST (ASTM D6572)

Project No.: HG1810145 Project Name: Neuens Road Location.: Houston
 Boring No.: DP-3 Sample No.: 5 Depth: 8-10'

Visual Classification: light brown sandy clay with ferrous inclusions Color: _____

Moisture Content of Sample:		<input checked="" type="checkbox"/> as-received	<input type="checkbox"/> in situ	<input type="checkbox"/> air-dried
Tare Number	Wet Mass + Tare (g)	Dry Mass + Tare (g)	Tare Mass (g)	Water Content (%)
AD	101.66	89.5	9.06	15

Specimen Identification:				1	Specimen Identification:				2	Specimen Identification:				3
Spec Cont. Identification:				8	Spec Cont. Identification:				9	Spec Cont. Identification:				13
Method:		<input checked="" type="checkbox"/>	Natural	Method:		<input checked="" type="checkbox"/>	Natural	Method:		<input checked="" type="checkbox"/>	Natural			
			Remolded				Remolded				Remolded			
Water Type:		<input checked="" type="checkbox"/>	Distilled	Water Type:		<input checked="" type="checkbox"/>	Distilled	Water Type:		<input checked="" type="checkbox"/>	Distilled			
			Type IV				Type IV				Type IV			
Initial Water Temp (°C):				22.2	Initial Water Temp (°C):				22.2	Initial Water Temp (°C):				22.2
Start Time (hh:mm:ss):				6:00:00	Start Time (hh:mm:ss):				6:00:00	Start Time (hh:mm:ss):				6:00:00
Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)			
2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2			
1h ± 8 min	7:00	1	22.2	1h ± 8 min	7:00	1	22.2	1h ± 8 min	7:00	1	22.2			
6 h ± 45 min	11:30	1	22.2	6 h ± 45 min	11:30	1	22.2	6 h ± 45 min	11:30	1	22.2			
Dispersive Classification				1	Dispersive Classification				1	Dispersive Classification				1
Additional water added to remold the specimen (Method B):				Additional water added to remold the specimen (Method B):				Additional water added to remold the specimen (Method B):						

Remarks: Soil is non-dispersive (1=non-dispersive 2=barely dispersive 3=dispersive 4=very dispersive)

Prepared by: KC Tested By: KC Input by: KC Reviewed by: SW
 Date: 2/11/19 Date: 2/11/19 Date: 2/11/19 Date: 2/19/19



HVJ Associates, Inc.
CRUMB TEST (ASTM D6572)

Project No.: HG1810145 Project Name: Neuens Road Location.: Houston
 Boring No.: DP-3 Sample No.: 8 Depth: 14-16'

Visual Classification: light greyish brown sandy clay Color: _____

Moisture Content of Sample:		<input checked="" type="checkbox"/> as-received	<input type="checkbox"/> in situ	<input type="checkbox"/> air-dried
Tare Number	Wet Mass + Tare (g)	Dry Mass + Tare (g)	Tare Mass (g)	Water Content (%)
B80	87.98	77.94	9.12	15

Specimen Identification:	1			Specimen Identification:	2			Specimen Identification:	3		
Spec Cont. Identification:	13			Spec Cont. Identification:	8			Spec Cont. Identification:	9		
Method:	<input checked="" type="checkbox"/> Natural	<input type="checkbox"/> Remolded	Method:	<input checked="" type="checkbox"/> Natural	<input type="checkbox"/> Remolded	Method:	<input checked="" type="checkbox"/> Natural	<input type="checkbox"/> Remolded	Method:	<input checked="" type="checkbox"/> Natural	<input type="checkbox"/> Remolded
	<input checked="" type="checkbox"/> Distilled	<input type="checkbox"/> Type IV		<input checked="" type="checkbox"/> Distilled	<input type="checkbox"/> Type IV		<input checked="" type="checkbox"/> Distilled	<input type="checkbox"/> Type IV			
Water Type:	<input checked="" type="checkbox"/> Distilled	<input type="checkbox"/> Type IV	Water Type:	<input checked="" type="checkbox"/> Distilled	<input type="checkbox"/> Type IV	Water Type:	<input checked="" type="checkbox"/> Distilled	<input type="checkbox"/> Type IV			
Initial Water Temp (°C):	<u>22.2</u>			Initial Water Temp (°C):	<u>22.2</u>			Initial Water Temp (°C):	<u>22.2</u>		
Start Time (hh:mm:ss):	<u>6:00:00</u>			Start Time (hh:mm:ss):	<u>6:00:00</u>			Start Time (hh:mm:ss):	<u>6:00:00</u>		
Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)	Target Reading	Time Taken	Grade	Temp. (°C)
2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2	2 min ± 15 s	6:02	1	22.2
1h ± 8 min	7:00	1	22.2	1h ± 8 min	7:00	2	22.2	1h ± 8 min	7:00	1	22.2
6 h ± 45 min	11:30	1	22.2	6 h ± 45 min	11:30	2	22.2	6 h ± 45 min	11:30	1	22.2
Dispersive Classification	1			Dispersive Classification	2			Dispersive Classification	1		
Additional water added to remold the specimen (Method B):				Additional water added to remold the specimen (Method B):				Additional water added to remold the specimen (Method B):			

Remarks: Soil is non-dispersive (1=non-dispersive 2=barely dispersive 3=dispersive 4=very dispersive)

Prepared by: KC
Date: 2/11/19

Tested By: KC
Date: 2/11/19

Input by: KC
Date: 2/11/19

Reviewed by: SW
Date: 2/19/19

APPENDIX E

DOUBLE HYDROMETER TEST RESULTS



HYDROMETER ANALYSIS

Project Name: Neuens Road Boring No. DP-1
 Project No. HG1810145 Sample No. 2
 Date Tested: 3/6/2019 Sample Depth 2-4'
 Technician: KC Calc. _____ Checked by: _____

Hydrometer No.	382
Tare No.	705
Wet Soil + Tare	68.11
Dry Soil + Tare	68.08
Tare	30.04
Hydroscopic Corr. Factor	0.999
Correction Factor	1
Mass for Sieve	50.6

Air Dry Mass of Soil	50.6
Corr. Mass of Soil	50.56
Mass Ret. on #10	0
% Passing No. 10 Sieve	100.00
Dry Mass after Wash. & Sieve	14.42
% Passing No. 200 Sieve	71.50
Amt of NA metaphosphate (g)	5
Specific Gravity	2.7

Date	Time	Elapsed Time (min)	Hydro. Rdg.	Temp	Comp. Corr.	Corr. Hydro. Rdg.	K	L	D	% Finer N	% Finer Total Sample
03/06	07:20:00	5	29	22.2	5	24	0.0131	11.5	0.020	47.47	47.47
03/06	07:30:00	15	26	22.2	5	21	0.0131	12.0	0.012	41.53	41.53
03/06	07:45:00	30	23	22.2	5	18	0.0131	12.5	0.008	35.60	35.60
03/06	08:15:00	60	22	22.2	5	17	0.0131	12.7	0.006	33.62	33.62
03/06	09:15:00	120	21	22.2	5	16	0.0131	12.9	0.004	31.65	31.65

% passing 5 micron, ASTM D-422: 32.64%



HYDROMETER ANALYSIS

Project Name: Neuens Road Boring No. DP-1
 Project No. HG1810145 Sample No. 2
 Date Tested: 3/6/2019 Sample Depth 2-4'
 Technician: KC Calc. _____ Checked by: _____

Hydrometer No.	383
Tare No.	705
Wet Soil + Tare	133.8
Dry Soil + Tare	119.17
Tare	30.04
Hydroscopic Corr. Factor	0.859
Correction Factor	1
Mass for Sieve	29.1

Air Dry Mass of Soil	29.1
Corr. Mass of Soil	25.00
Mass Ret. on #10	0
% Passing No. 10 Sieve	100.00
Dry Mass after Wash. & Sieve	8.29
% Passing No. 200 Sieve	71.51
Amt of NA metaphosphate (g)	0
Specific Gravity	2.7

Date	Time	Elapsed Time (min)	Hydro. Rdg.	Temp	Comp. Corr.	Corr. Hydro. Rdg.	K	L	D	% Finer N	% Finer Total Sample
03/06	07:20:00	5	3	22.2	0	3	0.0131	15.8	0.023	12.00	12.00
03/06	07:30:00	15	2	22.2	0	2	0.0131	16.0	0.014	8.00	8.00
03/06	07:45:00	30	1	22.2	0	1	0.0131	16.1	0.010	4.00	4.00
03/06	08:15:00	60	1	22.2	0	1	0.0131	16.1	0.007	4.00	4.00
03/06	09:15:00	120	0	22.2	0	0	0.0131	16.3	0.005	0.00	0.00

% passing 5 micron, ASTM D-4221: 0%
 % dispersion: 0 % (Test Result: Non-Dispersive)



HYDROMETER ANALYSIS

Project Name:	Neuens Road	Boring No.	DP-1
Project No.	HG1810145	Sample No.	4A
Date Tested:	3/1/2019	Sample Depth	6-7'
Technician:	KC	Calc.	Checked by: _____

Hydrometer No.	384
Tare No.	133
Wet Soil + Tare	73.88
Dry Soil + Tare	73.66
Tare	36.14
Hydroscopic Corr. Factor	0.994
Correction Factor	1
Mass for Sieve	50.76

Air Dry Mass of Soil	50.76
Corr. Mass of Soil	50.46
Mass Ret. on #10	0
% Passing No. 10 Sieve	100.00
Dry Mass after Wash. & Sieve	11.01
% Passing No. 200 Sieve	78.31
Amt of NA metaphosphate (g)	5
Specific Gravity	2.7

Date	Time	Elapsed Time (min)	Hydro. Rdg.	Temp	Comp. Corr.	Corr. Hydro. Rdg.	K	L	D	% Finer N	% Finer Total Sample
03/01	07:35:00	5	33	22.2	5	28	0.0131	10.9	0.019	55.48	55.48
03/01	07:45:00	15	31	22.2	5	26	0.0131	11.2	0.011	51.52	51.52
03/01	08:00:00	30	27	22.2	5	22	0.0131	11.9	0.008	43.60	43.60
03/01	08:30:00	60	25	22.2	5	20	0.0131	12.2	0.006	39.63	39.63
03/01	09:30:00	120	21	22.2	5	16	0.0131	12.9	0.004	31.71	31.71

% passing 5 micron, ASTM D-422: 35.67%



HYDROMETER ANALYSIS

Project Name: Neuens Road Boring No. DP-3
 Project No. HG1810145 Sample No. 8
 Date Tested: 3/1/2019 Sample Depth 14-16'
 Technician: KC Calc. _____ Checked by: _____

Hydrometer No.	382
Tare No.	705
Wet Soil + Tare	91.59
Dry Soil + Tare	91.36
Tare	36.25
Hydroscopic Corr. Factor	0.996
Correction Factor	1
Mass for Sieve	50.34

Air Dry Mass of Soil	50.34
Corr. Mass of Soil	50.13
Mass Ret. on #10	0
% Passing No. 10 Sieve	100.00
Dry Mass after Wash. & Sieve	29.6
% Passing No. 200 Sieve	41.20
Amt of NA metaphosphate (g)	5
Specific Gravity	2.7

Date	Time	Elapsed Time (min)	Hydro. Rdg.	Temp.	Comp. Corr.	Corr. Hydro. Rdg.	K	L	D	% Finer N	% Finer Total Sample
03/01	07:35:00	5	29	22.2	5	24	0.0131	11.5	0.020	47.87	47.87
03/01	07:45:00	15	21	22.2	5	16	0.0131	12.9	0.012	31.92	31.92
03/01	08:00:00	30	20	22.2	5	15	0.0131	13.0	0.009	29.92	29.92
03/01	08:30:00	60	20	22.2	5	15	0.0131	13.0	0.006	29.92	29.92
03/01	09:30:00	120	19	22.2	5	14	0.0131	13.2	0.004	27.93	27.93

% passing 5 micron, ASTM D-422: 28.93%



HYDROMETER ANALYSIS

Project Name:	Neuens Road	Boring No.	DP-3
Project No.	HG1810145	Sample No.	8
Date Tested:	3/1/2019	Sample Depth	14-16'
Technician:	KC	Calc.	Checked by: _____

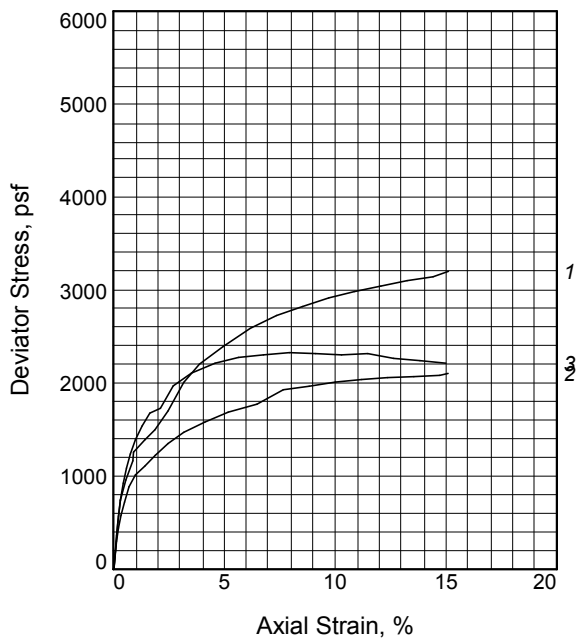
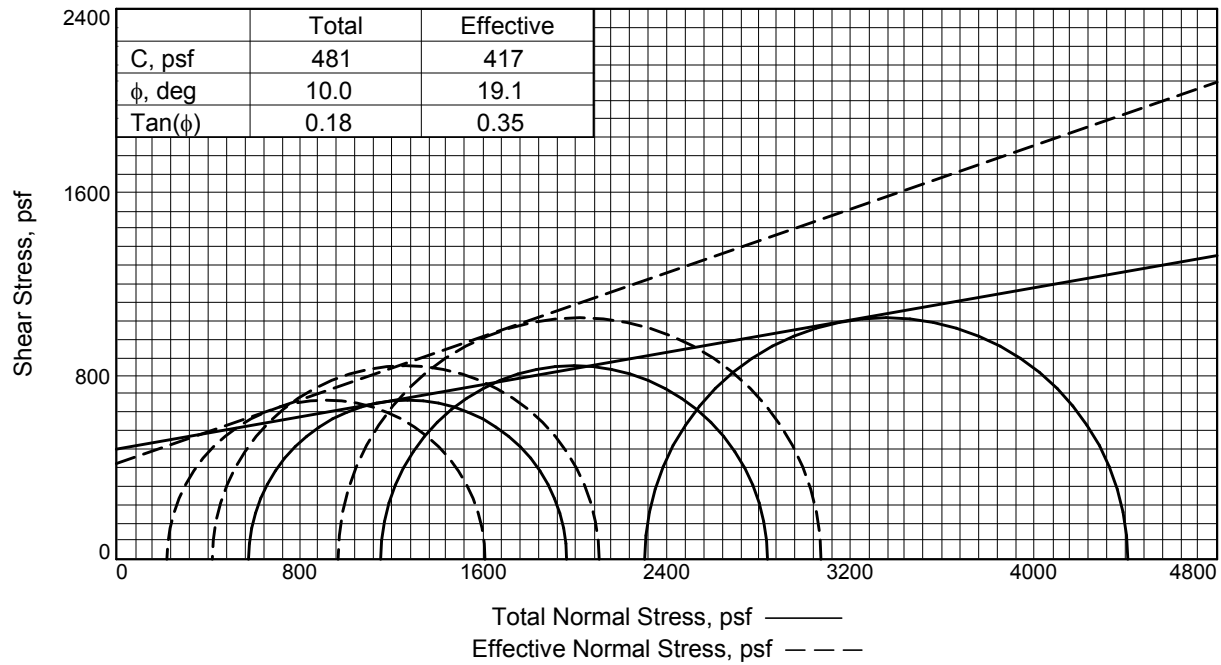
Hydrometer No.	383
Tare No.	705
Wet Soil + Tare	157.18
Dry Soil + Tare	141.69
Tare	36.25
Hydroscopic Corr. Factor	0.872
Correction Factor	1
Mass for Sieve	28.68

Air Dry Mass of Soil	28.68
Corr. Mass of Soil	25.01
Mass Ret. on #10	0
% Passing No. 10 Sieve	100.00
Dry Mass after Wash. & Sieve	16.86
% Passing No. 200 Sieve	41.21
Amt of NA metaphosphate (g)	0
Specific Gravity	2.7

Date	Time	Elapsed Time (min)	Hydro. Rdg.	Temp	Comp. Corr.	Corr. Hydro. Rdg.	K	L	D	% Finer N	% Finer Total Sample
03/01	07:35:00	5	2	22.2	0	2	0.0131	16.0	0.023	8.00	8.00
03/01	07:45:00	15	1	22.2	0	1	0.0131	16.1	0.014	4.00	4.00
03/01	08:00:00	30	0	22.2	0	0	0.0131	16.3	0.010	0.00	0.00
03/01	08:30:00	60	0	22.2	0	0	0.0131	16.3	0.007	0.00	0.00
03/01	09:30:00	120	0	22.2	0	0	0.0131	16.3	0.005	0.00	0.00

% passing 5 micron, ASTM D-4221: 0%
 % dispersion: 0 % (Test Result: Non-Dispersive)

APPENDIX F
CONSOLIDATED UNDRAINED TRIAXIAL TEST
RESULTS



Sample No.	1	2	3	
Initial	Water Content, %	15.5	18.3	18.2
	Dry Density, pcf	118.4	112.3	112.5
	Saturation, %	98.9	98.8	98.5
	Void Ratio	0.4235	0.5005	0.4986
	Diameter, in.	2.825	2.830	2.820
	Height, in.	5.812	5.700	5.892
At Test	Water Content, %	16.9	19.5	19.4
	Dry Density, pcf	115.8	110.5	110.5
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.4557	0.5259	0.5250
	Diameter, in.	3.099	3.097	3.085
	Height, in.	4.940	4.840	5.010
Strain rate, %/min.	0.01	0.01	0.01	
Back Pressure, psi	18.00	18.00	18.00	
Cell Pressure, psi	22.00	26.00	34.00	
Fail. Stress, psf	1387	1688	2106	
Total Pore Pr., psf	2948	3326	3930	
Ult. Stress, psf	1387	1688	2106	
Total Pore Pr., psf	2948	3326	3930	
$\bar{\sigma}_1$ Failure, psf	1608	2105	3073	
$\bar{\sigma}_3$ Failure, psf	220	418	966	

Type of Test:

CU with Pore Pressures

Sample Type: 3 Undisturbed samples

Description: Lean Clay w/ Sand

-200=78.0%

LL= 33

PL= 14

PI= 19

Assumed Specific Gravity= 2.7

Remarks: Tested by: MC

Date: 3/08/19

Checked by: JH

Date: 3/11/19

Client: HVJ Associates, Inc.

Project: Laboratory Testing, HVJ Job No. HG1810145

Sample Number: DP-1(1-3)

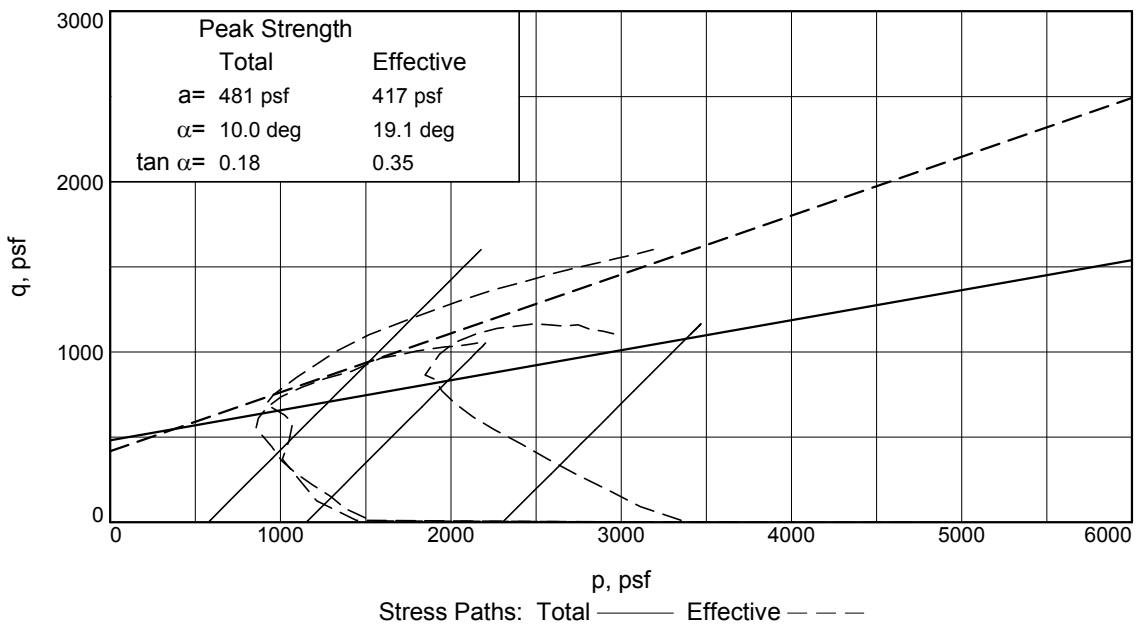
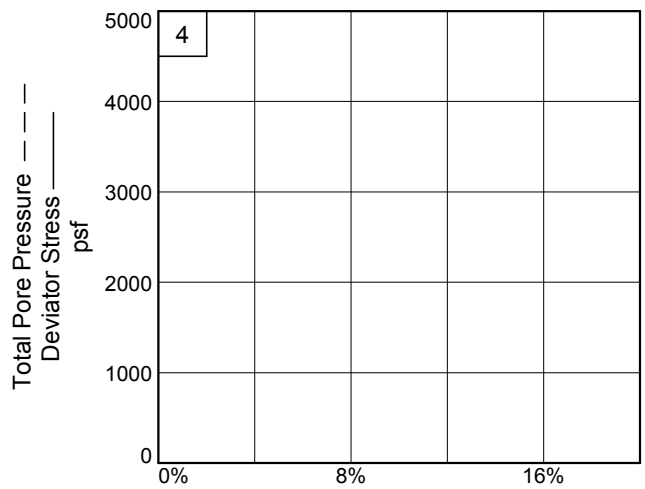
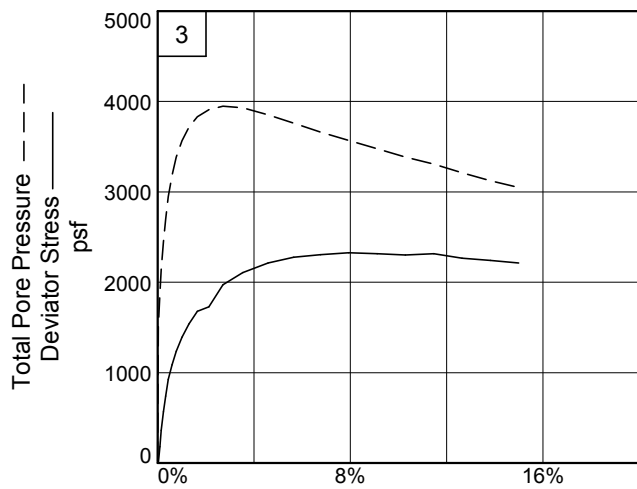
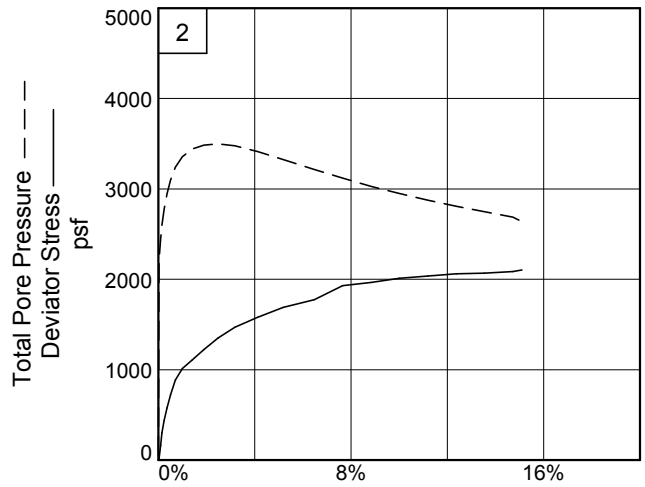
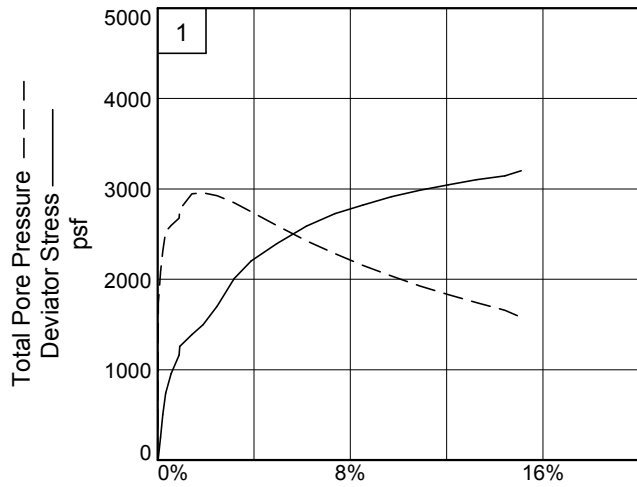
Depth: 6'-10'

Proj. No.: 19-S-143

Date Sampled:



Figure 1



Client: HVJ Associates, Inc.

Project: Laboratory Testing, HVJ Job No. HG1810145

Depth: 6'-10' **Sample Number:** DP-1(1-3)

Project No.: 19-S-143

Figure _____

HTS, Inc.

APPENDIX G
PROCTOR AND CBR TEST RESULTS

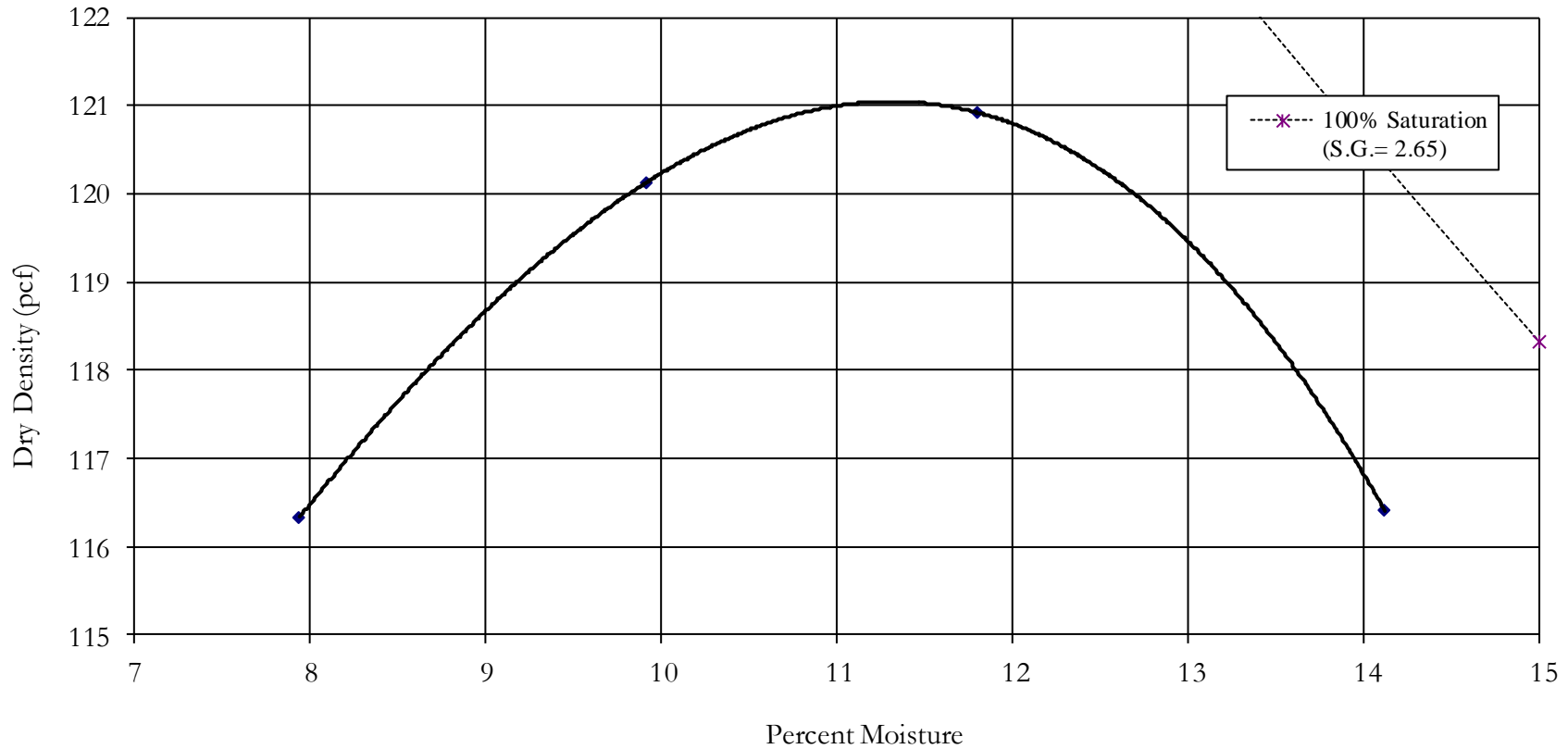
METHOD OF TEST



STANDARD ASTM D-698



MODIFIED ASTM D-1557



DATE TESTED: 9/27/18
TYPE OF MATERIAL : Brown Sandy Silty Clay with Shells
MAXIMUM DRY DENSITY : 121.0 pcf
OPT. MOISTURE CONTENT : 11.3 %

LIQUID LIMIT : 19
PLASTICITY INDEX : 4
-200 SIEVE % : 57.9



6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

DATE: 10/03/2018

APPROVED BY:
RS

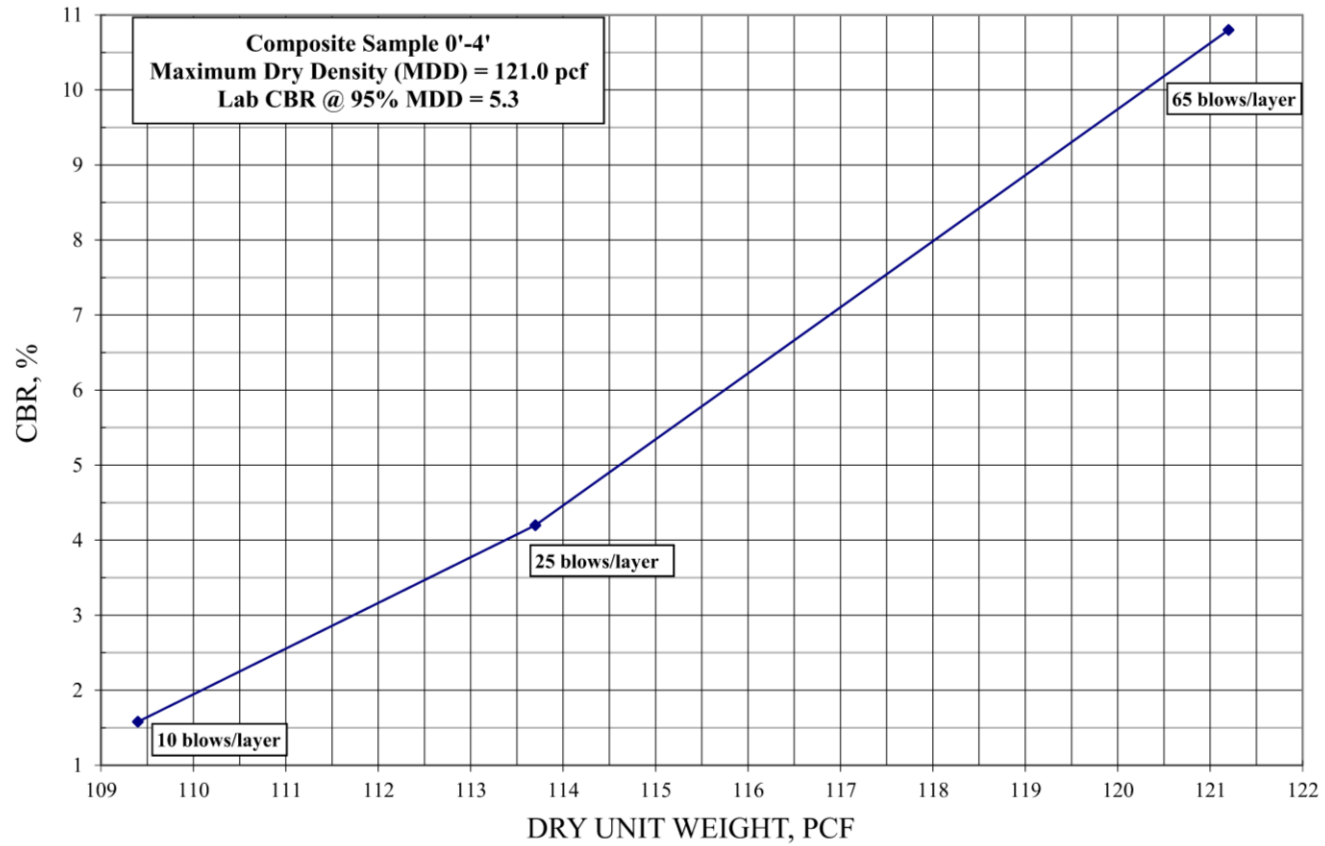
PREPARED BY:
PD

PROCTOR TEST RESULTS
NEUENS ROAD FROM GESSNER ROAD TO BLALOCK
ROAD

PROJECT NO.:
HG1810145

DRAWING NO.:
PLATE G-1

CALIFORNIA BEARING RATIO TEST RESULT



6120 S. Dairy Ashford Road
 Houston, Texas 77072-1010
 281.933.7388 Ph
 281.933.7293 Fax

DATE: 10/03/2018

APPROVED BY:
RS

PREPARED BY:
PD

CBR TEST RESULTS
 NEUENS ROAD FROM GESSNER ROAD TO BLALOCK
 ROAD

PROJECT NO.:
HG1810145

DRAWING NO.:
PLATE G-2

**CBR (CALIFORNIA BEARING RATIO) OF
LABORATORY COMPACTED SOILS
ASTM D-1883**

Project: Neuens Road from Gessner Road to Blalock Road

Sample Location: Composite Sample, 0-4 feet

Liquid Limit: 19 **Plastic Limit:** 14 **Plasticity Index:** 4

Method of Compaction: ASTM D698
 ASTM D1557

Sample Condition: soaked unsoaked

No. of Blows: **10** **25** **65**

Dry Density Before Soaking (pcf): 109.4 113.7 121.2

Dry Density After Soaking (pcf): 104.9 110.4 119.3

Moisture Content:

Before Compaction (%): 11.3 11.2 11.3


Top 1-inch Layer

After Soaking (%): 21.7 18.1 14.4

Swell (%): 1.2 0.9 0.4

Bearing Ratio (%): 1.58 4.20 10.80
(soaked unsoaked)

Surcharge: 10 lbs.

	6120 S. Dairy Ashford Road Houston, Texas 77072-1010 281.933.7388 Ph 281.933.7293 Fax	
	DATE: 10/03/2018	APPROVED BY: RS
CBR SUMMARY TABLE NEUENS ROAD FROM GESSNER ROAD TO BLALOCK ROAD		
PROJECT NO.: HG1810145	DRAWING NO.: PLATE G-3	

APPENDIX H

DARWIN PAVEMENT DESIGN OUTPUT

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare
Computer Software Product

Rigid Structural Design Module

Neuens Road
HG1810145
JRCF over Stabilized Subgrade - 30 years

Rigid Structural Design

Pavement Type	JPCP
18-kip ESALs Over Initial Performance Period	802,313
Initial Serviceability	4.5
Terminal Serviceability	2.25
28-day Mean PCC Modulus of Rupture	630 psi
28-day Mean Elastic Modulus of Slab	3,600,000 psi
Mean Effective k-value	132 psi/in
Reliability Level	95 %
Overall Standard Deviation	0.35
Load Transfer Coefficient, J	3.2
Overall Drainage Coefficient, Cd	1.2
Calculated Design Thickness	6.18 in

Effective Modulus of Subgrade Reaction

<u>Period</u>	<u>Description</u>	<u>Roadbed Soil Resilient Modulus (psi)</u>	<u>Base Elastic Modulus (psi)</u>
1	-	7,950	20,000
Base Type	Stabilized Subgrade		
Base Thickness	8 in		
Depth to Bedrock	100 ft		
Projected Slab Thickness	6 in		
Loss of Support Category	1		
Effective Modulus of Subgrade Reaction		132 psi/in	

Simple ESAL Calculation

Performance Period (years)	30
Two-Way Traffic (ADT)	4,000
Number of Lanes in Design Direction	1
Percent of All Trucks in Design Lane	100 %
Percent Trucks in Design Direction	50 %
Percent Heavy Trucks (of ADT) FHWA Class 5 or Greater	4.3 %
Average Initial Truck Factor (ESALs/truck)	0.66
Annual Truck Factor Growth Rate	0 %

Annual Truck Volume Growth Rate
Growth

2 %
Simple

Total Calculated Cumulative ESALs

802,313

APPENDIX I

PHASE I GEOLOGIC FAULT ASSESSMENT

PHASE I GEOLOGIC FAULT ASSESSMENT
NEUENS ROAD FROM GESSNER ROAD TO BLALOCK ROAD
HOUSTON, HARRIS COUNTY, TEXAS

SUBMITTED TO
CIVILTECH ENGINEERING, INC.
11821 TELGE ROAD
HOUSTON, TEXAS 77429

BY
HVJ ASSOCIATES, INC.
HOUSTON, TEXAS
August 31, 2018

REPORT NO. HG1810145 - FAULT
KEY MAP GRIDS: 450 S & T





Houston | 6120 S. Dairy Ashford Rd.
Austin | Houston, TX 77072-1010
Dallas | 281.933.7388 Ph
San Antonio | 281.933.7293 Fax
www.hvj.com

August 31, 2018

Mr. Paul M. Baxter, PE
Senior Project Manager
CivilTech Engineering, Inc.
11821 Telge Road
Cypress, Texas 77429

Re: Phase I Geologic Fault Assessment
Neuens Road from Gessner Road to Blalock Road
Harris County, Texas
Owner: Harris County Precinct 4
HVJ Project No. HG1810145-Fault

Dear Mr. Baxter:

Presented herein is our Phase I Geologic Fault Assessment report for the above captioned project. The study was performed in general accordance with our proposal number HG1810145.

This report presents HVJ Associates' understanding of the project's scope, the methodology we employed in executing the work, and the conclusions we reached subject to the limitations discussed in Section 8 of this report.

It has been a pleasure to work with you on this project, and we appreciate the opportunity to be of service. Please notify us if there are questions or comments or if we may be of further assistance.

Sincerely,

HVJ ASSOCIATES, INC.

Texas Firm Registration No. F-000646

A handwritten signature in black ink, appearing to read 'Edward F. Hawkinson'.

Edward F. Hawkinson, MS, MBA, PG
Project Manager

EH/MH/NL

Copies Submitted: 2 final & 1 electronic

The following lists the pages which complete this report:

- Main Text - 15 pages
- Plates - 7 pages
- Appendix A - 4 pages
- Appendix B - 16 pages
- Appendix C - 8 pages

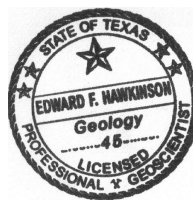


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APPENDIX

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EXECUTIVE SUMMARY

HVJ Associates, Inc. has completed a Phase I Geologic Fault Assessment for the “Neuens Road from Gessner Road to Blalock Road” in Houston, Harris County, Texas. We understand that the existing section for the roadway is two-lane asphalt with open ditches and the proposed section will be two-lane concrete with storm sewers and culverts. The length of the proposed improvements is approximately 1.2 miles. The project includes pavement reconstruction, and construction of storm sewers/culverts. We understand that the invert depth of the storm sewers and culverts will vary with an approximate maximum depth of 15 feet below the existing grade. This assessment was conducted in accordance with guidelines for Geologic Fault Studies contained in the March 1985 Houston Geological Society (HGS) Bulletin.

Our services included a review of the results of previous fault studies, performed by HVJ Associates and others in adjacent areas (relevant information from those studies was considered for this study), a review of the available geological records, a review of recent and historic topographic maps for the Subject Project Alignment, a site reconnaissance to determine approximate location of fault(s) and whether they are present at the surface and an examination of aerial photographs of the area taken under various conditions and in several different years, including some taken prior to substantial disturbance or covering the natural ground surface.

The Subject Project Alignment is located in a mixed use commercial and residential area. Access to the Project Alignment was not limited. The available information for this project and the on-site reconnaissance conducted during August 2018 are summarized below:

- The Subject Project Alignment appears to be in an area near and within Houston with documented fault systems. We reviewed the entire Subject Project Alignment and adjoining areas in depth and found that the Subject Project Alignment is not crossed by any geologic faulting. The northeast to southwest trending down to the southeast Long Point Fault is located approximately 1.0 mi. south of the Subject Project Alignment.
- Analysis of vertical aerial photographs revealed no areas with linear tonal features near the Subject Project Alignment that may be indicative of faulting. Development in the Subject Project Alignment makes resolution of these features difficult on some of the photos reviewed for this assessment.
- Examination of current and historical topographic maps revealed one topographic feature that may be indicative of faulting near the Subject Project Alignment. A narrowing of topographic map contours southeast of the Subject Project Alignment which may be related to scarp development associated with the Long Point Fault was noted on the 1915 and 1918 Hillendahl topographic maps. No other obvious topographic features and/or stream and drainage patterns that may be related to faulting were noted on any of the maps reviewed for this assessment.
- A segment of the hill shaded 15 ft. bare earth LiDAR derived digital elevation model of the area of Harris County shows the Long Point Fault is south of the Subject Project Alignment area. Based on our evaluation of this LiDAR imagery, it appears that the Long Point Fault trace from this data is consistent with previously mapped Long Point Fault using other data and does not extend into the Subject Project Alignment area.
- A Geomap top Yegua subsurface regional structure map at a one inch equals 4,000 ft. scale of the Subject Project Alignment area subsurface shows the Long Point Fault at a subsea depth of approximately 6,900 ft. with approximately 400 ft. of throw (fault throw is the vertical component of the separation along the fault plane). This fault projects to the surface

south of the Subject Project Alignment area. No faults are shown on the Geomap structure map which could potentially impact the Subject Project Alignment area.

- No cracked paving indicative of faulting or obvious building damage indicating recent fault movement was observed during the field reconnaissance.

Based on the information obtained in this assessment, we conclude the potential for active surface faulting to impact the proposed Subject Project Alignment is low. The Long Point Fault which is located approximately 1.0 mi. south of the Subject Project Alignment area was observed in the field and is documented in the geologic literature. No other possible geologic faults were observed near the Subject Project Alignment during the field reconnaissance. Because the location of faulting near (but not within or crossing) the Subject Project Alignment area is documented in the geologic literature, on topographic maps, on aerial photographs and by field reconnaissance, we recommend no additional geologic fault assessment of the Subject Project Alignment area.

Planned construction is unlikely to be impacted by either vertical or horizontal fault movement in the future. We conclude that no geologic fault hazard zone(s) are appropriate for the Subject Project Alignment area. Based on available information, we recommend no fault protective measures or design approaches be implemented for the Subject Project Alignment area.

Faults are not always associated with lineaments. Thus in the absence of definitely recognizable fault scarps or fault-related damage, they may not be identifiable by visual inspection alone. Additionally, vegetative cover and uneven topography can obscure the presence of a fault, especially if it is slow moving or currently inactive. Predicting future fault activity cannot be done with certainty due to the number of variables involved. Dormant or very slow moving faults can be, respectively, reactivated or accelerated due to a number of reasons, including groundwater withdrawals and petroleum production.

This executive summary does not fully summarize our findings and opinions. Those findings and opinions are related through the full report only.

1. INTRODUCTION

1.1 Project Objective

HVJ Associates, Inc. was contracted by CivilTech Engineering, Inc. to perform a Phase I Geologic Fault Assessment along Neuens Road from Gessner Road to Blalock Road in west Houston, Harris County, Texas. We understand that the existing section for the roadway is two-lane asphalt with open ditches and the proposed section will be two-lane concrete with storm sewers and culverts. The length of the proposed improvements is approximately 1.2 miles. The project includes pavement reconstruction, and construction of storm sewers/culverts. We understand that the invert depth of the storm sewers and culverts will vary with an approximate maximum depth of 15 feet below the existing grade. The objective of this study was to identify active faulting in the study area based on available data and a site reconnaissance and to determine if faulting hazards exist that could affect the planned development.

1.2 Project Scope

The scope of services for this study was performed in general accordance with fault study procedures recommended by the Houston Geological Society. The following tasks were performed:

1. A review of the results of previous fault studies performed by HVJ Associates and others in adjacent areas was conducted and relevant information from these studies was considered for this study.
2. A physical site and area reconnaissance was performed by a qualified HVJ Associates geologist to examine the area for physical evidence of a possible fault or faults and to identify and locate features that indicate the presence of faulting (see Appendix A for site photographs). All evidence derived from the literature, photo and map reviews was evaluated in the field. The geologist reviewed the Subject Project Alignment for physical fault evidence such as a) natural topographic scarps, b) soil layer displacements that may be recognized in ditches, creek banks and trenches, c) breaks in pavements, d) distress in existing buildings, and e) vertical offsets in fences.
3. An examination of a 1930s era through 2016 black and white and color vertical aerial photographs was conducted to identify features that may indicate the presence of faulting. Aerial photographs were selected to show the Subject Project Alignment under various conditions and in several different years, including some taken prior to substantial disturbance or covering the natural ground surface (see Appendix B for copies of aerial photographs reviewed).
4. LiDAR data and a Geomap subsurface structure map were reviewed for possible evidence of geologic faulting on or near the Subject Project Alignment area.
5. A search was conducted of available published and unpublished literature on geologic faulting to point out areas of known fault activity and assist in locating direct site-specific evidence. Literature reviewed included publications of the U.S. Geological Survey, Texas Bureau of Economic Geology, Gulf Coast Association of Geological Societies, Houston Geological Society, professional papers, academic theses, maps and papers on subsurface geology and other technical reports. This research also included the study and interpretation of both recent and historic U.S.G.S. topographic maps to identify features that may indicate the presence of faulting as well as (see Appendix C for copies of topographic maps reviewed).
6. This report was prepared summarizing our findings, conclusions and recommendations.

1.3 Basis of Report

Although this study has been a reasonably thorough attempt to identify geologic faulting in the vicinity of and on the Subject Project Alignment, there is a possibility that existing faults may have escaped detection due to the inherent limitations of this or similar studies or the inaccuracy of published and unpublished data. If faults are present, the surface evidence may not be well developed or may be obscured by erosion, soil and vegetation cover, and/or new construction.

HVJ Associates reserves the right to alter our conclusions and recommendations based on our review of any information obtained after the date of this report. The data obtained during the course of this Assessment and this report is for the sole and exclusive use of CivilTech Engineering, Inc. and Harris County Precinct 4. HVJ Associates, Inc. will hold all project data, papers, correspondences and reports pertaining to this study confidential to the extent allowed by law.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar conditions, by geotechnical consultants practicing in this or similar localities. No warranty, express or implied, is made as to the professional information included in this report.

1.4 Qualifications of Licensed Geologist

The primary assessor for this study is Mr. Edward Hawkinson. Mr. Hawkinson holds BS and MS degrees in geology from The Ohio State University and the University of Cincinnati respectively, and an MBA from the University of Cincinnati. Mr. Hawkinson is a registered professional geologist in Texas (License Number 45). His career encompasses a period exceeding 30 years involving both Phase I and II Geologic Fault Assessments, environmental site assessments, hydrogeology, water resource evaluations, NEPA environmental Assessments and energy exploration.

2. BACKGROUND

2.1 Site Description

The Subject Project Alignment extends along Neuens Road from Gessner Road to Blalock Road in Houston, Harris County, Texas. The Subject Project Alignment is located in a mixed use residential and commercial area (see Plates 1& 2 for the project location).

2.2 Geologic Setting

A review of the Bureau of Economic Geology 1992 Geologic Atlas of Texas, Houston and Beaumont Sheets indicates that the geologic formations underlying the Subject Project Alignment include the older Willis Formation (Pleistocene) which is primarily composed of clays with lesser amounts of silts and sands. The Lissie formation (Pleistocene) mainly contains sands with fewer silts and clays, while the Beaumont formation contains finer clays with silt (Moore and Wermund, 1993). The contacts between these formations are zones of low cohesion and thus can become normal faults. These formations were deposited on land near sea level in flat river deltas and in inter-delta regions. Soil deposition occurred in fresh water streams and in flood plains (as backwater marsh and natural levees). The courses of major streams and deltaic tributaries changed frequently during the period of deposition, generating within the Beaumont clay a complex stratification of sand, silt and clay deposits. Frequently, stream courses were diverted significant distances from a given point in a backwater marsh, and the water overlying the soil would evaporate since it was cut off from a drainage path. Such water, which would be highly alkaline, would precipitate large nodules of calcium carbonate (calcareous nodules) throughout the surface of evaporation. With the coming of the Second Wisconsin Ice Age, the nearby sea withdrew, leaving the formation several hundred feet above sea level and permitting the soil to desiccate. The process of desiccation compressed the clays in the formation such that they became significantly overconsolidated to a large depth. In addition to pre-consolidating the soil, the process of desiccation, together with the later rewetting, produced a network of fissures and slickensides that are now closed but which represent potential

planes of weakness in the soil. The formation weathers to a fairly flat and featureless surface except for numerous rounded shallow depressions and pimple mounds.

2.3 Nature of Faulting

In the Gulf Coast region of Texas over 200 faults are known or suspected to be active with an aggregate length of approximately 370 miles. Many of these faults are located in the Greater Houston-Galveston area subsidence bowl. Although the existence of most of these faults have been reported in the literature, only 100, with an aggregate length of approximately 140 miles have been mapped at scales suitable for general use. These faults extend offshore several hundred miles and inland north of the Conroe area. Evidence of fault activity includes laterally persistent abrupt changes in the elevation of the ground surface (scarps) where the slope of the land on either side of the fault scarp is similar. Fault scarps can produce linear features (lineaments) on aerial photographs and topographic maps, linear patterns of vegetation that are primarily due to the ponding of water on the downthrown side of the fault, and damage to pavement and other structures. Evidence of active faulting in undeveloped areas may be obscured due to dense vegetation cover such as woods and underbrush.

Many faults are classified as growth (down-to-the-coast) faults wherein the dip angle of the fault near the ground surface is very high, averaging 75 degrees. These faults may have been active for a long period of time. As their name implies, growth faults are active during sedimentation, and consequently, subsurface features include increased thickness of geologic units on the downthrown side and increased displacement of these units with depth adjacent to the fault. Another type of fault found along the Gulf Coast is often associated with growth faults. These faults generally parallel growth faults and have a fault-plane dip that is up-to-the coast. Because of their opposite dip and close association with growth faults, these faults are known as antithetic faults. Growth faults and their antithetic faults have a strike or orientation that generally parallels the coast. Movement rates of growth and antithetic faults are slow and generally range from 0.1 in. to slightly more than 1.0 in. per year. Horizontal movements are extensional and depend upon the dip of the fault, generally being about one-fourth to one-half the vertical movement. These surface movements generally occur in a band of significant width which is likely to be different for each fault and to vary along the length of a particular fault. Band widths of 30 to 50 ft. are common, but wider or narrower bands are also found. In general, fault movement rates may be episodic for a specific fault and an extended period of time may pass between movement periods. Fault movement and fault reactivation has been attributed to fluid withdrawals from pumping of groundwater and oil and gas production, however the predominant effect of this fluid pumping has been local and regional ground subsidence. Fault movement and subsidence rates are documented in Houston where older structures or roadways can display damage.

Other types of faults found along the Gulf Coast are those associated with salt domes. Faults immediate to or overlying salt domes may have surface expressions that tend to be shorter in length and may form either an irregular radial or offset pattern around the salt dome. Away from the dome tangential faults may be present. Unlike growth faults, the orientation of dome-related faults does not follow a general orientation, that is, they can have strikes that are randomly oriented. Many faults mapped in the subsurface are inactive and do not extend to the surface.

2.4 Indications of Faulting

Evidence of faulting at the surface is not always readily identifiable and can also be falsely inferred. Topographic features such as escarpments associated with river terraces may resemble a fault scarp. However, in many cases these features cannot be traced laterally for any substantial distance, or the relative direction of movement observed might change significantly which would indicate the feature is not related to active faulting. Normal deterioration on existing buildings and other structures may produce damage that may resemble damage associated with active faulting. Other sources of linears that can erroneously suggest faulting include clearings made for seismic surveys during oil exploration, fence lines, stratigraphic contacts, or drainage patterns. In most cases, the observed

linears on aerial photographs are related to changes in vegetation, while on topographic maps they are related to changes in slope and/or drainage patterns.

Though the existence of river terraces and other linear natural topographic features does not necessarily indicate the presence of a fault, there are times wherein fault scarps are coincident with and are the progenitors of these features. Additionally, there are instances where the fault may be offset from such a topographic feature yet nevertheless is the cause of its existence and the control on its orientation.

In undeveloped terrains covered by dense forest and underbrush and possessing varied topographic relief, the visual, onsite identification of fault scarps can be difficult. Lineaments that could be associated with faulting are likely to be masked by the heavy overgrowth. In such environments, several lines of boreholes across the study area may be needed to supplement the aerial photograph/topographic map analysis and field reconnaissance. Electric log data obtained from these boreholes can provide an idea of subsurface conditions and the likelihood of fault existence.

3. AERIAL PHOTOGRAPH, MAP AND LITERATURE REVIEW

3.1 Review of Aerial Photographs

For the Subject Project Alignment, we obtained a series of aerial photographs taken under various conditions and in several different years, including some taken prior to substantial disturbance or covering the natural ground surface (these aerial photographs are provided in Appendix B). Fifteen aerial photographs taken from 1930 through 2016 provided from several sources by GeoSearch were reviewed for this assessment. No linear feature which could be indicative of geologic faulting were found within the Subject Project Alignment area.

In viewing aerial photographs, features that may indicate the presence of a fault, include tonal variations in vegetation, areas of standing water and lineations associated with drainage patterns. These features by themselves do not prove that a fault is present, but allow for more effective topographic map review and field reconnaissance.

3.2 Review of Topographic Maps

Topographic maps can reveal evidence of surface faulting, such as abrupt steepening of the regional slope, sharp bends in contours or fault-controlled drainage patterns. HVJ Associates reviewed and interpreted both recent and historic United States Geological Survey (USGS) topographic maps to identify features that may indicate the presence of faulting. We reviewed USGS topographic quadrangle maps for the Hedwig Village, Texas quadrangles for the years 1970, 1982, 1995 and 2013, for the Addicks, Texas quadrangle for 1955 and for the Hillendahl, Texas quadrangles for 1915 and 1918. The topographic maps for 1915 and 1918 show a narrowing of topographic map contours southeast of the Subject Project Alignment which may be related to scarp development associated with the Long Point Fault. These maps have a one-foot contour interval which facilitates the recognition of possible fault related features. Because the Subject Project Alignment area terrain has relatively low relief and maps produced in 1955 and later have five-foot contour intervals, no obvious linear features, other topographic features and/or anomalous stream drainage patterns that may be related to faulting were noted on the maps produced from 1955 through 2013. Copies of all maps reviewed are provided in Appendix C.

3.3 Surface Faulting in the Houston Area Literature Review

Literature reviewed included publications of the U.S. Geological Survey, Texas Bureau of Economic Geology, Gulf Coast Association of Geological Societies, Houston Geological Society, professional papers, academic theses, maps and papers on subsurface geology and other technical reports. This research also included the review of available literature on faults in the area which include USGS publications, university research papers and professional society publications.

The Long Point Fault is shown on the Houston Area Principal Active Faults Map (see Plate 3) by O'Neill and Van Sicken in the Association of Engineering Geologist Bulletin, Volume XXI, No. 1, 1984. This fault is also shown on a plate contained in a "Field Trip Guidebook," Houston Geological Society, 1993 compiled by C.E. Norman, University of Houston (see Plate 4).

The most current research for the Subject Project Alignment was found in a paper by Khan et al (2013). Using geophysical data, they examined the fault systems in the Houston Metropolitan Area with emphasis on the Hockley Fault System in northwest Harris County. They used airborne LiDAR to identify fault scarps and identified several new faults and assemble an updated map for the faults in Houston and surrounding areas. Khan maps the Long Point Fault south of the Subject Project Alignment area (see Plate 5).

Many of the faults in the Texas Gulf Coast region are considered growth (down-to-the-coast) faults in which the dip angle of the fault near the ground surface averages 75 degrees. Since growth faults are active during sedimentation, subsurface features include increased thickness of geologic units on the downthrown side, and increasing displacement of these units with depth adjacent to the fault. Movement rates of these faults range from less than 0.1 to over 1.0 inches per year.

3.4 Surface Faulting in the Site Area Literature Review

The Subject Project Alignment lies about 13.5 miles northwest of the center of the Pierce Junction Salt Dome and its associated oil fields. The Long Point Fault is downthrown to the southeast and extends from near the intersection of Long Point Road and Hempstead Highway in a southwesterly direction for approximately ten miles south of the Subject Project Alignment to its southwestern terminus near the intersection of Briar Forest Drive and North Eldridge Parkway. The modern activity of the fault has been recorded in the literature by an elevation section in the 1960s and by records of movement rates in the 1980s - both at a pavement break on West Fuqua.

3.5 Review of LiDAR Imagery

LiDAR mapping can reveal evidence of surface faulting due to shading differentials. Plate 6 shows a segment of the hill shaded 15 ft. bare earth LiDAR derived digital elevation model of the area of Harris County showing the Long Point Fault is south of the Subject Project Alignment area. Based on our evaluation of this LiDAR imagery, it appears that the Long Point Fault trace from this data is consistent with previously mapped Long Point Fault using other data. Based on this information it does not appear that the Long Point Fault or other fault(s) extend into or near the Subject Project Alignment area.

3.6 Subsurface Structure Maps

We reviewed Horizon A - top Yegua subsurface regional structure map at a one inch equals 4,000 feet scale of the Subject Project Alignment area prepared by Geomap. This regional structure map showed their interpretation of the top of Yegua structure and geologic faulting scenario at a depth approximately 6,900 feet below sea level (subsea) based primarily on interpretations of oil company well log data. The structure map reviewed for this assessment was the shallowest horizons mapped by Geomap within the Subject Project Alignment area. This map is proprietary, and as such, cannot be reproduced for inclusion in this assessment.

Geomap includes the location of drilled oil and gas wells on their structure maps. The top of Yegua map shows three major faults at depth beneath the Subject Project Alignment area. The density of oil and gas well log data varies along the Subject Project Alignment leading to (in most cases) an upgraded geologic structural interpretation in areas with higher well densities. Based on the location and depths of subsurface faults in the general area of the Subject Project Alignment, we have projected these faults to the surface assuming that the Geomap information is accurate and that the faults extend to the surface. The surface projections of the faults were developed using typical fault dip angles of 75 degrees from the horizontal. The subsurface faults project to near (but not within) the Subject Project Alignment at three locations. The surface projection of one of these faults corresponds reasonably well with the surface location of the northeast to southwest trending down

to the southeast Long Point Fault south of the Subject Project Alignment area. Two other subsurface faults mapped by Geomap beneath the Subject Project Alignment are either buried faults which do not extend to the surface or their surface expression has been obscured by heavy vegetation or construction activity (clearing and leveling) associated with residential development. One of these faults parallels the Long Point Fault approximately 2.5 mi. to the southeast and is associated with the 1940's era Alief gas field. A complimentary (antithetic) down to the north and east to west trending fault is located north of this gas field and is truncated by the Long Point Fault. Neither of these minor faults were observed at the surface.

4. RECONNAISSANCE

4.1 Objectives

A site reconnaissance was performed in August 2018 on foot and by automobile to observe the entire Subject Project Alignment and to observe areas identified through literature research and on aerial photographs and topographic maps for evidence of faulting.

4.2 Field Reconnaissance

Field reconnaissance was performed for the entire Subject Project Alignment to physically observe possible faults. During the site reconnaissance, HVJ Associates field personnel drove along roads/streets near the Subject Project Alignment including (but not limited to) Neuens Road, Shadow Wood Drive, Shadow Lane, Pine Village Drive, Parana Drive, Crestdale Drive, Warwana Road, Witte Road, Long Point Road, Westview Drive, Cedar Post Lane and Bunker Hill Road. They looked for structural damage to streets and adjacent facilities, fault scarps in and adjacent to the streets, vegetation changes and depressional features (sag zones) that may be indicative of faulting. Several pavement damages (including cracks and/or patching) were observed on or adjacent to the Subject Project Alignment. None of these pavement stress areas appeared to be fault related. No significant scarp development or sag zones which are a common feature associated with active faults and which can cause drainage problems near a fault were observed along the Subject Project Alignment during our field reconnaissance. No obvious building damage indicating recent fault movement was observed. All of the fault indicators were observed in the field which associated with the Long Point Fault outside of the Subject Project Alignment area. Photographs of some of these fault indicators are included in Appendix A.

It should be noted that a common complication in many fault studies is that much of the evidence normally used to map surface traces of faults in the Gulf Coast have been destroyed in developed areas. Only the most active and damaging faults or faults whose scarps are of substantial height are likely to be noticed during mapping of developed areas. Mapping of faults is most difficult in areas with recent development; however, in older developed areas the fault can be located quite accurately at many points where it has damaged buildings, road and other manmade structures. The trace of the Long Point Fault is evident at several locations south of the Subject Project Alignment area.

5. FAULT CHARACTERIZATION

Vertical movement rates have been measured at numerous locations in the Houston Metropolitan Area. Data presented by Elsbury, et al showed a movement rate of 20 mm per year (0.787 inches per year) between 1974 and 1980 on the Long Point Fault near Billings Street. At Gessner, Heuer reported a rate of 12 mm per year (0.472 inches per year) between 1971 and 1978. Mastroianni reported movement rates at three locations between June 1985 and May 1987 as follows: on Moritz, (near Bingle), Mastroianni reported a rate of 5.6 mm per year, at Cedar Post (near Campbell) a rate of 10.2 mm per year and near the West Belt a rate of 19.5 mm per year. All movement rates reported in the literature are vertical. The average vertical rate for these five observations is 12.74 mm per year or 0.502 inches per year.

No horizontal extension data are available from the existing surveys, or public literature. The magnitude of horizontal movement verses vertical movement is largely controlled by the dip of the fault plane near the surface. Based on a dip angle of 75° and using the vertical design movement of 0.15 inches per year, we estimate that the total horizontal extension (i.e. lengthening parallel to the ground surface) assuming a 50 year life of the water line will be approximately two inches.

Anecdotal evidence indicates that fault movement rates have slowed markedly around the Houston metropolitan area recently. This has been attributed to progress in the City of Houston's Surface Water Transmission Program which has steadily converted water supply from well to surface water across the City. There has been a verifiable decrease in subsidence rates across the city in areas where surface water conversion is complete. Coincident with this decrease in subsidence, there seems to be a decrease in fault movement rates. Site history includes evidence of fault movement that predates any development through observation of the scarp on earliest topographic maps available for the Project Alignment. Our hypothesis is that the ground stresses induced by groundwater withdrawal that caused subsidence also accelerated the movement rate along the fault. Now that those ground stresses are relieved, the fault movement rate has decelerated. At some point, the fault will probably resume moving at its historical rate prior to development, which is unknown. How long it may take before this occurs, or even if this hypothesis is correct, is impossible to know based on existing information.

The most prudent course of action is to assume that some fault movement will occur over an extended design life. The design movements discussed above can be considered reasonable upper bound estimates of the amount of movement that might occur over an assumed 50 year design life.

6. SUMMARY OF FINDINGS/CONCLUSIONS

We conclude that the potential for active surface faulting to impact the proposed Subject Project Alignment is low since the documented Long Point Fault is located approximately one mile south of the Subject Project Alignment. No other geologic faults were observed on or near the Subject Project Alignment during the field reconnaissance. Since no faulting within the Subject Project Alignment is documented in the geologic literature or on aerial photographs and the location south of the Subject Project Alignment is known, we recommend no additional assessment of potential faulting in the Subject Project Alignment area.

Planned construction along the Subject Project Alignment is not likely to be impacted vertical and horizontal fault movement in the future. We recommend no fault related design criteria for this project.

Faults are not always associated with definitely recognizable fault scarps and their full extent may not be identifiable by visual inspection alone. Additionally, vegetative cover and uneven topography can obscure the presence of a fault, especially if it is slow moving or currently inactive. Predicting future fault activity cannot be done with certainty due to the number of variables involved. Dormant or very slow moving faults can be, respectively, reactivated or accelerated due to a number of reasons, including groundwater withdrawals and petroleum production.

7. DESIGN CRITERIA AND RECOMMENDATIONS

The Long Point Fault is well documented in the geologic literature, by field observation, on several topographic maps, by LiDAR imagery and Geomap subsurface structure mapping and is the only geologic fault near (but not within) the Subject Project Alignment. Because we observed no geologic fault(s) crossing the Subject Project Alignment area, we recommend no design criteria to accommodate geologic faulting.

8. LIMITATIONS

The conditions and recommendations contained in this report are based on our review of available documents and field geologic mapping techniques. Shallow soil conditions, cultural activities, new construction, slow movement rates, and repair of existing fault damage may obscure fault-related features. This report is an instrument of service of HVJ Associates, Inc. The report was prepared for and is intended for the exclusive use of CivilTech Engineering, Inc. and Harris County Precinct 4. The report's contents may not be relied upon by any other party without the express written permission of HVJ Associates and CivilTech Engineering, Inc.

The report's findings are based on conditions that existed on the dates of HVJ Associates site visit(s) and should not be relied upon to precisely represent conditions at any other time. All conclusions are qualified by the fact that no excavations or borings were made and no geophysical surveys or logging was conducted. Conclusions about site conditions under no circumstances comprise a warranty that conditions in all areas within the site and study area (and below existing grade) are of the same quality that HVJ Associates has inferred from observable site conditions.

HVJ Associates' findings and conclusions must be considered probabilities based on professional judgment applied to the limited data HVJ Associates was able to gather during the course of this fault study.

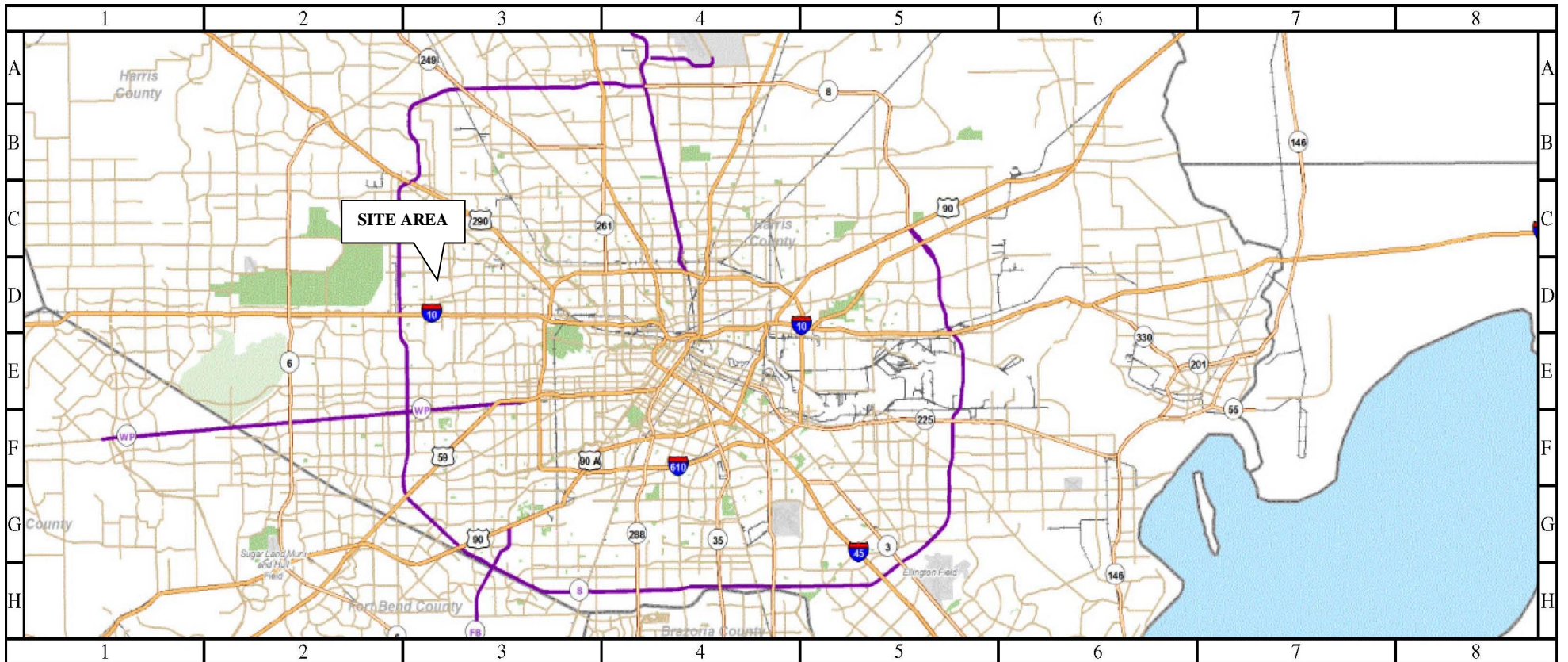
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PLATES



1 inch = 29465 feet



6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

DATE: 8/7/2018

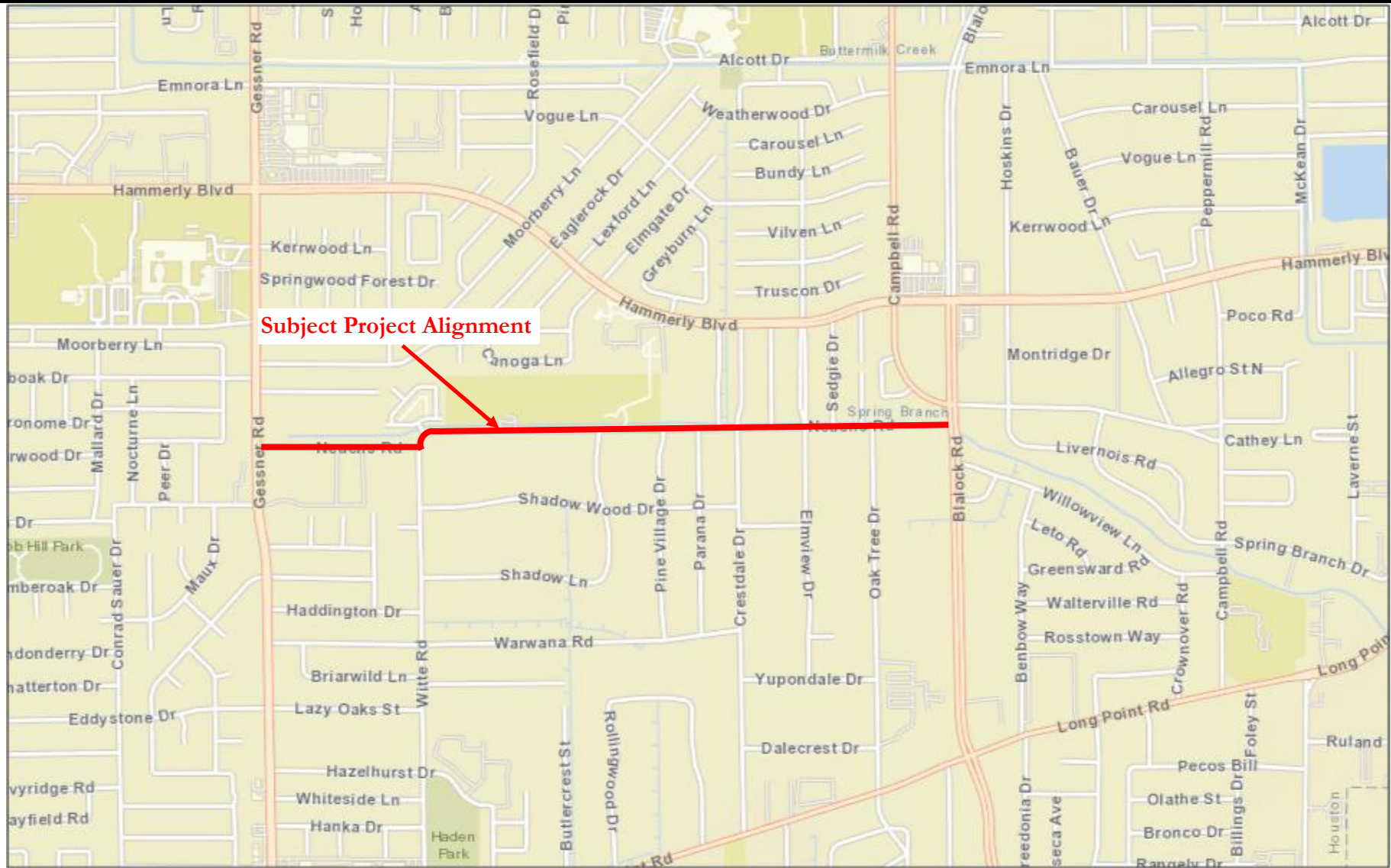
APPROVED BY:
EH

PREPARED BY:
NL

SITE VICINITY MAP
Phase I Geologic Fault Assessment
Neuens Road from Gessner Road to Blalock Road

PROJECT NO.:
HG1810145-Fault

DRAWING NO.:
PLATE 1



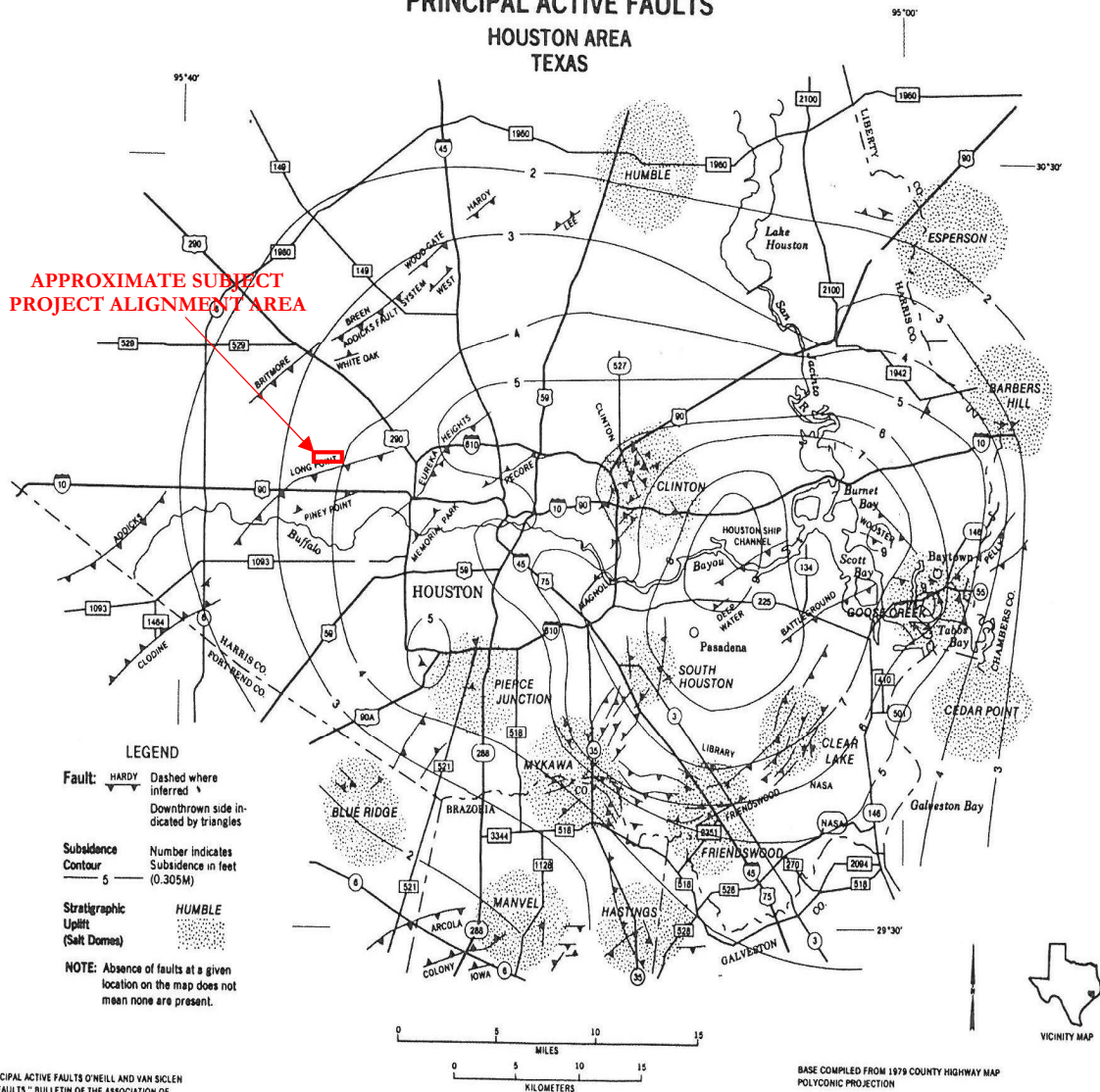
Drawn:	NL
Checked:	EH
Date:	August 2018
Scale:	NTS

PLATE 2
PROJECT AREA MAP
 Phase I Geologic Fault Assessment
 Neuens Road from Gessner Road to Blalock Road
 Houston, Harris County, Texas



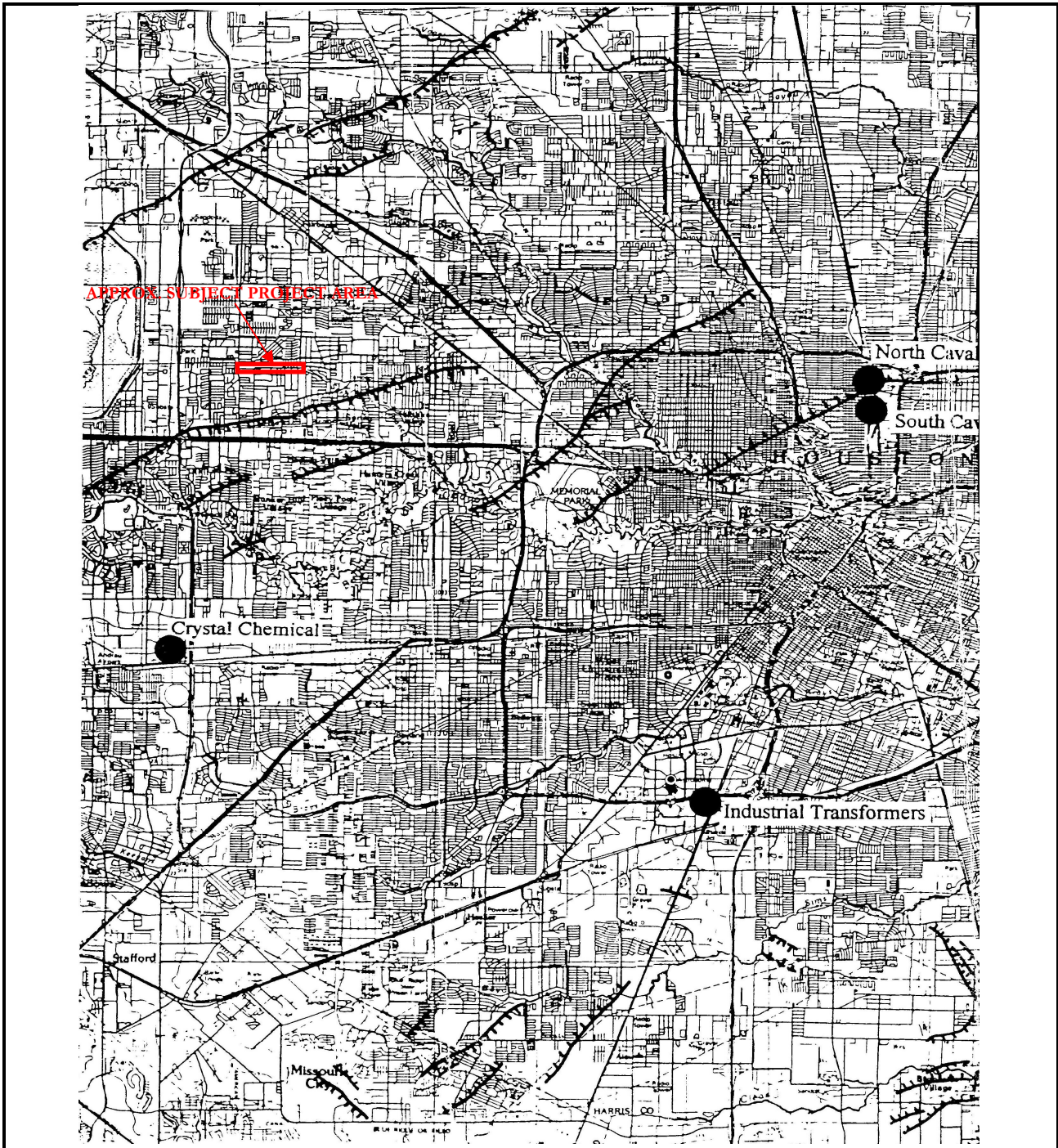
Project No.	HG1810145-Fault
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PRINCIPAL ACTIVE FAULTS HOUSTON AREA TEXAS





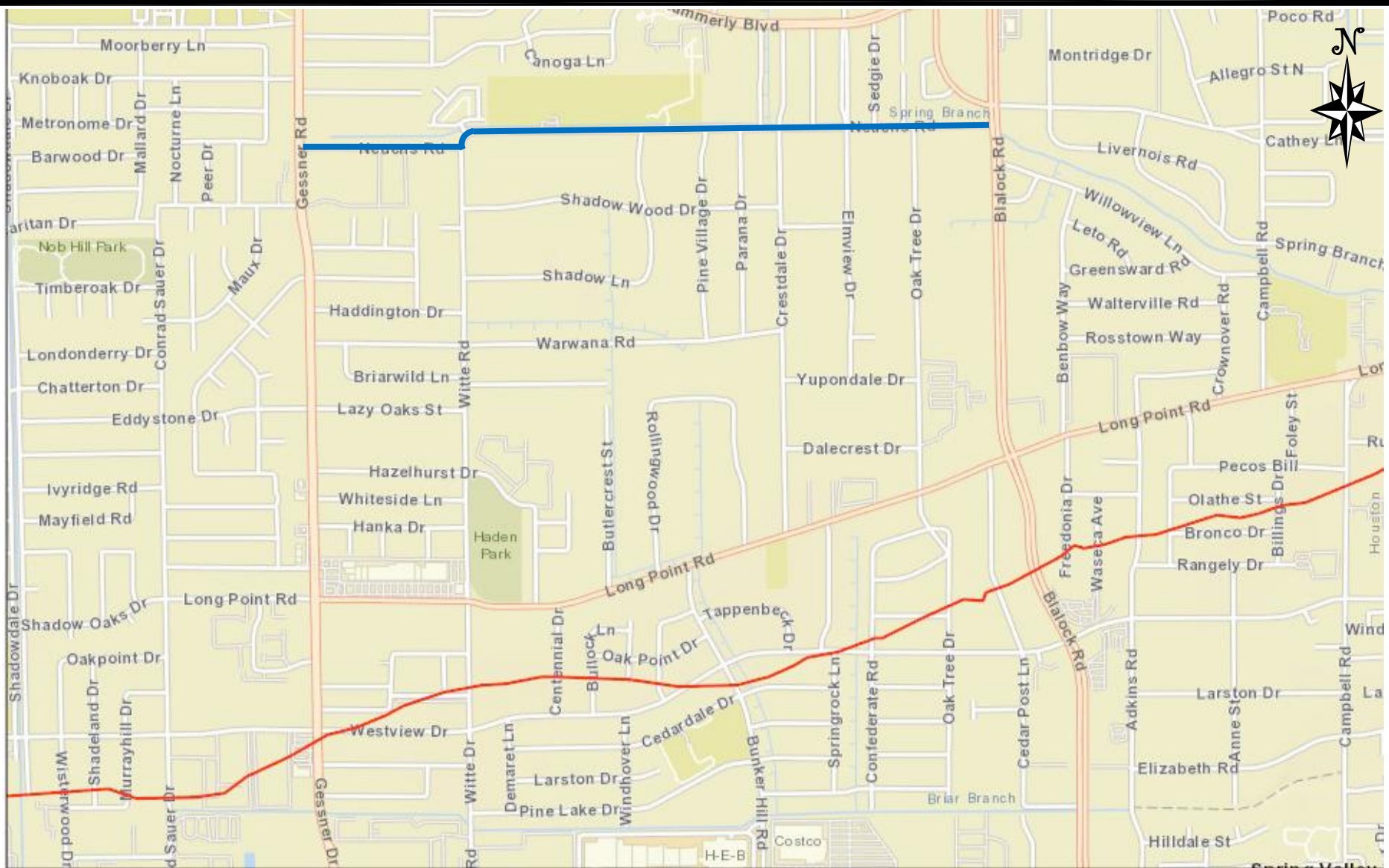
SOURCE: PRINCIPAL ACTIVE FAULTS O'NEILL AND VAN SICLEN
"GULF COAST FAULTS," BULLETIN OF THE ASSOCIATION OF
ENGINEERING GEOLOGISTS, VOL. XXII, NO. 1, 1964, PP. 73-97.

	Drawn:	NL	<p>Plate 3 Houston Area Principal Active Faults Map Phase I Geologic Fault Assessment Neuens Road from Gessner Road to Blalock Road Houston, Harris County, Texas</p>
	Checked:	EH	
	Date:	August 2018	
Report No.	HG1810145-Fault	Scale:	NTS



NOTE: Fault data from "Field Trip Guidebook," Houston Geological Society, 1993 (compiled by C.E. Norman, University of Houston).

	Drawn:	NL	PLATE 4 GEOLOGIC FAULT MAP SHOWING SITE AREA Phase I Geologic Fault Assessment Neuens Road from Gessner Road to Blalock Road Houston, Harris County, Texas	
	Checked:	EH		
	Date:	August 2018		
Report No.	HG1810145-Fault	Scale:		



Source: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Eri China (Hong Kong), Esri Korea, Esri (Thailand).

LEGEND:

- **SUBJECT PROJECT ALIGNMENT**
- **LONG POINT FAULT LOCATION**



6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

DATE: 8/8/2018

APPROVED BY:
EH

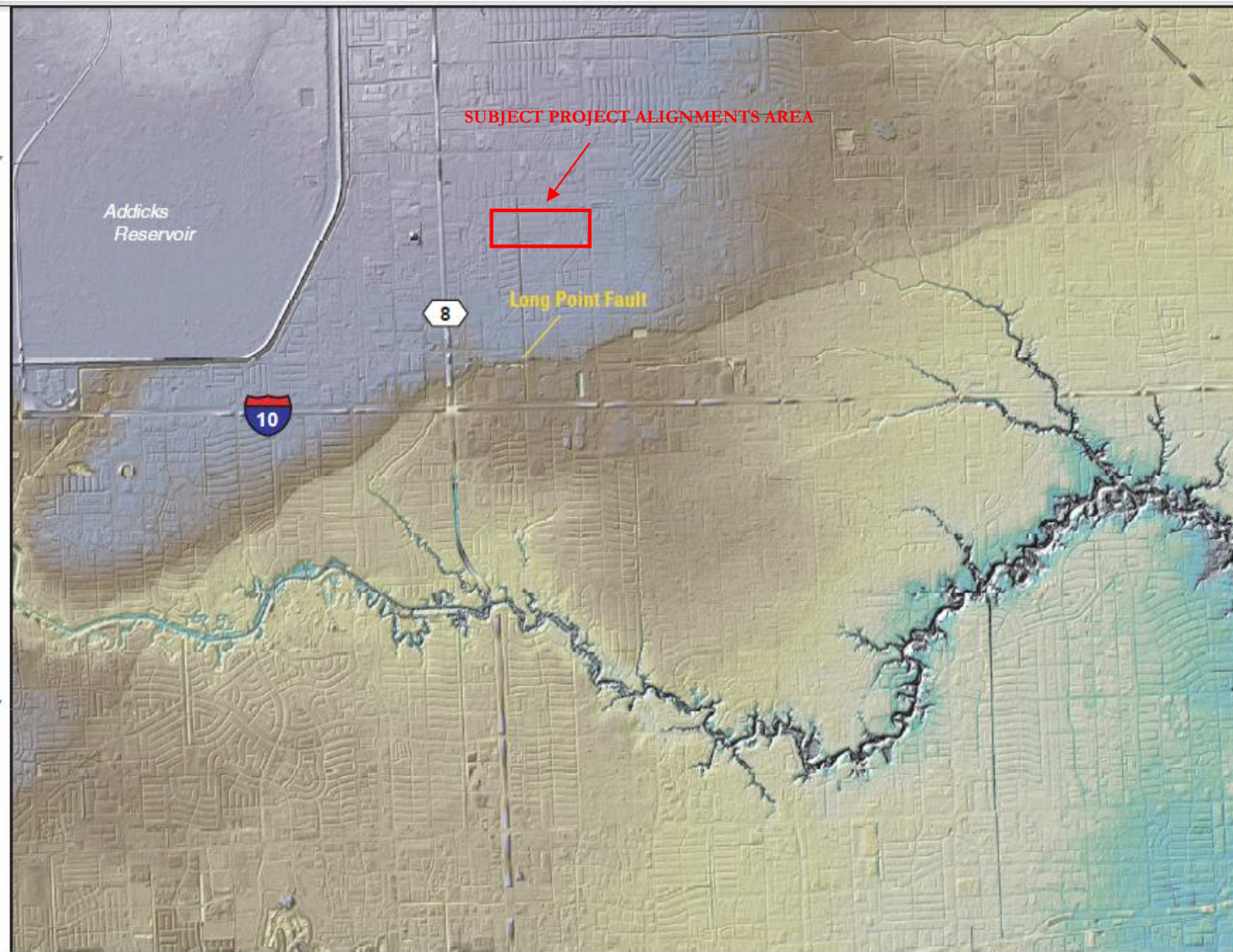
PREPARED BY:
NL

GEOLOGIC FAULT LOCATION MAP
Phase I Geologic Fault Assessment
Neuens Road from Gessner Road to Blalock Road

PROJECT NO.:
HG1810145-Fault

DRAWING NO.:
PLATE 5

SCALE: NTS



Source: Principal Faults in Houston, Texas, Metropolitan Area By Sachin D. Shah and Jennifer Lanning-Rush 2005.



6120 S. Dairy Ashford Road
Houston, Texas 77072-1010
281.933.7388 Ph
281.933.7293 Fax

DATE: 8/13/2018

APPROVED BY:
EH

PREPARED BY:
NL

PROJECT ALIGNMENT AREA LIDAR MAP
Phase I Geologic Fault Assessment
Neuens Road from Gessner Road to Blalock Road

PROJECT NO.:
HG1810145-Fault

DRAWING NO.:
PLATE 6

SCALE: NTS

APPENDIX A
SITE PHOTOGRAPHS



Photo 1. View looking west near the intersection of Gessner and Neuens Road.



Photo 2. View looking west at the intersection of Witte and Neuens Road.



Photo 3. View looking east near the intersection of Blalock and Neuens Road.



Photo 4. View of general pavement conditions along Neuens Road.

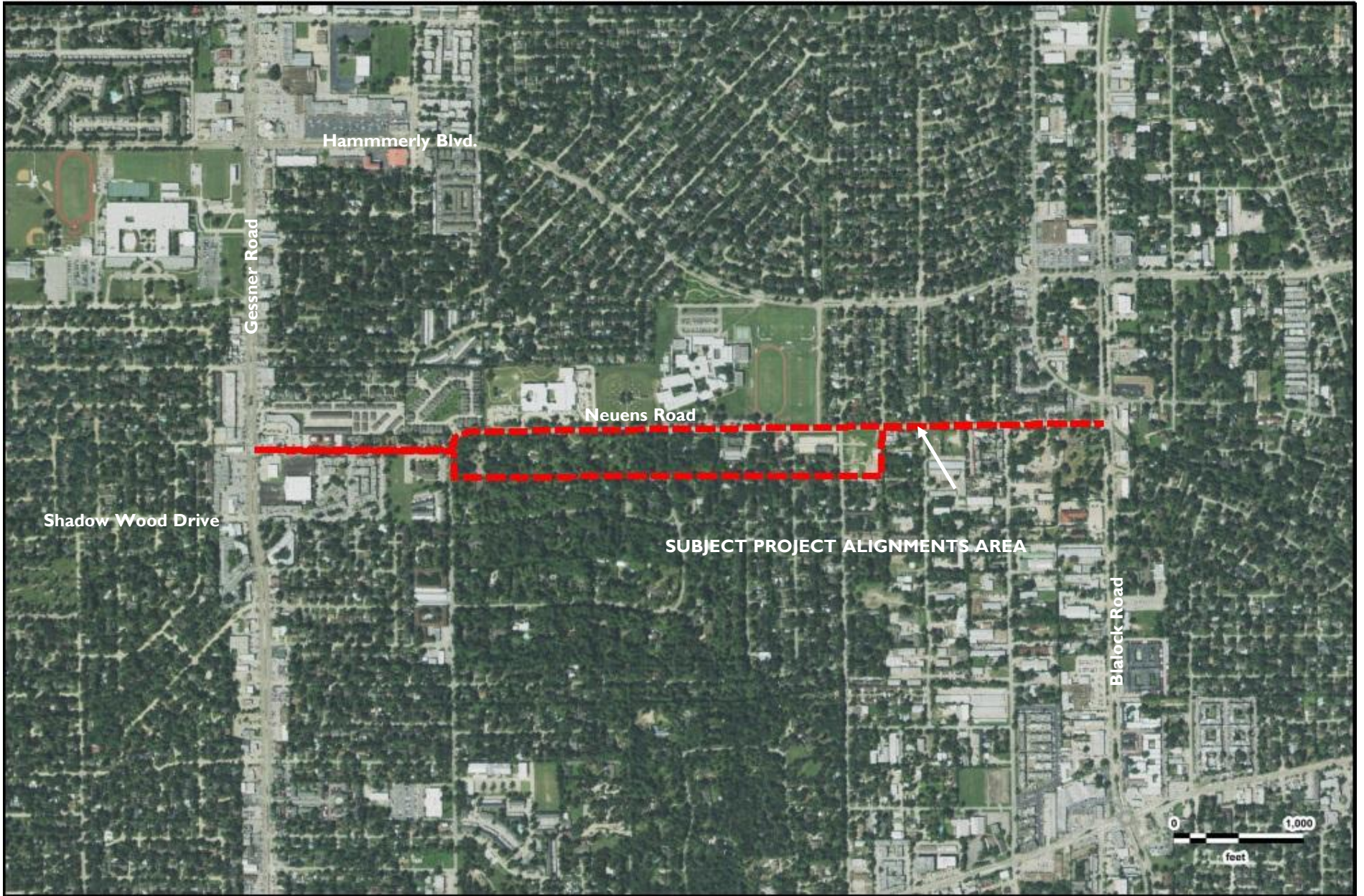


Photo 5. View looking north of possible fault scarp locates southeast corner of Westview and Bunker Hill Road. Photo was taken on the downthrown and upthrown is on the top side of the photo.



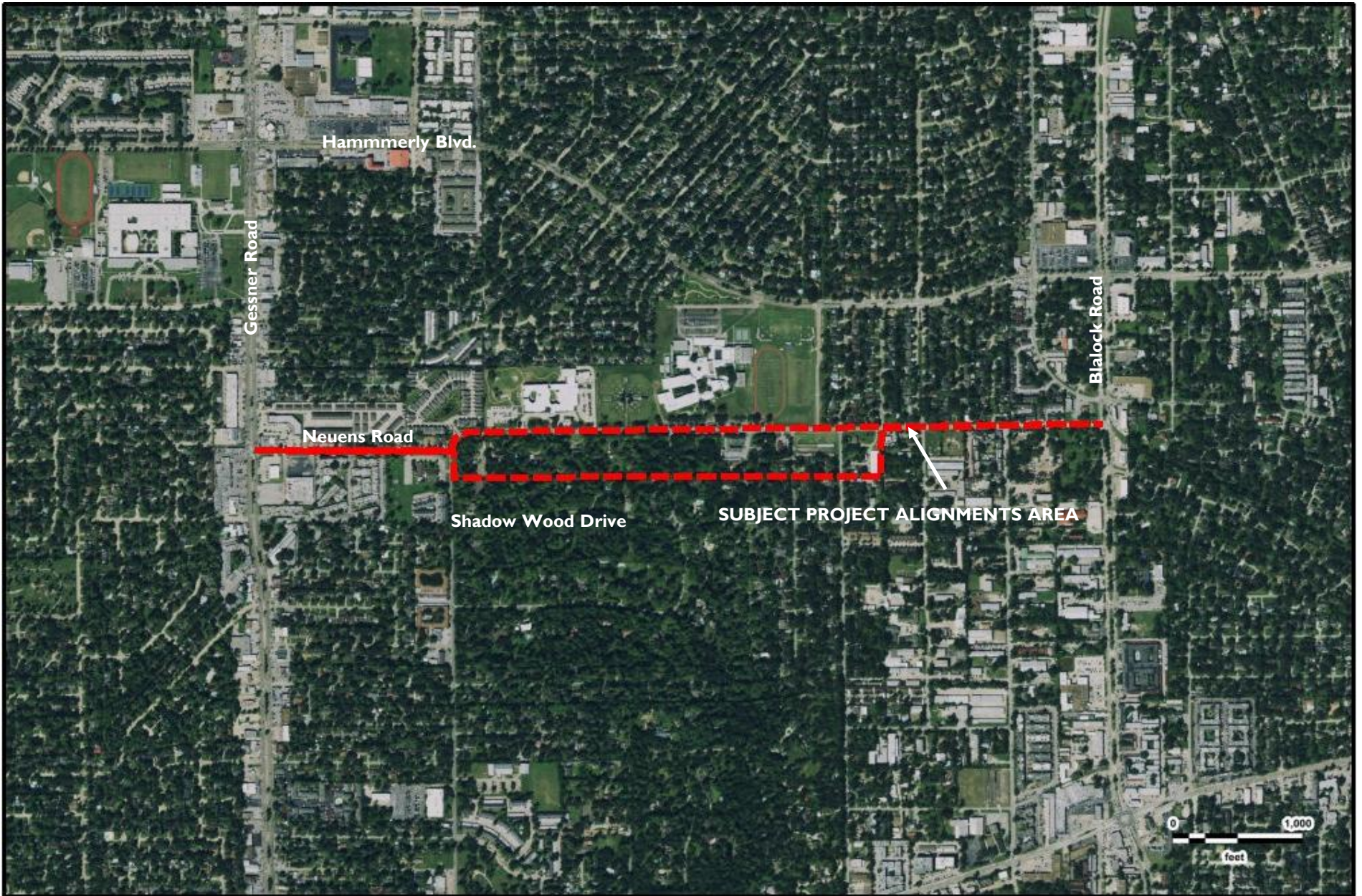
Photo 6. View looking south of possible fault scarp on Westview Drive. Photo was taken on the upthrown side of fault. The ground elevation at the garage door is lower than where the truck is parking.

APPENDIX B
AERIAL PHOTOGRAPHS



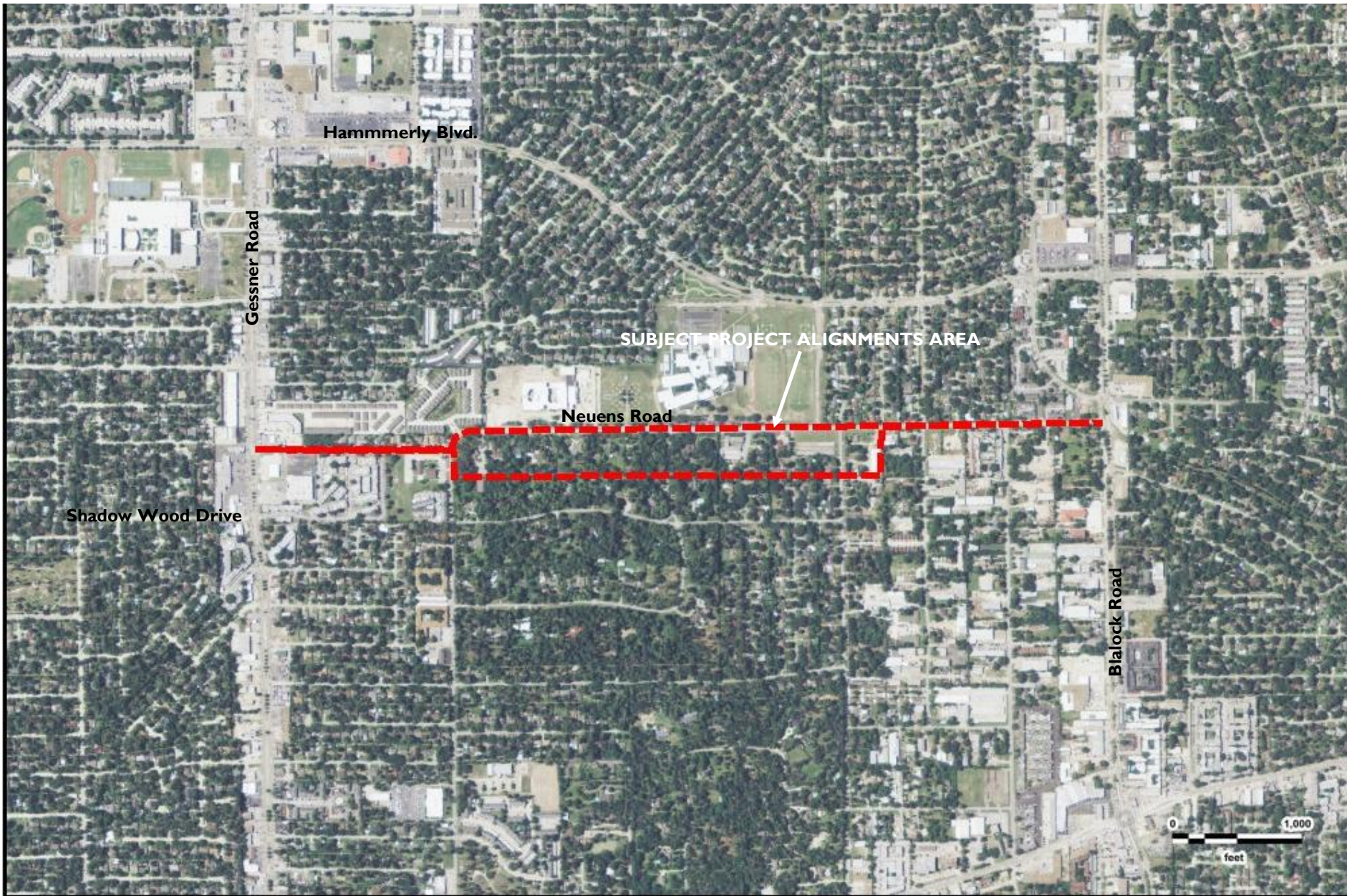
Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
2016 AERIAL PHOTO (USDA)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
2014 AERIAL PHOTO (USDA)
SCALE: 1" = 1000'





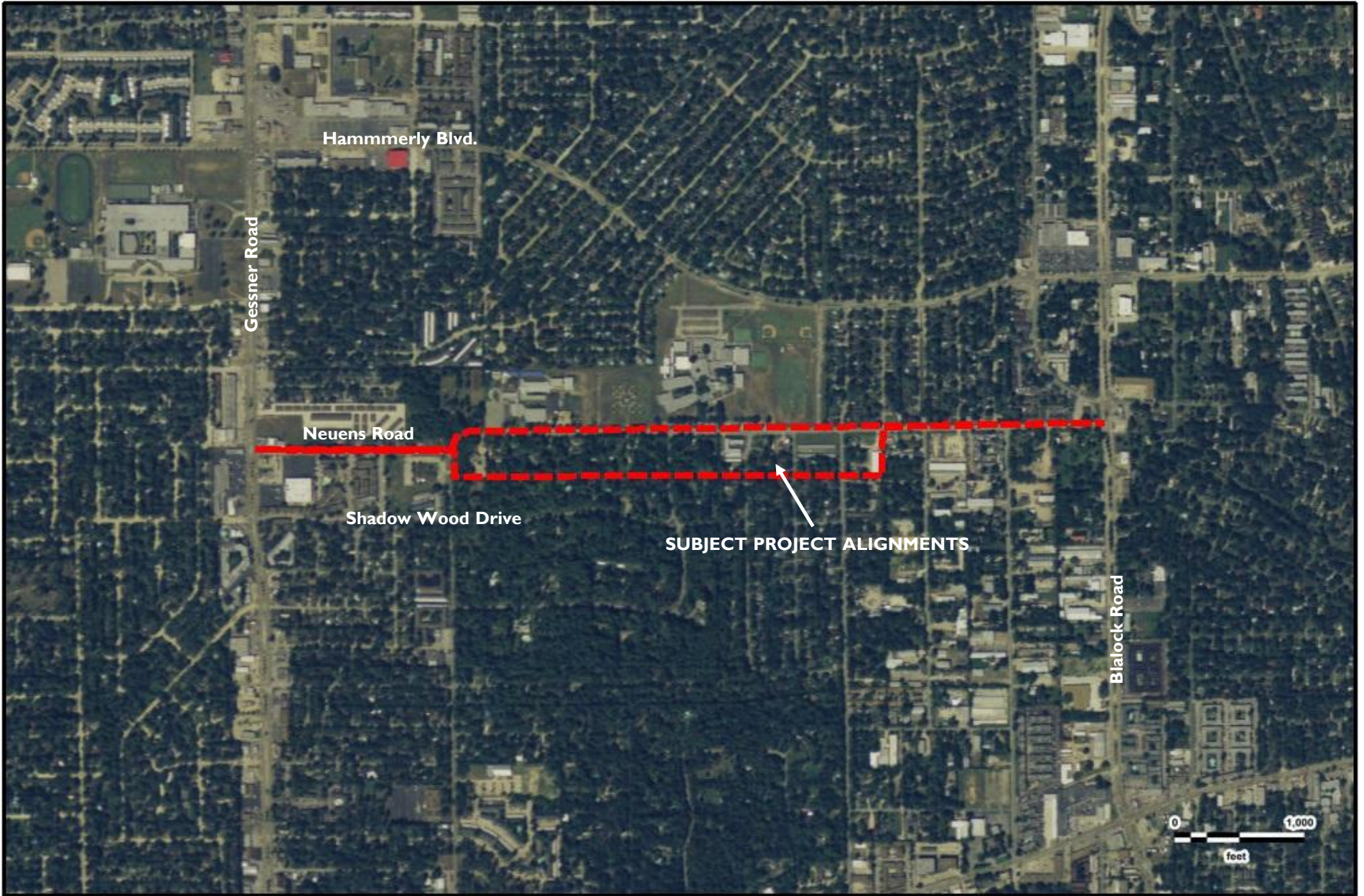
Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
2012 AERIAL PHOTO (USDA)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
2010 AERIAL PHOTO (USDA)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
2005 AERIAL PHOTO (USDA)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
2004 AERIAL PHOTO (USDA)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
1995 AERIAL PHOTO (USGS)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
1989 AERIAL PHOTO (TXDOT)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
1979 AERIAL PHOTO (TXDOT)
SCALE: 1" = 1000'





Phase I Geological Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
1969 AERIAL PHOTO (WALLACE)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
1966 AERIAL PHOTO (USGS)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
1962 AERIAL PHOTO (USGS)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
1953 AERIAL PHOTO (ASCS)
SCALE: 1" = 1000'





Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
1944 AERIAL PHOTO (ASCS)
SCALE: 1" = 1000'

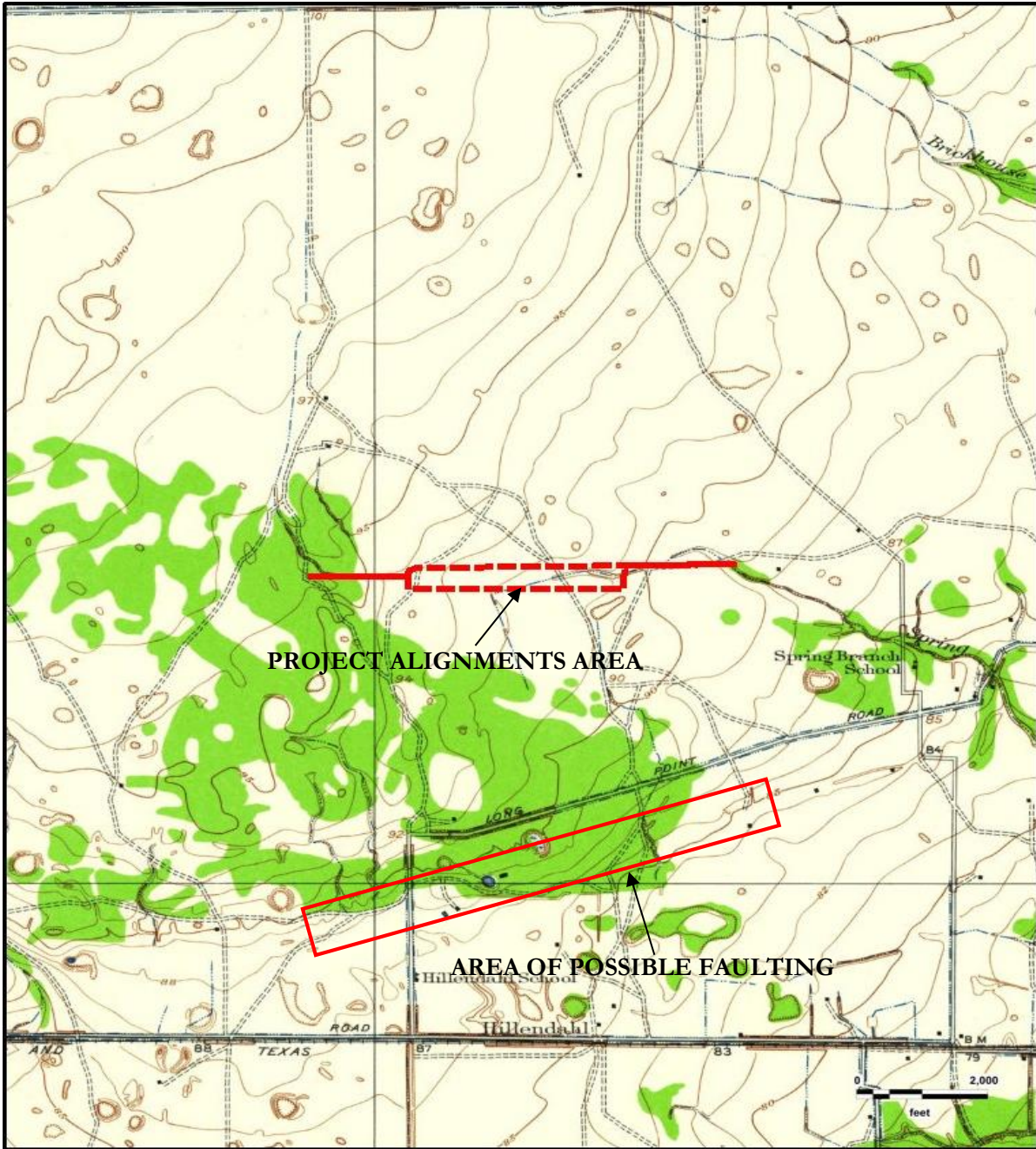






Phase I Geologic Fault Assessment – Neuens Road from Gessner Road to Blalock Road
Houston, Harris County, Texas
1930 AERIAL PHOTO (TOBIN)
SCALE: 1" = 1000'

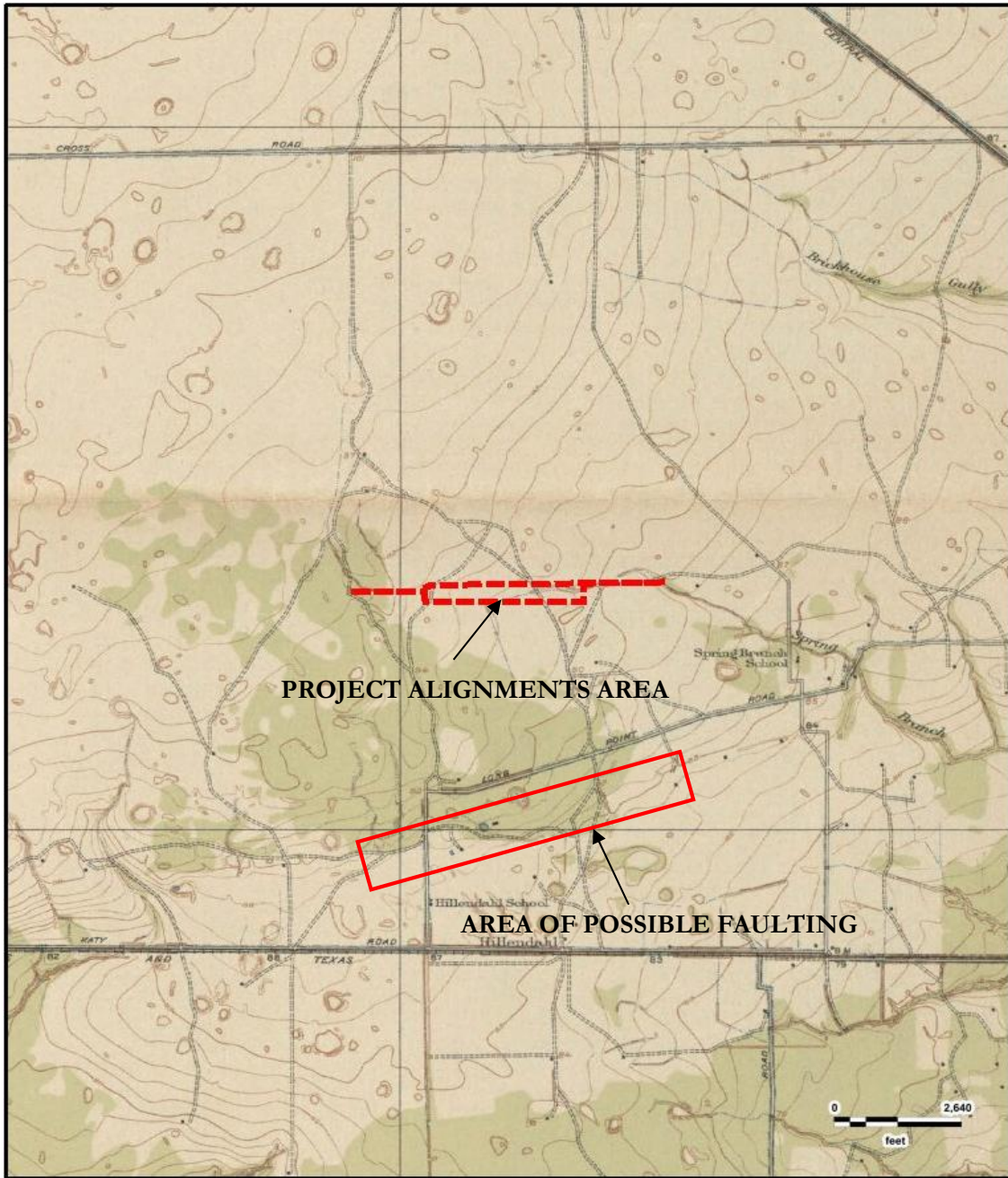


APPENDIX C
TOPOGRAPHIC MAPS




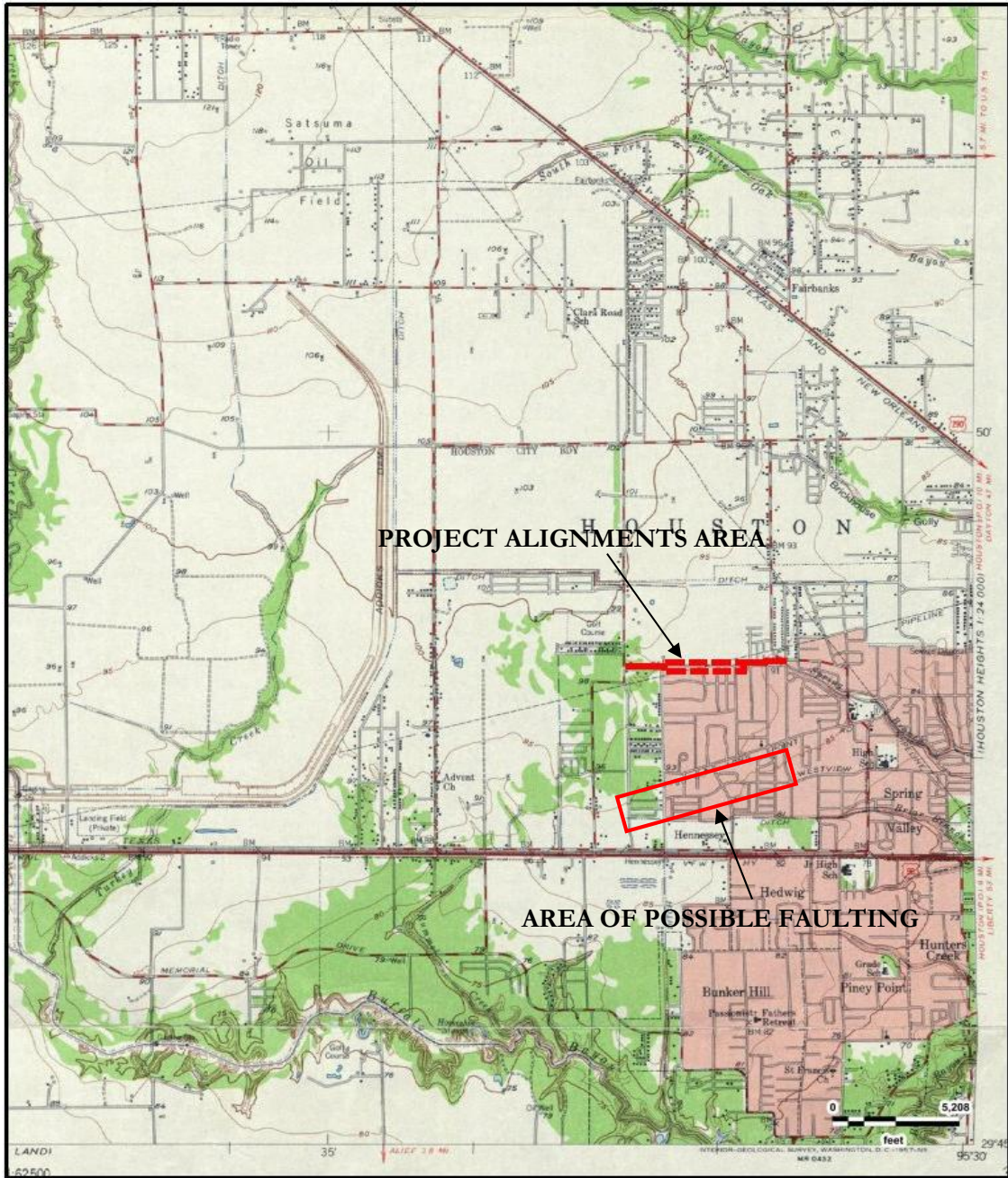
Source: U.S. Geological Survey 1915 Hillendahl, Texas Quadrangle

	Drawn:	NL	<p style="text-align: center;">TOPOGRAPHIC MAP (1915) Geologic Fault Assessment Neuens Road from Gessner Road to Blalock Road Harris County, Texas</p> 
	Checked:	EH	
	Date:	August 2018	
Report No.	HG1810145-Fault	Scale:	NTS





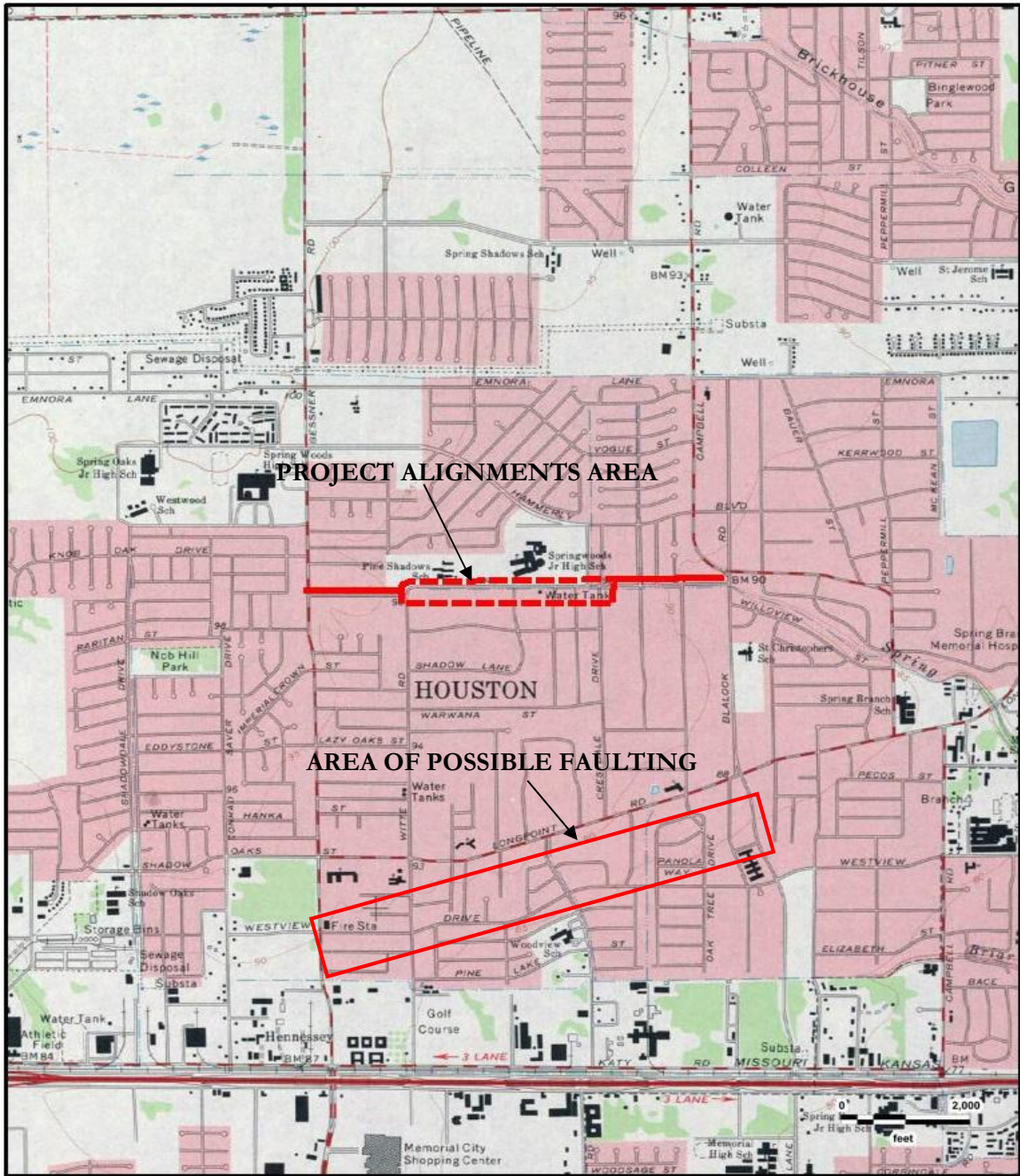
Source: U.S. Geological Survey 1918 Hillendahl, Texas Quadrangle

	Drawn:	NL	<p style="text-align: center;">TOPOGRAPHIC MAP (1918) Geologic Fault Assessment Project Neuens Road from Gessner Road to Blalock Road Harris County, Texas</p> 
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	Date:	August 2018	
Report No.	HG1810145-Fault	Scale:	





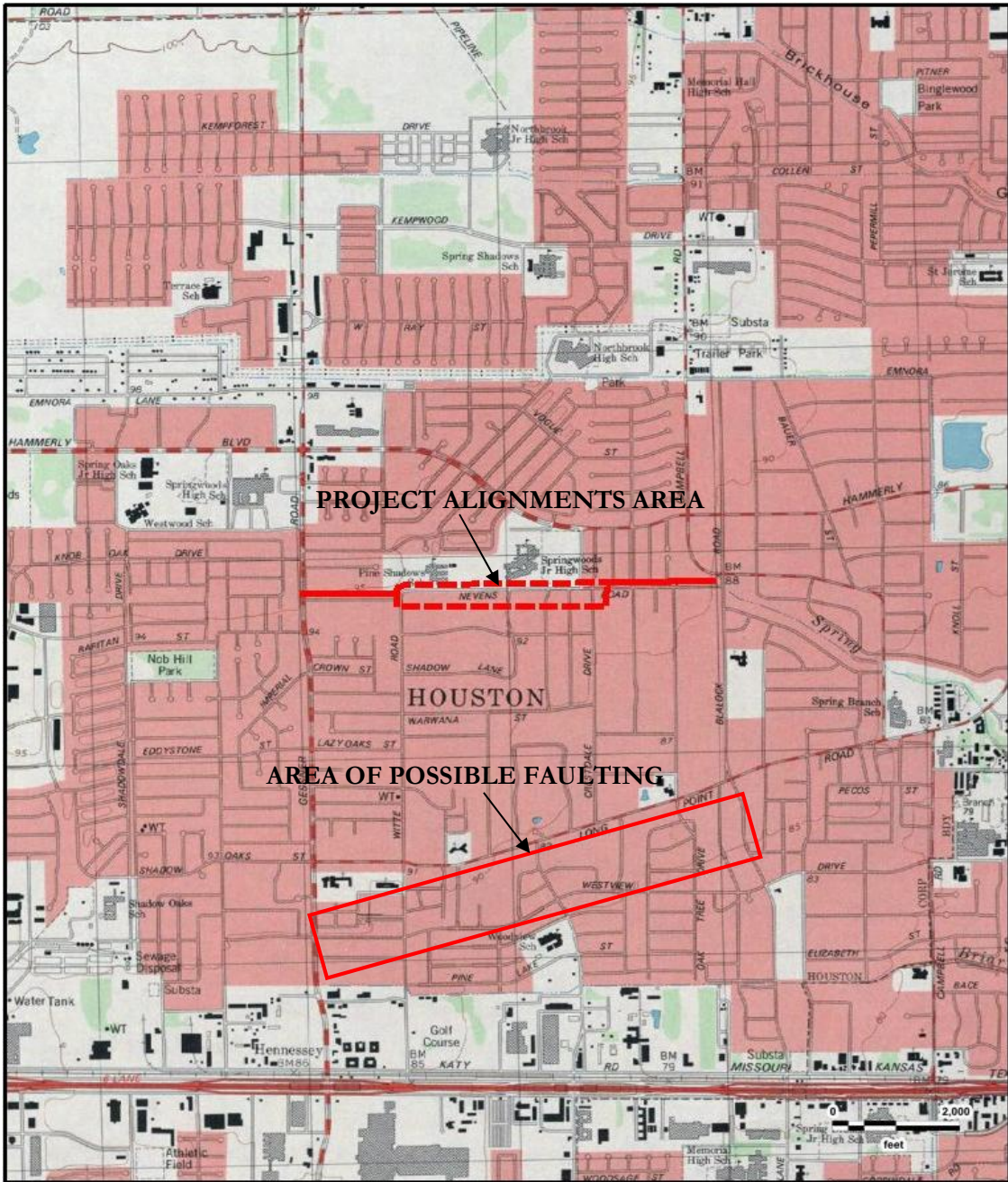
Source: U.S. Geological Survey 1955 Hedwig Village, Texas Quadrangle

	Drawn:	NL	<p style="text-align: center;">TOPOGRAPHIC MAP (1955) Geologic Fault Assessment Project Neuens Road from Gessner Road to Blalock Road Harris County, Texas</p> 
	Checked:	EH	
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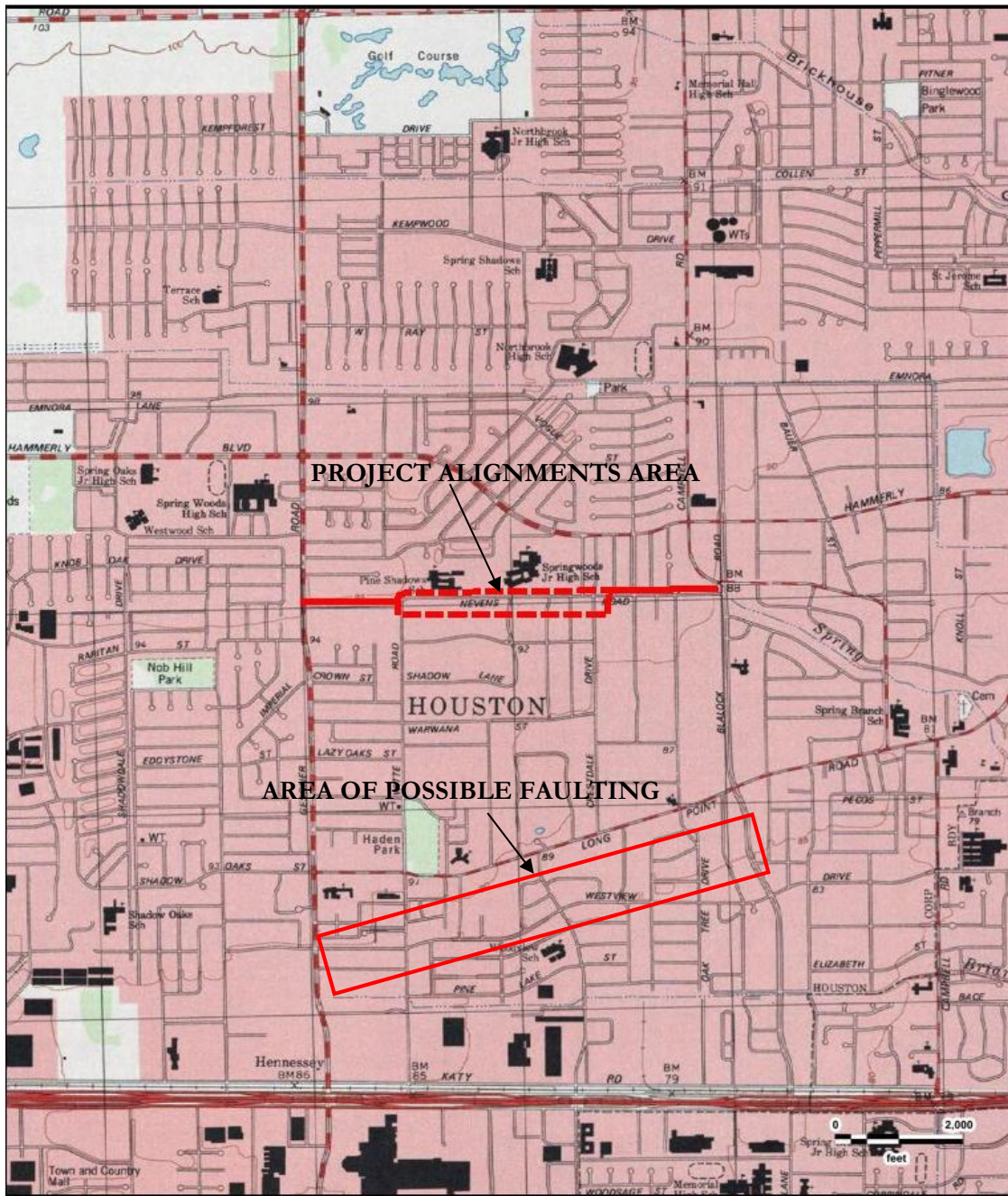
Source: U.S. Geological Survey 1970 Hedwig Village, Texas Quadrangle

	Drawn:	NL	<p style="text-align: center;"> TOPOGRAPHIC MAP (1970) Geologic Fault Assessment Project Neuens Road from Gessner Road to Blalock Road Harris County, Texas </p> 
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Report No.	HG1810145-Fault	Scale:	





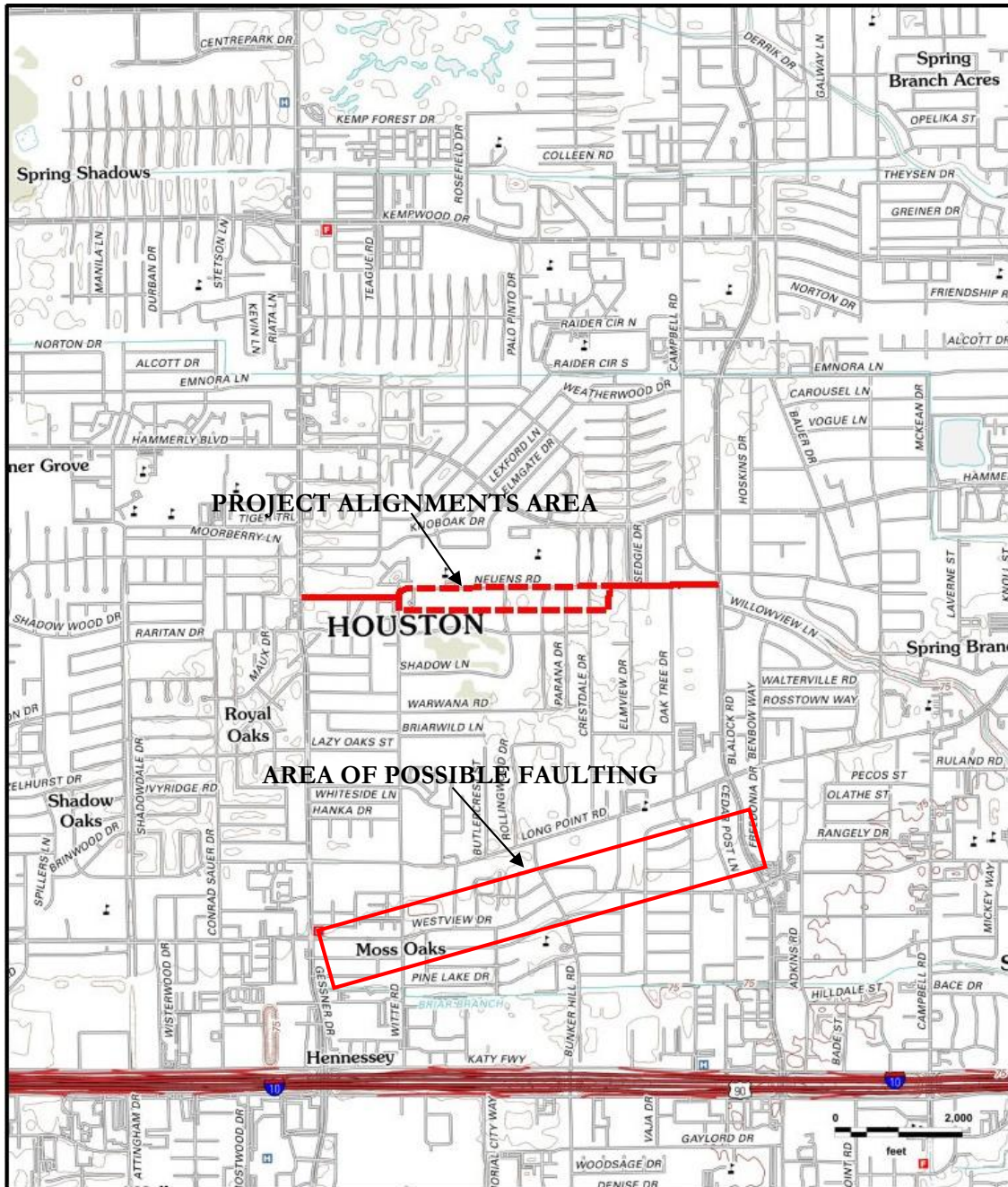
Source: U.S. Geological Survey 1982 Hedwig Village, Texas Quadrangle

	Drawn:	NL	TOPOGRAPHIC MAP (1982) Geologic Fault Assessment Project Neuens Road from Gessner Road to Blalock Road Harris County, Texas	
	Checked:	EH		
	Date:	August 2018		
Report No.	HG1810145-Fault	Scale:		




Source: U.S. Geological Survey 1995 Hedwig Village, Texas Quadrangle

	Drawn:	NL	TOPOGRAPHIC MAP (1995) Geologic Fault Assessment Project Nevens Road from Gessner Road to Blalock Road Harris County, Texas	
	Checked:	EH		
	Date:	August 2018		
Report No.	HG1810145-Fault	Scale:		



Source: U.S. Geological Survey 2013 Hedwig Village, Texas Quadrangle

	Drawn:	NL	<p>TOPOGRAPHIC MAP (2013) Geologic Fault Assessment Project Neuens Road from Gessner Road to Blalock Road Harris County, Texas</p> 
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	Date:	August 2018	
Report No.	HG1810145-Fault	Scale:	

APPENDIX J

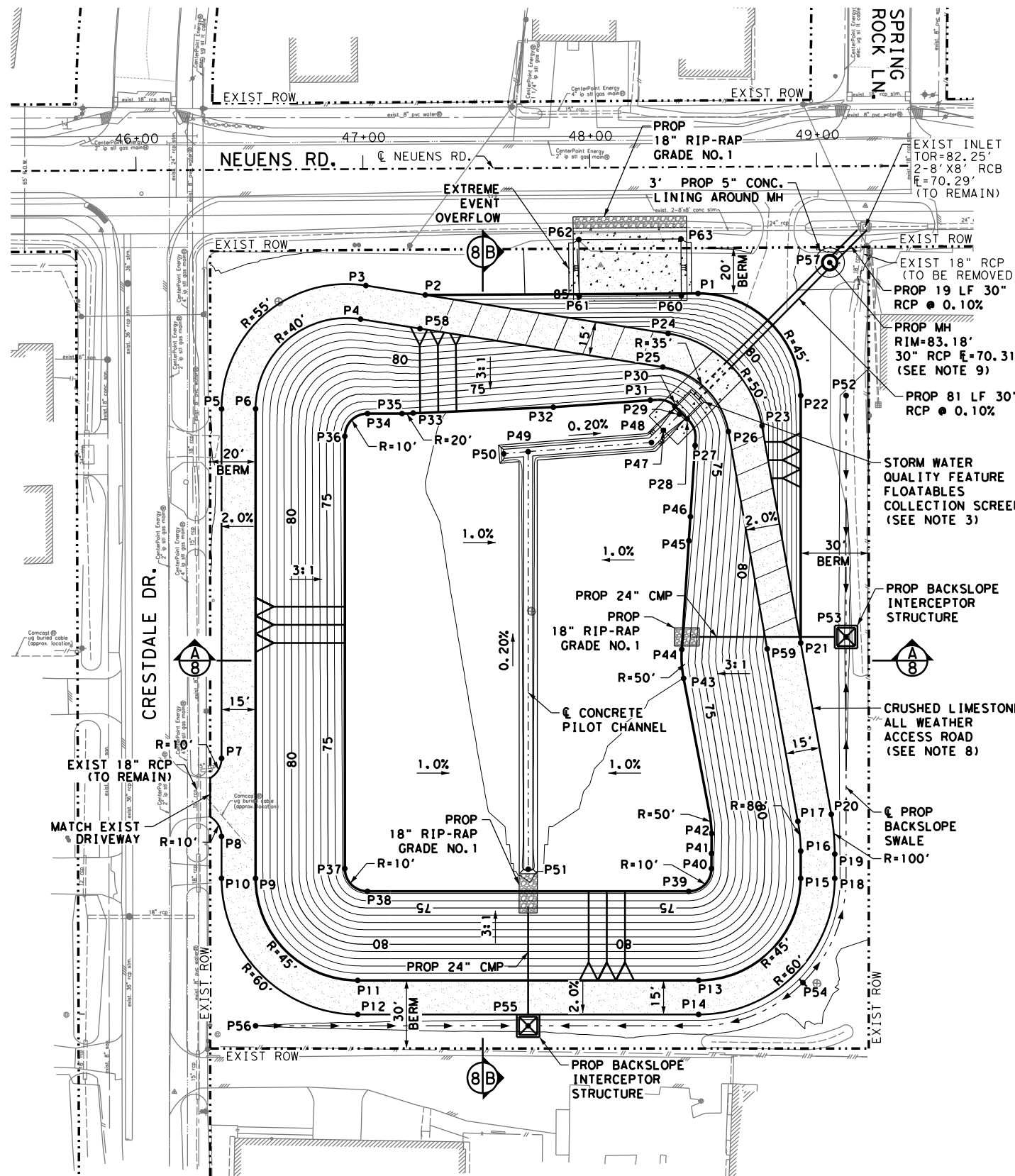
DETENTION POND PLAN & PROFILE

(FOR HCFCU UNIT NO. W140-00-00; PRECINCT 4, KEY MAP NO. 450
S & 450 T;

DATED MAY 24, 2019 PROVIDED BY
CIVILTECH ENGINEERING, INC.)

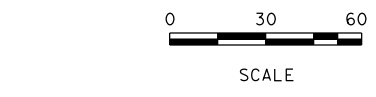
&

SLOPE STABILITY ANALYSIS



COORDINATE POINT INFORMATION			
POINT	X	Y	ELEVATION (FT)
1	3069173.20	13858853.94	85.00
2	3069053.17	13858847.79	85.00
3	3069026.82	13858850.75	84.98
4	3069025.14	13858835.85	84.77
5	3068965.74	13858793.61	84.90
6	3068980.72	13858794.29	85.00
7	3068972.71	13858639.72	84.80
8	3068974.26	13858605.36	84.70
9	3068990.08	13858587.58	85.00
10	3068975.10	13858586.90	84.70
11	3069037.07	13858544.66	85.00
12	3069037.75	13858529.68	84.70
13	3069187.16	13858551.46	85.00
14	3069187.85	13858536.47	84.70
15	3069230.08	13858598.44	85.00
16	3069229.54	13858610.44	85.00
17	3069227.71	13858623.52	84.95
18	3069245.07	13858599.12	84.70
19	3069244.59	13858609.79	84.70
20	3069242.25	13858627.24	84.76
21	3069225.39	13858702.09	85.00
22	3069220.46	13858811.03	85.00
23	3069204.02	13858797.00	76.60
24	3069160.82	13858835.70	76.49
25	3069159.14	13858820.80	76.19
26	3069189.38	13858793.71	76.30
27	3069174.94	13858786.91	71.42
28	3069170.95	13858798.48	71.42
29	3069167.42	13858800.38	70.41
30	3069166.27	13858804.94	71.42
31	3069154.13	13858807.37	71.42
32	3069111.65	13858802.34	71.46
33	3069049.68	13858796.90	72.16
34	3069045.20	13858797.01	72.21
35	3069028.93	13858799.25	72.40
36	3069017.58	13858788.93	72.43
37	3069025.77	13858590.00	72.70
38	3069036.21	13858580.42	72.70
39	3069184.77	13858587.14	72.70
40	3069194.30	13858597.73	72.70
41	3069193.71	13858607.76	72.65
42	3069192.40	13858616.53	72.58
43	3069175.97	13858684.52	71.99
44	3069174.58	13858696.86	71.88
45	3069175.15	13858744.83	71.49
46	3069175.49	13858755.46	71.47
47	3069160.71	13858792.97	70.43
48	3069155.66	13858787.40	70.44
49	3069101.56	13858780.87	70.55
50	3069090.85	13858779.46	70.57
51	3069109.93	13858597.07	70.92
52	3069240.44	13858811.94	83.19
53	3069245.25	13858705.64	82.75
54	3069233.13	13858552.57	83.45
55	3069113.02	13858528.08	83.20
56	3068993.02	13858522.65	84.00
57	3069230.58	13858870.12	83.32

COORDINATE POINT INFORMATION			
POINT	X	Y	ELEVATION (FT)
58	3069051.50	13858832.89	84.70
59	3069210.76	13858698.80	84.70
60	3069165.89	13858852.57	84.50
61	3069120.94	13858850.26	84.50
62	3069119.67	13858875.24	84.00
63	3069164.61	13858877.54	84.00



EARTHWORK QUANTITIES		
STRIPPING (CY)	CUT (CY)	FILL (CY)
947.1	22330.0	432.0

STAGE VS. STORAGE	
WSEL (FT)	POND VOLUME (AC-FT)
72.0	0.1
73.0	0.8
74.0	1.6
75.0	2.5
76.0	3.4
77.0	4.4
78.0	5.5
79.0	6.6
80.0	7.8
81.0	9.1
82.0	10.4
83.0	11.8
84.0	13.3
85.0	14.9

- NOTES:
- ALL HORIZONTAL COORDINATES ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83. THE COORDINATES AND DISTANCES SHOWN ARE SURFACE VALUES AND MAY BE CONVERTED TO GRID BY MULTIPLYING BY A SCALE FACTOR OF 0.999870017.
 - HARRIS COUNTY FLOODPLAIN REFERENCE MARK NO: 210240. A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTHEAST CORNER OF THE NEUENS ROAD AND SEDGE DRIVE INTERSECTION. EL = 82.72 FEET, NAVD 1988, (CORS96) (GEOID 12A) AS OBSERVED BY GPS SURVEYING AND PROCESSED IN REFERENCE TO THE CORS DATED APRIL 30, 2018.
 - SEE SHEETS 8 THROUGH 12 FOR FLOATABLES
 - COLLECTION SCREEN AND ADDITIONAL DETENTION POND DETAILS.
 - SEE SHEET 13 FOR BACKSLOPE INTERCEPTOR STRUCTURE AND CONCRETE PILOT CHANNEL DETAILS.
 - SEE SHEET 14 FOR ROCK RIP-RAP DETAILS.
 - SEE SHEET 17 FOR MANHOLE DETAILS
 - PROPOSED DETENTION POND TO BE MAINTAINED BY THE HARRIS COUNTY FLOOD CONTROL DISTRICT.
 - ALL WEATHER ACCESS ROAD SHOULD BE CONSTRUCTED OF 6" CRUSHED LIMESTONE ON TOP OF 8" CEMENT STABILIZED SAND.
 - A SLIP-ON DUCKBILL CHECK VALVE BACKFLOW PREVENTOR SHALL BE INSTALLED AT THE PROPOSED MANHOLE. THE CHECK VALVE SHALL BE CONSTRUCTED ON THE DOWNSTREAM END OF THE 30-IN RCP PIPE THAT OUTFALLS FROM THE DETENTION POND. CONSTRUCT CHECK VALVE PER MANUFACTURER'S REQUIREMENTS. CHECK VALVE IS INCIDENTAL TO PROPOSED MANHOLE.
 - SLIP-ON DUCKBILL CHECK VALVE WILL BE MAINTAINED BY THE GOVERNING ENTITY MAINTAINING NEUENS ROAD AND THE STORM SEWER SYSTEMS.

DETENTION POND SUMMARY		
TOTAL PROJECT AREA SERVED=	9.92	ACRES
1% STORM (100-YEAR STORM) DATA:		
MINIMUM DETENTION STORAGE VOLUME REQUIRED=	N/A	AC-FT
DETENTION STORAGE VOLUME PROVIDED=	13.24	AC-FT
DETENTION STORAGE RATE PROVIDED=	1.33	AC-FT/AC
MAXIMUM OUTFLOW RATE ALLOWED=	N/A	CFS
MAXIMUM OUTFLOW RATE PROVIDED=	51.50	CFS
OUTFALL SIZE=	30" RCP	
PEAK WATER SURFACE ELEVATION=	83.91	FT
10% STORM (10-YEAR STORM) DATA:		
MAXIMUM OUTFLOW RATE ALLOWED=	N/A	CFS
MAXIMUM OUTFLOW RATE PROVIDED=	49.30	CFS
OUTFALL SIZE=	30" RCP	
PEAK WATER SURFACE ELEVATION=	82.39	FT

NO.	REVISIONS	DATE	NAME

**HARRIS COUNTY
ENGINEERING DEPARTMENT**

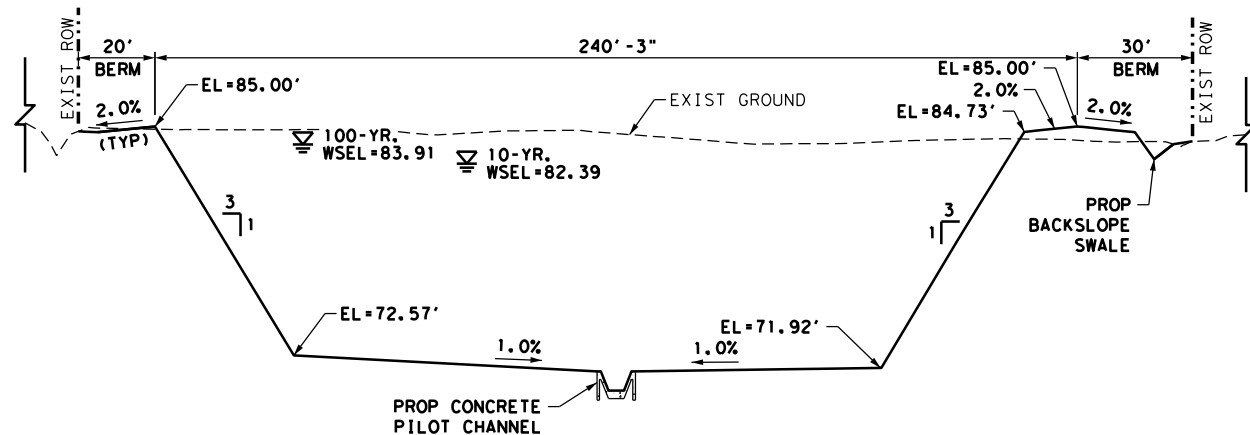


**CivilTech
Engineering, Inc.**
11821 TELGE ROAD
CYPRESS, TEXAS 77429
PH: (281) 304-0200
FX: (281) 304-0210
REGISTRATION NO. F-382

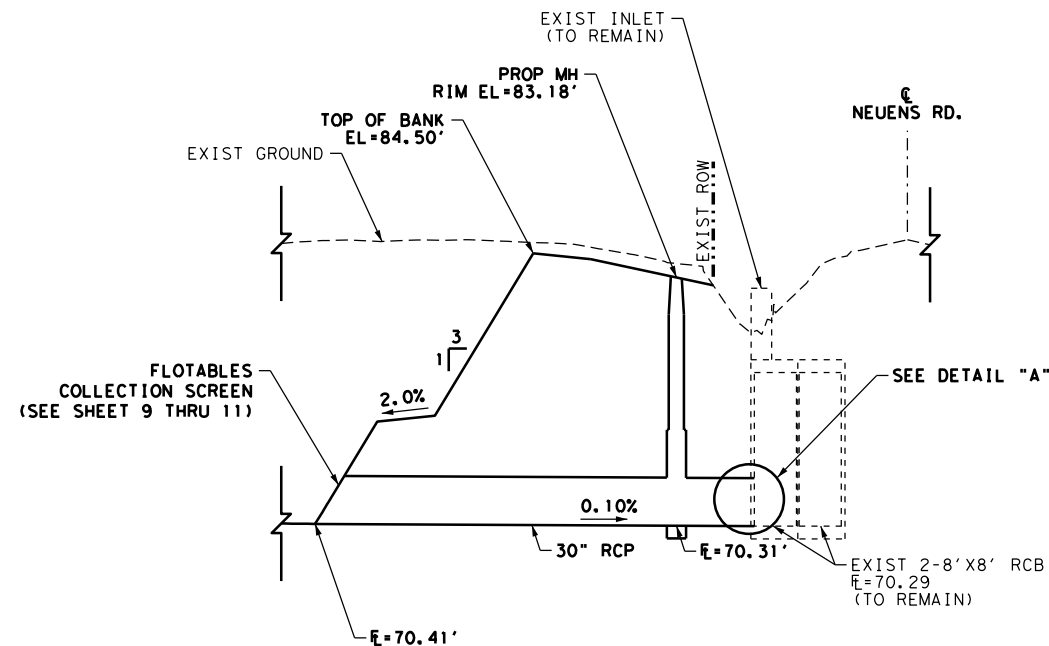


PROJECT TITLE:		NEUENS ROAD
SHEET DESCRIPTION:		PROPOSED DETENTION POND DETENTION POND LAYOUT
DRAWN BY:	RJS	DATE:
CK'D BY:	PMB	5/24/2019
SCALE:	1" = 30'	SHEET NO:
		7 / 24

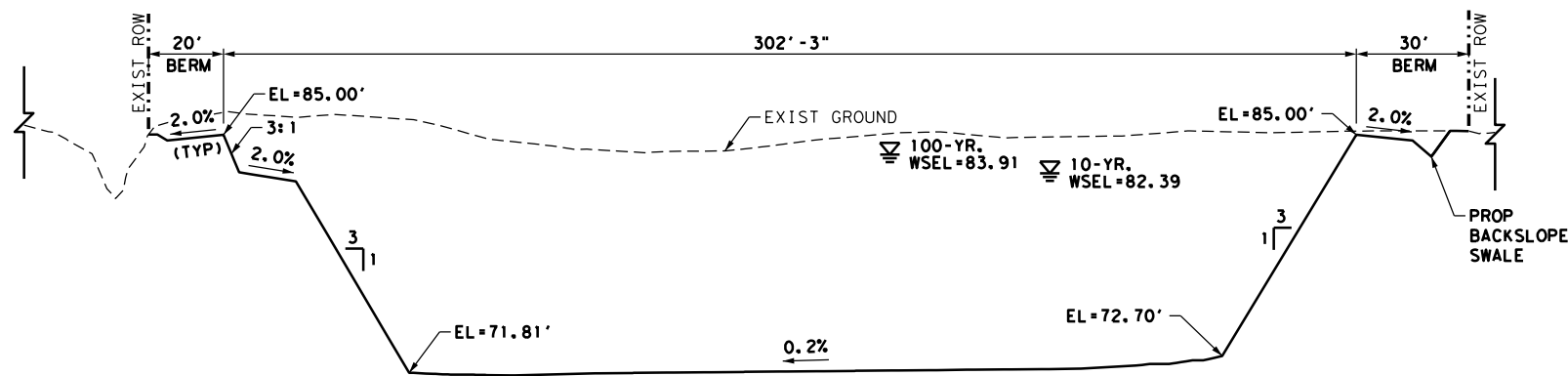
5/24/2019 12:27:48 PM
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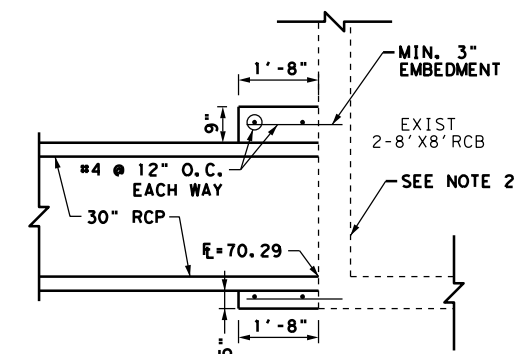
DETENTION POND SECTION A-A
NTS



DETENTION POND OUTFALL PROFILE
NTS



DETENTION POND SECTION B-B
NTS



DETAIL "A"
SCALE: 1/2"=1'

NOTES:

1. NO. 4 REINFORCING BARS SHALL BE EMBEDDED A MINIMUM OF 3-IN INTO EXISTING CULVERT SIDEWALL AND EPOXYED.
2. REMOVE EXISTING CULVERT SIDEWALL WITHIN LIMITS OF 30-IN RCP INSIDE DIAMETER. EXISTING CULVERT REINFORCEMENT TO BE CUT FLUSH WITH OPENING. EXPOSED END OF EXISTING REINFORCING SHALL BE GROUTED.

5/24/2019 12:27:51 PM C:\pwworking\CivilTech\Projects\111\Techengp.com\dms0431\8-D+POND DETAILS-01.dgn

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

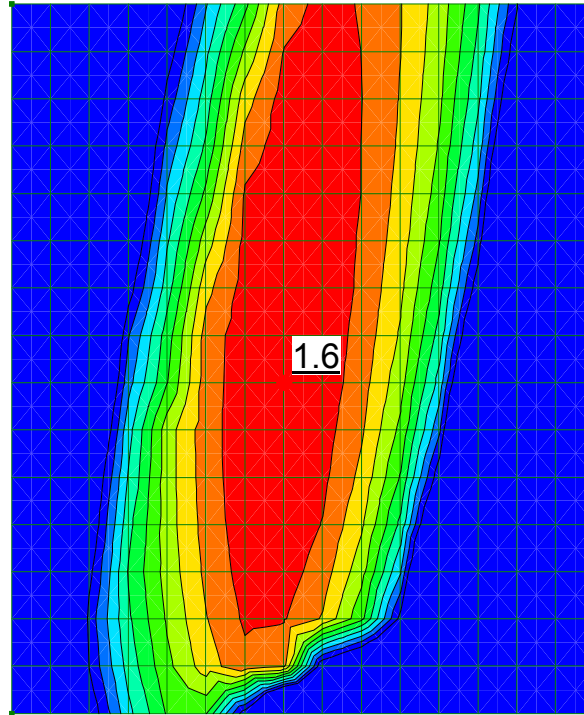


CivilTech
Engineering, Inc.
11821 TELGE ROAD
CYPRESS, TEXAS 77429
PH: (281) 304-0200
FX: (281) 304-0210
REGISTRATION NO. F-382

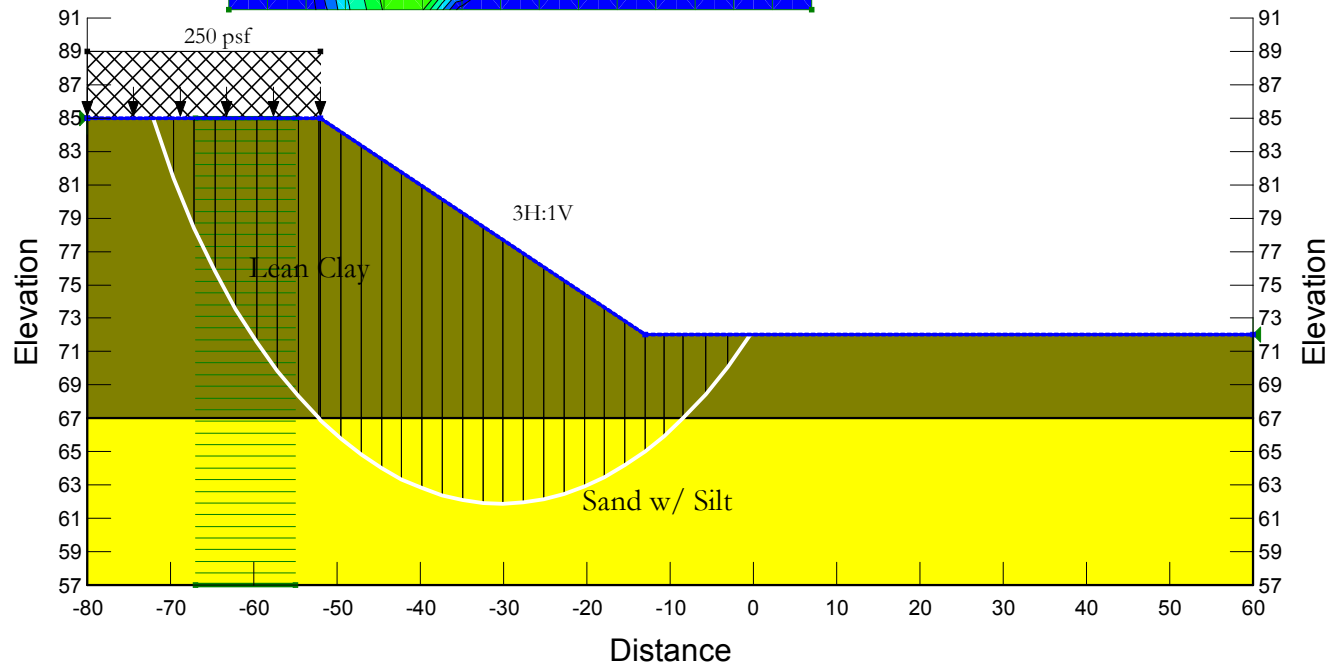


PROJECT TITLE:		NEUENS ROAD	
SHEET DESCRIPTION:		PROPOSED DETENTION POND DETENTION POND DETAILS	
DRAWN BY:	RJS	SHEET 1 OF 5	DATE: 5/24/2019
CK'D BY:	PMB	SCALE: AS SHOWN	SHEET NO: 8 / 24

Project: Neuens Road from Gessner to Blalock
HVJ Project No. HG1810145
Section: Detention Pond
Boring: DP-1, DP-2, DP-3
Short Term Analysis



Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	Lean Clay	125	800	0
	Sand with Silt	120	0	30



SLOPE/W Analysis

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File Information

File Version: 10.00
Title: Neuens Rd Detention Pond
Created By: Ruofan Chu
Last Edited By: Russell Sieg
Revision Number: 30
Date: 07/12/2019
Time: 01:09:51 PM
Tool Version: 10.0.2.18035
File Name: Neuens ST 3 to 1.gsz
Directory: G:\HOUSTON\HOU PS\GEO\PROJECTS\2018\HG1810145 Neuens Road, Civiltech\Engineering\Slope\Slope Stability Revised\
Last Solved Date: 07/12/2019
Last Solved Time: 01:10:01 PM

Project Settings

Unit System: U.S. Customary Units

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
Side Function
Interslice force function option: Half-Sine
PWP Conditions from: Piezometric Line
Apply Phreatic Correction: No
Use Staged Rapid Drawdown: No
Unit Weight of Water: 62.4 pcf
Slip Surface
Direction of movement: Left to Right
Use Passive Mode: No
Slip Surface Option: Grid and Radius
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack Option: (none)
Distribution
F of S Calculation Option: Constant

Advanced

Geometry Settings

Minimum Slip Surface Depth: 0.1 ft

Number of Slices: 30

Factor of Safety Convergence Settings

Maximum Number of Iterations: 100

Tolerable difference in F of S: 0.001

Solution Settings

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

Materials

Lean Clay

Model: Mohr-Coulomb

Unit Weight: 125 pcf

Cohesion': 800 psf

Phi': 0 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Sand with Silt

Model: Mohr-Coulomb

Unit Weight: 120 pcf

Cohesion': 0 psf

Phi': 30 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Slip Surface Grid

Upper Left: (-63.01563, 133.98062) ft

Lower Left: (-63.01563, 91.48927) ft

Lower Right: (7.0273, 91.48927) ft

Grid Horizontal Increment: 15

Grid Vertical Increment: 15

Slip Surface Radius

Upper Left Coordinate: (-67, 85) ft

Upper Right Coordinate: (-55, 85) ft

Lower Left Coordinate: (-67, 57) ft
Lower Right Coordinate: (-55, 57) ft
Number of Increments: 40
Use Left Projection: No
Left Projection Angle: 135 °
Use Right Projection: No
Right Projection Angle: 45 °

Slip Surface Limits

Left Coordinate: (-80, 85) ft
Right Coordinate: (60, 72) ft

Piezometric Lines

Piezometric Line 1

Coordinates

	X	Y
Coordinate 1	-80 ft	85 ft
Coordinate 2	-52 ft	85 ft
Coordinate 3	-13 ft	72 ft
Coordinate 4	60 ft	72 ft

Surcharge Loads

Surcharge Load 1

Surcharge (Unit Weight): 250 pcf
Direction: Vertical

Coordinates

	X	Y
	-80 ft	85 ft
	-80 ft	89 ft
	-52 ft	89 ft

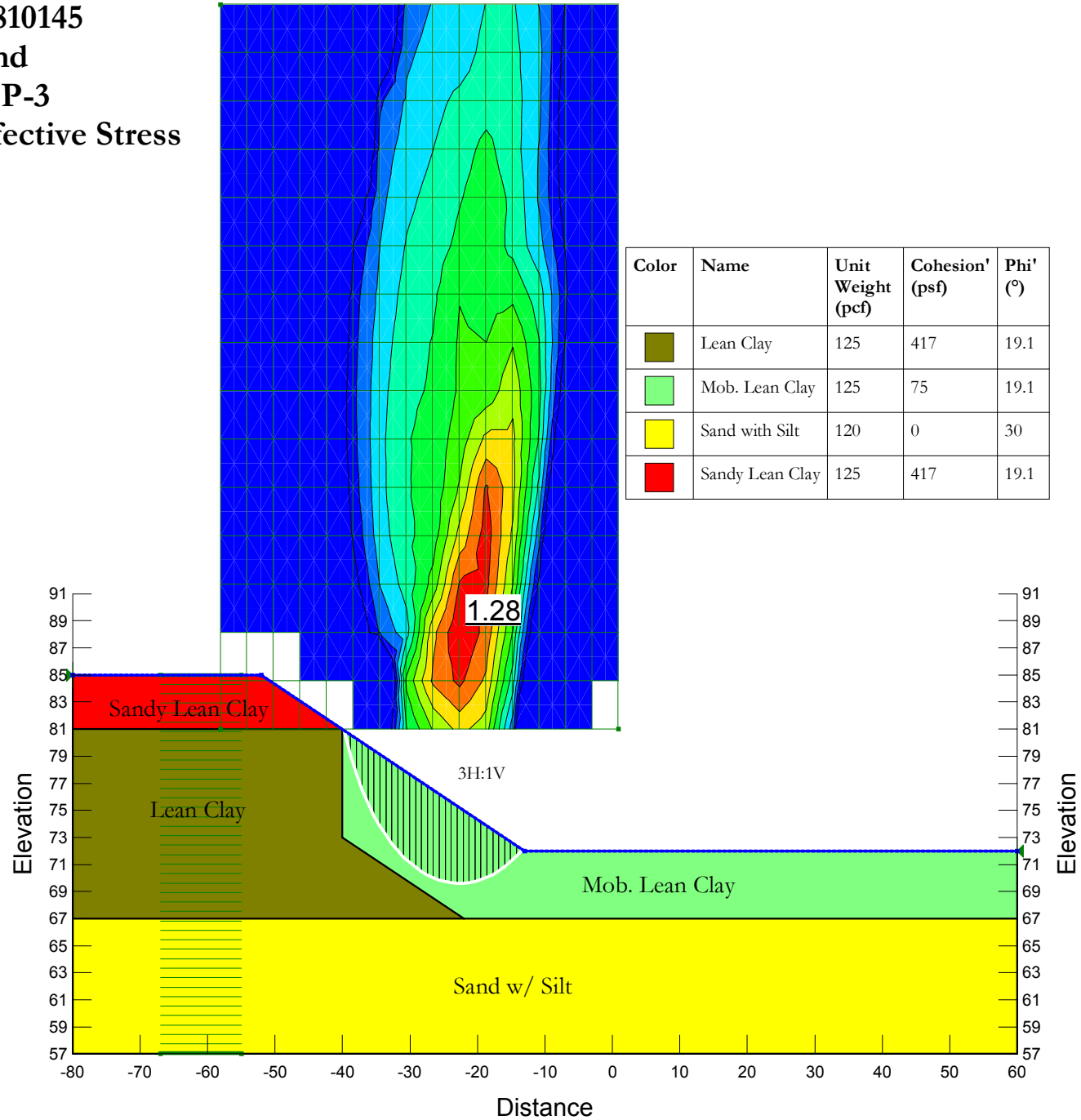
Points

	X	Y
--	---	---

Slice 1	- 70.908612 ft	83.199438 ft	112.35505 psf	506.03982 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 2	- 68.413263 ft	79.887116 ft	319.04398 psf	1,006.8067 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 3	- 65.917915 ft	77.078526 ft	494.29997 psf	1,402.5628 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 4	- 63.422567 ft	74.655494 ft	645.49716 psf	1,731.231 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 5	- 60.927218 ft	72.544692 ft	777.2112 psf	2,013.9885 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 6	-58.43187 ft	70.696926 ft	892.51185 psf	2,263.8914 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 7	- 55.936521 ft	69.077388 ft	993.571 psf	2,489.4663 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 8	- 53.441173 ft	67.660509 ft	1,081.9842 psf	2,696.4307 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 9	- 52.096749 ft	66.952531 ft	1,126.1621 psf	2,772.8876 psf	950.73744 psf	0 psf	0 psf	Sand with Silt
Slice 10	-50.78125 ft	66.350748 ft	1,138.3633 psf	1,970.4442 psf	480.40215 psf	0 psf	0 psf	Sand with Silt
Slice 11	-48.34375 ft	65.319134 ft	1,152.036 psf	2,025.258 psf	504.15494 psf	0 psf	0 psf	Sand with Silt
Slice 12	-45.90625 ft	64.436881 ft	1,156.3886 psf	2,069.9599 psf	527.4506 psf	0 psf	0 psf	Sand with Silt
Slice 13	-43.46875 ft	63.695658 ft	1,151.9409 psf	2,104.3264 psf	549.86001 psf	0 psf	0 psf	Sand with Silt
Slice 14	-41.03125 ft	63.088943 ft	1,139.0999 psf	2,127.6627 psf	570.74695 psf	0 psf	0 psf	Sand with Silt
Slice 15	-38.59375 ft	62.611695 ft	1,118.1802 psf	2,138.854 psf	589.28629 psf	0 psf	0 psf	Sand with Silt

Slice 16	-36.15625 ft	62.260124 ft	1,089.4182 psf	2,136.4213 psf	604.48748 psf	0 psf	0 psf	Sand with Silt
Slice 17	-33.71875 ft	62.031535 ft	1,052.9822 psf	2,118.585 psf	615.22608 psf	0 psf	0 psf	Sand with Silt
Slice 18	-31.28125 ft	61.924216 ft	1,008.9789 psf	2,083.3446 psf	620.28528 psf	0 psf	0 psf	Sand with Silt
Slice 19	-28.84375 ft	61.937373 ft	957.45792 psf	2,028.5725 psf	618.40831 psf	0 psf	0 psf	Sand with Silt
Slice 20	-26.40625 ft	62.071104 ft	898.41309 psf	1,952.1259 psf	608.36138 psf	0 psf	0 psf	Sand with Silt
Slice 21	-23.96875 ft	62.326399 ft	831.78269 psf	1,851.9689 psf	589.00478 psf	0 psf	0 psf	Sand with Silt
Slice 22	-21.53125 ft	62.705178 ft	757.4469 psf	1,726.301 psf	559.36815 psf	0 psf	0 psf	Sand with Silt
Slice 23	-19.09375 ft	63.210365 ft	675.22325 psf	1,573.6788 psf	518.72357 psf	0 psf	0 psf	Sand with Silt
Slice 24	-16.65625 ft	63.846006 ft	584.85922 psf	1,393.1188 psf	466.64888 psf	0 psf	0 psf	Sand with Silt
Slice 25	-14.21875 ft	64.617445 ft	486.02142 psf	1,184.1636 psf	403.07258 psf	0 psf	0 psf	Sand with Silt
Slice 26	-11.86609 ft	65.494732 ft	405.92872 psf	1,010.1571 psf	348.85144 psf	0 psf	0 psf	Sand with Silt
Slice 27	-9.5982702 ft	66.475797 ft	344.71025 psf	874.31435 psf	305.76707 psf	0 psf	0 psf	Sand with Silt
Slice 28	-7.1188964 ft	67.716206 ft	267.30876 psf	894.21737 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 29	-4.4279688 ft	69.261009 ft	170.91302 psf	703.13405 psf	0 psf	800 psf	0 psf	Lean Clay
Slice 30	-1.7370411 ft	71.044804 ft	59.604252 psf	488.47129 psf	0 psf	800 psf	0 psf	Lean Clay

Project: Neuens Road from Gessner to Blalock
HVJ Project No. HG1810145
Section: Detention Pond
Boring: DP-1, DP-2, DP-3
Rapid Drawdown - Effective Stress



SLOPE/W Analysis

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File Information

File Version: 10.00
Title: Neuens Rd Detention Pond
Created By: Ruofan Chu
Last Edited By: Russell Sieg
Revision Number: 55
Date: 07/12/2019
Time: 12:19:19 PM
Tool Version: 10.0.2.18035
File Name: Neuens RDD 3 to 1 - Effective.gsz
Directory: G:\HOUSTON\HOU PS\GEO\PROJECTS\2018\HG1810145 Neuens Road, Civiltech\Engineering\Slope\Slope Stability Revised - 7-10\
Last Solved Date: 07/12/2019
Last Solved Time: 12:19:29 PM

Project Settings

Unit System: U.S. Customary Units

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
Side Function
Interslice force function option: Half-Sine
PWP Conditions from: Piezometric Line
Apply Phreatic Correction: No
Use Staged Rapid Drawdown: No
Unit Weight of Water: 62.4 pcf
Slip Surface
Direction of movement: Left to Right
Use Passive Mode: No
Slip Surface Option: Grid and Radius
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack Option: (none)
Distribution
F of S Calculation Option: Constant

Advanced

Geometry Settings

Minimum Slip Surface Depth: 0.1 ft

Number of Slices: 30

Factor of Safety Convergence Settings

Maximum Number of Iterations: 100

Tolerable difference in F of S: 0.001

Solution Settings

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

Materials

Lean Clay

Model: Mohr-Coulomb

Unit Weight: 125 pcf

Cohesion': 417 psf

Phi': 19.1 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Sand with Silt

Model: Mohr-Coulomb

Unit Weight: 120 pcf

Cohesion': 0 psf

Phi': 30 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Mob. Lean Clay

Model: Mohr-Coulomb

Unit Weight: 125 pcf

Cohesion': 75 psf

Phi': 19.1 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Sandy Lean Clay

Model: Mohr-Coulomb

Unit Weight: 125 pcf

Cohesion': 417 psf

Phi': 19.1 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Slip Surface Grid

Upper Left: (-58.03969, 134.5194) ft

Lower Left: (-58.03969, 81.014965) ft

Lower Right: (0.94384, 81.014965) ft

Grid Horizontal Increment: 15

Grid Vertical Increment: 15

Slip Surface Radius

Upper Left Coordinate: (-67, 85) ft

Upper Right Coordinate: (-55, 85) ft

Lower Left Coordinate: (-67, 57) ft

Lower Right Coordinate: (-55, 57) ft

Number of Increments: 40

Use Left Projection: No

Left Projection Angle: 135 °

Use Right Projection: No

Right Projection Angle: 45 °

Slip Surface Limits

Left Coordinate: (-80, 85) ft

Right Coordinate: (60, 72) ft

Piezometric Lines

Piezometric Line 1

Coordinates

	X	Y
Coordinate 1	-80 ft	85 ft
Coordinate 2	-52 ft	85 ft
Coordinate 3	-13 ft	72 ft
Coordinate 4	60 ft	72 ft

Points

	X	Y
Point 1	-13 ft	72 ft
Point 2	-52 ft	85 ft
Point 3	-80 ft	85 ft
Point 4	60 ft	72 ft
Point 5	-80 ft	67 ft
Point 6	60 ft	67 ft
Point 7	-80 ft	57 ft
Point 8	60 ft	57 ft
Point 9	-60 ft	85 ft
Point 10	-80 ft	81 ft
Point 11	-22 ft	67 ft
Point 12	-80 ft	73.5 ft
Point 13	-40 ft	81 ft
Point 14	-40 ft	73 ft

Regions

	Material	Points	Area
Region 1	Sand with Silt	5,7,8,6,11	1,400 ft ²
Region 2	Sandy Lean Clay	10,13,2,3	136 ft ²
Region 3	Mob. Lean Clay	13,14,11,6,4,1	567.5 ft ²
Region 4	Lean Clay	10,13,14,11,5	614 ft ²

Slip Results

Slip Surfaces Analysed: 5367 of 10496 converged

Current Slip Surface

Slip Surface: 1,704

Factor of Safety: 1.28

Volume: 120.92108 ft³

Weight: 15,115.135 lbf

Resisting Moment: 90,373.459 lbf·ft

Activating Moment: 70,745.049 lbf·ft

Resisting Force: 4,338.8251 lbf

Activating Force: 3,398.8483 lbf

Slip Rank: 1 of 10,496 slip surfaces
Exit: (-13.331333, 72.110444) ft
Entry: (-39.72723, 80.909077) ft
Radius: 18.54889 ft
Center: (-22.649572, 88.14889) ft

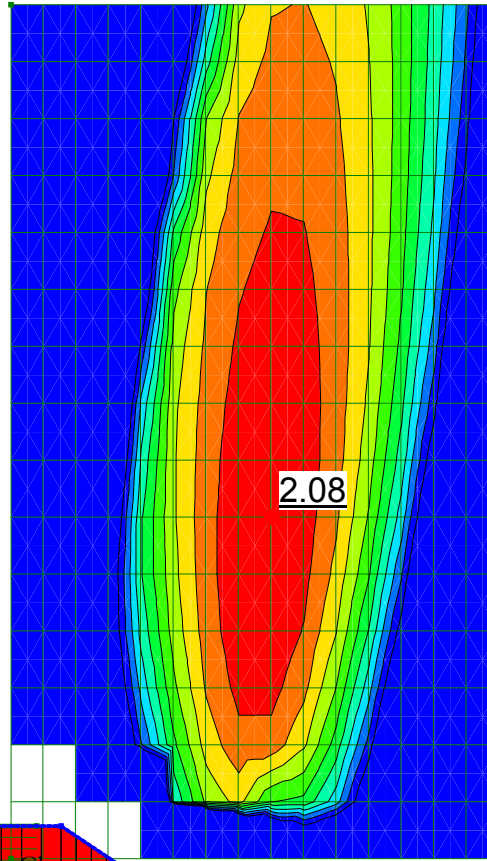
Slip Slices

	X	Y	PWP	Base Normal Stress	Frictional Strength	Cohesive Strength	Suction Strength	Base Material
Slice 1	- 39.287299 ft	80.009781 ft	46.965452 psf	0.90014961 psf	-15.951541 psf	75 psf	0 psf	Mob. Lean Clay
Slice 2	- 38.407436 ft	78.399433 ft	129.15005 psf	146.94745 psf	6.1629034 psf	75 psf	0 psf	Mob. Lean Clay
Slice 3	- 37.527572 ft	77.096189 ft	192.17129 psf	255.41765 psf	21.901016 psf	75 psf	0 psf	Mob. Lean Clay
Slice 4	- 36.647709 ft	75.997219 ft	242.44589 psf	340.61417 psf	33.993818 psf	75 psf	0 psf	Mob. Lean Clay
Slice 5	- 35.767846 ft	75.049861 ft	283.25986 psf	410.10438 psf	43.923851 psf	75 psf	0 psf	Mob. Lean Clay
Slice 6	- 34.887983 ft	74.22267 ft	316.57545 psf	468.47254 psf	52.599083 psf	75 psf	0 psf	Mob. Lean Clay
Slice 7	- 34.008119 ft	73.495054 ft	343.67749 psf	518.71084 psf	60.610731 psf	75 psf	0 psf	Mob. Lean Clay
Slice 8	- 33.128256 ft	72.852677 ft	365.46068 psf	562.8461 psf	68.35083 psf	75 psf	0 psf	Mob. Lean Clay
Slice 9	- 32.248393 ft	72.285109 ft	382.57579 psf	602.25874 psf	76.072043 psf	75 psf	0 psf	Mob. Lean Clay
Slice 10	-31.36853 ft	71.78452 ft	395.51139 psf	637.85919 psf	83.920451 psf	75 psf	0 psf	Mob. Lean Clay

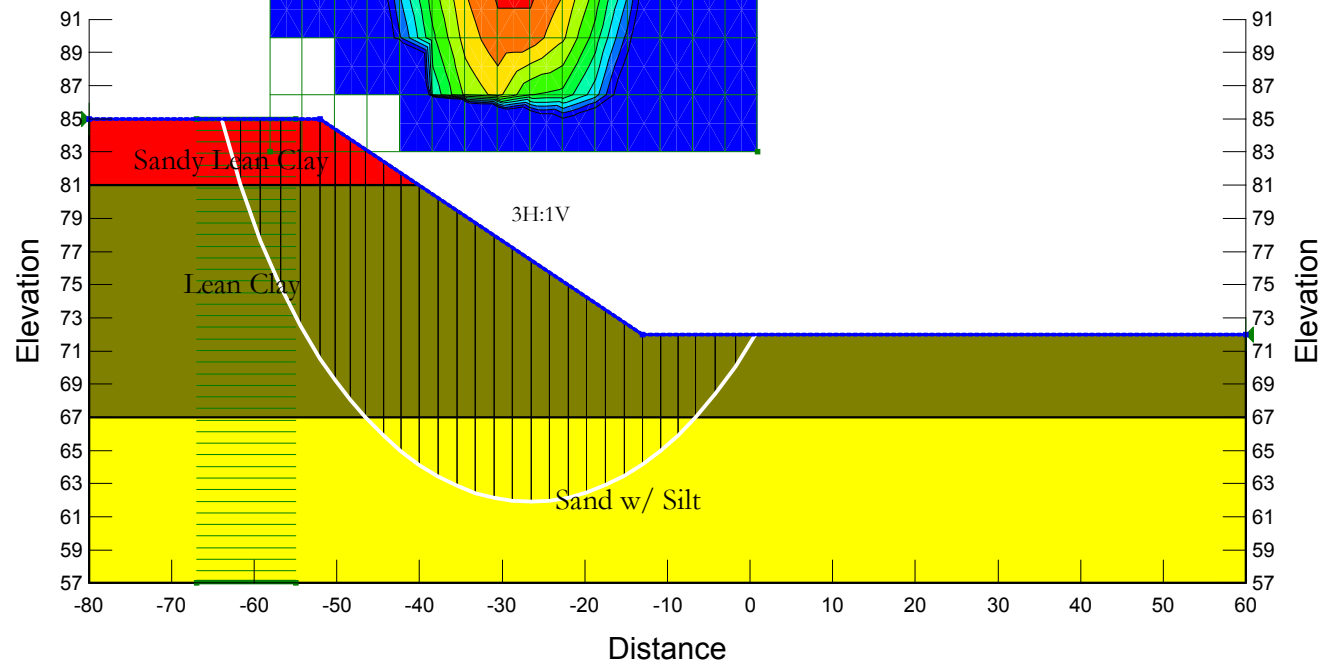
Slice 11	- 30.488666 ft	71.344895 ft	404.64283 psf	670.19144 psf	91.95445 psf	75 psf	0 psf	Mob. Lean Clay
Slice 12	- 29.608803 ft	70.961536 ft	410.26328 psf	699.49618 psf	100.15587 psf	75 psf	0 psf	Mob. Lean Clay
Slice 13	-28.72894 ft	70.630735 ft	412.60409 psf	725.75026 psf	108.43658 psf	75 psf	0 psf	Mob. Lean Clay
Slice 14	- 27.849077 ft	70.349552 ft	411.84872 psf	748.69267 psf	116.64268 psf	75 psf	0 psf	Mob. Lean Clay
Slice 15	- 26.969213 ft	70.11566 ft	408.14244 psf	767.84456 psf	124.55803 psf	75 psf	0 psf	Mob. Lean Clay
Slice 16	-26.08935 ft	69.927232 ft	401.59919 psf	782.52974 psf	131.90903 psf	75 psf	0 psf	Mob. Lean Clay
Slice 17	- 25.209487 ft	69.782865 ft	392.30652 psf	791.90145 psf	138.37215 psf	75 psf	0 psf	Mob. Lean Clay
Slice 18	- 24.329624 ft	69.681524 ft	380.32907 psf	794.98019 psf	143.58582 psf	75 psf	0 psf	Mob. Lean Clay
Slice 19	-23.44976 ft	69.6225 ft	365.711 psf	790.70581 psf	147.16765 psf	75 psf	0 psf	Mob. Lean Clay
Slice 20	- 22.569897 ft	69.605389 ft	348.47758 psf	778.00447 psf	148.73702 psf	75 psf	0 psf	Mob. Lean Clay
Slice 21	- 21.690034 ft	69.630074 ft	328.63609 psf	755.86838 psf	147.94245 psf	75 psf	0 psf	Mob. Lean Clay
Slice 22	- 20.810171 ft	69.696723 ft	306.17602 psf	723.44303 psf	144.49166 psf	75 psf	0 psf	Mob. Lean Clay
Slice 23	- 19.930307 ft	69.805795 ft	281.06877 psf	680.11424 psf	138.18188 psf	75 psf	0 psf	Mob. Lean Clay

Slice 24	- 19.050444 ft	69.958055 ft	253.26661 psf	625.58542 psf	128.92695 psf	75 psf	0 psf	Mob. Lean Clay
Slice 25	- 18.170581 ft	70.154601 ft	222.70096 psf	559.93512 psf	116.7778 psf	75 psf	0 psf	Mob. Lean Clay
Slice 26	- 17.290718 ft	70.396909 ft	189.27979 psf	483.6462 psf	101.93351 psf	75 psf	0 psf	Mob. Lean Clay
Slice 27	- 16.410854 ft	70.686889 ft	152.88389 psf	397.60049 psf	84.740719 psf	75 psf	0 psf	Mob. Lean Clay
Slice 28	- 15.530991 ft	71.02697 ft	113.36166 psf	303.03677 psf	65.680897 psf	75 psf	0 psf	Mob. Lean Clay
Slice 29	- 14.651128 ft	71.420219 ft	70.521779 psf	201.47468 psf	45.346508 psf	75 psf	0 psf	Mob. Lean Clay
Slice 30	- 13.771265 ft	71.870504 ft	24.122881 psf	94.611861 psf	24.408998 psf	75 psf	0 psf	Mob. Lean Clay

Project: Neuens Road from Gessner to Blalock
HVJ Project No. HG1810145
Section: Detention Pond
Boring: DP-1, DP-2, DP-3
Rapid Drawdown - Total Stress



Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
■	Lean Clay	125	481	10
■	Sand with Silt	120	0	30
■	Sandy Lean Clay	125	481	10



SLOPE/W Analysis

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File Information

File Version: 10.00
Title: Neuens Rd Detention Pond
Created By: Ruofan Chu
Last Edited By: Russell Sieg
Revision Number: 56
Date: 07/12/2019
Time: 12:26:52 PM
Tool Version: 10.0.2.18035
File Name: Neuens RDD 3 to 1 - Total.gsz
Directory: G:\HOUSTON\HOU PS\GEO\PROJECTS\2018\HG1810145 Neuens Road, Civiltech\Engineering\Slope\Slope Stability Revised - 7-10\
Last Solved Date: 07/12/2019
Last Solved Time: 12:27:03 PM

Project Settings

Unit System: U.S. Customary Units

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
Side Function
Interslice force function option: Half-Sine
PWP Conditions from: Piezometric Line
Apply Phreatic Correction: No
Use Staged Rapid Drawdown: No
Unit Weight of Water: 62.4 pcf
Slip Surface
Direction of movement: Left to Right
Use Passive Mode: No
Slip Surface Option: Grid and Radius
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack Option: (none)
Distribution
F of S Calculation Option: Constant

Advanced

Geometry Settings

Minimum Slip Surface Depth: 0.1 ft

Number of Slices: 30

Factor of Safety Convergence Settings

Maximum Number of Iterations: 100

Tolerable difference in F of S: 0.001

Solution Settings

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

Materials

Lean Clay

Model: Mohr-Coulomb

Unit Weight: 125 pcf

Cohesion': 481 psf

Phi': 10 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Sand with Silt

Model: Mohr-Coulomb

Unit Weight: 120 pcf

Cohesion': 0 psf

Phi': 30 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Sandy Lean Clay

Model: Mohr-Coulomb

Unit Weight: 125 pcf

Cohesion': 481 psf

Phi': 10 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Slip Surface Grid

Upper Left: (-58.03969, 134.51894) ft

Lower Left: (-58.03969, 83.022394) ft

Lower Right: (0.94384, 83.022394) ft
Grid Horizontal Increment: 15
Grid Vertical Increment: 15

Slip Surface Radius

Upper Left Coordinate: (-67, 85) ft
Upper Right Coordinate: (-55, 85) ft
Lower Left Coordinate: (-67, 57) ft
Lower Right Coordinate: (-55, 57) ft
Number of Increments: 40
Use Left Projection: No
Left Projection Angle: 135 °
Use Right Projection: No
Right Projection Angle: 45 °

Slip Surface Limits

Left Coordinate: (-80, 85) ft
Right Coordinate: (60, 72) ft

Piezometric Lines

Piezometric Line 1

Coordinates

	X	Y
Coordinate 1	-80 ft	85 ft
Coordinate 2	-52 ft	85 ft
Coordinate 3	-13 ft	72 ft
Coordinate 4	60 ft	72 ft

Points

	X	Y
Point 1	-13 ft	72 ft
Point 2	-52 ft	85 ft
Point 3	-80 ft	85 ft
Point 4	60 ft	72 ft
Point 5	-80 ft	67 ft

Point 6	60 ft	67 ft
Point 7	-80 ft	57 ft
Point 8	60 ft	57 ft
Point 9	-60 ft	85 ft
Point 10	-80 ft	81 ft
Point 11	-22 ft	67 ft
Point 12	-80 ft	73.5 ft
Point 13	-40 ft	81 ft
Point 14	-40 ft	73 ft

Regions

	Material	Points	Area
Region 1	Sand with Silt	5,7,8,6,11	1,400 ft ²
Region 2	Sandy Lean Clay	10,13,2,3	136 ft ²
Region 3	Lean Clay	10,5,11,6,4,1,13	1,181.5 ft ²

Slip Results

Slip Surfaces Analysed: 5577 of 10496 converged

Current Slip Surface

Slip Surface: 4,298

Factor of Safety: 2.08

Volume: 726.87836 ft³

Weight: 90,173.652 lbf

Resisting Moment: 1,575,282.7 lbf-ft

Activating Moment: 756,600.31 lbf-ft

Resisting Force: 32,127.66 lbf

Activating Force: 15,433.874 lbf

Slip Rank: 1 of 10,496 slip surfaces

Exit: (0.63499663, 72) ft

Entry: (-63.916787, 85) ft

Radius: 41.721011 ft

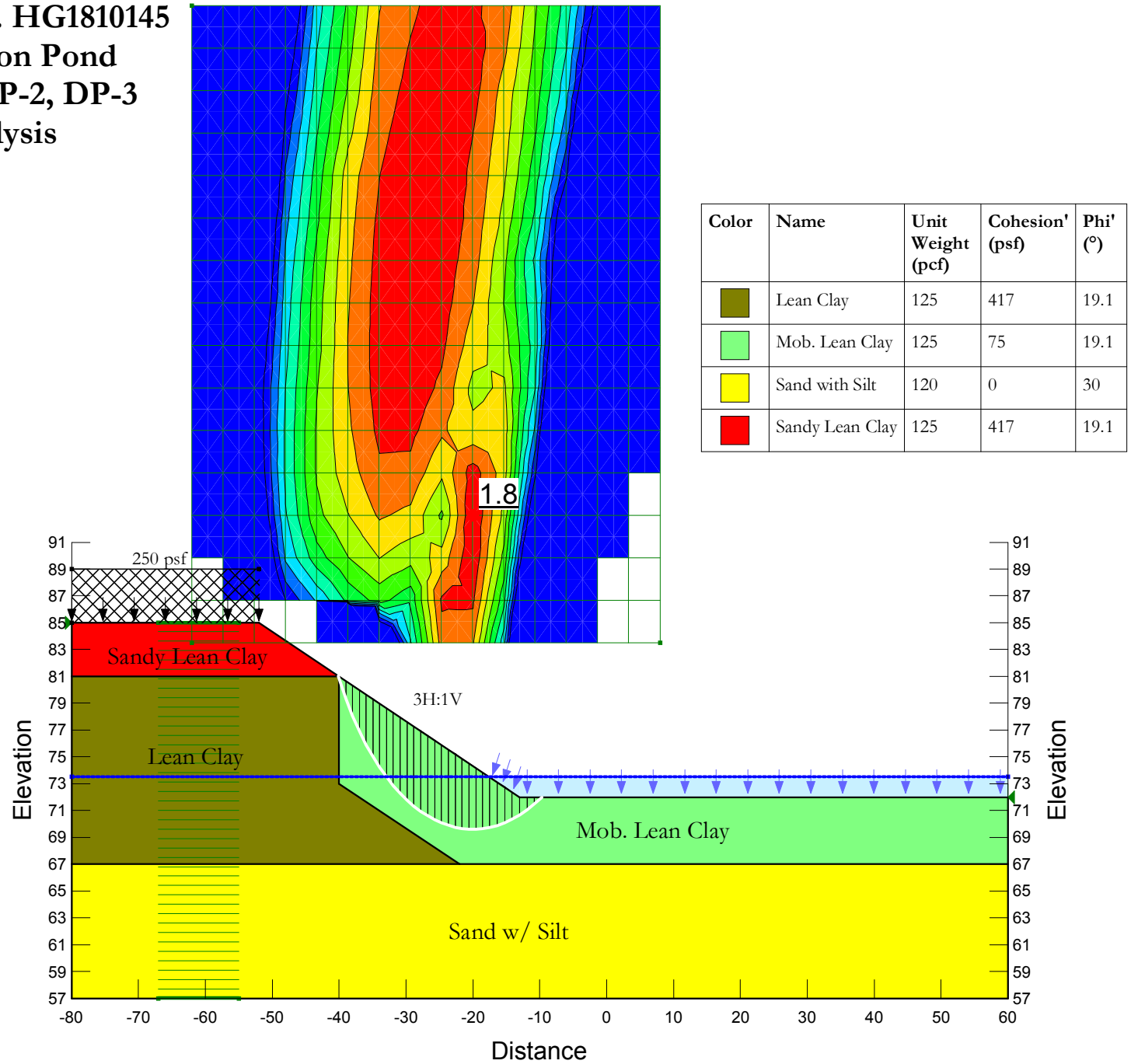
Center: (-26.581807, 103.62101) ft

Slip Slices

	X	Y	PWP	Base Normal Stress	Frictional Strength	Cohesive Strength	Suction Strength	Base Material
Slice 1	-62.777365 ft	83 ft	124.8 psf	-114.52485 psf	-42.199428 psf	481 psf	0 psf	Sandy Lean Clay
Slice 2	-60.4332 ft	79.321674 ft	354.32757 psf	382.04234 psf	4.886862 psf	481 psf	0 psf	Lean Clay
Slice 3	-58.023714 ft	76.258969 ft	545.44034 psf	779.78623 psf	41.321503 psf	481 psf	0 psf	Lean Clay
Slice 4	-55.614228 ft	73.705415 ft	704.78212 psf	1,105.1184 psf	70.590094 psf	481 psf	0 psf	Lean Clay
Slice 5	-53.204743 ft	71.536571 ft	840.118 psf	1,380.6916 psf	95.317704 psf	481 psf	0 psf	Lean Clay
Slice 6	-51.095069 ft	69.879469 ft	924.69856 psf	1,558.4831 psf	111.75331 psf	481 psf	0 psf	Lean Clay
Slice 7	-49.285206 ft	68.634804 ft	964.72054 psf	1,651.4418 psf	121.0875 psf	481 psf	0 psf	Lean Clay
Slice 8	-47.475343 ft	67.523786 ft	996.4029 psf	1,730.4591 psf	129.43391 psf	481 psf	0 psf	Lean Clay
Slice 9	-45.475343 ft	66.443489 ft	1,022.2135 psf	1,828.9838 psf	465.78905 psf	0 psf	0 psf	Sand with Silt
Slice 10	-43.285206 ft	65.408305 ft	1,041.2541 psf	1,881.07 psf	484.86798 psf	0 psf	0 psf	Sand with Silt
Slice 11	-41.095069 ft	64.523139 ft	1,050.9336 psf	1,920.4414 psf	502.0106 psf	0 psf	0 psf	Sand with Silt
Slice 12	-38.875 ft	63.769611 ft	1,051.7763 psf	1,947.6526 psf	517.23445 psf	0 psf	0 psf	Sand with Silt
Slice 13	-36.625 ft	63.143443 ft	1,044.0491 psf	1,962.3445 psf	530.17805 psf	0 psf	0 psf	Sand with Silt
Slice 14	-34.375 ft	62.65032 ft	1,028.02 psf	1,963.5357 psf	540.12022 psf	0 psf	0 psf	Sand with Silt
Slice 15	-32.125 ft	62.285465 ft	1,003.987 psf	1,950.4894 psf	546.46341 psf	0 psf	0 psf	Sand with Silt
Slice 16	-29.875 ft	62.045488 ft	972.16152 psf	1,922.2172 psf	548.51488 psf	0 psf	0 psf	Sand with Silt
Slice 17	-27.625 ft	61.928229 ft	932.67853 psf	1,877.5406 psf	545.51638 psf	0 psf	0 psf	Sand with Silt
Slice 18	-25.375 ft	61.932647 ft	885.60282 psf	1,815.1545 psf	536.67693 psf	0 psf	0 psf	Sand with Silt
Slice 19	-23.125 ft	62.058782 ft	830.93199 psf	1,733.6913 psf	521.20835 psf	0 psf	0 psf	Sand with Silt

Slice 20	-20.875 ft	62.307752 ft	768.59625 psf	1,631.7851 psf	498.36233 psf	0 psf	0 psf	Sand with Silt
Slice 21	-18.625 ft	62.681806 ft	698.45533 psf	1,508.1316 psf	467.46679 psf	0 psf	0 psf	Sand with Silt
Slice 22	-16.375 ft	63.184424 ft	620.29195 psf	1,361.538 psf	427.95862 psf	0 psf	0 psf	Sand with Silt
Slice 23	-14.125 ft	63.820495 ft	533.80114 psf	1,190.9567 psf	379.40892 psf	0 psf	0 psf	Sand with Silt
Slice 24	-11.9322 ft	64.573206 ft	463.43196 psf	1,049.8938 psf	338.59389 psf	0 psf	0 psf	Sand with Silt
Slice 25	-9.7966014 ft	65.443282 ft	409.13923 psf	940.01268 psf	306.49993 psf	0 psf	0 psf	Sand with Silt
Slice 26	-7.6610024 ft	66.456375 ft	345.9222 psf	807.08945 psf	266.25504 psf	0 psf	0 psf	Sand with Silt
Slice 27	-5.3885029 ft	67.710987 ft	267.63439 psf	740.23173 psf	83.331662 psf	481 psf	0 psf	Lean Clay
Slice 28	-2.9791031 ft	69.249228 ft	171.64817 psf	549.04297 psf	66.544886 psf	481 psf	0 psf	Lean Clay
Slice 29	-0.56970328 ft	71.038241 ft	60.013775 psf	330.05094 psf	47.614838 psf	481 psf	0 psf	Lean Clay

Project: Neuens Road from Gessner to Blalock
HVJ Project No. HG1810145
Section: Detention Pond
Boring: DP-1, DP-2, DP-3
Long Term Analysis



SLOPE/W Analysis

Report generated using GeoStudio 2019. Copyright © 1991-2019 GEOSLOPE International Ltd.

File Information

File Version: 10.00
Title: Neuens Rd Detention Pond
Created By: Ruofan Chu
Last Edited By: Russell Sieg
Revision Number: 38
Date: 07/12/2019
Time: 01:29:55 PM
Tool Version: 10.0.2.18035
File Name: Neuens LT 3 to 1.gsz
Directory: G:\HOUSTON\HOU PS\GEO\PROJECTS\2018\HG1810145 Neuens Road, Civiltech\Engineering\Slope\Slope Stability Revised\
Last Solved Date: 07/12/2019
Last Solved Time: 01:30:06 PM

Project Settings

Unit System: U.S. Customary Units

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
Side Function
Interslice force function option: Half-Sine
PWP Conditions from: Piezometric Line
Apply Phreatic Correction: No
Use Staged Rapid Drawdown: No
Unit Weight of Water: 62.4 pcf
Slip Surface
Direction of movement: Left to Right
Use Passive Mode: No
Slip Surface Option: Grid and Radius
Critical slip surfaces saved: 1
Optimize Critical Slip Surface Location: No
Tension Crack Option: (none)
Distribution
F of S Calculation Option: Constant

Advanced

Geometry Settings

Minimum Slip Surface Depth: 0.1 ft

Number of Slices: 30

Factor of Safety Convergence Settings

Maximum Number of Iterations: 100

Tolerable difference in F of S: 0.001

Solution Settings

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

Materials

Lean Clay

Model: Mohr-Coulomb

Unit Weight: 125 pcf

Cohesion': 417 psf

Phi': 19.1 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Sand with Silt

Model: Mohr-Coulomb

Unit Weight: 120 pcf

Cohesion': 0 psf

Phi': 30 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Mob. Lean Clay

Model: Mohr-Coulomb

Unit Weight: 125 pcf

Cohesion': 75 psf

Phi': 19.1 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

Sandy Lean Clay

Model: Mohr-Coulomb

Unit Weight: 125 pcf

Cohesion': 417 psf

Phi': 19.1 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

Slip Surface Grid

Upper Left: (-62.01563, 130.9811) ft
Lower Left: (-62.01563, 83.49741) ft
Lower Right: (8.0273, 83.49741) ft
Grid Horizontal Increment: 15
Grid Vertical Increment: 15

Slip Surface Radius

Upper Left Coordinate: (-67, 85) ft
Upper Right Coordinate: (-55, 85) ft
Lower Left Coordinate: (-67, 57) ft
Lower Right Coordinate: (-55, 57) ft
Number of Increments: 40
Use Left Projection: No
Left Projection Angle: 135 °
Use Right Projection: No
Right Projection Angle: 45 °

Slip Surface Limits

Left Coordinate: (-80, 85) ft
Right Coordinate: (60, 72) ft

Piezometric Lines

Piezometric Line 1

Coordinates

	X	Y
Coordinate 1	-80 ft	73.5 ft
Coordinate 2	60 ft	73.5 ft

Surcharge Loads

Surcharge Load 1

Surcharge (Unit Weight): 250 pcf

Direction: Vertical

Coordinates

	X	Y
	-80 ft	85 ft
	-80 ft	89 ft
	-52 ft	89 ft

Points

	X	Y
Point 1	-13 ft	72 ft
Point 2	-52 ft	85 ft
Point 3	-80 ft	85 ft
Point 4	60 ft	72 ft
Point 5	-80 ft	67 ft
Point 6	60 ft	67 ft
Point 7	-80 ft	57 ft
Point 8	60 ft	57 ft
Point 9	-60 ft	85 ft
Point 10	-80 ft	81 ft
Point 11	-22 ft	67 ft
Point 12	-80 ft	73.5 ft
Point 13	-40 ft	81 ft
Point 14	-40 ft	73 ft

Regions

	Material	Points	Area
Region 1	Sand with Silt	5,7,8,6,11	1,400 ft ²
Region 2	Sandy Lean Clay	10,13,2,3	136 ft ²
Region 3	Mob. Lean Clay	13,14,11,6,4,1	567.5 ft ²
Region 4	Lean Clay	10,13,14,11,5	614 ft ²

Slip Results

Slip Surfaces Analysed: 5176 of 10496 converged

Current Slip Surface

Slip Surface: 2,360

Factor of Safety: 1.8

Volume: 119.98414 ft³

Weight: 14,998.017 lbf

Resisting Moment: 155,070.33 lbf·ft

Activating Moment: 87,518.523 lbf·ft

Resisting Force: 5,888.0041 lbf

Activating Force: 3,324.2279 lbf

Slip Rank: 1 of 10,496 slip surfaces

Exit: (-9.6684423, 72) ft

Entry: (-40.094039, 81.031346) ft

Radius: 23.394148 ft

Center: (-19.989872, 92.994148) ft

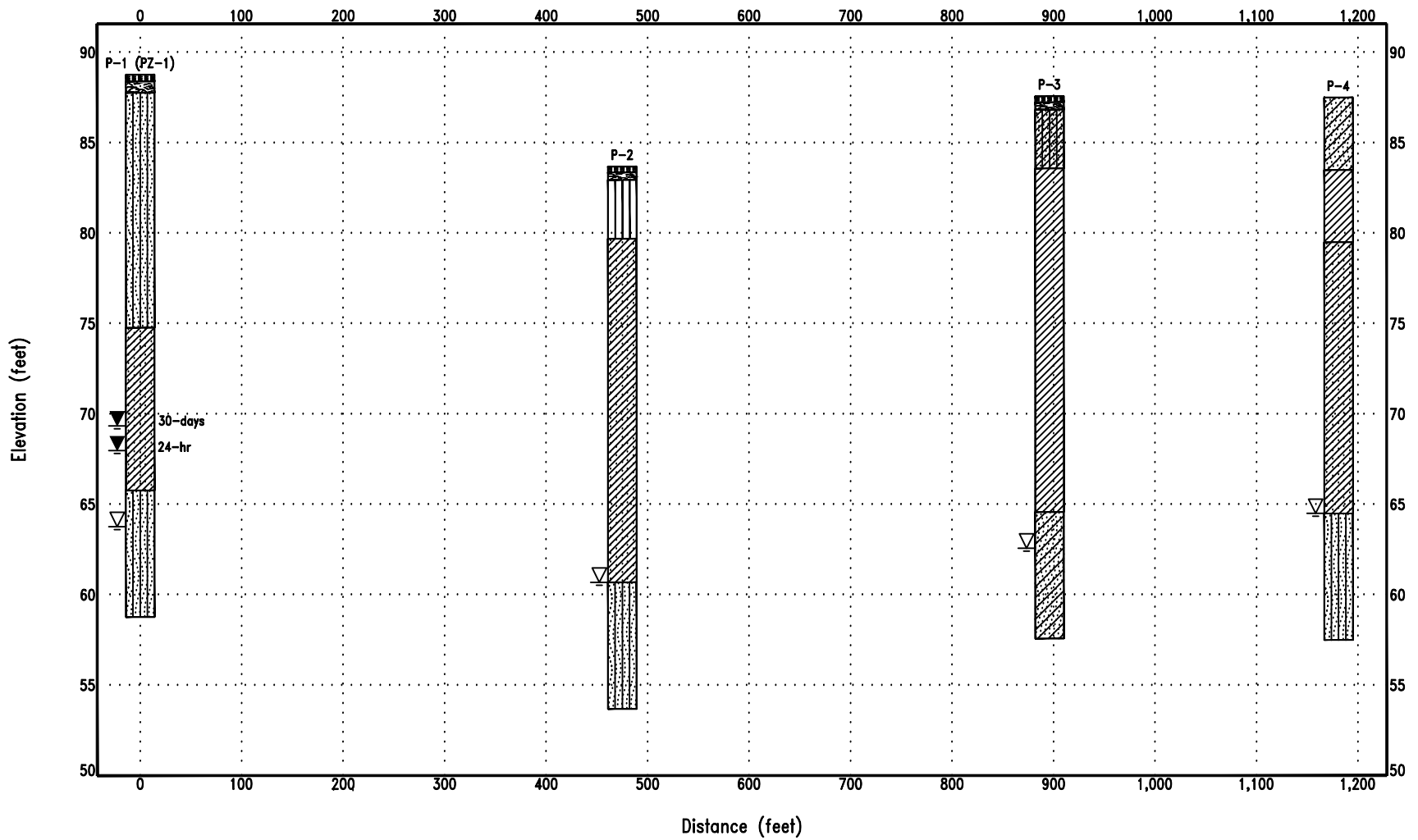
Slip Slices

	X	Y	PWP	Base Normal Stress	Frictional Strength	Cohesive Strength	Suction Strength	Base Material
Slice 1	- 40.084696 ft	81.015673 ft	-468.97801 psf	-295.85153 psf	-102.44778 psf	417 psf	0 psf	Sandy Lean Clay
Slice 2	- 40.037677 ft	80.937352 ft	-464.09075 psf	-286.7877 psf	-99.309146 psf	417 psf	0 psf	Lean Clay
Slice 3	- 39.494496 ft	80.109479 ft	-412.43148 psf	21.708681 psf	7.5173049 psf	75 psf	0 psf	Mob. Lean Clay
Slice 4	- 38.483488 ft	78.690665 ft	-323.89752 psf	133.44344 psf	46.208934 psf	75 psf	0 psf	Mob. Lean Clay
Slice 5	-37.47248 ft	77.467878 ft	-247.5956 psf	225.34318 psf	78.032071 psf	75 psf	0 psf	Mob. Lean Clay
Slice 6	- 36.461472 ft	76.397 ft	-180.77278 psf	302.57719 psf	104.77675 psf	75 psf	0 psf	Mob. Lean Clay
Slice 7	- 35.450464 ft	75.449853 ft	-121.67084 psf	368.58374 psf	127.63356 psf	75 psf	0 psf	Mob. Lean Clay
Slice 8	- 34.439456 ft	74.607133 ft	-69.085075 psf	425.74407 psf	147.4271 psf	75 psf	0 psf	Mob. Lean Clay
Slice 9	- 33.428448 ft	73.854939 ft	-22.148201 psf	475.73758 psf	164.73891 psf	75 psf	0 psf	Mob. Lean Clay
Slice 10	- 32.408846 ft	73.177813 ft	20.104487 psf	521.51709 psf	173.62968 psf	75 psf	0 psf	Mob. Lean Clay
Slice 11	-31.38065 ft	72.568922 ft	58.099254 psf	562.8585 psf	174.78856 psf	75 psf	0 psf	Mob. Lean Clay
Slice 12	- 30.352453 ft	72.028123 ft	91.845126 psf	598.19955 psf	175.34094 psf	75 psf	0 psf	Mob. Lean Clay
Slice 13	- 29.324257 ft	71.550244 ft	121.6648 psf	628.10474 psf	175.37055 psf	75 psf	0 psf	Mob. Lean Clay
Slice 14	- 28.296061 ft	71.131144 ft	147.81661 psf	652.86188 psf	174.88761 psf	75 psf	0 psf	Mob. Lean Clay










Slice 15	- 27.267865 ft	70.767489 ft	170.50866 psf	672.52625 psf	173.83918 psf	75 psf	0 psf	Mob. Lean Clay
Slice 16	- 26.239668 ft	70.456589 ft	189.90887 psf	686.95518 psf	172.11772 psf	75 psf	0 psf	Mob. Lean Clay
Slice 17	- 25.211472 ft	70.196278 ft	206.15227 psf	695.83868 psf	169.56912 psf	75 psf	0 psf	Mob. Lean Clay
Slice 18	- 24.183276 ft	69.984836 ft	219.34625 psf	698.73003 psf	166.00152 psf	75 psf	0 psf	Mob. Lean Clay
Slice 19	-23.15508 ft	69.820922 ft	229.57446 psf	695.07962 psf	161.19562 psf	75 psf	0 psf	Mob. Lean Clay
Slice 20	- 22.126883 ft	69.703531 ft	236.89964 psf	684.27377 psf	154.91718 psf	75 psf	0 psf	Mob. Lean Clay
Slice 21	- 21.098687 ft	69.631961 ft	241.36566 psf	665.67945 psf	146.93182 psf	75 psf	0 psf	Mob. Lean Clay
Slice 22	- 20.070491 ft	69.605788 ft	242.9988 psf	638.69446 psf	137.02191 psf	75 psf	0 psf	Mob. Lean Clay
Slice 23	- 19.042294 ft	69.624862 ft	241.80861 psf	602.80098 psf	125.00482 psf	75 psf	0 psf	Mob. Lean Clay
Slice 24	- 18.014098 ft	69.689293 ft	237.78814 psf	557.61902 psf	110.75137 psf	75 psf	0 psf	Mob. Lean Clay
Slice 25	-16.9375 ft	69.806925 ft	230.44786 psf	513.31117 psf	97.950204 psf	75 psf	0 psf	Mob. Lean Clay
Slice 26	-15.8125 ft	69.983088 ft	219.45532 psf	468.74468 psf	86.324181 psf	75 psf	0 psf	Mob. Lean Clay
Slice 27	-14.6875 ft	70.216144 ft	204.91261 psf	412.63492 psf	71.930302 psf	75 psf	0 psf	Mob. Lean Clay



Slice 28	-13.5625 ft	70.507868 ft	186.70904 psf	345.2822 psf	54.910878 psf	75 psf	0 psf	Mob. Lean Clay
Slice 29	-12.44474 ft	70.85791 ft	164.86639 psf	278.57521 psf	39.375207 psf	75 psf	0 psf	Mob. Lean Clay
Slice 30	- 11.334221 ft	71.268389 ft	139.25255 psf	219.52603 psf	27.797185 psf	75 psf	0 psf	Mob. Lean Clay
Slice 31	- 10.223702 ft	71.744803 ft	109.52427 psf	152.13377 psf	14.754862 psf	75 psf	0 psf	Mob. Lean Clay

APPENDIX K
SOIL PROFILES



LEGEND:

-  Asphalt
-  Base
-  Piezometer reading
-  Silty Sand
-  Sandy Lean Clay
-  Silt
-  Sandy Silty Clay
-  Lean Clay
-  Clayey Sand

-  24-hr/30 days readings
-  Groundwater during drilling



5/30/2019

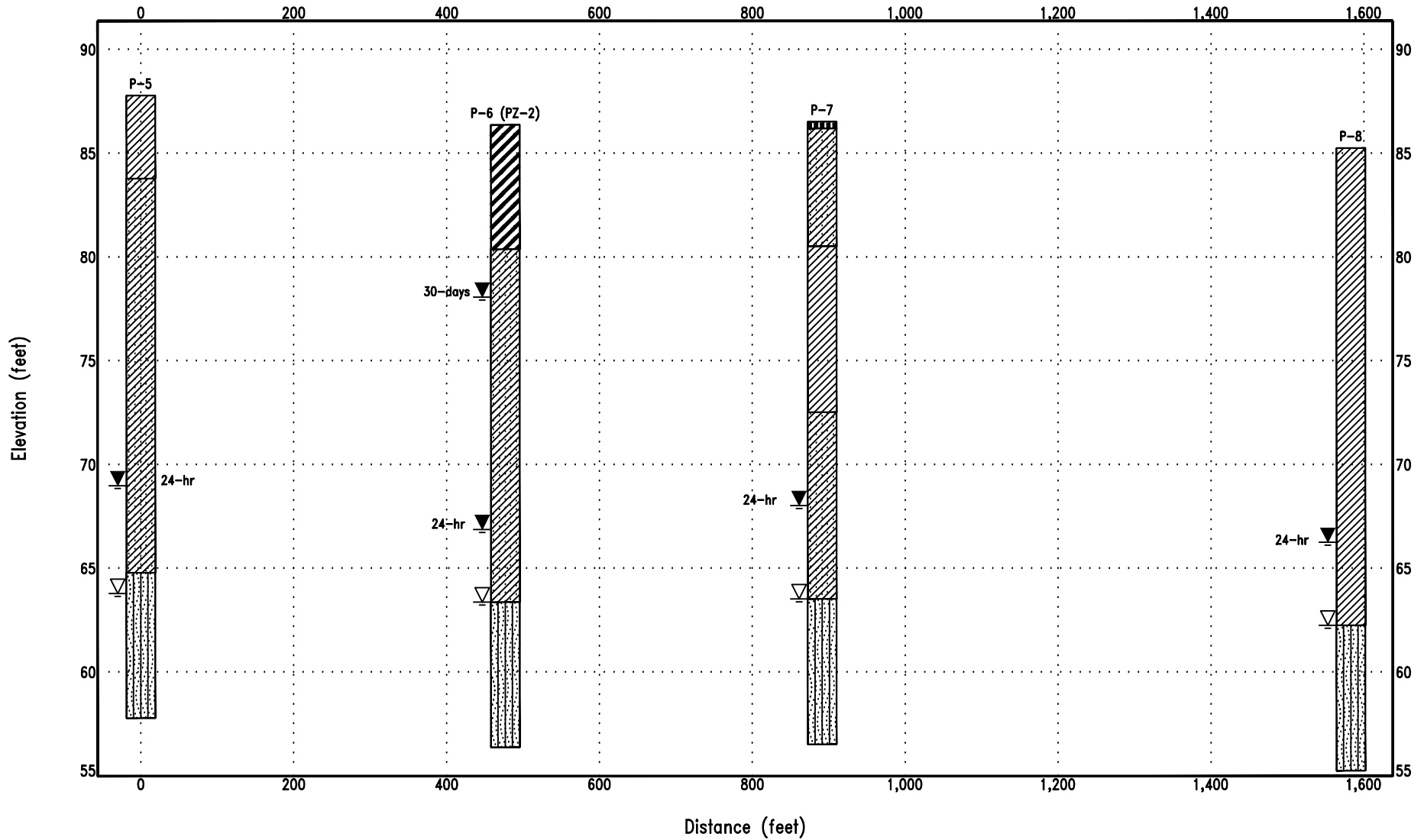
APPROVED BY:
RS

PREPARED BY:
PD






BORING LOG PROFILE
 NEUENS ROAD BETWEEN GESSNER ROAD AND BLALOCK ROAD
 HCFCU Unit No.: W140-00-00



PROJECT NO.:
HG1810145


DRAWING NO.:
PLATE K-1

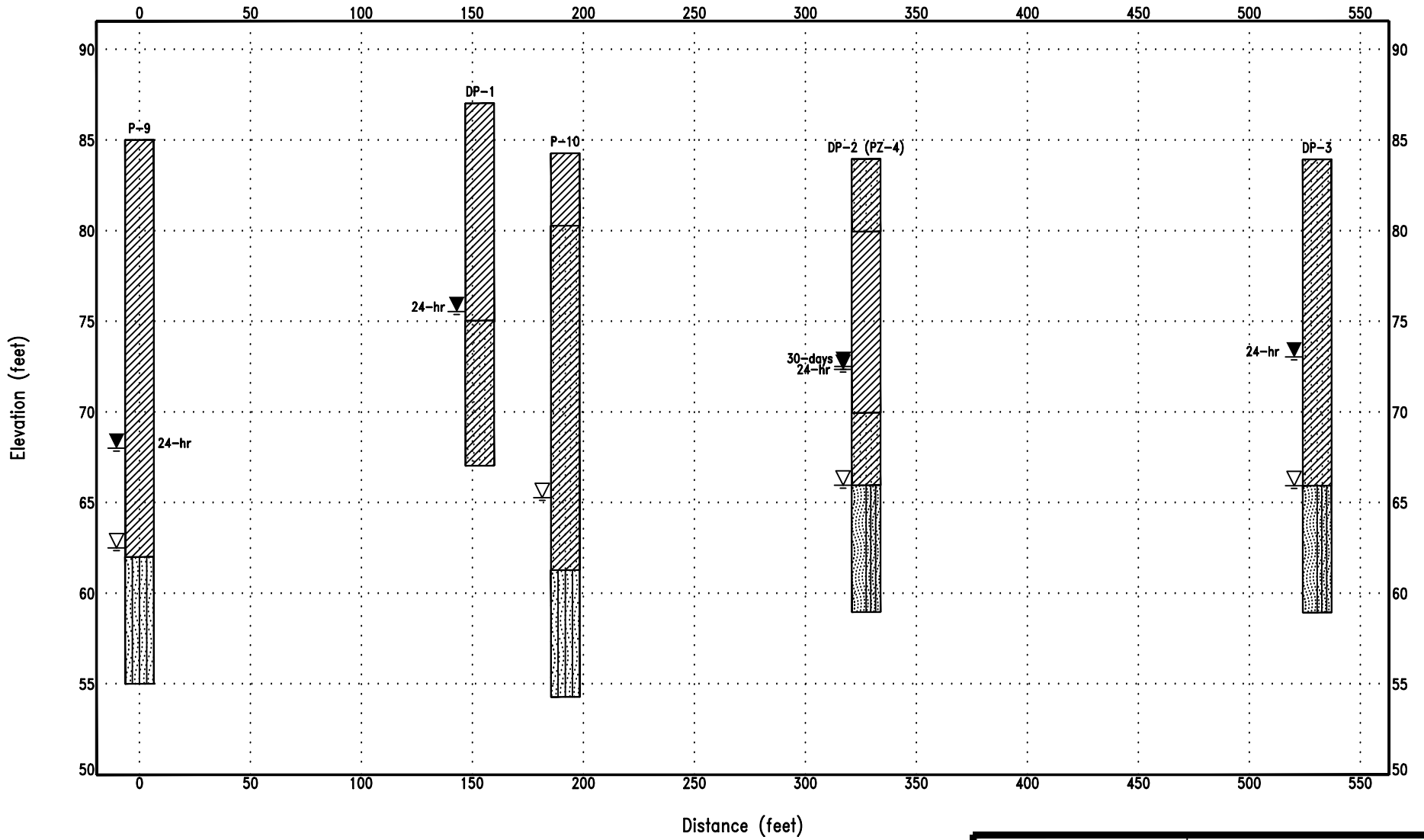


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
-  Lean Clay
-  Sandy Lean Clay
-  Silty Sand
-  Fat Clay
-  Asphalt



-  24-hr/30-days readings
-  Groundwater during drilling

	5/30/2019	
	APPROVED BY: RS	PREPARED BY: PD
BORING LOG PROFILE NEUENS ROAD BETWEEN GESSNER ROAD AND BLALOCK ROAD HCFC Unit No.: W140-00-00		
PROJECT NO.: HG1810145	DRAWING NO.: PLATE K-2	



LEGEND:

-  Lean Clay
-  Sandy Lean Clay
-  Sand with Silt
-  Silty Sand

-  24-hr/30-days readings
-  Groundwater during drilling



5/30/2019

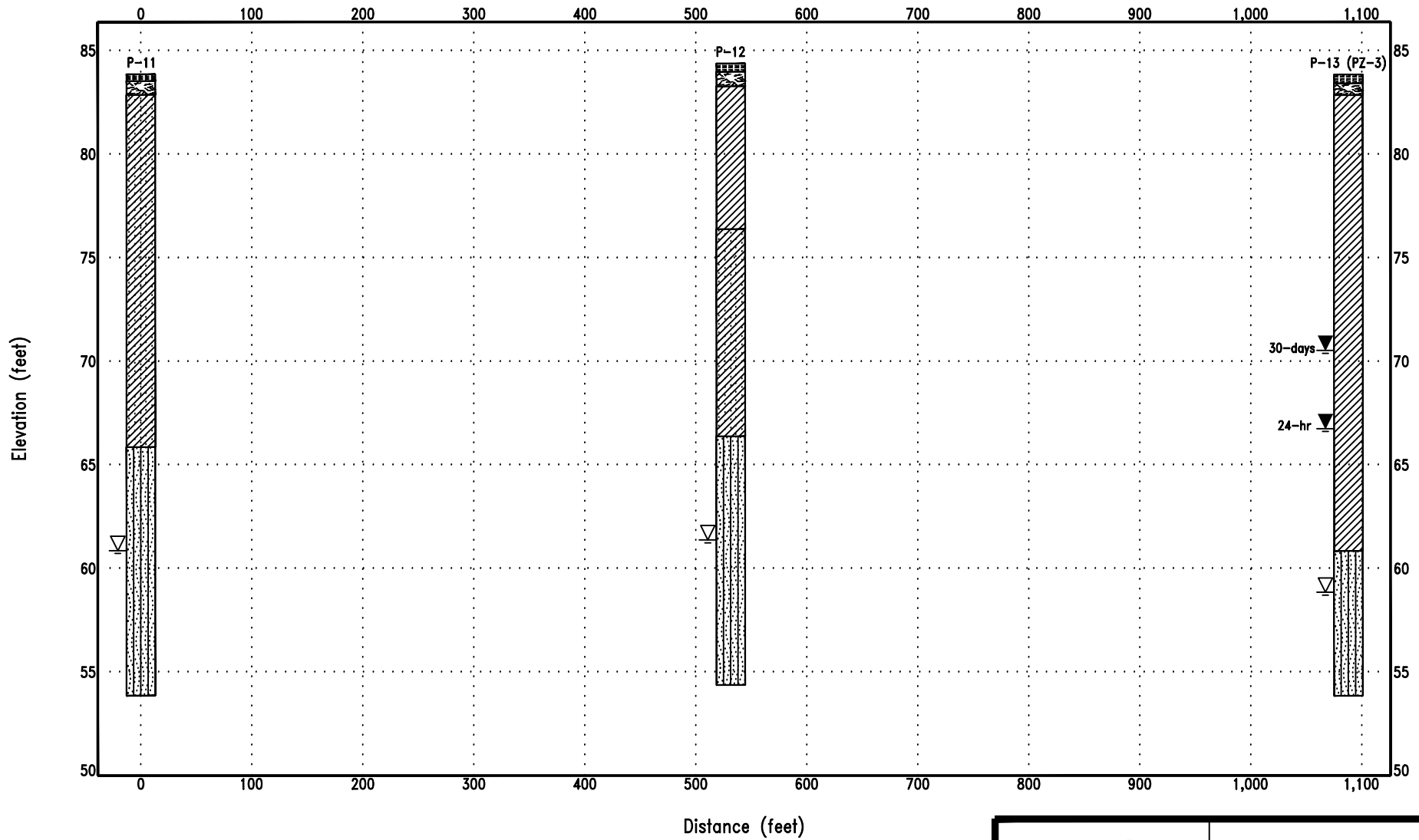
APPROVED BY:
RS

PREPARED BY:
PD

BORING LOG PROFILE
NEUENS ROAD BETWEEN GESSNER ROAD AND BLALOCK ROAD
HCFCU Unit No.: W140-00-00

PROJECT NO.:
HG1810145

DRAWING NO.:
PLATE K-3

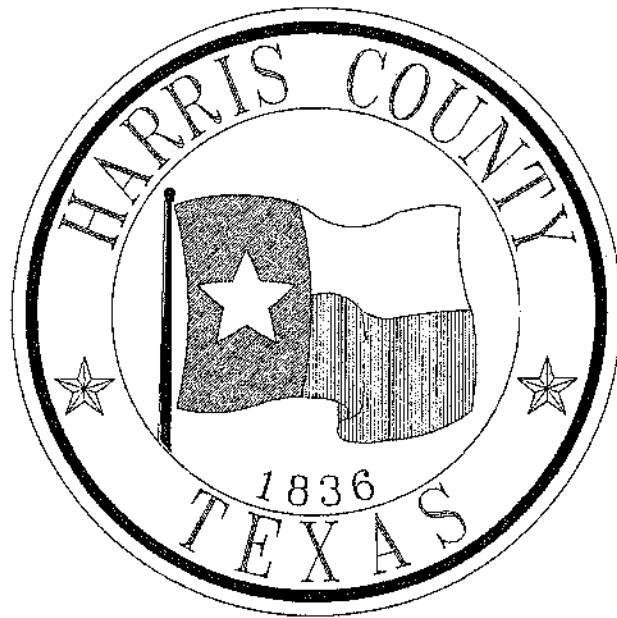


	5/30/2019	
	APPROVED BY: RS	PREPARED BY: PD
BORING LOG PROFILE NEUENS ROAD BETWEEN GESSNER ROAD AND BLALOCK ROAD HCFCD Unit No.: W140-00-00		
PROJECT NO.: HG1810145	DRAWING NO.: PLATE K-4	

Attachment Z
POLICY FOR PAYMENT
(5 Pages)

For prospective vendors downloading this IFB from CivCast at <https://www.civcastusa.com/>, the Policy For Payment ion may also be picked up between 7:30 a.m. and 4:30 p.m., Monday through Friday at the Office of the Purchasing Agent, 1001 Preston, Suite 670, Houston, TX.

HARRIS COUNTY
ENGINEERING DEPARTMENT



POLICY FOR PAYMENT
OF
MATERIAL ON HAND

December 6, 2005

INDEX

- I. Policy
- II. Request for Payment of Material on Hand Summary
- III. Request for Payment of Material On Hand Form

MATERIAL ON HAND POLICY

If payment for material on hand is desired, request compensation for the invoice cost of acceptable nonperishable materials that have not been used in the work before the request, and that have been delivered to the work location or are in acceptable storage places. Nonperishable materials are those that do not have a shelf life or whose characteristics do not materially change when exposed to the elements, include only materials that have been sampled, tested, approved, or certified, and are ready of incorporation into the work. Only materials which are completely constructed or fabricated on the contractor's order for a specific contract and are so marked and on which an approved test report has been issued are eligible. Payment for material on hand may include the following types of items: concrete traffic barrier, precast concrete box culverts larger than 25 square feet, concrete piling deck panels, beams, reinforced concrete pipe larger than 66 inches, structural steel girders, steel bridge rail, illumination poles and other items deemed reasonable by the Engineer. Any repairs after fabricated materials have been approved for storage shall require approval of the Engineer before being made and shall be made at the contractor's expense. Include only those materials that have an individual or collective invoice cost of at least \$1,000 in the request for material on hand payment.

For multiple work order contracts, payment for material on hand will only be made for materials authorized for purchase by the work order or by written approval of the Engineer.

If the request is acceptable, the Engineer will include payment for material on hand in a progress payment. Payment for material on hand does not constitute acceptance of the materials. Payment will not exceed the actual cost of the material as established by invoice, or the total cost for the associated item less reasonable placement costs, whichever is less. Materials for which the contractor does not have a paid invoice within 60 days will not be eligible for payment as material on hand and will be removed from the summary attached hereto. Payment may be limited to a portion of the invoice cost or unit price if shown elsewhere in contract as determined by the Engineer.

Submit the request on forms provided by the Engineer. These forms may be electronically reproduced, provided they are in the same format and contain all the required information and certifications. Continue to submit monthly material on hand forms until the total value of material on hand is \$0.

By submitting a request for material on hand payment, the contractor expressly authorizes the Engineer to audit material on hand records, and to perform process reviews of the record-keeping system. If the Engineer determines noncompliance with any of the requirements of this provision, the Engineer may exclude payment for any or all material on hand for the duration of the contract.

Maintain all records relating to material on hand payment until final acceptance. Provide these records to the Engineer upon request.

Engineer in the policy refers to the Engineer in charge of the project employed by Harris County, Harris County Toll Road Authority or Harris County Flood Control District as applicable.

Project Name: _____

Project ID: _____

REQUEST FOR PAYMENT OF
MATERIAL ON HAND SUMMARY PAGE

SHEET
AMOUNT

Sheet _____ of _____	
Sheet _____ of _____	
Sheet _____ of _____	
Sheet _____ of _____	
Sheet _____ of _____	
Sheet _____ of _____	
Total Value:	0.00
Less-Previous Total Value:	0.00
Net Change This Estimate:	0.00

TOTALS

1. Materials are non-perishable and suitable for incorporation in the work.
2. All materials are identified and set apart for this project and have not been included in a request for payment on any other projects.
3. Paid invoices are on file for any material that has been included through the warranty period.
4. "Harris County Engineering Department Policy for Payment of Material on Hand" is a complete guide for Material on Hand payment and shall be used to evaluate Contractor's requests.
5. The signatory hereby warrants that they have the authority to execute this request.

Contractor

Name (Print or Typed)

Signature

Title

Instruction: Attach corresponding paid invoice copies for supporting documentation.
Include with monthly contractor application for payments

Project Name: _____

Project ID: _____

REQUEST FOR PAYMENT OF MATERIAL ON HAND SUMMARY PAGE

CONTRACTOR: _____

Estimate Period From: _____ to _____

Item and Description Number (000-0000)	Material Description	Unit of Meas	Received This Period	Previous Qty on Hand	Used This Period	Balance On Hand	Material Unit Price \$	Plan Qty.	Total Value \$
						0.00			0.00
						0.00			0.00
						0.00			0.00
						0.00			0.00
						0.00			0.00
						0.00			0.00
						0.00			0.00
						0.00			0.00
						0.00			0.00

Page ____ of ____

Sheet Total: _____

By submitting a request for Material on Hand (MOH) payment, the Contractor expressly authorizes the Harris County Engineering Department to audit MOH records, and to perform process reviews of the record-keeping system. If the Department determines noncompliance with any of the requirements of Harris County Engineering Department Policy for Payment of Material on Hand, the Department may exclude payment for any or all MOH for the duration of this Contract.

Signature of Contractor Authorized Representative: _____

Date: _____

PAYMENT BOND

Pursuant to Tex. Gov't Code §§ 2253.001, et. seq, as amended

STATE OF TEXAS §

COUNTY OF HARRIS § KNOW ALL MEN BY THESE PRESENTS:

That Reytec Construction Resources address: 1901 Hollister St., Houston, TX 77080, phone: (832) 844-8322, hereinafter called the Principal; and Travelers Casualty & Surety Company of America mailing address: One Tower Square Hartford, Connecticut 06183, physical address: One Tower Square Hartford, Connecticut 06183, a corporation; existing under and by virtue of the laws of the State of Connecticut and authorized to do an indemnifying business in the State of Texas, and whose principal office is located in the City of Hartford, State of Connecticut, whose registered agent residing in the State of Texas, authorized to accept service in all suits and actions brought within said State, is (individual's name): Christopher H. Noble, mailing address: 1301 E. Collins Blvd., Richardson, Texas 75081, physical address: 1301 E. Collins Blvd., Richardson, Texas 75081, phone: 800-328-2189, hereinafter called Surety, are held and firmly bound unto the County of Harris, State of Texas, in the full sum of Eleven million seven hundred eighty-eight thousand nine hundred eighty and .00/cents Dollars (\$11,788,980.00) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the 28th day of July, 2020, for:

Job No. 20/0126, Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 - UPIN 18104MF0UE01

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said contract, then, this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of, Texas Gov't Code §§ 2253.001, et. seq., as amended, and all liabilities of this bond shall be determined in accordance with the provisions of said article to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this 21st day of August, 2020.

Accepted and Approved on behalf of Harris County

Lynda Araceli Mata

on JUL 28 2020, 20

LYNDA ARACELI MATA

Print Principal Name: Reytec Construction Resources, Inc. (Principal)

Authorized Signature By: [Signature] (Principal)

Travelers Casualty & Surety Company of America (Corporate Surety)

Countersignature: [Signature] John A. Martinez

By: [Signature] Jessica M. Jackson (Attorney-in-fact)

Agency Name: American Global of Texas LLC

Address: 25700 Interstate 45 North, Suite 140 Spring, TX 77386

License No: 2261195

Phone: 832.941.1814

PAYMENT BOND

Pursuant to Tex. Gov't Code §§ 2253.001, et. seq, as amended

STATE OF TEXAS §

COUNTY OF HARRIS § KNOW ALL MEN BY THESE PRESENTS:

That Reytec Construction Resources address: 1901 Hollister St., Houston, TX 77080, phone: (832) 844-8322, hereinafter called the Principal; and Travelers Casualty & Surety Company of America mailing address: One Tower Square Hartford, Connecticut 06183, physical address: One Tower Square Hartford, Connecticut 06183, a corporation; existing under and by virtue of the laws of the State of Connecticut and authorized to do an indemnifying business in the State of Texas, and whose principal office is located in the City of Hartford, State of Connecticut, whose registered agent residing in the State of Texas, authorized to accept service in all suits and actions brought within said State, is (individual's name): Christopher H. Noble, mailing address: 1301 E. Collins Blvd., Richardson, Texas 75081, physical address: 1301 E. Collins Blvd., Richardson, Texas 75081, phone: 800-328-2189, hereinafter called Surety, are held and firmly bound unto the County of Harris, State of Texas, in the full sum of Eleven million seven hundred eighty-eight thousand nine hundred eighty and .00/cents Dollars (\$11,788,980.00) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the 28th day of July, 2020, for:

Job No. 20/0126, Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 – UPIN 18104MF0UE01

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said contract, then, this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of, Texas Gov't Code §§ 2253.001, et. seq., as amended, and all liabilities of this bond shall be determined in accordance with the provisions of said article to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this 21st day of August, 2020.

Accepted and Approved on behalf of Harris County on JUL 28 2020, 20 LYND A ARACELI MATA

Print Principal Name: Reytec Construction Resources, Inc. (Principal)

Authorized Signature By: [Signature] (Principal)

Travelers Casualty & Surety Company of America (Corporate Surety)

Countersignature: [Signature] John A. Martinez

By: [Signature] Jessica M. Jackson (Attorney-in-fact)

Agency Name: American Global of Texas LLC

Address: 25700 Interstate 45 North, Suite 140 Spring, TX 77386

License No: 2261195

Phone: 832.941.1814



**Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company**

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Jessica M Jackson** of **SPRING Texas** their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **3rd** day of **February**, 2017.



State of Connecticut

City of Hartford ss.

By: *Robert L. Raney*
Robert L. Raney, Senior Vice President

On this the **3rd** day of **February**, 2017, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, 2021



Marie C. Tetreault
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this **21st** day of **August**, 20**20**



Kevin E. Hughes
Kevin E. Hughes, Assistant Secretary

**To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.**

PERFORMANCE BOND

Pursuant to Texas Gov't Code §§ 2253.001, et. seq, as amended

STATE OF TEXAS
COUNTY OF HARRIS

KNOW ALL MEN BY THE PRESENTS:

That Reytec Construction Resources address 1901 Hollister St., Houston, TX 77080 phone: (832) 844-8322, hereinafter called the Principal; and Travelers Casualty & Surety Company of America mailing address: One Tower Square Hartford, Connecticut 06183, phone: 860-277-0111, a corporation; existing under and by virtue of the laws of the State of Connecticut and authorized to do an indemnifying business in the State of Texas, and whose principal office is located in the City of Hartford State of Texas, whose registered agent residing in the State of Texas, authorized to accept service in all suits and actions brought within said State, is (name): Christopher H. Noble address: 1301 E. Collins Blvd., Richardson, Texas 75081 hereinafter called Surety, are held and firmly bound unto the County of Harris, State of Texas, in the full sum of Eleven million seven hundred eighty-eight thousand nine hundred eighty and .00/cents Dollars (\$11,788,980.00) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators executors successors and assigns, jointly and severally, firmly by these presents. WHEREAS, the Principal has entered into a certain written contract with the Oblige, dated the 28th day of July, 2020 to:

Job No. 20/0126, Road Construction at Neuens Road between Gessner Road and Blalock Road for Harris County Precinct 4 - UPIN 18104MF0UE01

which contract is hereby referred to and made a part hereof as fully and to the same extent as fully and to the same extent as if copied at length herein.

The Principal and the Surety hereon each agree, bind and obligate himself and themselves to pay to the County of Harris, Texas, all loss or damage to it occasioned by reason of failure of the Principal to comply strictly with each and every provision contained in said contract and agreement, and further agree, bind and obligate themselves to save and keep harmless the County of Harris from any and all damages expense and claims of every kind and character which the County of Harris may suffer directly or indirectly, as a result of the execution of the contract herein secured.

If the said Principal shall fail to comply with any of the contract to such an extent that it shall be forfeited or abandoned by him, or declared abandoned or suspended by the County, then said Surety shall have the right and privilege within five (5) days after the date of notice of notice of such action from the County, to assume control of the contract and all work thereunder and to sublet or complete it in strict conformity with the provisions of said contract; and provided, further, that failure on the part of the Surety to do so within said five (5) days will work an immediate forfeiture of all right to thereafter assume control of the contract and the work thereunder. Failure of the County to give the Surety notice of any default neglect, or omission of the Principal shall not diminish the obligations of the Surety in any respect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Texas Gov't Code §§ 2253.001, et. seq, as amended, and all liabilities of this bond shall be determined in accordance with the provisions of said article to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this 21st day of August, 2020.

Print Principal Name: Reytec Construction Resources, Inc. (Principal)

Authorized Signature By: [Signature] Gregg T. Reyes, President

Travelers Casualty & Surety Company of America (Corporate Surety)

Countersignature: [Signature] By: Jessica M. Jackson John A. Martinez (Attorney-in-fact)

Agency Name: American Global of Texas LLC

Address: 25700 Interstate 45 North, Suite 140 Spring, TX 77386 Phone: 832.941.1814

I certify that the Commissioner's Court approved this Bond on

JUL 28 2020

[Signature] Lynda Araceli Mata Deputy County Clerk LYNDA ARACELI MATA



**Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company**

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Jessica M Jackson** of **SPRING Texas**, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this 3rd day of **February**, 2017.



State of Connecticut

City of Hartford ss.

By: *Robert L. Raney*
Robert L. Raney, Senior Vice President

On this the 3rd day of **February**, 2017, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.

My Commission expires the 30th day of **June**, 2021



Marie C. Tetreault
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 21st day of **August**, 2020



Kevin E. Hughes
Kevin E. Hughes, Assistant Secretary

**To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.**

