THE WARREN GROUP
ARCHITECTS INC.

1801 South 2nd Street, Ste. 330 McAllen, TX 78503

Addendum No. 2

DATE: Monday, January 21, 2019

PROJECT: City of Pharr International Bridge Facility Expansion and Renovations

PROJECT NO: 971704/ 1819-70-510-C007-395 CSP

LOCATION: Pharr, Texas

FROM: Laura N. Warren, The Warren Group Architects, Inc.

The following revisions and clarifications shall be considered part of the record contract documents dated December 19, 2018 for the above referenced project and included in the contract amount. All general notes and specifications shall apply to this addendum. Where provisions of the following supplementary data differ from those of the original Contract Documents, this Addendum shall govern and take precedence.

Specifications

Item No. 1: **As requested by Owner Representative, the proposal opening date has been extended to February 5, 2019 at 3:00 p.m in lieu of January 24, 2019.**

Item No. 2: Refer to Project Manual dated December 19, 2018. Specification Section 08 80 00 Glazing; 2.9 Insulating Glass- Types A.
Clarification: Glazing is to follow Construction Documents in lieu of Specification Section 2.9.

Item No. 3: Refer to Construction Documents, MEP Drawings Sheet 2.00, Lighting Fixture Schedule dated December 19, 2018.
Modifications have been made as described in attached 8.5"x11" Addendum #2 provided by MEP Solutions Engineering dated January 14, 2019.

Item No. 4: **Hand Dryer Substitution request from Saniflow Corp shall be listed as approved equal as noted: The Saniflow Machflow Model No.: M09-UL and KT009CS ADA Recessed Kit is to ensure all the latest requirements for ADA-TAS rules and all regulations are met.**

Item No. 5: Refer to Project Manual dated December 19, 2018. Specification Section 01 21 00 Allowances.
Refer Addendum No. 1, Item No. 1, reference Landscaping Drawings dated January 3, 2019.

Item No. 6: Refer to Project Manual dated December 19, 2018. Specification Section 01 21 00 Allowances.
Refer Addendum No. 1, Item No. 2, reference Chain Link Fences and Gates dated January 3, 2019.

Item No. 7: Refer to Project Manual dated December 19, 2018. Specification Section 10 21 13 Toilet Compartments;
Substitution request No. 01945 from Scantron Products shall be listed as approved equal as noted: The Scranton "HINY HIDERS" Solid Plastic Toilet Compartments are to ensure closers and all accessories required meet the latest ADA-TAS rules and all regulations are met.

Item No. 8: Refer attached updated Wage Rates provided by the City of Pharr Authorized Representative.

Item No. 9: Clarification: As per Solorio Inc. (Structural Engineer); The AISC is a certified requirement.

Item No. 10: Refer to Project Manual dated December 19, 2018. Specification Section 00 18 00.
Refer attached Respondents Qualifications Specification Section 00 18 00 ADD2 revised date January 21, 2019.

Item No. 11: Refer to Project Manual dated December 19, 2018. Specification Section 00 31 32
Refer attached Geotechnical Report dated 12/05/2013 and Site Boring Location Map. Clarification: No other Geotechnical Report will be provided.

Item No. 12: Refer to Project Manual dated December 19, 2018. Specification Section 01 21 00. 1.8 Contingency Allowances and 1.9 Testing and Inspecting Allowances.
Clarification: G.C. is to remove paragraphs 1.8 and 1.9 Testing and Inspecting Services.

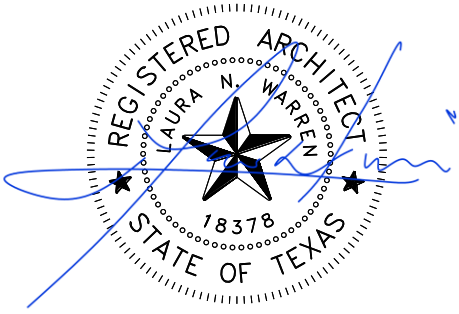
Item No. 13: **Clarification: *Bridge personnel will vacate facilities to allow G.C. to have full access for the renovation and expansion. G.C. will be responsible for all utilities costs during the construction period.***

Item No. 14: Refer to Project Manual dated December 19, 2018. Specification Section 00 30 00.
Refer attached Proposal Form Section 00 30 00 ADD2 revised date January 21, 2019.

Item No. 15: **Clarification: The existing A/C units will remain.**

ISSUED BY:

Laura N. Warren, AIA
The Warren Group Architects, Inc.



Attachments:

PDF - 8.5"x11" Response from MEP Solutions dated 01/14/2019
PDF - 8.5"x11" Substitution Request Form Machflow dated 01/14/2019
PDF - 8.5"x11" Substitution Request Form Scantron Products dated 01/14/2019
PDF - 8.5"x11" Updated Wage Rates ADD 2 dated 01/21/2019
PDF - 8.5"x11" Respondents Qualifications Section 00 18 00 ADD 2 dated 01/21/2019
PDF - 8.5"x11" Geotechnical Report ADD 2 dated 01/21/2019
PDF - 8.5"x11" Site Boring Locations Map ADD 2 dated 01/21/2019
PDF - 8.5"x11" Proposal Form Section 00 30 00 ADD 2 dated 01/21/2019

Distribution:
Bidding General Contractors
City of Pharr Authorized Representatives
File

MEP SOLUTIONS ENGINEERING
MECHANICAL, ELECTRICAL, PLUMBING ENGINEERS

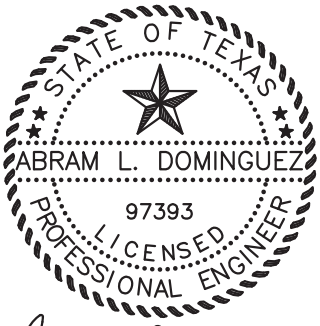
600 E. Beaumont Suite #2
McAllen, Texas 78501
(956) 664-2727
Fax (956) 664-2726

ADDENDUM #2
City of Pharr International Bridge Facility Expansion and Renovations
01.14.2019

The following items shall become a part of the contract documents. Refer to full or partial sheets referenced and make changes noted. Bidders are responsible for reading all sections of the addendum. The Addendum consists of the following:

ELECTRICAL

Item 1 Sheet E2.00, Lighting Fixture Schedule, Philips Lighting (ERT Lighting) shall be listed as approved equal.



MEP SOLUTIONS ENGINEERING
MECHANICAL, ELECTRICAL, PLUMBING ENGINEERS
600 E. BEAUMONT AVE. SUITE 2 McALLEN, TX 78501 (956) 664-2727
TEXAS BOARD OF PROFESSIONAL ENGINEERS REGISTRATION # F-9748

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Stage)

Project: International Bridge Facility Expansion and Renovations

9901 S Cage Blvd, Pharr, Texas, 78577

To: City of Pharr

Re: Substitution Request

Substitution Request Number:

From: Saniflow Corp. / Attn: Melissa Aguiar

Date: 1/14/19

A/E Project Number:

Contract

Specification Title: Enlarged Restroom Plan and Schedule

Description: Accessory Schedule

Section: Page:

Paragraph: 4

Proposed Substitution: Machflow

Manufacturer: Saniflow Corp. Address: 3325 NW 70th Ave ., Miami FL, 33122 Phone: 305-424-2433

Trade Name: Saniflow, a Mediclinics Company Model No.: M09-UL

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: Melissa Aguiar

Signed by:

Firm: Saniflow Corp

Address: 3325 NW 70th Ave, Miami, FL, 3312

Telephone: 305-424-2433 x. 2021

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
☑ Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures. Refer Addendum 2
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Supporting Data Attached: ☐ Drawings ☑ Product Data ☐ Samples ☐ Tests ☑ Reports ☐ _____

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110 South Union St., Suite 100, Alexandria, VA 22314

Machflow (M09A, M09AC, M09ACS, M09AB) High Speed, Eco-friendly with minimum consumption and ADA compliant Recess Kit available	saniflow a mediclinics company 	
Comparison	**Machflow**	**Xlerator**
Electrical	100V-230V (Universal Voltage)	110-230V (Universal Voltage)
Air Velocity	18,00 LFM (Adjustable)	16,000 LFM
Power	450-1300W,6.4 to 10A @115 VAC (Adjustable)	1500W,12.6 A @ 115 VAC
Motor type	1/2hp-1 2/5hp 19,000-28,000 rpm (Adjustable)	5/8 hp 20,000 rpm
Heater	Nichrome wire element protected with auto-resetting thermostat	Nichrome wire element protected with auto-resetting thermostat
Standby power consumption (W)	2 W	1W
Construction materials	Vandal resistant Epoxy or steel or Stainless Steel	Painted Zinc, Fiberglass or Stainless Steel
Air temperature (at 70F ambient)	106°F	135°F
Color finish	White,Black, S/S polish, S/S Satin	White, Black, Graphite and Silver
Dimensions	13”Hx8-3/8”Wx6-11/16”D	12-11/16”Hx11-¾”Wx 6-11/16”D
Operation	Touch free infrared sensor. Auto 2 second shutoff after hands are removed	Touch free infrared sensor. Auto 2 second shutoff after hands are removed
Price Comparison (List Price)	$560.00	$600.00
Weight	11.24 lbs	15-17 lbs
Safety shut off	Shut off after 60 seconds if hands are not removed	Shut off after 35 seconds if hands are not removed
Drying time	Approx.10-15 seconds	Approx. 8-10 seconds
Limited Warranty	5 years	5 years
Noise Level	67-74 dB	85 dB
Sensor	infrared (Adjustable 2”-8”)	Infrared
BuildingGreen Approved	Yes	Yes
ADA Compliant Recessed Kit	$125.00	$160.00

DATA SHEET
machflow®

saniflow corp
a mediclinics company
Hand Dryer Technology At the Leading Edge

M09A-UL / M09AB-UL / M09AC-UL / M09ACS-UL

General Description

- High speed hand dryer recommended for very high traffic areas.
- ADA-Compliant with recessed kit.
- Maximum robustness and vandal-proof.
- GreenSpec approved & offering LEED Credits.

203 mph

Components & Materials

- **M09A-UL:** 1/16" (1.5 mm) thick one-piece steel cover; white epoxy finish
- **M09AB-UL:** 1/16" (1.5 mm) thick one-piece steel cover; black epoxy finish
- **M09AC-UL:** 1/16" (1.5 mm) thick one-piece stainless steel cover; bright finish
- **M09ACS-UL:** 1/16" (1.5 mm) thick one-piece stainless steel cover; satin finish

Cover fixed to the base with 2 vandal-proof lock screws and lock with special key wrench.

- **BASE PLATE:** Fire retardant UL 94V0 plastic base, with four Ø 7/32" (6 mm) holes for wall mounting. Includes silent-blocks to damp mechanical vibrations.
- **ADJUSTABLE MOTOR:** High pressure universal brush, fully adjustable (19,000-28,000 rpm) potentiometer, Class A.
- **HEATING ELEMENT:** 250 Watts waved wire Ni-Cr heating that incorporates a self-resettable thermal cut-off at 180°F.
- **ADJUSTABLE SENSOR:** electronic infrared detection sensor with fully adjustable (2"-8") potentiometer. Includes polycarbonate viewing windows.
- Automatic disconnection system after 60 seconds of continuous use.

Technical Specifications

Voltage - 100-120V; 208V; 220-240V	Total power – 450-1,300 W
Frequency - 50/ 60 Hz	Motor Power – 400-1,050 W
Insulation - Grounding required (Class I)	Heating element: 50-250 W
Dimensions - 13"H x 8 3/8"W x 6 11/16"D	Consumption 6.4-10 A (120 V) 3.2 -5 A (220 V)
Weight - 11,24 Lbs.	r.p.m. - 19,000-28,000 rpm
Effective airflow - 68 - 108 CFM	Air temperature – (at 4" distance/ T amb. 70 °F) 106 °F
Max air velocity - 203 mph / 18.000 LFM	Drying time - 10 – 15 sec
Protection level - IP23	Noise level (at 79") - 67 – 74 dBA

Mounting -

Surface-mounted: not ADA compliant
Recessed (with recessed kit): ADA compliant

Operation

Place the hands under the air outflow valve. The dryer will start automatically, and go on with no interruption as long as the hands are kept in the detection range of the sensor. The appliance will stop 2 seconds after the hands are removed from the airflow.

Please mark the selected item

☐ 

code
M09A-UL
material
steel
finish
white epoxy

☐ 

code
M09AB-UL
material
steel
finish
black epoxy

☐ 

code
M09AC-UL
material
stainless steel
AISI 304
finish
bright

☐ 

code
M09ACS-UL
material
stainless steel
AISI 304
finish
satin

Saniflow Corp reserves the right to make changes and/or modifications to the products and their specifications without warning or notice.

For further info please contact SANIFLOW on: Toll free: **1-877-222-9125** or visit our website at **www.saniflowcorp.com**
Tel: +1 (305) 424 2433 Fax: +1 (305) 424 2435 · **sales@saniflowcorp.com**

Installation

Verify all rough-in dimensions prior to installation. Hand dryers require a dedicated circuit and must be properly grounded. a GFCI (Ground fault circuit interrupter) is recommended. One side of dryer show be mounted to a stud.

Certificates & Qualifications

Unit shall be UL and CSA approved, according to UL 499, 13th Edition; CSA C22.2 standars and GreenSpec approved.

N° dryers to be fitted

- In toilet areas with a normal frequency of use and only one wash-basin: 1 dryer.
- In toilet areas with a normal frequency of use and more than one wash-basin: 1 dryer for each 2-3 wash-basins.
- In toilet areas with multiple wash basins: 4 wash basins: 2 dryers; 1 row of 6 wash basins: 2-3 dryers; 1 row of 8 wash basins: 3 dryers.

Ideal location

Between the wash-basin and exit. It is not recommended to install dryer between wash-basins, next to urinals, lavatories and showers. If installing automatic dryers over marble surface or ledge, the minimum distance from the dryer to the ledge must be 15-3/4". It is recommended that hand dryers be distributed throughout the washroom area to avoid overcrowding.

Guide specification

Surface-mounted hand dryer shall have a one piece steel cover with white epoxy finish (M09A-UL), or steel cover with black finish (M09AB-UL), or stainless steel cover with bright finish (M09AC-UL), or stainless steel cover with satin finish (M09ACS-UL). Hand dryer shall include a fire resistant UL V0 plastic base, fully adjustable (2" to 8") infrared sensor potentiometer and fully adjustable (19,000 - 28,000 RPM) universal brush motor. Dryer shall operate at 67-74 dBA while delivering 68-108 CFM of air at 106 °F and 203 mph as maximum air velocity (Max - 18,000 LFM) during user controlled drying cycle. Dryer shall have a total power of 450-1,300 W with a consumption of 6.4 to 10 A.

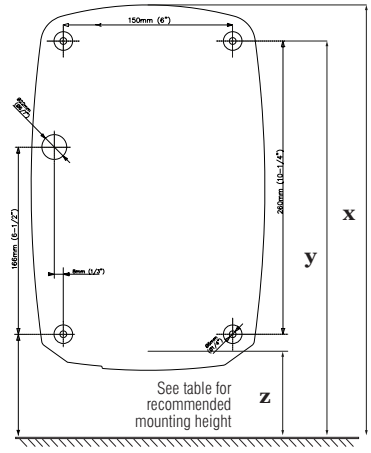
Unit shall be UL and CSA approved, according to UL 499, 13th Edition, CSA C22.2 standards, and GreenSpec approved.

Overall dimensions:

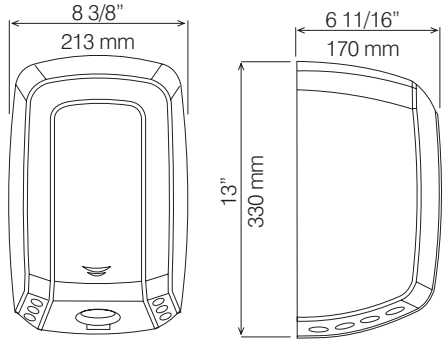
13"H x 8 3/8"W x 6 11/16"D (330 mm x 213 mm x 170 mm)

Weight: 11,24 Lbs. (5,1 Kg)

MOUNTING



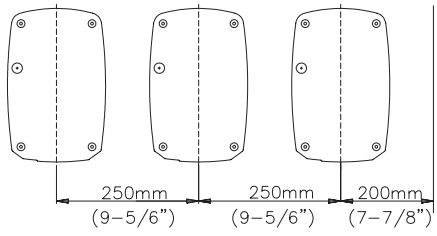
M09A-UL / M09AB-UL / M09AC-UL / M09ACS-UL



Recommended heights from floor

	Male	Female	Child	Disabled
x To top of machine	59" / 150 cm	57-1/8" / 145 cm	49-1/4" / 125 cm	51-1/8" / 130 cm
y To mounting brackets	57-1/2" / 146 cm	55-1/2" / 141 cm	47-5/8" / 121 cm	49-5/8" / 126 cm
z To sensor top	46-1/8" / 117 cm	44-1/8" / 112 cm	36-1/4" / 92 cm	38-1/4" / 97 cm

Serial mounting



Job: | Architect / Engineer: | City / State / Country:

Model number: | Contractor: | Date:

Variations: | Customer / Wholesaler: | Quantity:

Saniflow Corp reserves the right to make changes and/or modifications to the products and their specifications without warning or notice.

For further info please contact SANIFLOW on: Toll free: **1-877-222-9125** or visit our website at **www.saniflowcorp.com**
Tel: +1 (305) 424 2433 Fax: +1 (305) 424 2435 · **sales@saniflowcorp.com**

Legend for symbols shown on last page of catalog

M09A

material: steel
finish: white epoxy

M09AB

material: steel
finish: black epoxy

M09AC

material: Stainless steel AISI 304
finish: bright

M09ACS

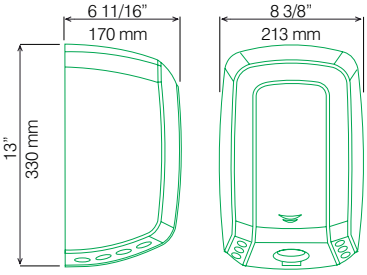
material: stainless steel aisi 304
finish: satin

M09A · M09AB · M09AC · M09ACS | | ⋮ | COMPONENTS AND MATERIALS

- Maximum airspeed: 203 mph.
- One piece cover 1/16" thick.
- The ABS-PC base includes silent-blocks to damp mechanical vibrations.
- Class A high pressure Universal brush motor.
- Internal UL plastic housing components to be flame retardant type.
- Automatic disconnection system after 60 seconds of continuous use.
- Minimum heating element (only 250 W).
- Fully adjustable (2"-8") infrared electronic detection sensor by means of a potentiometer.
- Lower power consumption: motor works at an adjustable 350-1,050 Watts.
- Sensors come with a vandal-resistant polycarbonate viewing window.
- GreenSpec® approved & offering LEED Credits.

M09A · M09AB · M09AC · M09ACS | | ⋮ | TECHNICAL SPECIFICATIONS

Estimated drying time	10-15 seconds	Total Power	600-1,300W
Voltage	100-120V; 208V; 220-240V	Heating Element	250 W
Frequency	50/60 Hz	Protection level	IP23
Power Consumption	6.4-10 Amps (120V) /3.2-5 Amps (220V)	Effective airflow	68 – 108 CFM
Electrical insulation	Class I (ground required)	Air temp (at 4" distance/70ºF)	106ºF (42ºC)
Motor Power	350-1,050 W	Dimensions	13"H x 8 3/8"W x 6 11/16"D
rpm	adjustable (19,000-28,000 rpm)	Weight	11,24 Lbs. (5.1 Kg)
Max air speed	203 mph / 18,000 LFM	Noise level	67 - 74 dBA



machflow®

(Does not include Hand dryer)

ACCESSIBILITY & ADA

The American Disabilities Act (ADA) was passed in 1990. Basically, It provides civil rights protections to people with disabilities, ensuring equal access to all public goods and services. This resulted in ADA standards and guidelines for accessibility to places of public accommodations and commercial facilities by individuals with disabilities.

How does ADA apply to hand dryers?

There are not any specific references to hand dryers in the regulations, but there are regulations pertaining to turning radius (for wheelchairs to have enough room) and objects that protrude from the wall.

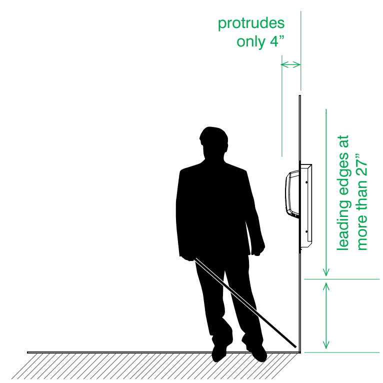
In fact, for most public bathrooms, to be ADA compliant (American Disabilities Act), a hand dryer (with leading edges between 27 and 80 inches) that is located in a passage way must protrude less than 4" from the wall (so, that a person using a walking stick will not bump into it). If the hand dryer is not thin enough, a recess wall box will be needed to reduce the depth of the dryer to less than 4 inches., complying with the ADA standards.

Here´s exactly what the regulation says:

307.2 Protrusion limits: Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.

The American with Dissabilities Act (ADA) defines the accessible requirements for the design and construction of washroom spaces in the USA.

The machflow® has been designed to comply with these recommendations. As you can see on these examples of installations:



KT009CS

Material: stainless steel AISI 304

Finish: satin

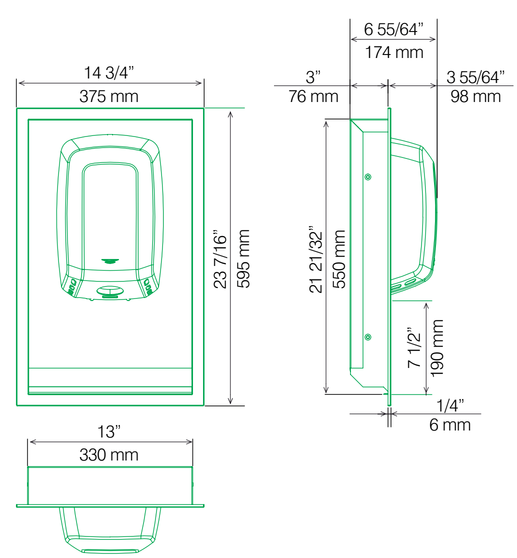
dryer not included

KT009CS | MATERIALS & DIMENSIONS

With 4 screws holes of 23/64 (9 mm) for mounting on the wall.

Weight:	6.6 lbs. (3 Kg.)
Overall Dimensions:	14 3/4" wide x 23 7/16" high x 3 1/16" deep (375 mm wide x 595 mm high x 77 mm deep)
Rough Wall Opening:	13" wide x 21 11/16" high x 3 1/16" deep (330 mm wide x 550 mm high x 77 mm deep)
Construction:	Wall box is fabricated of 2 welded pieces. The dryer mounting area is fabricated of 18 GA 18-8 type 304 stainless steel, and frame is fabricated of 22 GA 18-8 type 304 stainless.
Installation Guide:	When installed bottom of hand dryer will be 7 1/2" (190 mm) above bottom of rough wall opening.
Consult local ADA codes	

KT009CS | TECHNICAL SPECIFICATIONS



saniflow corp.

machflow®

- Ultra-fast drying time
- Minimum energy consumption
- Minimum CO_2 emissions
- Minimum noise pollution
- Universal Voltage Out of the box: from 110 to 240 V
- Adjustable High Speed motor: turn up for fast drying; turn down for quiet operation
- Rock solid & Compact Design
- ADA recessed kit available
- GreenSpec listed

To download technical data sheets, 3 CSI Specs, CADs, BIM and Green Info, please go to www.saniflowcorp.com or visit your preferred specification website:

Sweets.com BIM CAD Specs Green

ARCAT BIM CAD Specs LEED®

HAND DRYERS

HIGH SPEED

machflow®

Who is using MACHFLOW M09A Hand dryers:

- Northwestern University, Kellogs Dorms, Chicago, IL
- Citrus College Football Stadium, Glendora, CA
- Downing University Center, Western Kentucky University, Bowling Green, KY
- Pennsylvania State University, Residential Housing, PA
- Glendale Community College, Glendale, CA
- North Myrtle Beach Park & Sport Complex, SC
- Old Pueblo Gimnastic Academy, Tucson, AZ
- Tegeler High School, Pasadena, TX
- City of SouthPort Public Works, SouthPort, NC
- City of Gridley, KS
- Main Lodge Custodial, Mammoth Lakes, CA
- Vittoria Caffe, Boston, MA

A ROCK SOLID & COMPACT DESIGN

Our most powerful & energy efficient high speed hand dryer incorporates a low energy, high pressure, adjustable motor that allows you to choose noise levels between 67 to 74 dBA. Reduces drying times to 10-15 seconds and utilizes an incredibly energy efficent 6.4 Amps per drying cycle.

saniflow corp.

SUBSTITUTION REQUEST
(During the Bidding/Negotiating Stage)

Project:	International Bridge Facility Expansion and Renovations (19-507491)	Substitution Request Number:	SubReq-01945
	PHARR, TX	From:	Courtney Damore, Scranton Products
To:	Laura Nassri Warren, Warren Group Architects	Date:	01/14/2019
	lwarren@twgarch.com, (956) 994-1900	A/E Project Number:	
Re:	Toilet Compartments	Contract For:	City of Pharr

Specification Title: Toilet Compartments
Description: Manufacturers
Section: 10 21 13 Page: 3
Article/Paragraph: 2.1

Proposed Substitution: Hiny Hiders Solid Plastic
Manufacturer: Scranton Products Address: scrantonproducts.com Phone: 570-348-0997
Trade Name: Scranton Hiny Hiders Solid Plastic Model No.: N/A

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.

Submitted by: Courtney Damore
Signed by: Courtney Damore
Firm: Scranton Products
Address: 801 E. Corey Street
Scranton, Pennsylvania 18504
Telephone: (570) 348-0997 ext. 8032, courtney.damore@azekco.com

A/E' s REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Substitution Procedures.

☑ Substitution approved as noted - Make submittals in accordance with Specification Substitution Procedures. Refer Addendum 2.

☐ Substitution rejected - Use specified materials.

☐ Substitution Request received too late - Use specified materials.

Signed by: **Date:**

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ ____

General Decision Number: TX190255 01/04/2019 TX255

Superseded General Decision Number: TX20180305

State: Texas

Construction Type: Building

County: Hidalgo County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher)for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019

BOIL0074-003 01/01/2017

	Rates	Fringes
BOILERMAKER	$ 28.00	22.35

ENGI0178-005 06/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(1) Tower Crane	$ 29.00	10.60
(2) Cranes with Pile Driving or Caisson Attachment and Hydraulic		

Crane 60 tons and above	$ 28.75	10.60
(3) Hydraulic cranes 59 Tons and under	$ 27.50	10.60

* IRON0084-011 06/01/2018

	Rates	Fringes
IRONWORKER, ORNAMENTAL	$ 23.77	7.12

PLUM0412-004 04/01/2013

	Rates	Fringes
PLUMBER	$ 31.14	12.43

SUTX2014-031 07/21/2014

	Rates	Fringes
BRICKLAYER	$ 16.17	0.00
CARPENTER	$ 14.21	2.22
CEMENT MASON/CONCRETE FINISHER	$ 12.46	0.00
ELECTRICIAN	$ 18.44	4.53
INSULATOR - MECHANICAL (Duct, Pipe & Mechanical System Insulation)	$ 11.54	2.17
IRONWORKER, REINFORCING	$ 12.01	0.00
IRONWORKER, STRUCTURAL	$ 15.04	4.34
LABORER: Common or General	$ 8.00	0.00
LABORER: Mason Tender - Brick	$ 10.00	0.00
LABORER: Mason Tender - Cement/Concrete	$ 10.89	0.96
LABORER: Pipelayer	$ 11.00	3.47
LABORER: Roof Tearoff	$ 10.06	0.00
OPERATOR: Backhoe/Excavator/Trackhoe	$ 14.04	1.01
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 13.93	0.00

OPERATOR: Bulldozer.....$ 18.29 1.31

OPERATOR: Drill.....$ 16.22 0.34

OPERATOR: Forklift.....$ 14.83 0.00

OPERATOR: Grader/Blade.....$ 10.00 0.00

OPERATOR: Loader.....$ 12.87 0.70

OPERATOR: Mechanic.....$ 17.00 0.00

OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....$ 16.03 0.00

OPERATOR: Roller.....$ 12.70 0.00

PAINTER (Brush, Roller, and Spray).....$ 11.27 0.00

PIPEFITTER.....$ 15.22 3.16

ROOFER.....$ 11.42 0.00

SHEET METAL WORKER (HVAC Duct Installation Only).....$ 18.40 2.12

SHEET METAL WORKER, Excludes HVAC Duct Installation.....$ 21.13 6.53

TILE FINISHER.....$ 11.22 0.00

TILE SETTER.....$ 12.15 0.00

TRUCK DRIVER: Dump Truck.....$ 12.39 1.18

TRUCK DRIVER: Flatbed Truck.....$ 19.65 8.57

TRUCK DRIVER: Semi-Trailer Truck.....$ 12.50 0.00

TRUCK DRIVER: Water Truck.....$ 12.00 4.11

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide

employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

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

in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION

SECTION 00 18 00
RESPONDENT'S QUALIFICATIONS – **"REVISED"**

PART 1 - GENERAL

1.1 SECTION INCLUDES

This section contains the respondent's qualifications for the project.

1.2 REFERENCES – Not Used

1.3 DEFINTIONS – Section 0700

1.4 RESPONDENT'S QUALIFICATIONS

PART 2 - Proposers shall submit evidence in the form of a Contractor's Qualification Statement of compliance with the following requirements:

A. Respondent shall have experience, human resources and access to the equipment necessary for performing the project work.

B. Respondent shall have performed substantially the same type of work as is required in the project in its prior work experience.

C. The successful respondent shall appoint a "competent person" of the company to be full time supervisor or superintendent at the site. The competent person must be available at all times during the pendency of the project and must be available during "off-hours."

D. Respondent shall have completed four (4) projects of similar scope and complexity within the past two (2) years.

E. Respondent shall have an established office in Texas with at least five (5) years of experience.

F. Respondent are to submit financial statements for the last three (3) years along with an "Accountants Review Report" from accountant.

Respondent shall submit with their Base Proposal in the same envelope a Contractor's Qualification statement, fully executed and indicating compliance with the above qualifications, on an original American Institute of Architects Document A305, 1986 Edition. Photo copies of facsimiles of original forms will not be acceptable.

The City of Pharr will evaluate and consider, in the qualifications and acceptance of the Respondents, all information relevant to his interests and requirements, as provided on the Contractor's Qualifications Statement and any information on past work from references provided therein. The Owner reserves the

right to qualify or disqualify any Proposal based on any information called for in the Contractor's Qualification Statement, in any names permitted by applicable law.

CONSIDERATION OF PROPOSAL

A. Properly identified Proposals received on time will be considered.
B. The City of Pharr shall have the right to reject any or all Proposals and in particular to reject a Proposal not accompanied by any required security bond or data required by the Contract Documents or a Proposal in any way incomplete or irregular.
C. The City of Pharr shall have the right to waive any formality or irregularity in any proposal received.
D. If the City of Pharr accepts any Alternates, the Owner shall have the right to accept them in any order or combination.
E. It is the intent of the City of Pharr to award a contract to the offeror submitting the proposal providing the "best value" to the city provided the Proposal has been submitted in accordance with the requirements of the Solicitation Documents, selection criteria, and adopted by the City of Pharr.
F. Award of Contract may include full consideration of Unit Prices and Alternates if any. City of Pharr may accept or reject any or all alternates if any and make an award of contract as deemed in the best interest of the City. The City's decision shall be final.
G. The selection of a qualified Contractor shall be based on the enclosed Ranking Criteria.
H. Contractor may provide supplemental information to support selection criteria. The support information will not be disclosed to other Offerors.
I. The estimated budget is as follows: $1 Million.

Ranking Evaluation and Ranking Criteria

The City of Pharr, City Commission has authorized the use of the Competitive Sealed Proposal method of solicitation. The following criteria and scoring matrix is hereby incorporated:

The City of Pharr reserves the right to apply all criteria as deemed appropriate and allowed in Texas Local Government Code 252 and 2269. Including but not limited to the below, and other relevant factors specifically denoted in the solicitation package. The City of Pharr specifically requests offerors to answer and provide information related to the following criteria. Questions left unanswered or omitted requested information may result in a partial or total reduction of allocated points.

Criteria	**Weight**
1. Proposal Amount	40 Points
2. Firm Experience/Key Personnel and Firm Stability Statement from Financial Institution/ /Management/ Resumes/Company History Similar Successful Projects Including Quality Construction, Timely Completion Prompt Project Closeout are delivered successfully	**25 Points**
3. Proposed Subcontractor Team	7 Points

4. References — 10 Points

Scaled Between
Excellent – full credit
Poor Experience or No Experience – No Credit

5. General Contractor Small Business Certifications: — 9 points

SBA (3 pts)
DBE (3pts)
8(a) (3pts)

6. General Contractor Project Management Certifications: — 9 points

U.S. Army Corps of Engineers
Construction Quality Management for Contractors (3pts)
Project Management Institute
Project Management Professional (3pts)
Construction Management Association of America
Certified Construction Manager (3pts)

100 Points

Evaluation Factor (1) - Proposal Amount (40 Points):

The City of Pharr will consider the total contract cost on the base proposal price as part of the evaluation process. Alternates will be included in the Competitive Sealed Proposal price evaluation only if the base price plus the alternate price(s) are within the project budget. If the base price plus the alternate(s) exceed the budget and additional funding is not allocated, only the base price will be used in the price evaluation process. After the highest ranked firm is selected, negotiations on price and changes on the scope of work may include alternate(s).

Points will be awarded based on Offerors' deviation from the lowest price received. The following formula will be used to determine point value for each offeror: Lowest Proposal/ Offeror's Proposal X Max Point Value = Points Awarded. See **example** below for point determination. This example assumes that four (4) proposals were received with a low proposal of $2,500,000 and a high proposal of $3,000,000. The Offerors would receive points per the following chart.

Contractor Ranking Form for Price

Assuming price is 40 Points

Contractor No.	Price	Formula	Points Awarded
1	$2,500,000	$2,500,000 / $2,500,000 X 40 =	40
2	$2,550,000	$2,500,000 / $2,550,000 X 40 =	39
3	$2,800,000	$2,500,000 / $2,800,000 X 40 =	36
4	$3,000,000	$2,500,000 / $3,000,000 X 40 =	33

Evaluation Factor (2) - Firm Experience/Key Personnel & Firm Stability/Management (25 Points):

In order to get points relating to construction experience and performance, the offeror must submit the following information:

Include an organizational chart for your proposed management team. Include, at a minimum, the name of the principal-in-charge for the firm as well as the following staff: Project Manager (Primary decision maker), superintendent(s), project engineer, and safety manager. The Safety manager may have other roles, such as project superintendent or project manager, but must be on-site full time. Staffing strength is or significant importance to the City of Pharr and changes to proposed staff (or staff options) without the prior approval of the City of Pharr grounds for termination prior to construction phase services.

List a minimum of five (5) projects for which you have provided, or are providing, services that are most related to this project. Identify similar challenges and describe your approach. List the projects in order of priority, with the most relevant project listed first. Provide the following information for each project listed:

- Project name, location, contract delivery method, and description
- Color images (photographic or machine reproductions)
- Initial budget and final Construction Cost, including Change Orders
- Type of construction (new, renovation, or expansion)
- Description of services respondent provided for the project during preconstruction
- The Owner's name and representative, including telephone number and email address
- Length of business relationship with the Owner
- The Architect's contact information, including telephone number and email address

References shall be considered relevant based on specific project participation and experience with the Respondent. The City of Pharr may contact references during any part of this process. Regarding these projects, identify which staff members were on the featured projects.

Describe how your firm's quality control team will measure the quality of construction and commissioning performed by mechanical and electrical subcontractors and how will you address non-conforming work.

Describe your firm warranty service support philosophy and your approach to warranty service implementation.

List any liens that Offeror has had on any projects.

List any project-related lawsuits that Offeror has had, or is currently involved in.

Evaluation Factor (3) - Proposed Subcontractor Team (Must be submitted within (48) hours after proposal opening) (7 Points)

List of Sub-Contractors may be submitted at the time of Proposal submittal or within forty-eight (48) hours after Proposal Opening. If not sure on certain trades, please provide list of potential subcontractors. Do not leave blank. E-mail list to Sandra Zamora, CPM, Purchasing Director by emailing **bids@pharr-tx.**gov If lists are not received within (48) hours after proposal opening, no points will be received for this section. Substitution of unacceptable subcontractors during negotiation with the highest ranked contractor may be grounds for disqualification of the contractor and movement to the next highest ranked offeror.

Evaluation Factor (4) - Experience with the City of Pharr, Architect and/or Consultants (10 Points)

The full credit of 10 points will be given to Offerors whose prior project experience with City of Pharr and or City of Pharr's project team has been excellent. If experience is "standard", 5 points will be given. If City of Pharr and/or City of Pharr's project team had a poor experience with an Offeror, no points will be awarded.

Evaluation Factor (5) - General Contractor Small Business Certifications (9 Points)

SBA- Small Business Owner Certification determines the number of employees over the past year, or average annual receipts over the past three years. ((3 pts)

DBE- Disadvantaged Business Enterprise is a small business owned and controlled by socially and economically disadvantaged individuals must receive DBE certification from the relevant state– generally through the state Uniform Certification Program (UCP).(3pts)

8(a) Business Development- Is a firm that is eligible to receive federal contracts under the Small business Administration Business Development Program because it is owned and operated by socially and economically disadvantaged individuals. (3pts)

Evaluation Factor (6) – General Contractor Project Management Certifications (9 Points)

General contractor to provide Project Management Certifications or subcontractors included in proposal or reasons why cannot use local traits. State procedures and programs your company has in place to ensure quality control and timely completion.

Other Required Information to be submitted (No Point Value)

The Offer must submit the following items. No point values are assigned to these items but will be used in overall evaluation of Offeror.

1. Review and acknowledge the contract included in the Front End of the Specifications issued for this project and list any objections or modifications to the contract. (No Point Value – Basis of rejection dependent on gravity of revisions)

2. Provide certified financial statements for the past three (3) years. The City of Pharr reserves the right to disqualify firms that cannot show financial stability in a satisfactory manner to the Owner. Financial information provided will not be shared with anyone outside of the City of Pharr and the selection team.

3. The City of Pharr is interested in understanding the stability of your firm in terms of managed growth. Provide information showing measured corporate work trends in the form of total projects relative to firm resources or a work load analysis based on gross billings for the prior three (3) years and projecting through 2019 assuming that your firm is awarded this Project. The intent is to understand your firm's growth and trajectory and the company's ability to successfully manage projects based on historical and future trends. Explain any anomalies or major deviations on the charts provided. (No Point Value – Basis of rejection dependent on company stability)

4. Provide the number of Surety companies that your company has engaged over the last two (2) years, the name(s) of the Surety company, and the number of years that your firm has consistently engaged the Surety company(ies). (No Point Value – Basis of rejection dependent on Surety information)

Ranking Criteria for
Selection of Building Contractors

Project Name: _____ Contractor: _____

Project Location(s): _____ Proposal: _____

Ranking Date: _____ Proposal Opening Date: _____

CATEGORY	Maximum Score	Total Points Scored
1. PRICE (40 pts.) • Construction Cost	**40**	
2. FIRM EXPERIENCE / KEY PERSONNEL AND FIRM STABILITY (25 pts) • Team Organization Chart (proposed management team) 5 • Projects of Comparable Type and Size 5 • Firms Quality Control 5 • Firms Warranty Service Philosophy 5 • Demonstrated ability to successfully meet time schedules 5	**25**	
3. Proposed Subcontractor Team (7 pts) • Subcontractor Team	**7**	
4. References (10 pts) • Past Experience with City of Pharr PMSI, Architect and/or Consultants	**10**	
5. General Contractor Small Business Certifications (9 pts) • SBA (3 pts) • DBE (3pts) • 8(a) (3pts)	**9**	
6. General Contractor Project Management Certifications (9 pts) • US Army Corp of Engineers-Construction Quality Management for Contractors (3 pts) • Project Management Institute-Project Management Professional (PMP) (3pts) • Construction Management Association of America-Certified	**9**	

Construction Manager (3pts)

TOTAL POINTS SCORED **100** **Grand Total** _____

1.5 STATEMENT OF QUALIFICATIONS AND OWNER'S REVIEW

A. Respondent shall submit on the form furnished in this section for that purpose, a Statement of Respondent's Qualifications. The City of Pharr shall have the right to take such steps or perform such investigations as it deems necessary to determine the ability of the respondent to perform the obligations under this Contract, and the respondent shall furnish any and all information or data requested for this purpose. The City of Pharr reserves the right to reject any proposal if the evidence submitted by or investigation of such respondent fails to satisfy the City of Pharr that such respondent is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional proposals will not be accepted. Refer Supplementary Instructions to Respondents Document 00 22 13.

STATEMENT OF QUALIFICATIONS FORM.

Date: _____, 2019

Proposal of _____ (hereinafter called "Respondent") a

_____(Corporation, Partnership, LLC, LLP, etc.) organized and existing under the laws of the State of Texas.

To the City of Pharr (hereinafter called "Owner").

Gentlemen:

The Respondent is in compliance with the Respondent's Qualifications Section(s) of the specifications for proposals for the _____, having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, hereby submits the following:

STATEMENT OF QUALIFICATIONS:

A. Years experience in similar type projects:

B. Work on similar type projects: Provide a minimum of four (4) similar type projects with the following information: Project Name, Location, Construction Cost, Reference Name and Phone Number.

C. Number of employees:

D. Names of Subcontractors: Provide names of subcontractors for this project with the following information: Name, Location and Experience

E. Provide information of available equipment:

P A R T 2 P R O D U C T S - Not Used

P A R T 3 E X E C U T I O N - Not Used

END OF SECTION

Information To Build On
Engineering • Consulting • Testing

December 5, 2013

Mr. William F. Ueckert, P.E.
City Engineer
City of Pharr
118 South Cage, City Hall 1st Floor
Pharr, Texas

Re: Geotechnical Engineering Services Report
Pharr Bridge International Trade Center
Pharr, Texas
PSI Project No. 328-1108

Dear Mr. Ueckert:

Professional Service Industries, Inc. is pleased to transmit our Geotechnical Engineering Services Report for the referenced project. This report includes the results of field and laboratory testing, and recommendations for foundation and pavement design as well as general site preparation.

We appreciate the opportunity to perform this Geotechnical Study and look forward to continued participation during the design and construction phases of this project. If you have any questions pertaining to this report, or if we may be of further service, please contact our office.

Respectfully submitted,
Professional Service Industries, Inc.

Héctor J. López, P.E.
Branch Manager

GEOTECHNICAL ENGINEERING SERVICES REPORT

For the proposed

PHARR BRIDGE INTERNATIONAL TRADE CENTER
PHARR, TEXAS

Prepared for:

THE CITY OF PHARR
118 SOUTH CAGE, CITY HALL 1ST FLOOR
PHARR, TEXAS

Prepared by:

PROFESSIONAL SERVICE INDUSTRIES, INC.
2020 NORTH LOOP 499, SUITE 302
HARLINGEN, TEXAS 78550
Telephone: (956) 423-6826
Fax: (956) 423-5735

PSI PROJECT No. 328-1108

Texas Board of Professional Engineers Certificate of Registration # F003307

December 5, 2013

Héctor J. López, P.E.
Branch Manager

STATE OF TEXAS
12-5-13
H J LOPEZ SEPULVEDA
70040
LICENSED
PROFESSIONAL ENGINEER

Lucas Castillo, E.I.T
Staff Engineer

psi

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APPENDIX

PROJECT INFORMATION

Project Authorization

Professional Service Industries, Inc. (PSI) has completed a geotechnical exploration for the proposed Pharr Bridge International Trade Center located in Pharr, Hidalgo County, Texas. Mr. William F. Ueckert, P.E., City Engineer with the City of Pharr, authorized our services by issuing Work Order No. 7 per PSI Proposal No. G2013-106 dated November 11, 2013. This exploration was completed in general accordance with the referenced proposal.

Project Description

Project information was provided by Ms. Andrina Garza, Associate AIA of the The Warren Group Architects, Inc. on November 8, 2013, which included a Site Plan, First & Second Floor Plans, and Building Renderings. We also reviewed a Topography Survey dated October 14, 2013 and publicly available aerial photography to become familiar with the proposed development area and geographical setting. The proposed development site encompasses approximately 1.3 acres in areal extent and is generally located on the West Side of the South Bound Lanes Toll Booths at the Pharr International Bridge in Pharr, Texas. A building facility and associated vehicle parking area are currently present on site.

PSI understands that the proposed International Trade Center will consist of the construction of a two story building, approximately 65 ft. wide by 78 ft. long with a "footprint" area of 5,053 square feet (s.f.). The building incorporates a reception and greeting hall area, conference room, offices, hallways, and other space allocations. The building structure is likely to be constructed of stucco/façade, glass and concrete panel exterior walls, with interior metal studs, steel columns and a steel truss roof system(s). The proposed building is anticipated to be constructed adjacent and to the west of the existing building at the site. The planned finished floor elevation (FFE) for this facility is anticipated to be the same as the existing FFE of the adjacent building. Structural loads were not provided to us; however, based upon our past experience, we anticipate the buildings column loads and bearing wall loads will be up to 75 kips and 5 kips per linear foot, respectively.

Parking lot areas for approximately 87 vehicles are also planned as part of the site development and are located to the west and northwest of the building. Based on our visual observations and topographic information provided, top of ground grade elevations in the proposed construction area ranges from about 99.2 ft. MSL on the west side (natural grade) to 99.5 ft. MSL on the east side and adjacent to the existing building where fill materials are believed to have been placed to raise grade as part of the previous development. Anticipated grading activities will include soil fills on the order of four (4) to six (6) feet across the site.

The geotechnical recommendations presented in this report are based on the available project information, project location, and the subsurface materials described in this report. If any of the noted information is incorrect, please inform PSI in writing so that we may amend the recommendations presented in this report if appropriate and if desired by the client. PSI will not be responsible for the implementation of its recommendations when it is not notified of changes in the project.

Purpose and Scope of Services

The purpose of this study was to explore the subsurface conditions at the site to enable an evaluation of acceptable foundation systems for the proposed construction. Our scope of services included drilling and sampling soil test borings, performing laboratory testing of selected samples, and preparing this geotechnical report. This report briefly outlines the testing procedures, presents available project information, describes the site and subsurface conditions, and presents recommendations regarding the following:

- Site preparation;
- Foundation types, depths, allowable bearing capacities, and an estimate of potential settlement;
- General pavement design criteria and pavement subgrade preparation; and,
- Comments regarding factors that will impact construction and performance of the proposed construction.

SITE AND SUBSURFACE CONDITIONS

Site Location and Description

The site for the proposed project is located at the Pharr-Reynosa International Bridge on South Cage Boulevard in Pharr, Hidalgo County, Texas. The site is currently developed with a single story building with associated asphalt paved parking and driveways. Based on our visual observations and provided topographic survey, the existing surface site topography adjacent to the existing building slopes towards the west with an elevation difference ranging from 4 feet to 6 feet lower than the existing pavement areas and building's finished floor elevations, respectively. PSI understands that the site grades around the existing building were raised with soil fill materials as part of the previous site development. In addition, the proposed construction area appears to be currently utilized as a storm water detention/retention area. The soil borings were drilled at selected locations within the proposed project "footprint" and new parking lot areas. The surficial soils were relatively firm at the time of the field exploration, our truck-mounted drill rig experienced little difficulty in moving about the site.

Subsurface Conditions

The site subsurface conditions were explored with four (4) soil test borings drilled to a depth of 25 feet to 40 feet within the building "footprint" area and three (3) soil test borings drilled to a depth of 6 ft. across the proposed parking lot and driveway/access areas, below the existing ground surface, respectively. The boring locations and depths were selected by PSI with the Client's Representative coordination. The borings were located in the field by PSI personnel by measuring distances from existing boundaries located at the site.

Elevations of the ground surface at the various boring have been inferred from the topographic information provided. However, all references to depths of the various materials encountered are from the existing grade at the time of drilling, which was performed on November 20, 2013. The borings were advanced utilizing solid stem auger and wet rotary drilling methods and soil samples were routinely obtained during the drilling process. Drilling and sampling techniques were accomplished generally in accordance with ASTM procedures. Select soil samples were tested in the laboratory to determine material properties for our evaluation. Laboratory testing was accomplished in general accordance with ASTM procedures. A detailed description of the various strata and specific laboratory analysis results are presented

in the individual boring logs on Plates 2 through 8 of the Appendix. A subsurface stratigraphic profile is presented in Plate 9. A Key Chart to log terms and symbols is also included at the end of the Appendix.

The near surface and subsurface soils encountered at the site consisted of recent soil fill materials generally present in the east area near the existing building and natural soils in the west section of the proposed construction area. The fill materials consisted of Lean Clay (CL) and Fat Clay (CL) soils generally considered moderate to high in plasticity and stiff to very stiff in consistency. The natural subsurface soils consisted of interlayered strata of Fat Clay (CH), Sandy Clay (CL) & Lean Clay (CL) and Lean Clay with Sand (CL) strata. Tables 1 and 2 present the generalized subsurface profiles as well as the summary of the laboratory test results, respectively. Note that the inferred elevation, based on the topographic map information provided, is included as a reference.

Table 1 - Generalized Subsurface Profile

Stratum	Depth (Ft.)	Inferred Elevation (Ft., MSL)	Thickness (Ft.)	Description
I (B-1 & B-2)	+6 to 0	99.2 to 93.2	6	Fill Materials - Fat Clay (CH) & Lean Clay (CL), stiff, moist.
II	0 to 6	93.2 to 87.2	6	Fat Clay (CH), stiff to hard, moist to wet.
III	6 to 22 - 23	87.2 to 70.2 – 71.2	16 to17	Sandy Clay (CL), Lean Clay with Sand (CL) & Lean Clay (CL), stiff, moist to wet.
IV	22 – 23 to 33	70.2 – 71.2 to 60.2	10 to 11	Fat Clay (CH) very stiff, moist.
V	33 to 40	60.2 to 53.2	7	Lean Clay with Sand (CL) firm, moist to wet.

Notes: (1) For depth information below ground surface, the inferred elevation of 93.2 is assumed as 0 ft.; (2) The maximum exploration depth was 40 ft. below ground surface at Borings B-1 and B-3.

Table 2 - Summary of Laboratory Test Results

Stratum	w (%)	LL	PI	-200 (%)	PP (tsf)	UC (tsf)	SPT_N (blows/ft)
I	10 to 24	37 to 54	24 to 39	87 to 97	---	---	10 to 24
II	15 to 26	55 to 62	39 to 45	97 to 98	2.5 to 4.5	1.12 to 4.88	---
III	23 to 30	21 to 22	9	53 to 88	0.5 to 1.75	---	8 to 18
IV	14 to 26	60	44	---	2.25 to 3.25	2.30 to 2.62	14 to 22
V	23 to 25	---	---	76	0.5	0.69	15

Notes: w- Water Content, LL- Liquid Limit; PI- Plasticity Index; PP-Pocket Penetrometer Values; UC-Compressive Strength in tsf; SPT-N Standard Penetration Test Results.

The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs included in the Appendix should be reviewed for specific information at individual boring locations. These records include soil descriptions, stratifications, penetration resistances, locations of the samples, and laboratory test data.

The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials, and the actual transition may be gradual. Water level information obtained during field operations is also shown on these boring logs. The samples which were not altered by laboratory testing will be retained for 60 days from the date of this report and then will be discarded.

Groundwater Information

Groundwater levels were recorded at the time of drilling operations, and the shallowest ground water encountered was at a depth of approximately 8 feet (Elev. 85 ft. MSL) in borings B-3 and B-4 below the existing ground surface. Delayed groundwater measurements were not practical to collect as the mud present in the borehole as the result of the wet rotary drilling methods prevented it. The groundwater depths encountered within the soil borings are presented in the following table.

Boring Number	Ground Surface Inferred Elevation (ft. MSL)	Boring Depth(feet)	Est. Water Level Depth During Drilling (feet)	Est. Water Level Elevation During Drilling (ft. MSL)
B-1	99.2	40	15	84.2
B-2	99.2	25	15	84.2
B-3	93.2	40	8	85.2
B-4	93.2	25	8	85.2
P-1	93.2	6	None	NA
P-2	93.2	6	None	NA
P-3	93.9	6	None	NA

Additionally, discontinuous zones of perched water may exist within the overburden materials and/or at the contact with clay lenses. We recommend that the Contractor determine the actual groundwater levels at the site at the time of the construction activities, if necessary

EVALUATION AND RECOMMENDATIONS

Geotechnical Discussion

Based on our investigation and understanding of the project, the proposed building structure can be founded on shallow or deep foundation systems. The following design recommendations have been developed based on the previously described project characteristics and subsurface conditions encountered. If there are any changes in these project criteria, including project location on the site, a review must be made by PSI to determine if any modifications in the recommendations will be required. The findings of such a review should be presented in a supplemental report. Once final design plans and specifications are available, a general review by PSI is strongly recommended as a means to check that the conditions assumed in the project description are correct and that the earthwork, pavement, and foundation recommendations are properly interpreted and implemented.

It should be noted that if the proposed building structure is to be connected to an existing building, there is a significant potential for differential movement to occur between the existing and proposed construction, particularly if the two (2) structures are supported on different types of foundations. Where the structures are connected, the design should allow for differential movement to occur without causing structural distress. Furthermore, care should be taken so that the proposed construction does not damage or undermine support of the existing construction. Foundation information and type for the existing structure is not currently available to PSI. It should be noted that there would be less likelihood of differential movement between the existing structure and the proposed addition if they are both supported on the same types of foundations.

Potential Vertical Rise (PVR)

The results of laboratory plasticity tests indicate that the natural soils at this site have moderate to high potential to shrink or swell. The soils have a tendency to swell when soil moisture increases and shrink when the soil moisture decreases. The amount of potential movement to shrink and swell with soil moisture variations is represented or indicated by Potential Vertical Rise (PVR). The estimates of PVR were calculated using Texas Department of Transportation (TXDOT) TEX-124-E method. In designing the floor slab or foundation system, the structural engineer should take movements associated with shrinking-swelling soils into account.

PVR estimates are based on an assumed depth known as "Active Depth" to which the soil moisture variations could occur due to seasonal variations. The typical active depth for this area is assumed to be at eight (8) feet. It is noted that the active depth assumed herein may not represent the moisture variations that can occur in the field. Moisture variations can occur to deeper depths or moisture variations can be greater than those inherently assumed in the TXDOT method. The moisture variations in the field could occur due to the presence of large tree root systems that could desiccate the soils, or the presence of other heating units, or possible soil wetting due to pipe leaks, poor drainage, etc. It is very difficult to predict the lateral and vertical moisture variations under the structure during its service life. Even if the moisture variations were to be predicted, the current state of soil mechanics cannot predict the soil movements associated with shrinking and swelling accurately. This is largely due to the inability of laboratory tests, including swell tests, to accurately replicate the field conditions in their present state or during the entire service life of the structure. Hence, the PVR estimates

provided herein should be considered approximate probable estimates based on industry standard practice and experience, and the movements predicted herein should not be construed as absolute values that could occur in the field.

PVR values on the order of one and three-quarter (1¾) inches to two and one-quarter (2¼) inches were calculated for this site using the Texas Department of Transportation (TXDOT) TEX-124-E method. For this site, PVR estimates were calculated using the "Dry Swell Line" shown on Figure 1 of TEX-124-E method.

The PVR or the movements associated with soil shrink-swell potential will cause movements to the structure (floor-slab) when the structure is placed directly in contact with the soil at the ground surface. In order to mitigate the movements, the at-grade structure (floor-slab) should be isolated from contact with the soil and should be supported above grade, structurally on appropriate deep foundation system with adequate void space between the structure (floor-slab) and the soil.

Alternatively, it has been the industry practice to place a non-expansive (i.e., low plasticity structural fill) soil layer between the natural soil and the structure (floor slab) to reduce the movements associated with shrinking and swelling soils. This method to reduce the movements is dependent on the assumption that a certain amount of movement can be tolerated and it is noted that the success of method is primarily dependent on:

1) the thickness of the non-expansive structural fill material placed below the structure (floor slab); and,

2) the methods (i.e., civil drainage, landscape, other designs) adopted to prevent moisture variations below the structure (floor slab).

The owner's should understand the assumptions of this method and the associated risk that movements could occur when this method is adopted.

For this site, it is anticipated that the soils fills in the order of four (4) to six (6) feet necessary to raise grade to meet the planned building FFE will result in reducing the PVR to about one (1) inch. Raise in grade should be completed with properly compacted select structural fill and should be placed within the plan area of the proposed structure to a distance of at least five (5) feet beyond the perimeter of the structure. Plasticity and compaction requirements for the select fill are provided in the Site Preparation section of this report.

It is not uncommon to assume the differential movement to be about half the value of the PVR. This is based on the assumption that a certain amount of moisture variation may occur beneath the plan area of the floor slab. It is possible that under extreme moisture variation conditions, the differential movements could be equal to, or even double, the value of PVR.

Poor drainage and water infiltration into the foundation soils for an extended period of time can be detrimental to the floor slab and foundation. Excessive wetting of soil (due to accumulation of water), or, excessive drying (due to the presence large trees, etc.) could possibly result in greater PVR values than those estimated herein as the moisture variations could occur down to deeper depths; or, the moisture variations or shrinking and swelling predictions can be greater than those inherently assumed by the methods mentioned above. It

is recommended that the moisture-related problems be corrected immediately as they can be detrimental to the foundation and floor slab.

Swelling or shrinkage occurs in soils due to changes in moisture content. Water ponding around the foundations/slab may result in reduction of soil strength, thereby causing adverse and damaging movements. Poor drainage and water seepage for an extended period of time can be detrimental to the slab and foundation. It is important to control the possibility of moisture changes by following the precautions shown below:

1. Direct surface runoff away from structures by sloping the subgrade away from the slabs.
2. Extend paving or other impervious coverings, such as sidewalks, to the slab edge.
3. Extend roof drain downspouts so that the discharge is at least 5 feet from the slab.
4. Avoid placing trees or shrubs adjacent to slab.
5. Avoid excessive drying of soil around the slab.

Site Preparation

Based on the available information and understanding of the project, PSI recommends the following site preparation recommendations. In general, PSI recommended that an earthen uniform pad keyed into the existing building pad be constructed to support the proposed building. The following site preparation recommendations have been developed utilizing the inferred natural grade site elevation of EL. 93.2 ft., MSL) in the proposed construction area.

The building area should be prepared as follows:

- Remove existing buildings foundations, pavement systems, vegetation, roots, fill materials and near surface soils within the proposed building construction area in their entirety to a minimum depth of 8 inches or as necessary to expose the natural subgrade soils. After any existing utilities, structures and stripping operations described above have been completed to expose the natural subgrade soils, and to provide a uniform earthen building pad, PSI recommends that excavation and soil removal activities continue to a minimum Elevation of 92.7 ft. MSL, which is about 6.5 ft. from the top of existing grade elevations present adjacent to the existing building. The materials excavated should be segregated if desired, and either wasted or stockpiled for later use in landscaping or other applications, as appropriate. The removal area should extend at least 5 feet beyond the perimeter of the proposed new building foundation. Any excavations adjacent to existing walls/foundations that are to remain should slope at a minimum 1V:1H incline away from the top of footing/slab to avoid undermining of existing soils in these foundations. Voids left by removal of the below grade components should be backfilled with properly compacted structural fill soils or flowable fill, as deemed necessary.

- After stripping and excavating to the desired grade as indicated above, the exposed soil should be proof-rolled to locate any soft or loose areas. Proof-rolling can be performed in accordance with Item 216 of TXDOT, Standard specification for construction of highways, streets and bridges (TXDOT Specification). Soils that are observed to rut or deflect under the moving load should be undercut and replaced with properly compacted structural fill. The proof-rolling and undercutting activities should be witnessed by a representative of the Geotechnical Engineer and should be

performed during a period of dry weather. The subgrade soils should be scarified and compacted to at least 95 percent of the standard Proctor maximum dry density as determined by ASTM D 698 for a depth of at least six (6) inches below the exposed surface. The soils should be compacted at moisture content in the range of optimum to four (4) percent above the optimum moisture content.

- After subgrade preparation and observation have been completed, select structural fill placement may begin to the required grade elevation. The first layer of select structural fill should be placed in a relatively uniform horizontal lift and be adequately keyed into the stripped and scarified subgrade soils and existing building pad. Select structural fill materials should be sandy lean clay (CL) soils free of organic or other deleterious materials, should have a maximum particle size less than two (2) inches, and should have a liquid limit of thirty five (35) percent or less and a plasticity index of eight (8) to eighteen (18). Select structural fill should be compacted to at least 98 percent of the Standard Proctor maximum dry density as determined by ASTM D698. Select structural fill should be placed in maximum lifts of eight (8) inches of loose material and should be compacted within the range of zero (+0) percent to three (3) percentage points above the optimum moisture content value. If water must be added, it should be uniformly applied and thoroughly mixed into the soil by disking or scarifying. Each lift of compacted engineered fill should be tested by a representative of the Geotechnical Engineer prior to placement of subsequent lifts. The edges of compacted select fill should extend at least five (5) feet beyond the edges of buildings prior to sloping, as applicable. Care should be taken to apply compactive effort throughout the fill and fill slope areas. The moisture content and the degree of compaction of the structural fill soils should be maintained until the construction of the structures within the area.

Footing Recommendations

The planned construction can be supported on conventional spread footing foundations bearing on properly compacted select fill material as described in the Site Preparation section of this report. Spread footings for building columns and continuous footings for bearing walls, founded at a depth of two (2) to four (4) feet below proposed finished earthen pad site grade (~El. 99.2 Ft. MSL), can be designed utilizing a net allowable soil bearing pressure of 2,200 psf based on dead load plus long-term live loads. Minimum width dimensions of 24 inches for spread footings and 12 inches for continuous footings should be used in foundation design to reduce the possibility of a local shear failure.

The base adhesion/frictional resistance and the passive soil resistance will resist the horizontal loads on shallow foundations. For a footing cast against stiff natural clay soil or compacted soil, the adhesion/frictional resistance and the passive soil resistance values for both transient and sustained loading conditions are as follows: For transient loading conditions, an ultimate base adhesion resistance of 550 psf and an ultimate passive resistance of 2,000 psf can be used; and, For sustained loading conditions, a frictional co-efficient of 0.36 and an ultimate passive resistance of 240 psf per foot depth is recommended. A factor of safety of 2.0 is recommended to arrive at the allowable values. Passive resistance from the upper two feet of soil should be neglected. In addition, the passive resistance of any un-compacted fill material should be neglected.

Uplift resistance of shallow foundations formed in open excavations should be taken as the weight of the foundation and soil above it. For design purposes, the uplift resistance should

be based on effective unit weights of 100 and 150 lbs. per cubic foot (pcf) for soil and concrete, respectively. The foundation excavations should be observed by a representative of PSI prior to steel or concrete placement to assess that the foundation materials are capable of supporting the design loads and are consistent with the materials discussed in this report.

After opening, footing excavations should be observed and concrete placed as quickly as possible to avoid exposure of the footing bottoms to wetting and drying. Surface run-off water should be drained away from the excavations and not be allowed to pond. The foundation concrete should be placed during the same day the excavation is made. If it is required that footing excavations be left open for more than one (1) day, they should be protected to reduce evaporation or entry of moisture.

Consolidation of the overburden resulting from the foundation loads and the anticipated four (4) to six (6) feet of compacted select fill used to elevate the site may result in measurable increments of soil settlement. Based on results of the field tests and the anticipated foundation loads, we estimate that the maximum foundation settlement will not exceed one (1) inch. Differential settlement between two (2) adjacent columns will probably approximate 75 percent of the total increment. While settlement of this magnitude is generally considered tolerable for structures of the type proposed, the design of masonry walls should include provisions for liberally spaced, vertical control joints to reduce the effects of cosmetic "cracking".

Slab-on-Grade Foundation Recommendations

A grid type beam and slab foundation is used to support relatively light structures upon expansive soils where soil conditions are relatively uniform, and where uplift and settlement can be tolerated and is taken into account in the design. The intent of a stiffened slab-on-grade foundation is to allow the structure and foundation to move up and down freely with soil movements while providing sufficient stiffness to limit differential movements within the superstructure.

Provided that movements of the magnitude as discussed above can be tolerated, and will not impair the performance of the structures, a stiffened grid type beam and slab foundation may be utilized at this site. Grade and widened beams based at two (2) to three (3) feet below the finished floor elevation founded within the compacted select fill, can be designed for an allowable soil bearing capacity of 2,200 psf based on dead load plus long term live load conditions (includes a factor of safety of 3). Foundation beams and widened columns should be a minimum of 12 inches and 24 inches wide, respectively, to prevent local shear failure. A vapor barrier should be placed beneath the floor slab in order to break the rise of capillary moisture.

Saw cut joints should be provided within the monolithic slab-on-grade foundation to help control shrinkage cracks. The joints and spacing should meet the structural and/or civil engineers' drawings and specifications. Reinforcing steel will also be required and should meet the requirements shown on the structural engineer's or civil engineer's drawings and specifications.

The foundation excavations should be observed by a representative of PSI prior to steel or concrete placement to assess that the bearing materials are capable of supporting the design loads and are consistent with the materials discussed in this report. This is especially important to identify the acceptability of the bearing soils under the footings. Soft or loose soil zones encountered at the bottom of the footing or beam excavations should be removed down to firm

soils. The undercut area should then be backfilled with Select or Structural fill and compacted as determined by the Geotechnical Engineer.

After opening, footing and beam excavations should be observed and concrete placed as quickly as possible to avoid exposure of the footing bottoms to wetting and drying. Surface run-off water should be drained away from the excavations and not be allowed to pond. If it is required that foundation excavations be left open an extended period, they should be protected to reduce evaporation or entry of moisture.

Consolidation of the overburden resulting from the foundation loads will result in measurable but tolerable increments of soil settlement. Based on results of the field tests and the anticipated foundation loads, we estimate that the maximum foundation settlement will not exceed one (1) inch. Differential settlement between two (2) adjacent columns will probably approximate 50 percent of the total increment.

Utilizing the "Building Research Advisory Board No. 33" (BRAB Report) as a guideline, the following design criteria are provided for this site for existing soils conditions and for reduction of the PVR to one inch by undercutting the existing site soils and replacing with select fill as discussed previously in the Potential Vertical Rise (PVR) section:

	Remedial Earthwork PVR ≈ 1"
Climatic Rating (Cw)	15
Effective Plasticity Index	22
Support Index	0.92
Unconfined Compressive Strength (tsf)	1.5

Alternatively, the foundation may be designed based on the "Design of Slab-On-Ground Foundations" published by the Wire Reinforcement Institute, Inc. (Aug., 1981) using the following design criteria:

	Remedial Earthwork PVR ≈ 1"
Climatic Rating (Cw)	15
Effective Plasticity Index	22
Soil Climatic Rating Factor (1-C)	0.08
Maximum Beam Spacing (ft)	20

Soil supported floor slabs are subject to vertical movements as discussed earlier in this report. This movement often causes distress to interior wall partitions supported by these slabs. This should be understood and addressed in the design phase of this project.

Based on this information and using the "Design and Construction of Post-Tensioned Slabs-On-Ground", 2nd Edition, published by the Post-Tensioning Institute (PTI) as a guideline, the following design criteria may be used for this site considering the minimum site preparation previously presented.

	Remedial Earthwork PVR ≈ 1"
Edge Moisture Variation Distance (center lift)	5.5'
Edge Moisture Variation Distance (edge lift)	2.5'
Differential Swell (center lift)	1.72"
Differential Swell (edge lift)	0.42"

Utilities which project through slab-on-grade floors should be designed with some degree of flexibility and/or with sleeves in order to prevent damage to these lines should vertical movement occur.

Contraction, control, or expansion joints should be designed and placed in various portions of the structure. Properly planned placement of these joints will assist in controlling the degree and location of material cracking which normally occurs due to material shrinkage, thermal effects, soil movements, and other related structural conditions.

Deep Foundations

As an alternative, the structural loads of the buildings may be supported on a deep foundation system consisting of drilled piers or auger cast piles. Grade beams should be supported on the deep foundations where required to support wall loads. Because it is expected that the pier foundations will be founded below the water table, the piers should be designed and constructed as straight shaft type drilled piers. The depth of the foundation should be determined based on loading requirements. PSI recommends that new deep foundations to be constructed near or adjacent to the existing buildings are placed at least 6 feet from the exterior edge of existing building walls/foundations.

Drilled Piers and Auger Cast-in-Place Piles

Drilled straight shaft piers or auger cast-in-place piles can be considered for use in supporting the proposed structure. The piers and piles will utilize a combination of end bearing and skin friction to develop axial load carrying capacity.

The axial load carrying capacity of a drilled shaft or auger cast-in-place piles can be computed using the static method of analysis. According to this method, axial capacity, Q, at a given penetration is taken as the sum of the skin friction on the side of the shaft, Qs, and the end or point bearing at the shaft tip, Qp, so that:

$$Q = Q_s + Q_p = fA_s + qA_p$$

where A_s and A_p represent, respectively, the embedded surface area and the end area of the shaft; f and q represent, respectively, the unit skin friction and the unit end or point bearing.

The total allowable axial capacity in compression will be the summation of the allowable frictional capacity and the allowable end bearing capacity. The total allowable axial capacity in tension will be the allowable frictional capacity alone neglecting end bearing component.

The manual titled "**Drilled Shafts: Construction Procedures and Design Methods**"[1] contains information that should be reviewed by the Design Team. Applicable information contained in the manual should be utilized during the design and construction for this project. Drilled piers or auger cast-in-place piles should bear at depths ranging from 23 feet to 33 feet below existing site grade (EL. 99.2 ft. MSL) based on the information obtained from the 40 feet deep borings drilled at the site.

For axial loads, neglect the upper 10 feet of the existing site soils for calculations for drilled piers and for auger cast-in-place piles. For lateral loads, neglect the upper 5 feet of the existing site soils for calculations for drilled piers and for auger cast-in-place piles. Drilled pier and auger cast-in-lace pile design values may be designed based upon the data provided in the following table.

Depth(1)	Elevation (MSL)(2)	Description	γ	c	Φ	$f_{a\,(SS)}$(3)	$f_{a\,(ACP)}$(4)	q_{eb}	ks	kc	e_{50}
0 – 5	99.2 - 94.2	(CH) & (CL)	125	---	---	---	---	---	---	---	---
5 – 10	94.2 - 89.2	(CH) & (CL)	125	1,000	---	---	---	---	100	---	0.01
10 - 15	89.2 - 84.2	(CH) & (CL)	125	1,000	---	275	350	---	100	---	0.01
15 – 23	84.2 - 76.2	(CL)	62	1,000	---	275	350	---	500	200	0.007
23– 28	76.2 - 71.2	(CL) & (CH)	58	1,375	---	375	480	4,125	500	200	0.007
28 - 33	71.2 – 66.2	(CH)	60	1,750	---	480	610	5,250	1,000	400	0.005

Notes: (1) Depth below top of site grade adjacent to existing structure; (2) Elevation reference to inferred site grade elevation of 99.2 ft. MSL adjacent to existing structure; (3) Straight Shaft Drilled Piers; and, (4) Auger Cast-in-Place Piles

Where:

Depth = Feet
γ = effective unit weight (pcf)
c = ultimate shear strength (psf)
Φ = angle of internal friction (degree)
f_a = average allowable skin friction (psf) (SF = 2)
q_{eb} = net allowable end bearing pressure (psf) (SF = 3)
k s = modulus of subgrade reaction (static) (pci)
k c = modulus of subgrade reaction (cyclic) (pci)
e_{50} = 50 percent strain value

The uplift force on each pier or pile will be resisted by the dead load on the pier or pile,

[1] Reese, Ph.D., P.E., Lymon and Michael W. O'Neill, Ph.D., **Drilled Shafts: Construction Procedures and Design Methods**. ADSC: the International Association of Foundation Drilling. Publication No. ADSC-TL 4, August 1999.

continuous vertical reinforcing steel in the pier or pile, and the weight of the concrete pier or pile, as well as the allowable skin friction on the pier or pile below a depth of 10 feet. Piers or piles should be reinforced over their entire length.

Center to center pier or pile spacing should be a minimum of three (3) times the pier or pile diameter. Pier or pile group efficiency should be taken into account when calculating the group working axial design load. A group of piles or piers subjected to lateral loads may not have the same capacity as the sum of the capacity of the individual piles or piers.

For axially loaded piles, published results indicate that the ratio of capacity per pile in a group to that of a single isolated pile typically ranges from one-half (0.5) to one (1). This efficiency factor depends on the pile spacing (distance between each shaft) and on the direction of loading with respect to the orientation of the pile group. Research indicates a minimum spacing of three (3) diameters to six (6) diameters is required depending on the direction of loading with respect to the orientation of the piles or piers in a group. PSI should be contacted, once the pile group or pier group orientation, spacing, and loading direction are determined. PSI can then provide information regarding the required reduction factor(s). Auger cast-in-place piles and drilled piers should have adequate steel reinforcement for resistance of anticipated lateral loads.

It is estimated that settlement for a single pier or a single auger cast-in-place pile having a diameter of 48 inches or less, that is designed and constructed as outlined in this report, should be approximately three-quarter (¾) inch or less. A detailed group settlement analysis was not performed, as the actual group configurations are unknown at this time. However, we do not anticipate large settlements. If a group settlement analysis is desired, PSI should be contacted to perform such a settlement analysis.

Lateral Capacity for Piles and Piers

For piles and piers, the soil as well as the rigidity of the pile or pier resists the lateral loads on the pile or pier. Once the locations, loads, and other pertinent information are provided, PSI can assist in performing lateral load analyses based on methods ranging from chart solutions to the 'p-y' approach utilizing computer programs such as LPILE or COM 624. The lateral loads on the pile or pier can also be designed based on the criteria provided in the FHWA-Drilled Shaft Manual.

The lateral design information regarding the 'p-y' data is included in the drilled pier design values table presented previously. The relationship between the soil resistance (p) and pile deflection (y) is commonly referred to as 'p-y'. Along the depth of the pile, soil resistance (p) is expressed as a non-linear function of lateral pile deflection (y). Various researchers developed 'p-y' criteria for different kinds of soils. The 'p-y' curves can be automatically generated utilizing the computer program LPILE. The program LPILE was developed by Lymon Reese and Shin-Tower Wang of Ensoft, Inc.

Drilled Pier Installation

During our field operations, ground water was encountered at a depth of about 8 feet below the existing ground surface during the drilling of the soil test borings. Therefore, drilled shaft/AC pile excavations during the pier installation will experience ground water infiltration. Temporary steel casing must be used at this site to prevent groundwater inflow and caving of the granular soils. A "vibra-hammer" or similar tool will likely be required to install and remove the

casing. Sealing of the casing in this material may be difficult and nearly impossible to remove the groundwater. The use of slurry displacement should be anticipated for drilled shafts. The level of the slurry should approximate the level of the groundwater encountered at the site.

The successful completion of the drilled pier excavation will depend, to a large extent, on the suitability of the drilling equipment together with the skill of the operator. The sequence of operations should be scheduled so that the pier can be drilled, reinforcing steel placed, and the concrete poured in a continuous, rapid, and orderly manner to reduce the time the excavation is left open.

The shaft should be clean and be free of all loose materials prior to placement of concrete. The drilled shafts should be installed in accordance with Item 416 of TxDOT specifications or ACI 336.1 Specifications or in accordance with the guidelines provided in FHWA-IF-99-025. We recommend a PSI representative should verify the bearing depth, bearing soil condition if possible, bearing area, pier diameter, and that the pier installation procedures meet the specifications.

A hopper and tremie should be utilized during concrete placement to prevent the free fall of the wet concrete down the center of the pier. In addition, pumping of the concrete will be required to place the concrete below any slurry used during construction of the pier.

Sufficient concrete should remain in the casing as the casing is withdrawn to prevent any discontinuities from forming within the concrete section. Furthermore, concrete placed in the drilled pier should not possess a slump of less than 6 inches unless it is consolidated with a vibrator or by other means. Concrete which is placed in the pier at a slump less than 6 inches increases the potential for honeycombing. In addition, concrete placed in the drilled pier should not be placed at a slump greater than 8 inches. Concrete used in the pier should be designed to achieve the required strength at the higher slumps as referenced above. For any given pier, excavation, placement of steel, and concreting should be completed within the same workday.

Auger Cast-in-Place Pile Installation

Auger cast-in-place piles should be installed in accordance with ACIP Pile Manual (DFI 1990)[2]. The successful completion of auger cast-in-place pile installations will depend to a large extent on the suitability of the equipment and the installation procedures used. Controlled and closely monitored withdrawal of the auger will be necessary. A sufficient head of grout should be maintained in the auger system at all times to prevent necking down of the fluid grout due to hydrostatic pressure. The quality and volume of the concrete grout used should be tested and verified. The volume of concrete grout placed should be approximately one and two-tenths (1.2) to one and three-tenths (1.3) times the calculated volumes required to obtain design pile dimensions. PSI should be retained to review and comment on specifications developed for auger cast-in-place pile foundation installation, and to monitor the pile load test and actual pile installation.

The geotechnical engineer and/or their representative should observe and monitor installation of piles. Proper installation of the auger cast-in-place piles is critical to achieving a successful foundation. The pile installation monitoring should include:

2 Deep Foundation Institute, Committee on Augered Cast-In-Place Piles, Augered Cast-In-Place Piles Manual, 1990.

- Inspection of the pile installation equipment and reporting non-conformance to specifications.

- Monitor and record; 1) the amount of grout pumped for each pile installed, 2) the volume of grout pumped per unit length of pile to determine the finished shape of the pile, and 3) the rate and pressure at which the grout is pumped.

- Monitor and record the rate of auger withdrawal with respect to maintaining required grout pressure.

- Calibration of the grout pump for controlling and measuring the flow rate of grout into the pile.

- Grout sampling for grout compressive strength tests.

Load Test

It has been PSI's experience that a pile load test is necessary on each individual pile project. The foundation contractors are capable of performing the test set-up and running the tests. However, the load test jack should be calibrated by the Geotechnical Engineer, the test should be continuously monitored by the Geotechnical Engineer, and the final load test report should be prepared by the Geotechnical Engineer. The test load should be taken to at least three (3) times the design load unless failure occurs first in accordance with ASTM D 1143 (Long Version Test).

Floor Slab Recommendations

The floor slab can be grade supported on properly compacted select fill. Proof-rolling, as discussed earlier in this report, should be accomplished to identify any soft or unstable soils which should be removed from the floor slab area prior to the placement of select fill and/or floor slab construction.

Floor slabs can be designed for an allowable soil bearing pressure of 1,200 psf, based on dead load plus long-term live loads. For the natural and select structural soil backfill material, a modulus of subgrade reaction of 100 lbs/in^3 can be utilized for the concrete floor slab. Select fill should also be used to elevate the site where possible so that positive drainage is provided away from the building. A relatively consistent thickness of fill should be provided so that the floor slabs are more uniformly supported.

As an alternative, we recommend that a minimum four (4) inch thick granular mat consisting of gravel or sand be placed beneath the floor slab to enhance drainage and provide a capillary break. Vapor barrier sheeting should be placed on the granular mat. The floor slabs should have an adequate number of joints to reduce cracking resulting from any differential movement and shrinkage. The floor slab should not be rigidly connected to columns, walls, or foundations.

Pavement Recommendations

In order to design a pavement, the subgrade soil conditions and anticipated levels of traffic must be known. The subgrade soils are evaluated based on our limited testing. The anticipated traffic on the proposed pavement is not known at this time. Based on our previous experience with similar facilities, the traffic for the proposed pavement could include lightly

loaded cars/pick trucks, busses, delivery vans or trucks, dump trucks and occasional 18-wheeler truck traffic.

Subgrade Preparation: The subgrade soils of this site have moderate to high potential to shrink/swell. Pavements placed on soils with very high shrink-swell potential would experience movements. Therefore, as a minimum, at least the upper six (6) inches of the natural clays soils should be lime stabilized.

It is anticipated that at least the upper six inches of the soils would require a lime application of 6% expressed as percent of the dry weight of the soil to be treated. In order to determine the exact percentage of lime addition, lime series testing should be performed in accordance with ASTM D 6276 or TXDOT test method TEX-112-E (Lime-pH series testing). Lime stabilization should be performed in accordance with the applicable provisions of Item 260 of the TXDOT Specification. Lime stabilized subgrade should be compacted to at least 95 percent of standard Proctor maximum dry density as determined by ASTM D 698 within zero(+0) to three (+3) percentage points above the optimum moisture content. Due to grading considerations, if at least 12 inches of sandy clay structural fill is provided below the pavement materials stabilization is not necessary. The degree of compaction and moisture content of the subgrade soils should be maintained till the subgrade is paved.

Pavement Design: AASHTO design methodology can be used to design the pavements. According to AASHTO design methodology, the pavement design thickness primarily depends on strength of the subgrade soils and type of traffic. Traffic includes several types of vehicles with various magnitudes of axle loads that may be subjected to the pavement during its service life. The design involves a traffic analyses that converts various types of vehicles with various magnitudes axle loads to a number of 18-kip equivalent single axle load repetitions. The design engineer should perform the traffic analyses to compute the number of ESALs repetitions that would be subjected to the pavement during its service life or design life. Based on the computed ESALs, an economical and appropriate pavement can be designed accordingly.

AASHTO low volume design methodology can also be used to design pavements. The low volume design methodology depends on typical subgrade conditions for six different U.S climatic zones and provides minimum thickness for three different levels of traffic.

Based on AASHTO low volume design and our previous experience, we have provided pavement thickness for both flexible pavement and rigid pavement systems in the following tables. The tables below include thickness design corresponding to three levels of traffic (low, medium and high).

- It is recommended that the pavement design thicknesses corresponding to low or medium traffic condition be used for parking areas.
- It is recommended that the thickness design corresponding to high traffic condition be used for driveways, exit and entry lanes and frequently used areas.

Flexible Pavement Design Thickness

Pavement Material(s)	Design Thickness		
Applicable Traffic Condition	**Low**	**Medium**	**High**
Hot Mix Asphalt Concrete (a1 = 0.44) Item 340. TXDOT-Type D	**2.0 in.**	**2.5 in.**	**3.0 in.**
Crushed Limestone Base (Min. CBR = 100) (a2 = 0.14) Item 247. TXDOT-Type A, Grade 1	**8.0 in.**	**8.0 in.**	**8.0 in.**
Subgrade or Subbase (a3 = 0.06)	As Discussed Previously (Min. 6 inches of Lime Stabilization)		

Rigid Pavement Design Thickness

Pavement Material(s)	Design Thickness		
Applicable Traffic Condition	**Low**	**Medium**	**High**
Cement Concrete	**5.0 in.**	**6.0 in.**	**7.0 in.**
Subgrade or Subbase	As Discussed Previously (Min. 6 inches of Lime Stabilization)		

All related civil design factors such as drainage, cross-sectional configurations, surface elevations, and environmental factors which will significantly affect the service life of the pavement must be included in the preparation of the construction drawings and specifications.

Water should not be allowed to pond behind curbs and saturate the pavement base stone. In down grade areas base should extend through the slope to allow any water entering the base a path to exit. If landscape islands are incorporated into the design, provisions to collect and remove water at the curbs by means of commercially available drain systems are recommended.

Rigid Pavement Reinforcement Recommendations: Joints are typically placed in pavements to control cracking, to facilitate construction, and to isolate a section of pavement from a structure or an adjacent pavement section. Joints used to control cracking are typically known as contraction joints as they are intended to control cracking that arises out of the shrinkage of concrete as it cures. Construction joints are used to provide clean breaks between pavement sections that result from the construction process. Isolation joints (or expansion joints) are used to separate the pavement from other structures or pavements and typically include the use of compressible materials in the joint as opposed to contraction or construction joints. Contraction joints should be spaced no greater than 15 feet between the nearest parallel joints with joint depths of at least one-quarter (¼) of the slab thickness. Construction and isolation joints should be full-depth joints and should be spaced no greater than 54 feet for rebar reinforcement and 30 feet for welded wire fabric reinforcement between the nearest parallel construction or isolation joint. Contraction and construction joints should be no wider than one-eighth (⅛) of an inch whereas isolation joints may be up to one (1) inch wide.

Steel reinforcement of concrete is typically not necessary for concrete pavements with construction or isolation (expansion) joint spacing closer than 15 feet. When these joints are spaced greater than 15 feet, steel reinforcement can be used to control the widths of cracks that form between these joints such that the fracture faces that form in the concrete are held together. Steel reinforcement is also used where subgrade conditions are not likely to provide uniform support to the concrete pavement. Because the soils at the ground surface of this site have some potential for expansion, it is likely that uniform support will not be available to the rigid pavements. Therefore, reinforcing steel should be used to span between construction and isolation (expansion) joints and should consist of the following:

- Rebar may be used as reinforcement and should consist of N°. 3 bars spaced 18 inches on-centers each way. The rebar should be Grade 60 steel.

- Flat sheets of welded wire fabric, including either 6 X 6 – W2.9 X W2.9 or 4 X 4 – W1.4 X W1.4, may be used with a maximum wire tensile strength of at least 60 ksi.

As with steel reinforcement, load transfer devices such as dowels are not typically necessary for most parking lots. However, in situations were heavy traffic loads are present or where the subgrade may not provide uniform support to the pavement, dowels should be used to transfer loads across joints. Smooth dowels may be used for this purpose and should be utilized as recommended in the following table.

Dowel Design Information

Slab Thickness, in.	Dowel Diameter, in.	Dowel Embedment Each side, in.	Dowel Length, in.	Dowel Spacing On-Centers, in
5	5/8	5	12	12
6	3/4	6	14	12
7	7/8	7	16	12

The joint and reinforcing design of a rigid pavement system is largely a function of geometry for the pavement area. The proper length of concrete panels (defined as the distance between discontinuous pavement sections; e.g. between construction or isolation joints, or a combination of the two) and the location of contraction, construction, and isolation (expansion) joints are not included as a function of the above concrete pavement guidelines. Rather, these features should be determined based on the geometry and construction sequencing of the pavement. Actual joint spacing should be based on actual pavement areas and final panel lengths so that joints are evenly spaced. Joints should be designed to form approximately square panels where geometrically feasible. The values provided herein are guidelines and the recommendations selected by the project civil engineer and any guidelines not provided or mentioned herein should not exceed the American Concrete Institute (ACI) 330R recommendations.

Site Class and Site Coefficients

Please note that the project site is located within a municipality that employs the International Building Code (IBC), 2012 edition. As part of this code, the design of structures

must consider dynamic forces resulting from seismic events. These forces are dependent upon the magnitude of the earthquake event as well as the properties of the soils that underlie the site. Part of the IBC code procedure to evaluate seismic forces requires the evaluation of the Seismic Site Class, which categorizes the site based upon the characteristics of the subsurface profile within the upper 100 feet of the ground surface.

To define the Seismic Site Class for this project, we have interpreted the results of our soil test borings drilled within the project site and estimated appropriate soil properties below the base of the borings to a depth of 100 feet, as permitted by Section 1613.5.2 of the code. The estimated soil properties were based upon data available in published geologic reports as well as our experience with subsurface conditions in the general site area.

Based upon our evaluation, it is our opinion that the subsurface conditions within the site are consistent with the characteristics of the Specific Site Class E as defined in Table 1613.5.2 of the building code.

The USGS-NEHRP probabilistic ground motion values for the site latitude 26.0886° and longitude -98.2022 which were obtained from the USGS geohazards web page are as follows:

Period (seconds)	Design Spectral Response Acceleration Parameters	Site Coefficient F_a	Site Coefficient F_v
0.2 (S_s)	0.082 (SDs)	2.5	--
1.0 (S_1)	0.031 (SD1)	--	3.5

The Site Coefficients, Fa and Fv presented in the above table were also obtained from the USGS geohazards webpage as a function of the site classification and mapped spectral response acceleration at the short 0.2 seconds (S_s) and 1 second (S_1) periods.

CONSTRUCTION CONSIDERATIONS

Moisture Sensitive Soils/Weather Related Concerns

The upper clay soils encountered at this site may be sensitive to disturbances caused by construction traffic and changes in moisture content. During wet weather periods, increases in the moisture content of the soil can cause significant reduction in the soil strength and support capabilities. In addition, soils which become wet may be slow to dry and thus significantly retard the progress of grading and compaction activities. It will, therefore, be advantageous to perform earthwork and foundation construction activities during dry weather.

Drainage and Groundwater Concerns

Water should not be allowed to collect in the foundation excavation, on floor slab areas, or on prepared subgrades of the construction area either during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site surface drainage should be provided to reduce infiltration of surface water around the perimeter of the building and beneath the floor slabs. The grades should be sloped away from the building and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill and floor slab areas of the building.

Groundwater was encountered at depths of 8 feet to 15 feet during drilling operations; however it is possible that seasonal variations will cause fluctuations, or a water table to be present in the upper soils at a later time. Perched water may be encountered in discontinuous zones within the overburden and/or near the contact with clay lenses. Any water accumulation should be removed from excavations by pumping. Should excessive and uncontrolled amounts of seepage occur, the Geotechnical Engineer should be consulted.

Excavations

As was discussed previously, typically native materials were encountered at this site. Typically soils penetrated by geotechnical augers, such as those encountered at this site can be removed with conventional earthmoving equipment. However, areas of very stiff to hard materials may be encountered during construction and are very difficult to excavate. The excavation of these materials may require the use of heavy duty excavation equipment and techniques. Well maintained, high torque drilling equipment will be required to excavate in these materials.

It should be noted that excavation equipment varies and field conditions may vary. Generally, geologic processes are erratic and large variations can occur in small lateral distances. Details regarding "means and methods" to accomplish the work (such as excavation equipment and technique selection) are the sole responsibility of the project contractor. The comments contained in this report are based on the observations of small diameter boreholes. The performance of large diameter drilled holes (such as pier shafts) or other excavations may differ significantly as a result of the differences in hole sizes.

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better insure the safety of workmen entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavation or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

We are providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state, and federal safety or other regulations.

Recommended Minimum Sampling and Testing Frequencies

It is recommended that PSI be retained to provide observation and testing of construction activities involved in the foundations, pavements and earthwork, and related activities of this project. PSI cannot accept any responsibility for any conditions that deviate from

those described in this report, nor for the performance of the foundations and pavements if not engaged to also provide construction observation and testing for this project.

REPORT LIMITATIONS

The recommendations submitted in this report are based on the available subsurface information obtained by PSI and design details furnished by the client for the proposed project. If there are any revisions to the plans for this project, or if deviations from the subsurface conditions noted in this report are encountered during construction, PSI should be notified immediately to determine if changes in the foundation recommendations are required. If PSI is not notified of such changes, PSI will not be responsible for the impact of those changes on the project.

The Geotechnical Engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional Geotechnical Engineering practices in the local area. No other warranties are implied or expressed.

After the plans and specifications are more complete, the Geotechnical Engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At that time, it may be necessary to submit supplementary recommendations. If PSI is not retained to perform these functions, PSI will not be responsible for the impact of those conditions on the project. This report has been prepared for the exclusive use of the City of Pharr and their Design Team for the specific application to the proposed Pharr Bridge International Trade Center to be located in in Pharr, Hidalgo County, Texas.

APPENDIX

LOG OF BORING NO. B-1

Pharr Bridge International Trade Center
Pharr, Texas
PSI Project No.:328-1108

TYPE BORING: Solid Stem Auger/ Wet Rotary — LOCATION: See Plate 1

DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	% PASSING #200 SIEVE	BLOWS PER FOOT	LIQUID LIMIT	PLASTIC INDEX	MOISTURE CONTENT	SHEAR STRENGTH KSF ○HAND PEN ● UNC 1.0 2.0 3.0 / PL ✕ WC ✕ LL 20 40 60	UNIT DRY WT. LB./CU FT.
			SURF. ELEV.: 99.2 ft.							
			Dark Brown Lean Clay (CL) stiff to very stiff, moist.		11			14	✕	
					22			10	✕	
5					24	42	29	15	✕ ●	
			93.2 ft							
			Dark Brown Fat Clay (CH) very stiff to hard, moist to wet.					23	✕	>>● 111
				98				24	✕ ○	
10			87.2 ft							
			Brown Sandy Clay (CL) stiff to very stiff, wet.	53		22	9	25	✕ ○	
15										
			-Lean Clay encountered below 18 ft., saturated	88	8			30	✕	
20										
			-Lean Clay with Sand below 23 ft.		11			25	✕	
25			71.2 ft							
			Reddish Brown Fat Clay (CH) stiff, wet.		14			27	✕	
30										
					15			31	✕	
35										
			59.2 ft		22			26	✕	
40										
45										
50										

COMPLETION DEPTH: 40.0 FEET
DATE: 11/20/13

DEPTH TO WATER: Water encountered at the depth of 15 ft. during drilling operations.
DELAYED WATER READING: Not available due to mud in borehole.

BL_TEXAS_BORING LOGS PHARR.GPJ PSI_CORP.GDT 12/5/13

PLATE 2

Geotechnical Consulting Services
Harlingen, Texas

LOG OF BORING NO. B-2

Pharr Bridge International Trade Center
Pharr, Texas
PSI Project No.:328-1108

TYPE BORING: Solid Stem Auger/ Wet Rotary — LOCATION: See Plate 1

DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	% PASSING #200 SIEVE	BLOWS PER FOOT	LIQUID LIMIT	PLASTIC INDEX	MOISTURE CONTENT	SHEAR STRENGTH KSF ○HAND PEN ●UNC 1.0 2.0 3.0 / PL WC LL 20 40 60	UNIT DRY WT. LB./CU FT.
			SURF. ELEV.: 99.2 ft.							
			Dark Brown Fat Clay (CH) stiff, moist.		12	54	39	14		
			97.2 ft							
			Dark Brown Lean Clay (CL) stiff, moist.	87	10	37	24	20		
5					13			22		
			93.2 ft							
			Dark Brown Fat Clay (CH) very stiff, moist.					24		125
								24		
10			87.2 ft							
			Brown Sandy Clay (CL) stiff, wet.	56	12			26		
15										
					14			26		
20										
			74.2 ft	62	16			23		
25										
30										
35										
40										
45										
50										

COMPLETION DEPTH: 25.0 FEET
DATE: 11/20/13

DEPTH TO WATER: Water encountered at the depth of 15 ft. during drilling operations.
DELAYED WATER READING: Not available due to mud in borehole.

BL TEXAS BORING LOGS PHARR.GPJ PSI_CORP.GDT 12/5/13

PLATE 3

LOG OF BORING NO. B-3

Pharr Bridge International Trade Center
Pharr, Texas
PSI Project No.:328-1108

TYPE BORING: Solid Stem Auger/ Wet Rotary — LOCATION: See Plate 1

DEPTH, FT.	SYMBOL / SAMPLES	SOIL DESCRIPTION	% PASSING #200 SIEVE	BLOWS PER FOOT	LIQUID LIMIT	PLASTIC INDEX	MOISTURE CONTENT	SHEAR STRENGTH KSF (○ HAND PEN ● UNC; 1.0 2.0 3.0; PL WC LL 20 40 60)	UNIT DRY WT. LB./CU FT.
		SURF. ELEV.: 93.2 ft.							
5		Dark Brown Fat Clay (CH) stiff to very stiff, moist to wet.	97	16	57	39	17		
					55	39	24		103
							26		96
		87.2 ft							
10		Brown Sandy Clay (CL) firm to very stiff, wet.	61				29		
			55	12			27		
15				9			27		
20			68	12			30		
		70.2 ft							
25		Reddish Brown Fat Clay (CH) very stiff, moist to wet. -very stiff reddish brown Lean Clay below 23 ft.			60	44	26		98
30							26		102
		60.2 ft							
35		Brown Lean Clay with Sand (CL) firm, wet. -firm, brown Lean Clay with Sand encountered below 33 ft.	76				25		
							23		108
40		53.2 ft							
45									
50									

COMPLETION DEPTH: 40.0 FEET
DATE: 11/20/13

DEPTH TO WATER: Water encountered at the depth of 8 ft. during drilling operations.
DELAYED WATER READING: Not available due to mud in borehole.

BL_TEXAS_BORING LOGS PHARR.GPJ_PSI_CORP.GDT 12/5/13

PLATE 4

LOG OF BORING NO. B-4

Pharr Bridge International Trade Center
Pharr, Texas
PSI Project No.:328-1108

TYPE BORING: Solid Stem Auger/ Wet Rotary — LOCATION: See Plate 1

DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	% PASSING #200 SIEVE	BLOWS PER FOOT	LIQUID LIMIT	PLASTIC INDEX	MOISTURE CONTENT	SHEAR STRENGTH KSF ○ HAND PEN ● UNC (1.0 / 2.0 / 3.0) PL ✙ WC ✕ LL ✙ (20 / 40 / 60)	UNIT DRY WT. LB./CU FT.
			SURF. ELEV.: 93.2 ft.							
			Brown Fat Clay (CH) very stiff to hard, moist to wet.					17		>>● 109
								23		○ 102
5			87.2 ft			45	30	24		
			Brown Lean Clay with Sand (CL) stiff, wet.	77	10			28		
					11			29		
10										
			-Sandy Clay encountered below 13 ft.	53	14			26		
15										
					18	21	9	24		
20										
			-Lean Clay encountered at 23 ft.							
			68.2 ft		16			25		
25										
30										
35										
40										
45										
50										

COMPLETION DEPTH: 25.0 FEET
DATE: 11/20/13

DEPTH TO WATER: Water encountered at the depth of 8 ft. during drilling operations.
DELAYED WATER READING: Not available due to mud in borehole.

BL_TEXAS_BORING LOGS PHARR.GPJ_PSI_CORP.GDT 12/5/13

PLATE 5

LOG OF BORING NO. P-1

Pharr Bridge International Trade Center
Pharr, Texas
PSI Project No.:328-1108

TYPE BORING: Solid Stem Auger

LOCATION: See Plate 1

DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	% PASSING #200 SIEVE	BLOWS PER FOOT	LIQUID LIMIT	PLASTIC INDEX	MOISTURE CONTENT	SHEAR STRENGTH KSF ○HAND PEN ● UNC 1.0 2.0 3.0 / PL WC LL 20 40 60	UNIT DRY WT. LB./CU FT.
			SURF. ELEV.: 93.2 ft.							
			Dark Brown Fat Clay (CH) very stiff to hard, moist to wet.					20		
								16		
5			87.2 ft					22		
10										
15										
20										
25										

COMPLETION DEPTH: 6.0 FEET
DATE: 11/20/13

DEPTH TO WATER: Water was not encountered during drilling operations.
DELAYED WATER READING: Water was not present upon completion of drilling.

BL_TEXAS_BORING LOGS PHARR.GPJ PSI_CORP.GDT 12/5/13

PLATE 6

LOG OF BORING NO. P-2

Pharr Bridge International Trade Center
Pharr, Texas
PSI Project No.:328-1108

TYPE BORING: Solid Stem Auger

LOCATION: See Plate 1

DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	% PASSING #200 SIEVE	BLOWS PER FOOT	LIQUID LIMIT	PLASTIC INDEX	MOISTURE CONTENT	SHEAR STRENGTH KSF ○HAND PEN ● UNC 1.0 2.0 3.0 / PL WC LL 20 40 60	UNIT DRY WT. LB./CU FT.
			SURF. ELEV.: 93.2 ft.							
			Dark Brown Fat Clay (CH) very stiff to hard, moist to wet.	98		62	45	16		
								23		
5								24		
			87.2 ft							
10										
15										
20										
25										

COMPLETION DEPTH: 6.0 FEET
DATE: 11/20/13

DEPTH TO WATER: Water was not encountered during drilling operations.
DELAYED WATER READING: Water was not present upon completion of drilling.

BL_TEXAS_BORING LOGS PHARR.GPJ_PSI_CORP.GDT 12/5/13

PLATE 7

Geotechnical Consulting Services
Harlingen, Texas

LOG OF BORING NO. P-3

Pharr Bridge International Trade Center
Pharr, Texas
PSI Project No.:328-1108

TYPE BORING: Solid Stem Auger — LOCATION: See Plate 1

DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	% PASSING #200 SIEVE	BLOWS PER FOOT	LIQUID LIMIT	PLASTIC INDEX	MOISTURE CONTENT	SHEAR STRENGTH KSF ○HAND PEN ●UNC 1.0 2.0 3.0	UNIT DRY WT. LB./CU FT.
			SURF. ELEV.: 93.2 ft.						PL WC LL 20 40 60	
			Dark Brown Fat Clay (CH) very stiff to hard, moist to wet.					15		
								17		
5			87.2 ft					24		
10										
15										
20										
25										

COMPLETION DEPTH: 6.0 FEET
DATE: 11/20/13

DEPTH TO WATER: Water was not encountered during drilling operations.
DELAYED WATER READING: Water was not present upon completion of drilling.

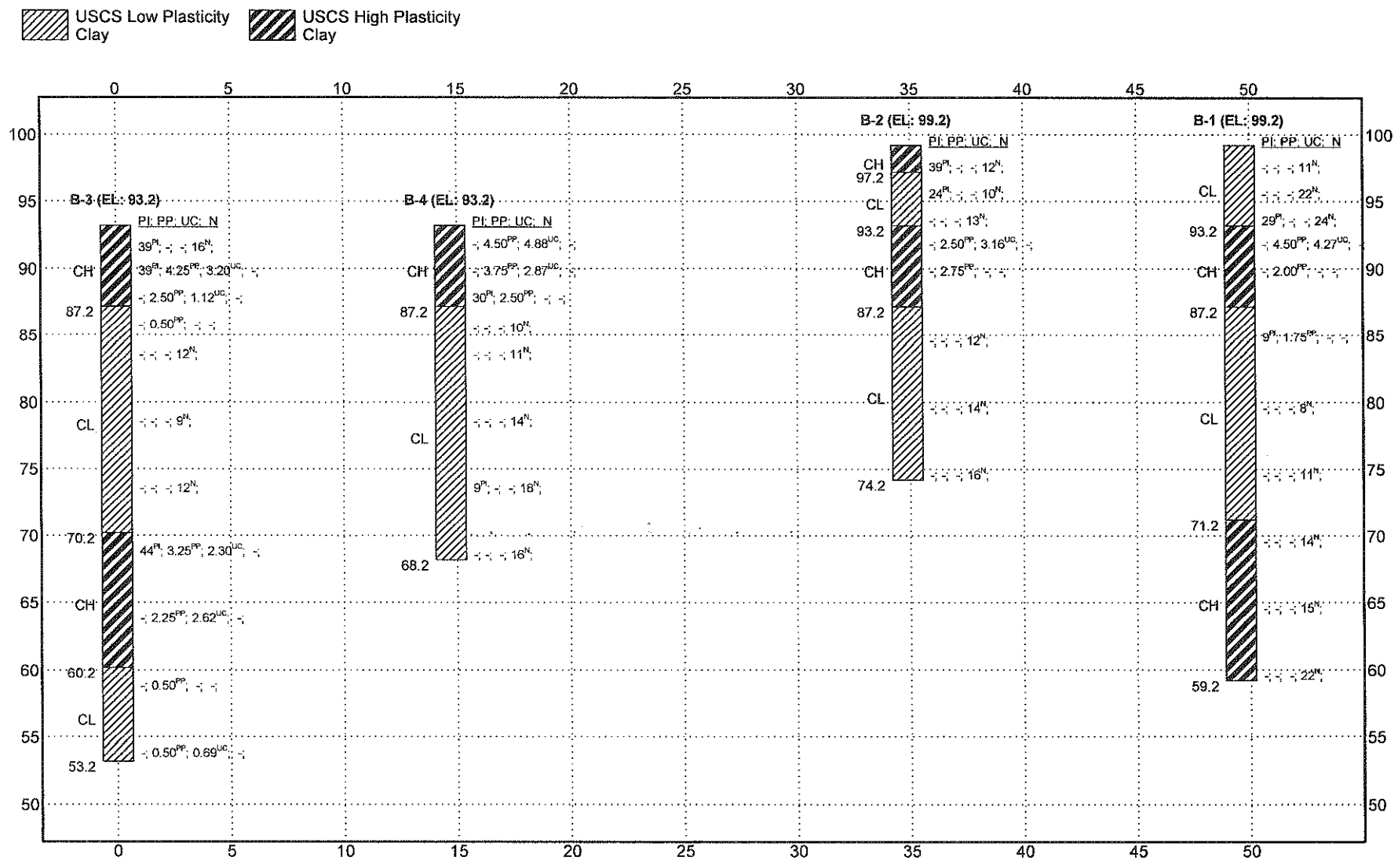
BL_TEXAS_BORING LOGS PHARR.GPJ_PSI_CORP.GDT_12/5/13

PLATE 8

Geotechnical Consulting Services
Harlingen, Texas

Pharr Bridge International Trade Center
Pharr, Texas
Project Number: 328-1108

SUBSURFACE PROFILE



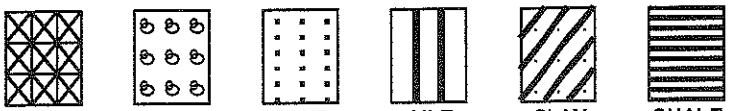
Notes: PI - Plasticity Index; PP - Pocket Penetrometer; UC - Unconfined Compressive Strength, tsf

Plate 9

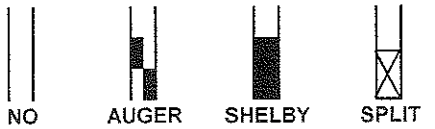
STRATIGRAPHY - 8½X11" BORING LOGS PHARR.GPJ PSIHOUSTON.GDT 12/5/13

KEY TO TERMS AND SYMBOLS USED ON LOGS

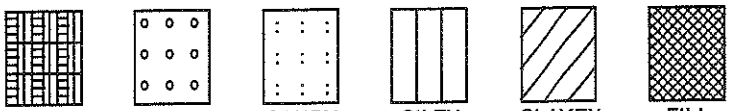
SOIL TYPE



SAMPLER TYPE



MODIFIERS



UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487

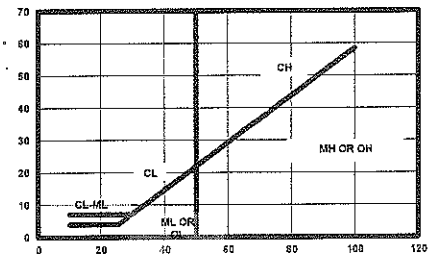
MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS LESS THAN 50% PASSING NO. 200 SIEVE	GRAVEL & GRAVELY SOILS LESS THAN 50% PASSING NO. 4 SIEVE	CLEAN GRAVEL (LITTLE OR NO FINES	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		W/ APPRECIABLE FINES	GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN 50% PASSING NO. 4 SIEVE	CLEAN SANDS LITTLE FINES	SW	WELL GRADED SAND, GRAVELY SAND (LITTLE FINES)
			SP	POORLY GRADED SANDS, GRAVELY SAND (LFINES)
		SANDS WITH APPREA. FINES	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS,SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS & VERY FINE SANDS,ROCK FLOUR SILTY OR CLAYEY FINE SANDS OR CLAYEY SILT W/ LOW PI
			CL	INORGANIC CLAY OF LOW TO MEDIUM PI LEAN CLAY GRAVELY CLAYS, SANDY CLAYS, SILTY CLAYS
			OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PI
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY FAT CLAYS
			OH	ORGANIC CLAYS OF MED TO HIGH PI, ORGANIC SILT
HIGHLY ORGANIC SOIL			PT	PEAT AND OTHER HIGHLY ORGANIC SOILS
UNCLASSIFIED FILL MATERIALS				ARTIFICIALLY DEPOSITED AND OTHER UNCLASSIFIED SOILS AND MAN-MADE SOIL MIXTURES

CONSISTENCY OF COHESIVE SOILS

CONSISTENCY	SHEAR STRENGTH IN TONS/FT^2
VERY SOFT	0. TO 0.125
SOFT	0.125 TO 0.25
FIRM	0.25 TO 0.5
STIFF	0.5 TO 1.0
VERY STIFF	1.0 TO 2.0
HARD	> 2.0 OR 2.0+

RELATIVE DENSITY - GRANULAR SOILS

CONSISTENCY	N-VALUE (BLOWS/FOOT)
VERY LOOSE	0-4
LOOSE	4-9
MEDIUM DENSE	10-29
DENSE	30-49
VERY DENSE	> 50 OR 50+



ABBREVIATIONS

HP - HAND PENETROMETER
TV - TORVANE
MV - MINIATURE VANE
UC - UNCONFINED COMPRESSION TEST
UU - UNCONSOLIDATED UNDRAINED TRAIXIAL
CU - CONSOLIDATED UNDRAINED

NOTE: PLOT INDICATES SHEAR STRENGTH AS OBTAINED BY ABOVE TESTS

HYDRO-STATIC WATER LEVEL

WATER LEVEL UNDER HYDRO - STATIC PRESSURE HEAD

CLASSIFICATION OF GRANULAR SOILS

U.S. STANDARD SIEVE SIZE(S)

6"	3"	3/4"	4	10	40	200

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		

152	76.2	19.1	4.76	2.0	0.42	0.074	0.002

GRAIN SIZE IN MM

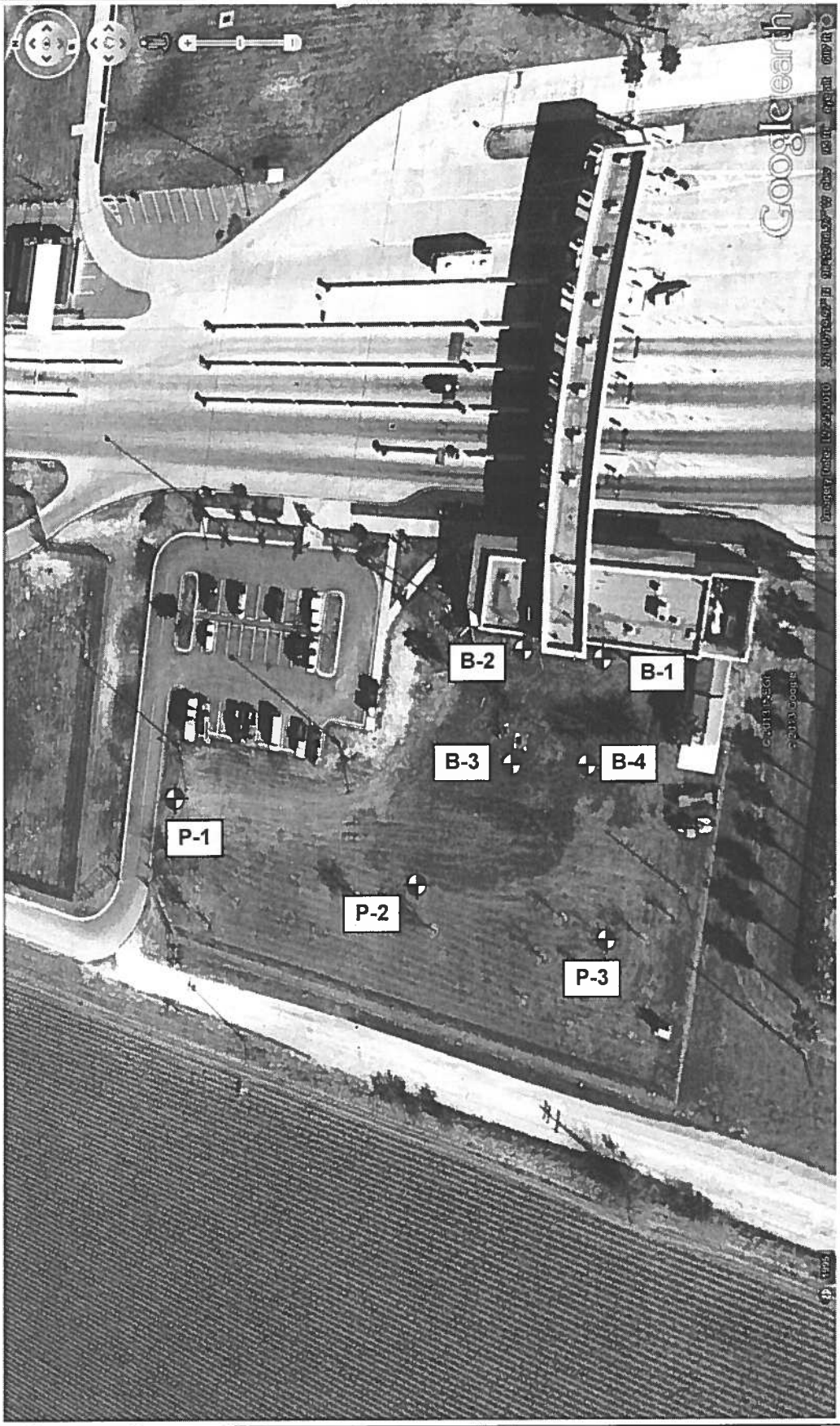


Figure 1

Information To Build On
Engineering • Consulting • Testing

Proposed Trade Center

Pharr International Bridge
City of Pharr, Texas
The Warren Group Architects, Inc.
PSI Proposal No. 2013-106

Site/Boring Location Map

NOT TO SCALE

SECTION 00 30 00
PROPOSAL FORM – **"REVISED"**

CITY OF PHARR
INTERNATIONAL BRIDGE FACILITY
EXPANSION AND RENOVATIONS

Project No. 1819-70-510-C007-393

PROPOSAL OPENING DATE
FEBRUARY 05, 2019 at 3:00 P.M. CST

CITY OF PHARR

We have carefully examined the Plans and Specifications herein referred to and have carefully examined the locations, conditions, and classes of materials of the proposed work; and agree that we will provide all the necessary labor, machinery, tools, apparatus, and other means of construction, and will do all the work and furnish all the materials called for in the Solicitation Documents and Specifications in the manner prescribed and according to the requirements therein set forth.

It is further agreed that the quantities of work to be done at unit prices and materials to be furnished may be increased or diminished as may be considered necessary, in the opinion of the *(Architect or Engineer)*, to complete the work fully as planned and contemplated, and that quantities of work, whether increased or decreased are to be performed at the unit prices set forth below or as provided in the Specifications.

It is further agreed that the lump sum prices may be increased to cover additional work ordered by the *(Architect or Engineer)* and approved by the OWNER, but not shown on the Plans or required by the Specifications, in accordance with the provisions of the General Conditions. Similarly, they may be decreased to cover deletion of work so ordered.

Accompanying this proposal is a certified or cashier's check or proposal bond payable to the City of Pharr.

Dollars ($_____)

Percent (_____%) Time of Completion (_____)

The proposal security accompanying this proposal shall be returned to the respondent, unless in case of the acceptance of the proposal, the respondent shall fail to execute a Contract and file a performance and payment bond within ten (10) days after its acceptance, in which case the proposal security shall become the property of City of Pharr and shall be considered as payment for damages due to delay and other inconveniences suffered by the CITY OF PHARR on account of such failure of the respondent. It is understood that the CITY OF PHARR reserves the right to reject any and all proposals.

PROPOSAL

Respondent agrees to perform all work described in the specifications and shown on the plans, for the following price or prices:

ITEM NO.	DESCRIPTION	UOM	QTY	UNIT PRICE
1	BASE PROPOSAL	LS	1	ENTER BID PRICES IN BIDDING PORTAL
2	ALTERNATE 1 GENERAL CONTRACTOR TO PROVIDE ADD COST TO PROVIDE AND INSTALL BACKLIT "CITY OF PHARR BRIDGE" AND LOGO AS PROVIDED BY FAST SIGNS ON THE SOUTH PORTION OF THE TOLL BOOTH AS NOTED ON SHEET A2.11 AND A3.12.	LS	1	ENTER BID PRICES IN BIDDING PORTAL
3	ALTERNATE 2 GENERAL CONTRACTOR TO PROVIDE DEDUCT COST TO PROVIDE ALTERNATIVE CEILING, LIGHTING AND LAYOUT AS OUTLINED ON SHEET A1.21 DETAIL 2.	LS	1	ENTER BID PRICES IN BIDDING PORTAL
4	ALLOWANCE No. 1 LUMP-SUM ALLOWANCE FOR ANY STRUCTURAL SUPPORT NEEDED FOR THE TOLL BOOTH MONUMENT SIGN (INCLUDES MATERIAL COST, RECEIVING,HANDLING,AND INSTALLATION, AND CONTRACTOR OVERHEAD AND PROFIT)	LS	1	ENTER BID PRICES IN BIDDING PORTAL
5	ALLOWANCE No. 2 LUMP-SUM ALLOWANCE FOR LANDSCAPE AND IRRIGATION DESIGN, MATERIALS AND INSTALLATION, (INCUDES MATERIAL COST, RECEIVING, HANDLING AND INSTALLATION, AND CONTRACTOR OVERHEAD AND PROFIT)	LS	1	ENTER BID PRICES IN BIDDING PORTAL

*NOTE: Amount shall be shown in both written and figure form. In case of discrepancy between the written amount and the figure, the written amount will govern.

1. BASE PROPOSAL:

_____DOLLARS

($_____)

Alternate 1_____DOLLARS

($_____)

Alternate 2_____DOLLARS

($_____)

In the event of the award of a Contract to the undersigned, the undersigned will furnish a performance and payment bond for the full amount of the Contract, to secure proper compliance with the terms and provisions of the Contract, to insure and guarantee payment of all lawful claims for labor performed and materials furnished in the fulfillment of the Contract.

The proposed work to be done shall be accepted when fully completed and finished in accordance with the Plan and Specifications to the satisfaction of the *(Architect or Engineer)*. The undersigned certifies that the proposal prices contained in this Proposal have been carefully checked and are submitted as correct and final.

The Respondent agrees that this proposal shall be good and may not be withdrawn for a period of ninety (90) calendar days after the scheduled closing for receiving proposals.

Unit and lump sum prices must be shown in figures for each item listed in the Proposal. Should proposal prices on any item be omitted, the right is reserved to apply the lowest prices submitted by and other respondents for the omitted items in payment for work done under this Proposal. In the event of discrepancies, respondent agrees that the Owner has the right to accept or reject any or all proposals and to waive any or all formalities and/or technicalities.

2. SUBCONTRACTORS AND SUPPLIERS

D. The following companies shall execute subcontracts for the portions of the Work indicated:

1. General Conditions:

_____.

2. Site Work:

_____.

3. Concrete Scope:

_____.

4. Masonry Scope:

_____.

5. Structural Steel Work:

_____.

6. Carpentry:

_____.

7. Thermal & Moisture Protection Scope:

_____.

8. Doors, Windows, Glass & Hardware Work:

_____.

9. Painting (Finishes) Work:

_____.

10. Miscellaneous/Specialties:

_____.

11. Mechanical/Plumbing Work:

_____.

12. Electrical Work:

_____.

13. Roofing:

_____.

14. Fire Protection Work:

_____.

3. TIME OF COMPLETION

Coordinate location of Contract Time requirement with option in paragraph below.
The undersigned Respondent proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work within _____(____) calendar days.

4. Receipt is hereby acknowledged of the following addenda to the Contract Document:

Addendum No. 1 dated:_____ Received:_____

Addendum No. 2 dated:_____ Received:_____

Addendum No. 3 dated:_____ Received:_____

Addendum No. 4 dated:_____ Received:_____

Addendum No. 5 dated:_____ Received:_____

5. PROPOSAL SUPPLEMENTS
The following supplements are a part of this Proposal Form and are attached hereto.

A. Proposal Form Supplement - Instructions to Respondents (AIA Document A701).
B. Proposal Form Supplement - CSI Form 1.5C Substitution Request

1.15 CONTRACTOR'S LICENSE

A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in the State of Texas and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

Date:_____

Respectfully Submitted:

_____
Authorized Signor

_____
Type/Print Name (Authorized Signor)

_____
Title

_____
Legal Company Name

(Seal - If respondent is a Corporation)

_____
Address

_____
City, State, Zip

_____
Business Phone

_____
Cell Number

_____
E-Mail Address

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