

**CITY OF CORPUS CHRISTI
ENGINEERING SERVICES
CHANGE ORDER**



REVIEWED
By amiew at 1:37 pm, Aug 27, 2020

CHANGE ORDER NO:	1	CHANGE ORDER DATE:	8/27/2020
PROJECT:	(RE-BID) Park Road 22 Lift Bridge (Bond 2008)	PROJECT NUMBER:	6281
CONTRACTOR:	Haas-Anderson Construction	ORIGINAL CONTRACT TIME:	639 CD's
ENGINEER:	Urban Engineering		

Make the following additions, modifications or deletions to the work described in the Contract Documents:

ADDITIONS	Quantity	Unit	Unit Price	Total
Part B - Street Improvements				
B30-A Ground Improvements (Geopier/Peterson Contractors)	1	FPP	\$ 1,075,700.00	\$ 1,075,700.00
Added Time on Contract: due to Change of Scope	60	DAYS	\$ -	\$ -
<i>Scope includes the following: Additional Mobilization/General Conditions, Geopiers - Subcontractor, Dozer Assistance, Flag for Trucks, Add Alternate for Additional Modulus Test</i>				
Additions Total:				\$ 1,075,700.00

DELETIONS				
Allowance				
B30 ALLOWANCE: Ground Improvements	-1	LS	\$ 500,000.00	\$ (500,000.00)
Deletions Total:				\$ (500,000.00)

Additional Calendar Days requested 60

NET TOTAL OF THIS CHANGE ORDER: \$ 575,700.00

Why was this Change necessary:

Urban Engineering and team identified ground improvements as a requirement for this project. Due to the uniqueness of this scope the design team and the City determined that adding a performance specification to the bid documents in lieu of designing around a single solution was the best option. An allowance of \$500K was added to the bid documents to cover the anticipated cost for the ground improvements. After award, HAAS-Anderson Construction provided two ground improvement proposals for consideration, but only one (Geopier/Peterson Contractors Inc) met the bearing capacity, global stability and anticipated settlement of 3" - 6" specified in the performance specification. Geopier/Peterson Contractors Inc proposal was for \$1,075,700 (\$1,059,700 +\$16K Add Alternate) and 60 additional calendar days. The base bid included \$500,000 Ground Improvements Allowance which leaves a balance of \$575,700. The change order will add \$575,700 to the project to supplement the existing Ground Improvements Allowance and 60 calendar days to the contract time.

The compensation agreed upon in this Change Order is full, complete and final payment for all costs the Contractor may incur as a result of or relating to this change whether said costs are known, unknown, foreseen or unforeseen at this time, including without limitation, any cost for delay, extended overhead, ripple or impact cost, or any other effect on changed or unchanged work as a result of this Change Order.

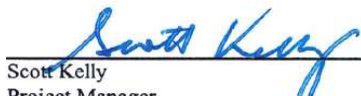
Original Contract Amount	\$ 13,943,536.00
Maximum Change Order Contingency Amount (25%)	\$ 3,485,884.00
Remaining Available Contingency Amount (including this CO)	\$ 2,910,184.00
Previously Approved Change Order Amount	\$ -
Proposed Change Order Amount	\$ 575,700.00
Revised Contract Amount	\$ 14,519,236.00
Percent of Total Change Orders (including this CO)	4.13%
Original Contract Time for Substantial Completion	639 CD's
Notice to Proceed Date	6/29/2020
Original Substantial Completion Date	3/30/2022
Previously Approved Change Order Time	0 CD's
Additional Time on This Change Order	60 CD's
Revised Contract Time for Substantial Completion	699 CD's
Revised Substantial Completion Date	5/29/2022

REVIEWED BY:

Eng. Proj. Specialist Karissa O'Neill
Constr. Supervisor Amie Wojtasczyk
Constr. Inspector Jim Jennings
Constr. Sr. Project Mgr. Ruben Barrera

Initial	Date
KLO	8/19/2020
ADW	8/27/2020
JJ	8/19/2020
RB	8/19/2020

REQUESTED BY: Haas-Anderson Construction

 **8/27/20**
Scott Kelly
Project Manager

CITY OF CORPUS CHRISTI

Brett Van Hazel	FUND: 3541-051	3546-051	3548-051
	ACCOUNT: 550910	550910	550910
	CITY: 170062-3541-EXP	170062-3546-EXP	170062-3548-EXP
	AMOUNT: \$344,000.00	\$182,150.00	\$49,550.00
	Digitally signed by Brett Van Hazel Date: 2020.08.27 15:37:52 -05'00'		

RECOMMENDED BY:

Brett Van Hazel Date
Construction Engineer

RECOMMENDED BY:

Jeff H. Edmonds Date
Director of Engineering Services

APPROVED BY:

Michael Rodriguez Date
Chief of Staff

RECOMMENDED BY:

Eddie Houlihan, Director Date
Management and Budget

APPROVED AS TO FORM:

Kent McIlyar Date
Assistant City Attorney



August 11, 2020

City of Corpus Christi
C/O Jeff Edmonds
Director of Engineering Service
1201 Leopard Street
Corpus Christi, TX 78401

Subject: Park Road 22 Bridge – Ground Improvements Recommendation

Dear Mr. Edmonds:

Urban Engineering has received two proposals from the general contractor, Haas Anderson Construction, for the proposed ground improvements. We worked diligently with a third group to ensure they could meet the project requirements, but ultimately did not receive a proposal from them. Each of the submissions were from qualified contractors experienced in providing these services. I reviewed each of the proposals and discussed them with the general contractor.

Per the performance specification, the proposals were to address improving the soil conditions to meet the necessary bearing capacity, global stability and an anticipated settlement of between 3" and 6".

The first proposal was from Menard Group USA using the Rapid Impact Compaction (RIC) method. Although this proposal was the lower of the two, there were serious concerns that left too much doubt to consider it as a possibility. First, their proposal only specifically addresses improving the bearing capacity of the soil. It did not address global stability or reduction of the settlement. This is likely because their proposal calls to only improve the top 10' of soil. Most of the settlement is expected to happen in the top 30'. The general contractor also requested one additional month to the contract since Menard's proposal was for three months instead of the anticipated two months.

The general contractor also had concerns about using this method with the high water table. RIC will liquify the sandy soil when saturated with water. The ground water in this location is only about 1.5' to 2.5' below the surface. In addition the sub-contractor was only able to list three projects using RIC. None were in Texas and none were in sandy soil conditions.

The second proposal was from Geopier/Peterson Contractors Inc. Their proposal uses multiple aggregate driven piers penetrating deep into the soil. We were satisfied that their proposal adequately addressed bearing capacity, global stability and reduced settlement enough that the structural design to compensate for the remaining settlement.

The Geopier/Peterson Contractors Inc proposal would require adding two more months to the contract. The price for using this method would be \$1,075,700. This is a little over double the allowance of \$500,000. All though this contractor is the more expensive of the two, they are the only one that we consider to have fully addressed the project requirements. Therefore, Urban Engineering recommends engaging Geopier/Peterson Contractors Inc and amending Haas Anderson's contract accordingly.

The design geotechnical firm, Raba Kistner, identified the need for ground improvements during the design phase of the project. The three critical items that needed to be addressed were defined and considered by the design team and discussed with city staff. Part of the thinking was that every contractor does the ground improvements differently and it can be as much of an art as it is a science. Also, many methods are proprietary and designing around one solution could inhibit competitive bidding. Therefore, a performance specification was added to the bid documents that would define the conditions the contractor would need to achieve. This would allow a competitive design of the ground improvements by a subcontractor prior to the start of construction.

The allowance was provided as a place holder at the time not knowing the means and methods that would be employed or the extent to which those methods would extend. The \$500,000 was an estimate that was decided upon with the concurrence of the design team and staff at the time.

The two bids that were submitted are attached for reference. Please let me now if you have any questions concerning this recommendation.

Sincerely,

URBAN ENGINEERING



Rhodes "Chip" Urban, P.E., R.P.L.S.

RCU/

Cc: Jim Parish – Haas Anderson Const
Larijia Francis – Engineering Services
Brett Van Hazel – Engineering Services
File



June 24, 2020

Brett Van Hazel
City of Corpus Christi - Engineering Services
Assistant Director of Construction Management
4917 Holly Rd., Bldg. 5
Corpus Christi, TX 78411

Re: Park Road 22 Bridge – Bond 2004
City Project No. 6281
Proposal for Ground Improvements – Geopier/Peterson Contractors, Inc.

Brett:

Attached is our Ground Improvement proposal utilizing Geopiers via Peterson Contractors, Inc. (PCI). All supporting documentation is also attached.

PCI has approximately 4 months to complete the work in total. We had figured 2 months total to complete the work in the original bid. So, the Project Overhead/Supervision will increase accordingly 2 additional months which you will see in the additional mobilization item. The surveying support for PCI is also included in this additional mobilization item. With the additional mobilization cost we would also require that the contract time be increased an additional 60 calendar days to accommodate this method.

Total Lump Sum Price \$1,059,700

Additive Alternate for Additional Modulus Testing (if desired) \$16,000

Drew P. Cullen, P.E.
Haas-Anderson Construction, LTD

HAAS-ANDERSON CONSTRUCTION, LTD.

P.O. BOX 7692

CORPUS CHRISTI, TX

Phone: 3618532535

HAC1343GEOPR Ground Improvements - Geopier/PCI

Drew Cullen

BID PROPOSAL

Biditem	Description	Quantity	Units	Unit Price	Bid Total
10	ADDITIONAL MOBILIZATION/GENERAL CONDITIONS	1.000	LS	90,300.00	90,300.00
20	GEOPIERS - SUBCONTRACTOR	1.000	LS	915,000.00	915,000.00
30	DOZER ASSISTANCE	1.000	LS	38,100.00	38,100.00
40	FLAG FOR TRUCKS	1.000	LS	16,300.00	16,300.00
<i>100</i>	<i>ADD ALTERNATE FOR ADDITIONAL MODULUS TEST</i>	<i>1.000</i>	<i>EA</i>	<i>16,000.00</i>	<i>16,000.00</i>
	Bid Total				\$1,059,700.00

** Items in italics are Non-Additive.

Bid Summary Totals Report

Standard Markup Instructions

	Cost Basis	Markup %	Markup
Labor:	79,532	15.00	11,930
Burden:	11,017	15.00	1,653
Perm Matl:	0	15.00	0
Const Matl:	18,200	15.00	2,730
Sub:	861,328	5.00	43,066
Eq. Op. Exp:	8,017	15.00	1,203
Co. Equip:	7,801	15.00	1,170
Rented Eq.:	0	15.00	0
Hauling:	0	15.00	0
HAC Int. #:	0	15.00	0
Plug #'s:	0	15.00	0
Overrides:	0		0
Total:	985,895	6.26	61,752

Selected Bond Table: RC

Previous Run

Summary: 06/23/2020 4:10 PM
Spread: 06/23/2020 4:10 PM
Summary run on Takeoff Quan and Adjusted to Bid Qu

Standard Spreads

Indirect Spread: Total less Sub
Markup Spread: Markup %
Addon/Bond Spread: Total

Totals as of Last Spread

	Cost:	Markup:	Total:
Direct:	985,896	61,752	1,047,648
Indirect:	0	0	0
Addons:	2,649	0	2,649
Bond:	9,418		9,418
Subtotal:	997,963	61,752	1,059,715
Pass Through:	0		0
Total:	997,963	61,752	1,059,715

Direct Cost Report

Activity Resource	Desc	Quantity Pcs	Unit MH/Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Ment Contract	Total
BID ITEM = 10									
Description =	ADDITIONAL MOBILIZATION/GENERAL CONDITIO			Unit =	LS	Takeoff Quan:	1.000	Engr Quan:	1.000
9999	General Conditions	Quan:		2.00 MO	Hrs/Shft:	8.00	Cal: SAL WC: TX0001		
3ZEQMOVE	Equipment Moves	1.00	1.00 EA	200.000			200		200
3ZFIELD	Field Office and Utilities	1.00	2.00 MO	1,500.000			3,000		3,000
3ZMISC	Miscellaneous Costs	1.00	2.00 MO	5,000.000			10,000		10,000
3ZPOICE	POP/Ice	1.00	2.00 MO	500.000			1,000		1,000
3ZWATER	Construction Water	1.00	2.00 MO	500.000			1,000		1,000
3ZYDRNT	Yard Rent	1.00	2.00 MO	1,500.000			3,000		3,000
ZGS	==> General Superintend	1.00	2.00 MO	1,000.000	2,000				2,000
ZPM	==> Project Manager	1.00	2.00 MO	3,000.000	6,000				6,000
ZSUPT	==> Superintendent	1.00	2.00 MO	9,500.000	19,000				19,000
ZSURVEY	==> Survey Crew	1.00	32.50 DAY	1,000.000	32,500				32,500
\$77,700.00				[]	59,500		18,200		77,700
====> Item Totals: 10 - ADDITIONAL MOBILIZATION/GENERAL CONDITIO									
\$77,700.00				[]	59,500		18,200		77,700
77,700.000	1 LS				59,500.00		18,200.00		77,700.00

BID ITEM = 20									
Description =	GEOPIERS - SUBCONTRACTOR			Unit =	LS	Takeoff Quan:	1.000	Engr Quan:	1.000
20A	GEOPIERS - SUBCONTRACTOR	Quan:		1.00 LS	Hrs/Shft:	9.00	Cal: STD WC: TX0001		
4GEOPIERS	Geopier - Subcontractor	1.00	1.00 LS	817,800.000				817,800	817,800
20B Bond for Geopier Sub									
		Quan:		1.00 LS	Hrs/Shft:	9.00	Cal: STD WC: TX0001		
4GEOPIERS	Geopier - Subcontractor	1.00	1.00 LS	8,528.000				8,528	8,528
20C Additional Mobilization for Geopier Sub									
		Quan:		1.00 LS	Hrs/Shft:	9.00	Cal: STD WC: TX0001		
4GEOPIERS	Geopier - Subcontractor	1.00	1.00 LS	35,000.000				35,000	35,000
====> Item Totals: 20 - GEOPIERS - SUBCONTRACTOR									
\$861,328.00				[]			861,328		861,328
861,328.000	1 LS						861,328.00		861,328.00

BID ITEM = 30									
Description =	DOZER ASSISTANCE			Unit =	LS	Takeoff Quan:	1.000	Engr Quan:	1.000
213004	Fine Grade w/ Dozer	Quan:		1.00 LS	Hrs/Shft:	9.00	Cal: STD WC: TX0001		
<u>ZCREW</u>	(Mod) Crew on the Fly		180.00 CH	Prod:	20.0000 S	Lab Pcs:	3.00	Eqp Pcs:	2.00
8DZD6	CAT D6 Dozer	1.00	180.00 HR	61.680			11,102		11,102
8TRWAT	Water Truck 3000gal	1.00	180.00 HR	26.201			4,716		4,716
LC	Laborer Common	1.00	180.00 MH	12.600	3,711				3,711
LU	Laborer Utility	1.00	180.00 MH	14.700	4,329				4,329
OMGF	Operator Motor Grader Fi	1.00	180.00 MH	30.350	8,938				8,938
\$32,797.22	540.0000 MH/LS		540.00 MH	[10953.96]	16,979		15,819		32,797
====> Item Totals: 30 - DOZER ASSISTANCE									
\$32,797.22	540.0000 MH/LS		540.00 MH	[10953.96]	16,979		15,819		32,797
32,797.220	1 LS				16,978.64		15,818.58		32,797.22

Direct Cost Report

Activity Resource	Desc	Quantity Pcs	Unit MH/Unit	Unit Cost	Perm Labor	Constr Material	Equip Matl/Exp	Sub- Ment Contract	Total
BID ITEM = 40									
Description =	FLAG FOR TRUCKS		Unit =	LS	Takeoff Quan:	1.000	Engr Quan:	1.000	
40A	FLAG FOR TRUCKS		Quan:	1.00 LS	Hrs/Shft:	9.00	Cal: STD WC: TX0001		
<u>ZCREW</u>	(Mod) Crew on the Fly	585.00	CH	Prod:	65.0000 S	Lab Pcs:	1.00	Eqp Pcs:	0.00
LU	Laborer Utility	1.00	585.00 MH	14.700	14,070				14,070
\$14,070.33	585.0000 MH/LS	585.00 MH	[9077.63]	14,070					14,070
====> Item Totals: 40 - FLAG FOR TRUCKS									
\$14,070.33	585.0000 MH/LS	585.00 MH	[9077.63]	14,070					14,070
14,070.330	1 LS			14,070.33					14,070.33

BID ITEM = 100									
Description =	ADD ALTERNATE FOR ADDITIONAL MODULUS TES		Unit =	EA	Takeoff Quan:	1.000	Engr Quan:	1.000	
100A	ADD ALTERNATE FOR ADDITIONAL MODULUS T		Quan:	1.00 EA	Hrs/Shft:	9.00	Cal: STD WC: TX0001		
4GEOPIERS	Geopier - Subcontractor	1.00	1.00 LS	15,000.000				15,000	15,000
100B	Additional Bond for Add Alternate		Quan:	1.00 EA	Hrs/Shft:	9.00	Cal: STD WC: TX0001		
4GEOPIERS	Geopier - Subcontractor	1.00	1.00 LS	150.000				150	150
====> Item Totals: 100 - ##### NON-ADDITIVE BIDITEM #####									
\$15,150.00			[]					15,150	15,150
15,150.000	1 EA							15,150.00	15,150.00

\$985,895.55 * Report Totals *** 1,125.00 MH 90,549 18,200 15,819 861,328 985,896**

>>> indicates Non Additive Activity

-----Report Notes:-----

The estimate was prepared with TAKEOFF Quantities.

This report shows TAKEOFF Quantities with the resources.

'Unreviewed' Activities are marked.

Bid Date: 06/26/20 Owner: Engineering Firm:
Estimator-In-Charge:

JOB NOTES

Estimate created on: 06/23/2020 by User#: 1 - Drew Cullen
Source estimate used: R:\HEAVYBID\EST\ESTMAST

* on units of MH indicate average labor unit cost was used rather than base rate.

[] in the Unit Cost Column = Labor Unit Cost Without Labor Burdens

In equipment resources, rent % and EOE % not = 100% are represented as XXX%YYY where XXX=Rent% and YYY=EOE%

-----Calendar Codes-----

508 5 Eight Hour Days
510 5 Ten Hour Days
512 5 Twelve Hour Days
609 6 Nine Hour Days
610 6 Ten Hour Days
612 6 Twelve Hour Days
SAL Salary Employees
STD Standard HAC Workweek 509 (Default Calendar)

To: Drew Cullen Company: Haas-Anderson Re: Proposal for Installing a <i>Geopier</i> ® System Park Road 22 Bridge Corpus Christi, Texas GFC Project No.: PTX-739	From: Dustin Douglas, P.E. Pages: 32 Date: June 19, 2020 CC:
---	---

In combination with Peterson Contractors, Inc. (PCI), Geopier Foundation Company, Inc. is pleased to present this proposal for installing a *Geopier*® system for the above referenced project. Attached and included herein is a proposal for a scope of work based upon our review of the project bid documents and information provided.

This proposal includes the following:

- Installation of piers below retaining walls and embankments,
- Mobilization and demobilization from the site, and
- Geopier testing (modulus load test options included in PCI proposal).
- See PCI proposal for list of full inclusions.

Items not included in this proposal are:

- Spoils removal, and
- Surveying/layout of the piers in the field.
- See PCI proposal for list of full exclusions.

Technical Comments:

- This proposal is based on a scope of work determined from our review of the structural drawing sheets included in Park Road 22 Bridge (Bond 2004) Rebid Revision 1 Addenda Changes Incorporated and Issued for Construction dated 1/2020, and geotechnical information from Raba Kistner dated 3/27/12, 5/9/12, 9/20/13, 1/13/14, and 10/25/16.
- The project consists of providing embankment support, settlement control, bearing capacity, sliding coefficient and slope stability for embankments and retaining walls associated with construction of Park Road 22 Bridge.

Project Description

Emb. & MSE Wall	STA. No.	Borings	Elev. (ft)	Emb. Width (ft)	Emb. Height (ft)	RW Height (ft)	Max. Allowable Bearing Pressure* (psf)	Service Bearing Pressure** (psf)
NB Emb. (SE Wingwall)	23+36 to 28+86	B-101, B-2, B-4, B-8, B-9, B-10	BTM of RW: +0.67	115 (including NB and SB)	4.93 to 16.33	4.33 to 15.65	3,650	616 to 2,041
NB Emb. (NE Wingwall)	30+14 to 35+64	B-1, B-3, B-5 to B-7, B-11			5.33 to 16.33	4.49 to 15.65	3,650	666 to 2,041
SB Emb. (SW Wingwall)	25+86 to 28+86	B-101, B-2, B-4, B-8, B-9, B-10	BTM of RW: +0.67		10.53 to 16.33	10.04 to 15.65	3,650	1,316 to 2,041
SB Emb. (NW Winwall)	30+14 to 33+74	B-1, B-3, B-5 to B-7, B-11			8.73 to 16.33	8.38 to 15.65	3,650	1,091 to 2,041

* Used for bearing capacity evaluation

** Used for settlement evaluation. Estimated by multiplying embankment height by fill unit weight of 125 pcf.

- Based on our understanding of these documents, our scope of work is based on the following:
 - Global Stability: FOS $\geq$ 1.5 (Drained, Long Term)
 - Bearing Capacity: FOS $\geq$ 3 with allowable bearing pressure of 3,650 psf
 - Sliding Coefficient: 0.6 (Ultimate), 0.4 (Allowable)
 - Settlement (Post-Construction): Total: 1", Differential: 1" over 200' (in a direction parallel to the wall face)
- Geopier is not responsible for differential settlement between Geopier supported structures and non-Geopier supported structures.
- Site grading should take place prior to Geopier installations. Geopier installations should occur after the site has been stripped and grubbed, and prior to the beginning of fill placement. Geopier construction can begin after the geotechnical engineer of record has determined that site settlements due to the weight of any new grade-raise fill have achieved desired results.
- Embankment fill should be placed and compacted as recommended by the project geotechnical engineer (assumed to be 95% of the maximum dry unit weight as per ASTM D-1557). Please provided a copy of the QC compaction test results for our files when available.
- Fill materials should be clean and cohesive, placed and compacted per the project geotechnical engineer's recommendations for structural fill. Shot rock, rounded gravel, or clean sand should not be used.
- If changes are made to the construction drawings, we will review our scope of work and proposal costs.

Your contract will be with PCI, the licensed installer for this area. Please call Mr. Matt Van Heiden at PCI (319-345-2713 ext. 239) to determine the project start date and schedule. We look forward to working with you on this project. Please contact this office if you have any questions.

Attachments: Proposal from Peterson Contractors, Inc.
Geopier/PCI SOQ

PETERSON CONTRACTORS, INC.

ADDRESS REPLY TO:
104 BLACKHAWK STREET
P.O. BOX A
REINBECK, IOWA 50669

HEAVY & HIGHWAY CONTRACTORS



PHONE: (319) 345-2713

FAX: (319) 345-2658

June 23, 2020

Drew Cullen
Haas-Anderson Construction Inc
6367 Hopkins Rd
Corpus Christi, TX 78409

Re: Geopier® Foundation System

Park Road 22 Bridge - TX, Corpus Christi

Dear Mr. Cullen,

Peterson Contractors, Inc. (PCI) proposes to install Geopier® soil reinforcing elements for the above referenced project. This proposal is based on information presented in the geotechnical investigation report as well as the Geopier® design as performed by Geopier Foundation Company, Inc of Davidson, NC. The Geopier® design is based on the dated project information, provided by others, as indicated in the GFC cover letter included with this proposal. PCI is a licensed installer for the Geopier® system.

This proposal is based on PCI providing all supervision, labor, equipment and materials to construct the Geopier® elements. It is assumed that the maximum over burden distance to the top of the pier will be two feet. One mobilization is included in this proposal, no meetings or onsite visits are included. One Geopier® modulus test is included in this quotation to verify design parameter values. This test is to be monitored by an approved geotechnical firm. **Survey and layout for the Geopier® elements are to be provided by others. Spoils handling and removal from drilling operations is also by others. This proposal assumes soil drilling only. Soils that are not drillable for whatever reason are to be made drillable by others. Prevailing wages included. Permits, existing structure monitoring or protection, SWPPP, erosion controls, street sweeping, traffic control, utility relocations, and environmental restrictions are excluded. See Exhibit A for further terms and conditions. PCI has not included any COVID-19 contingencies, costs or schedule in our bid. Therefore, any costs, delays or impacts resulting from the same are not the responsibility of PCI.**

PCI does not provide professional liability insurance or design services. However, PCI has a contractual relationship with GFC for this design work and professional liability insurance can be provided by Geopier Foundation Company upon request. The aggregate used for this project will be as approved by the Geopier Foundation Company.

This proposal is based on work to be performed during regular business hours, Monday through Friday with the understanding that PCI is an open shop company. As part of the general conditions, the Owner or General Contractor will furnish the items and agree to conditions as listed on the attached **Exhibit A** of this proposal at no charge to PCI.

An insurance certificate will be furnished by PCI upon request. Terms of this proposal will remain firm until July 19, 2020. PCI requires at least 14 working days for contract review. **Upon receipt of a signed**

and executed contract, PCI will arrange a schedule for this work.

Notwithstanding any provision to the contrary, PCI's acceptance of any indemnity or insurance provision is specifically conditioned on the understanding that PCI's liability is limited to property damages and bodily injury losses to the extent caused by PCI during performance of its work, but not to the extent such losses are caused by others. Under no circumstances does PCI accept responsibility for consequential or incidental damages. PCI reserves the right to refuse to sign any agreement not in its best interest.

This proposal is not to be construed as acceptance of any example or preliminary contract form that may have been included in the bidding documents. If selected, PCI will negotiate the terms of the contract for the work at a later time but before commencing with any work on the project.

PCI can include additional insured forms upon request. A copy of these endorsements can be provided by emailing connie@pci.us

Peterson Contractors, Inc. proposes to perform the above mentioned work for the lump sum consideration of:

Embankment / Retaining Wal Footing Support	\$ <u>817,800.00</u> /Lump Sum
Add Alternate: Additional Modulus Testing	\$ <u>15,000.00</u> /Each
Add Alternate: Additional Mobilization	\$ <u>35,000.00</u> /Each

Add 1% to the above Lump Sum amount if PCI is to provide a performance and payment bond with standard language, such as an AIA, AGC, or similar format. If financials are requested in lieu of a bond, PCI will provide only if GC provides the same.

No credit will be allowed for reduction in the stated quantity.

The above pricing is considered a lump sum conditional upon acceptance of terms in **Exhibit A**. This pricing is based on the project design and bid documents available at bid time. If the project is modified or unforeseen conditions occur, PCI reserves the right to adjust its pricing.

The opportunity to be considered for this work is appreciated and we look forward to being of service to you in the construction of this project. Please do not hesitate to contact us with questions regarding this proposal.

Sincerely,

PETERSON CONTRACTORS, INC.



Matt Van Heiden, Project Manager

Enclosures

PETERSON CONTRACTORS, INC. EXHIBIT A

1. General Contractor shall provide all site grades within six inches of finish subgrade elevations prior to aggregate pier installation work.
2. General Contractor shall provide access to site for wheeled and track aggregate pier equipment and shall keep site and access ramps (if any) trafficable for equipment.
3. General Contractor shall locate the center of all Geopier® elements with a wooden hub. The top of the hub should be 1" above the pad grade, painted with a neon color, and marked with the pier number on the top. In addition, a bottom of footing elevation must be provided at these locations for Geopier® construction as well as the pad elevation.
4. Completion of the project is anticipated within the durations provided by PCI. If PCI is delayed in the performance of their work, by an act or omission of the Contractor or Owner or other causes outside the control of PCI, the completion date will be extended accordingly and PCI will be compensated for all reasonable costs incurred due to such delays. Regardless of the reason, PCI shall not be liable for any indirect, incidental or consequential losses or damages suffered by owner or general contractor caused or resulting from delays in completion or otherwise.
5. In the event of any legal actions, the prevailing party will be entitled to attorney's fees.
6. General Contractor shall provide aggregate stockpile areas within 100 feet of installation areas and within excavations requiring Geopiers® elements (if any). Stockpile areas shall be large enough to hold at least six tandem dump truck loads of aggregate.
7. General Contractor/C.M. shall move and dispose of spoils from drilling operation. General Contractor/C.M. shall be responsible for site work, street sweeping, dust control, SWPPP, flaggers and traffic control.
8. General Contractor shall insure that excavations have safe wall slopes and working conditions in accordance with OSHA requirements.
9. General Contractor shall insure that site is properly drained (dewatered), maintained, and accessible to allow movement of wheeled and tracked construction equipment needed for Geopier® installation work, and to allow proper installation of Geopiers.
10. A stable working pad with a maximum slope of 2.5% is to be provided by others.
11. General Contractor shall remove any underground or above ground obstructions or unsuitable materials, and replace with suitable materials compacted to required or approved densities. This includes, but is not limited to, existing or new buried concrete, pipes, utilities, and etc. PCI is not responsible for, and shall be held harmless from, any liability from damage to subsurface structures, services and utilities where the exact location has not been previously established and physically shown to us in the field by excavation or other means acceptable to us. The GC or others will be responsible to determine if any below ground or above ground conflicts exist with our system. Modifications to these conflicts are required by others to remove the interference with the installation and performance of the Geopier® system prior to our project mobilization to avoid safety concerns, delays, or standby costs.
12. General Contractor shall compact exposed footing bottoms and exposed aggregate pier surfaces with hand-operated, mechanical compaction equipment after each footing excavation is completed and prior to placing steel or concrete.
13. Payment terms are net 30 days. PCI includes no excise, gross receipts or other special taxes.
14. Retainage for this project, if any, is not to exceed the General Contractors rate or a maximum of 10% of the value of the completed work, whichever is lower. Such retainage shall be reduced to 5% at completion of our work and total release no later than 6 months after our personnel leave the job site. If the contract amount is equal to or less than \$200,000.00, PCI requires payment in full in 30 days from the date of our personnel leaving the jobsite.
15. General Contractor to provide adequate source or supply of water, within 200 feet of the aggregate stockpiles, for moisture control of graded aggregate. Garden hose supply volume is acceptable.
16. General Contractor/Owner shall provide geotechnical testing and any additional Geotechnical soil borings, if required, to delineate areas of questionable soils. General Contractor/Owner shall also provide observation services as a quality assurance (QA) overview for all Geopier installations as required. Project quality control (QC), as required by GFC, is included in our work.
- ~~17. PCI assumes that the drilled holes will stand open without caving. If casing becomes necessary or is required, PCI reserves the right to adjust its price.~~
18. General Contractor to furnish portable toilet facilities on site for PCI employees.
19. General Contractor acknowledges that PCI does not provide professional liability insurance or design services. However, PCI has a contractual relationship with GFC for this design work and professional liability insurance can be provided by Geopier® Foundation Company upon request.
20. If the soil conditions differ from those indicated in the project geotechnical report/information, a change of conditions price increase shall apply if the project soils require additional reinforcement beyond the scope of this proposal. This change of conditions increase shall also apply if these changes require different equipment, materials, or procedures as defined by us.



June 19, 2020
Attn: Drew Cullen
Haas-Anderson Construction Inc
6367 Hopkins Rd
Corpus Christi, Texas 78409

RE: Park Road 22 Bridge Project, Corpus Christi, Texas

Dear Mr. Cullen,

Geopier Foundation Company, a leader in ground improvement is interested in working with you on the new Park Road 22 Bridge project, located in Corpus Christi, Texas. Geopier ground improvement technologies, such as Geopier® Rammed Aggregate Pier®, can be an efficient and cost-effective Intermediate Foundation® solution for the support of your structure.

Over 10,000 structures worldwide have been supported on Geopier technologies. The enclosed documents will provide insight into our company history, available technologies, supported applications and display our large array of our ground improvement expertise.

We look forward to hearing from you.

Sincerely,

A handwritten signature in black ink, appearing to read "Dustin Douglas".

Dustin Douglas, P.E.
Geopier Foundation Company
903.513.3524 | ddouglas@geopier.com

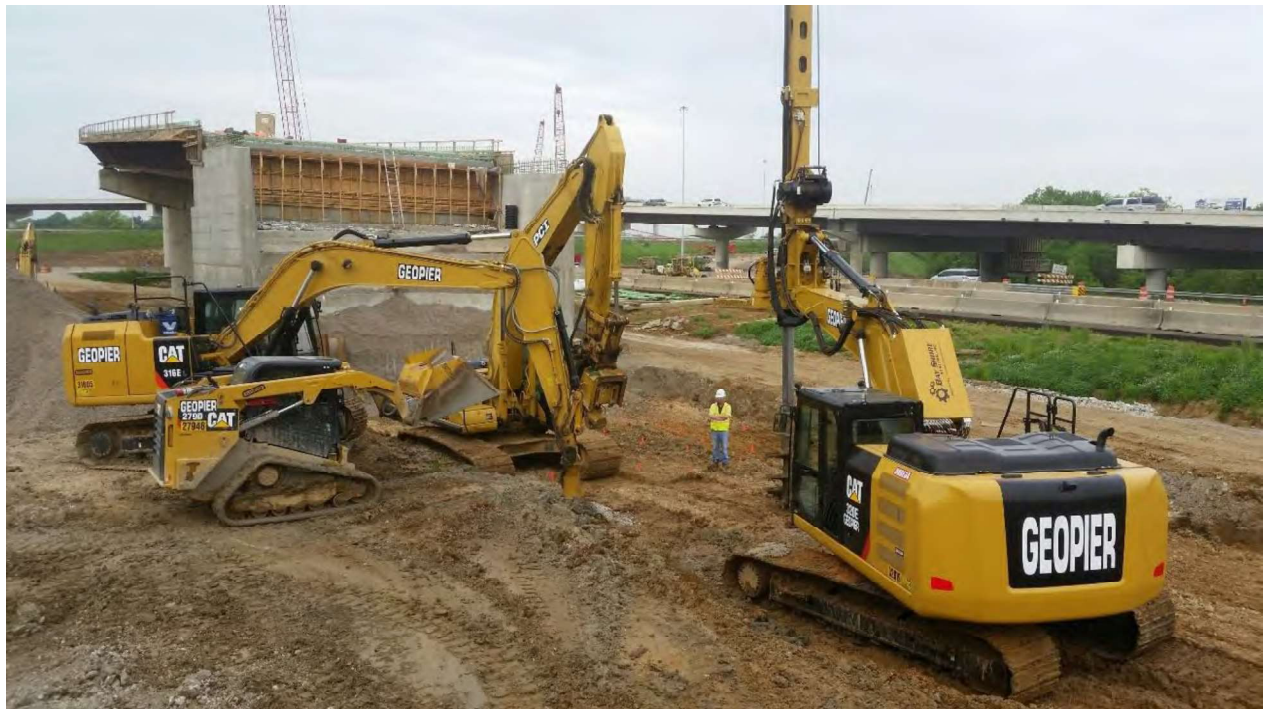
Geopier is Ground Improvement®

Geopier Foundation Company, a subsidiary of Tensar Corporation, developed the first Rammed Aggregate Pier® (RAP) in 1989. Now, Geopier is the industry leader in providing efficient, cost-effective Intermediate Foundation® solutions for the support of structures.

Our systems have become effective replacements for massive over-excavation and replacement of deep foundation, including driven piles, drilled shafts or augered cast-in-place piles. Thousands of structures around the world are currently supported by Geopier technologies (see page 5 for a list of key projects).

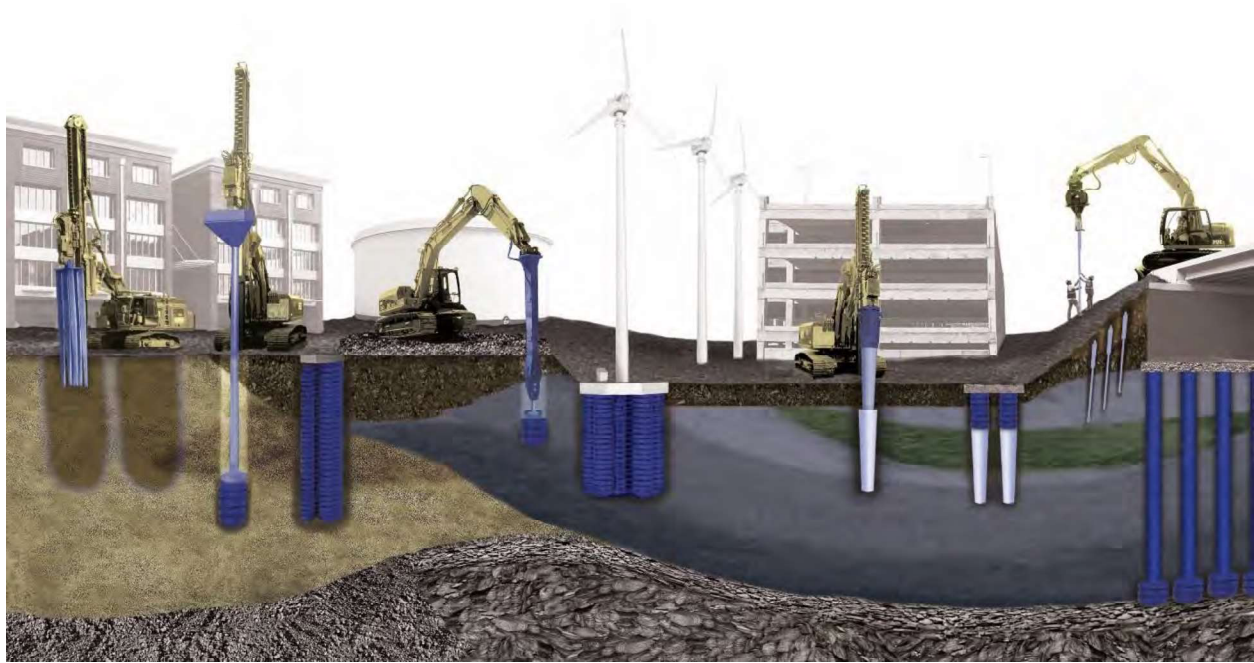
Geopier's goal is to bring you advanced, innovative ground improvement technology in a way that is easy to use every day. Geopier Rammed Aggregate Piers (RAPs), Rigid Inclusion and Slope Reinforcement products enable you to:

- Improve variable fill soils in place
- Replace deep foundations
- Control settlement
- Increase soil bearing capacities



Geopier Technologies

With multiple systems available, Geopier is able to engineer support for virtually any soil type and ground water condition across many applications.



Geopier Rammed Aggregate Pier systems are constructed by applying direct vertical ramming energy to densely compact successive thin lifts of high quality crushed rock to form high stiffness engineered elements. The vertical ramming action also increases the lateral stress and improves the soils surrounding the cavity, which results in foundation settlement control and greater bearing pressures for design.

- **GP3® system** – The GP3 system uses replacement (drilled) Rammed Aggregate Pier elements to reinforce good to poor soils, including soft to stiff clay and silt, loose to dense sand, organic silt and peat, and variable, uncontrolled fill.
- **Impact® system** – Using a displacement mandrel for loose sand, soft silt and clay, mixed soil layers, uncontrolled fill, contaminated soils and soils below the ground water table.
- **Rampact® system** – Recommended for installation in soils subject to caving because construction is facilitated using a patented tamper displacement mandrel, eliminating casing risks and increasing installation productivity.

- **X1® system** – A combination of both replacement and displacement methods, which allows for construction flexibility and the ability to build through caving zones that are encountered during drilling operations.

Geopier Applications

Geopier ground improvement systems have become preferred alternatives to massive overexcavation and replacement of deep foundations, including driven piles, drilled shafts or augured cast-in-place piles. With multiple systems that provide solutions for a wide range of soil conditions, Geopier provides engineered solutions for virtually any application.



Foundations



Floor Slabs



Industrial Facilities &
Storage Tanks



Liquefaction Mitigation



MSE Walls &
Embankment Support



Slope Stabilization



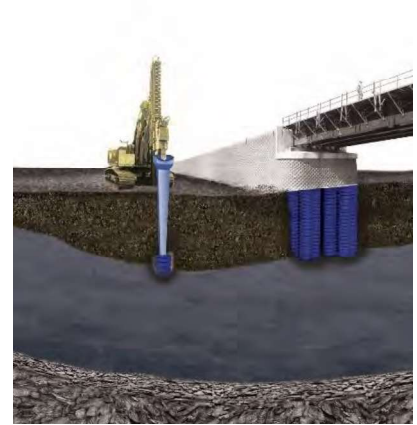
Uplift &
Lateral Load Resistance



Wind and Energy

Transportation Applications

Constructing MSE walls and embankments on weak or soft foundation soils can result in excessive settlement or inadequate factors of safety for global stability or bearing capacity. Geopier® systems increase the composite stiffness of the soft foundation soils and provide additional shear reinforcement that increases the factors of safety for bearing capacity and global stability. The high-strength of Geopier systems can also allow for heavy retaining wall loads to be efficiently transferred to an underlying stronger bearing stratum. The improved stiffness coupled with high strength of the Geopier foundation elements significantly reduces embankment and retaining wall settlement. The reduction in settlement magnitude can eliminate the need for staged embankment construction and reduces overall construction schedules while delivering superior performance.



Geopier Experience

Over 10,000 structures around the world are currently supported by Geopier technologies. Below is a list of MSE/Retaining wall projects that are supported on Geopier throughout Texas. PCI has been a licensed installer for Geopier for over 25 years. A more comprehensive list for the last five years can be found in the appendix.



Westpark Tollway MSE Wall Support – Houston, TX

Construction of a Mechanically Stabilized Earth (MSE) wall along the Westpark Tollway with maximum wall height of 23 feet. Medium stiff to stiff clay fill soils underlain by stiff clay and medium dense to dense sand. Average SPT N-values in the clay fill were seven blows per foot. The Geopier GP3® system was selected as a cost effective alternate to over excavation and replacement. Three rows of 16 foot long Geopier® elements were installed at spacings ranging from 7 to 11 feet on-center beneath the perimeter of the MSE wall to increase the factor of safety against global instability to 1.3 and to increase the allowable bearing pressure to 6,000 psf with a factor of safety of two beneath the wall. Additional Geopier

elements were installed to meet stringent construction and post-construction settlement magnitude criteria of less than two inches.

Key Project Team:

- Geotechnical Engineer: Tolunay-Wong Engineers, Inc.
- General Contractor: MChampagne-Webber, Inc.

- Construction Manager: Turner, Collie & Braden, Inc.

**Sienna Parkway MSE Wall – Missouri City, TX**

Construction of a 31 foot tall Mechanically Stabilized Earth (MSE) wall to support the Sienna Parkway Bridge. Stiff to very stiff brown and gray clay with slit pockets to a depth of 11 feet. Below the upper clay layer, loose brown sandy silt with clay pockets. The Geopier GP3® system was selected to increase the global factor of safety to 1.3 and reduce long term embankment settlements from 15 inches to less than the project criteria of two inches. A 17 foot width zone Rammed Aggregate Pier® (RAP) system

was installed along the edge of the MSE wall to increase shearing resistance, while additional RAP elements were installed ten feet on-center beneath the midpoint of the wall to reduce settlement. A total of 490 Geopier® elements were installed on the project.

Key Project Team:

- Geotechnical Engineer: Tolunay-Wong Engineers, Inc.
- General Contractor: Sienna/Johnson Development, L.P.
- Structural Engineer: LJA Engineering & Surveying, Inc.

**Loop 363 South Interchange – Temple, TX**

This project involved reconstruction of portions of Loop 363 to create a new highway interchange along Interstate 35, as well as widening nearby portions of Loop 363 to accommodate the traffic demand. A total of 905 Rammed Aggregate Pier® (RAP) elements with spacings that ranged from 4.75 to 8.5 feet on-center were installed beneath wall heights of 16 feet or greater. The factors of safety for bearing capacity and global stability were increased to greater than 2.0 and

1.3, respectively. The modulus test results showed a total movement of 0.69 inches at a stress of more than 22,000 psf, indicating a pier stiffness greater than twice the assumed design value.

Key Project Team:

- Geotechnical Engineer: Tolunay-Wong Engineers, Inc.
- General Contractor: Sienna/Johnson Development, L.P.
- Structural Engineer: LJA Engineering & Surveying, Inc.

**US 90 at SH 6 – Sugarland, TX**

This project consisted of the construction of providing support for several MSE walls located at the US90 and SH6 interchange. The Geopier GP3® system provided a cost-effective solution for this MSE wall project. A total of 1,411 Rammed Aggregate Pier® (RAP) elements with spacing that ranged from four to nine feet on-center were installed beneath wall heights of 14 feet or greater. As a result, the factors of safety for bearing capacity instability and global stability were increased to greater than 2.0 and 1.3, respectively as well as allowing rapid pore water pressure dissipation by radial drainage into RAP elements. Horizontal displacement at the base of the walls was measured to be less than one and a half inches. The modulus test results showed a total movement of 0.69 inches at a stress of more than 22,000 psf, indicating a pier stiffness greater than twice the assumed design value.

Key Project Team:

- Geotechnical Engineer: HVJ Associates
- General Contractor: W.W. Webber, Inc.
- Structural Engineer: Chiang Patel & Yerby

Key Personnel

The Geopier leadership team for this project will design and construct a Geopier system for the Park Road 22 Bridge project that will exceed Haas-Anderson's and the owner's expectations for quality, safety, value, and performance. Our combined engineering and construction experience is unsurpassed in the industry.



Kord J. Wissmann, Ph.D., P.E., D.GE is president and chief engineer of Geopier Foundation Company. Since 1998, he has led the company to proving multiple innovative ground improvement technologies now deployed worldwide. He earned his BS and Doctorate degrees in civil engineering from Virginia Tech and a MS in civil engineering from the University of California, Berkeley. Resume attached to end of document.



Brian C. Metcalfe, P.E. currently serves as vice president of engineering and has over 20 years of experience in the geotechnical engineering industry. Brian joined Geopier Foundation Company in 2005 and holds MS and BS degrees in civil engineering from Virginia Tech. Resume attached to end of document.



Rupesh Kadam, P.E. is the area manager for the southern U.S. division and has over 10 years of experience in the geotechnical engineering industry. He is responsible for southern U.S. projects and responsible for technical training of region engineers and external training seminars for GFC. Rupesh completed his BS in Civil Engineering from Mumbai University in India and MS in Geotechnical Engineering at the University of Texas at Arlington.



Dustin Douglas, P.E. is a Region Engineer for Geopier Foundation Company with over 12 years of experience in the geotechnical engineering industry. Dustin facilitates engineering design and marketing for Geopier Foundation Company in the states of Texas and Louisiana. He received his Bachelor of Science in Civil Engineering from the University of Texas in Tyler, Texas.



Doug Clark, P.E. is a Geopier and structures division manager at Foundation Service Corporation (FSC) and is responsible for overseeing construction methods and development of new technologies. Doug joined FSC in 1990 and graduated from Iowa State University with a BS in construction engineering



Matt Van Heiden is a senior project manager at Peterson Contractors, Inc (PCI). Matt joined PCI in 2013 and graduated from Iowa State University with a BS in Construction Engineering.

Appendix

Below is a list of MSE/Embankment ground improvement projects that Geopier has completed over the last five years.

Name	City	State/Province
Campus Crest MSE Wall	Tuscaloosa	AL
ALDOT 31 Street Bridge	Birmingham	AL
F L Shuttlesworth Drive MSE Walls	Birmingham	AL
ALDOT SR 21	Talladega	AL
ALDOT I-59 MSE Walls	Birmingham	AL
I-30 at Red River MSE Wall	Fulton	AR
Towne Center Bridge	Lathrop	CA
Laurel Creek MSE Walls	Vista	CA
Crown Valley Community Park Tier 2	Laguna Niguel	CA
A1A Kings Road Improvements	Jacksonville	FL
A1A Kings Road Improvements	Jacksonville	FL
A1A Kings Road Improvements	Jacksonville	FL
Cook Park Restroom	Atlanta	GA
Cook Park Retaining Walls	Atlanta	GA
Gateway Decatur Wall	Decatur	GA
Home Depot Backyard	Atlanta	GA
IADOT MSE Wall 5272 Extension	Woodbury County	IA
IADOT BO 29 MSE Wall 5240	Sioux City	IA
IADOT I-29 Special Letting	Woodbury Co	IA
IADOT BO#6 MSE Walls	Linn County	IA
IADOT BO#6 MSE Walls	Linn County	IA
IADOT BO102 Abutment Support	Dubuque	IA
IADOT BO 15 Embankment	Warren County	IA
IADOT BO #4 MSE Walls	Johnson Co	IA
IADOT BO 25 MSE Walls	Woodbury Co	IA
IADOT BO9 MSE Walls	Polk Co	IA
MSE Retaining Wall, Meacham Rd at I-90	Cook Co	IL
NE Retaining Wall US34 over CNRR	DuPage Co	IL
MLK Bridge MSE Wall: Design Fee	East St Louis	IL
I-90 Barrington Rd Retaining Walls	Cook Co	IL
Longmeadow Parkway Widening	Kane Co	IL
I-90 Roadway Location 7 4206	Cook County	IL
Sunrise On The Monon	Carmel	IN
Buffalo Street Boardwalk RW	Warsaw	IN
Turner Diagonal West Ramps Retaining Wall	Kansas City	KS

Cambridge Turnpike Ph I-A	Concord	MA
Riverside Industries Bridge Replacement	Easthampton	MA
Washington Street Parking RW	Newton	MA
Principio Retaining Wall Repair	Perryville	MD
Principio Retaining Wall Repair	Perryville	MD
Old Harford Rd Retaining Walls I-695 Widening	Baltimore	MD
Maryland 5 Branch Avenue Metro Access	Prince Georges Co	MD
Purple Line	Prince Georges Co	MD
Morse HS MSE	Bath	ME
TRU by Hilton Retaining Wall	Novi	MI
Cayuga Bridge 62610: Impact	Minneapolis	MN
Canadian National Railway Slope Failure	Duluth	MN
I44 MSE Walls Thurman Ave	St Louis	MO
Farmington Retaining Wall	Farmington	MO
I44 MSE Walls Kingshighway Blvd	St Louis	MO
I-93 SB Over Lowell Road	Windham	NH
Sunrise Senior Living RediRock Wall	Summit	NJ
Mount Laurel Walmart Wall	Mt Laurel	NJ
Tappan Zee Liquefaction-East Bound	Rockland and Winchester Co	NY
Jacksons Store	Milwaukie	OR
TDOT SR 14	Memphis	TN
RW No 11 TDOT	Jackson	TN
I 24/I 124 Retaining Walls	Chattanooga	TN
FastC Gabion Wall Along Bridge C 300	Blackstone	VA
Blackwater Bridge Replacement	Rocky Mount	VA
Blackwater Bridge Replacement	Rocky Mount	VA
I-66 & Rte 15 Interchange Reconstruction	Haymarket	VA
Millennium Arch Bridge No 2	Arlington	VA
Millennium Arch Bridge No 1	Arlington	VA
BNSF Kelso RR Task 5: Ph I	Kelso	WA
Seaway Center	Everett	WA
Sheridan Slope Stabilization	Sheridan	WY
Sheridan-Buffalo Slide Repair	Sheridan	WY