April 4, 2023

Addendum 1

Notice to all holders of Bid Documents for Chamberlain Street Retaining Wall Reconstruction Project – BGS# 3172

The following Changes are incorporated into the contract documents for Chamberlain Street Retaining Wall Reconstruction Project – BGS# 3172.

Addendum 1

- 1. The geotechnical report noted on the contract drawings is provided on the following sheets.
- The plan drawings from the previous Chamberlain St Parking Lot Improvements Project, BGS #3172 by SJR Engineering and noted on the contract documents are provided on the following sheets.
- 3. The boundary survey date 7/14/2022 noted on the contract drawings is provided on the following sheets.
- 5. In pen and ink, cross out the Bid Tab Table on page 9.
- 6. Add the following in pen and ink as a new paragraph at the end of page 50. "The quantities provided on the plans and removed from page 9 of the Project Bid Book are for informational purposes only. Payment for work shall be based on the base bid amount in the Contractor Bid Form (Section 00 41 13), and the Contract Agreement Section 00 52 13 Article 1. This shall supersede the method of measurement and the basis of payment for each individual item noted in the MaineDOT Standard Specifications and the project specific Special Provisions included in the bid book. Payment will not be made based upon the provided quantities and associated unit prices."
- On the first page of the Project Bid Book In pen and ink below prepared by, add "March 9th, 2023".

Please take the following question and answers from the pre-bid into account when developing your bid.

- Question A Contractor asked if the existing raised bed planters can be replaced with new
 planters as they appear to be readily available kits? Answer As some of the existing planters
 have deteriorated to a point where it is unlikely that they can be removed and reset it is
 acceptable to replace the planters with new materials matching/similar to the existing materials
 and dimensions of the existing.
- Question A contractor asked if the tree and stump to the east of the tree and stump to be removed and noted as "contractor to protect existing tree (typ.)" on plan sheet 3 as it was felt the root system of the tree would be significantly impacted by construction activities? Answer – The additional tree can be removed if contractor's proposed excavation will significantly impact the root system of the tree.

- 3. Question A contractor asked if the existing gate in the composite stockade security fence on Chamberlain Street is the only access to the project site? Answer – The gate and through the section of the composite stockade security fence to be removed and reset and behind the temporary security fence shall be the contractor's only access to the back side of the existing and proposed retaining wall.
- 4. Question A contractor asked if there was a stone wall behind the existing cast in place concrete wall and if so, how would the removal of the wall be paid for? Answer It is unknown if there is a stone wall behind the existing concrete wall as record drawings for the existing wall are not available. Based upon the boring and probes conducted at the site, a stone wall was not encountered during the subsurface exploration program. If there is a change in subsurface conditions during the project, it will be addressed accordingly during construction.
- 5. **Question** A contractor asked who installed the existing PVC Stockade Fence? **Answer** Pine Tree Fencing as noted on Plan Sheet 2, note 27.
- 6. **Question** A contractor asked if there is a geotechnical report for the project? **Answer** The project geotechnical report was provided in Addendum 1.
- Question The precast supplier asked if a curved block layout could be used instead of the proposed 45 degree block at station 0+39 of the wall? Answer – A curved block layout may be used in place of the 45 degree block shown on the plans. The maximum radius at the base of the wall shall be 20 feet.
- 8. Question The precast supplier asked if top blocks could be substituted for the dual faced blocks called for on plan sheet 4 as the dual faced blocks will require an additional cap block to cover the lifting points for the dual faced block? Answer The dual faced blocks shall be replaced with top blocks. In pen and ink change note 4 on sheet 4 to state "The top course of blocks for all locations shall be top blocks" and the "Dual face block" in the typical wall section to "Top Block".

Please remember to acknowledge this addendum and date April 4, 2023 in the Contractor Bid Form (Section 00 41 13).



REPORT

21-0679.2

February 7, 2022

Explorations and Geotechnical Engineering Services

Retaining Wall Replacement Chamberlain Street Augusta, Maine

Prepared For: Kleinfelder Attention: Keith Wood, P.E. 16 Commerce Drive, Suite 2 Augusta, ME 04330

Prepared By: S. W. Cole Engineering, Inc. 26 Coles Crossing Drive Sidney, ME 04330 T: 207.626.0600

www.swcole.com | info@swcole.com

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21-0679.2

February 7, 2022

Kleinfelder Attention: Keith Wood, P.E. 16 Commerce Drive, Suite 2 Augusta, ME 04330

Subject: Explorations and Geotechnical Engineering Services Retaining Wall Replacement Chamberlain Street and Higgins Street Augusta, Maine

Dear Keith:

In accordance with our Proposal, dated November 16, 2021, we have performed subsurface explorations for the subject project. This report summarizes our findings and geotechnical recommendations, and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information at the site in order to develop geotechnical recommendations relative to foundations and earthwork associated with the proposed construction. Our scope of services included a test boring and auger probe explorations, soils laboratory testing, a geotechnical analysis of the subsurface findings, and preparation of this report.

1.2 Site and Proposed Construction

The site is the existing retaining wall located on southern boundary of the Chamberlain Street and Higgins Street parking area in Augusta, Maine. The existing retaining wall consists of a \pm 8-to-10-foot tall, cast-in-place (CIP) concrete retaining wall supporting a \pm 2-foot rise in grade up to a relatively flat lawn area. The retaining wall has an overall length of about 140 feet. We understand the existing CIP wall is failing and will be



replaced. We understand replacement options include replacing the wall in its current location or constructing a new wall in front of the existing wall. We understand the replacement wall type has not been selected however, CIP and Segmental-block retaining walls are be considered.

Existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

One test boring (B-101) and a series of auger probes were made at the site on January 6, 2022, by S. W. Cole Explorations, LLC. The exploration locations were selected and established in the field by S. W. Cole Engineering, Inc. (S.W.COLE) using measurements from existing site features. The auger probes were drilled at about 6-inch intervals beginning about 1-foot from the wall face to investigate the retaining wall footing geometry. The approximate exploration locations are shown on the "Exploration Location Plan" attached in Appendix B. A log of the test boring and a key to the notes and symbols used on the log are attached in Appendix C.

2.2 Field Testing

The test boring was drilled using hollow-stem augers and the auger probes were drilled using solid-stem augers. The soils in the test boring were sampled at 2-to-5-foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. A Vane Shear Test (VST) was performed where softer cohesive soils were encountered. SPT blow counts and VST results are shown on the logs.

2.3 Laboratory Testing

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. Atterberg Limits and moisture content test results are noted on the logs. The results of two gradation tests are attached in Appendix D.



3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

<u>Test Boring</u>: Test boring B-101 was made behind the existing retaining wall and encountered a soils profile generally consisting of topsoil overlying medium dense to dense, silty gravelly sand (fill) to a depth of about 14 feet overlying loose, silty sand with some gravel (fill) to about 20 feet. Below the fill, very loose silty sand with organics (leaf debris) and debris (coal, ash) to a depth of about 21 feet overlying loose, silty sand to about 25 feet overlying medium stiff, silty clay with sandy silt partings to about 36.5 feet overlying granular soils (probable glacial till). The test boring was terminated in the granular soils at a depth of about 38.5 feet.

Refer to the attached boring log for more detailed subsurface information.

<u>Auger Probes</u>: A series of shallow auger probes were made at the toe of wall to interpret the geometry at the existing retaining wall footing.

Exploration No.	Location	Refusal Depth (feet)
P-101	20" from face of wall	4.2
P-102	37" from face of wall	No Refusal
P-103	28" from face of wall	4.3
P-104	33" from face of wall	4.2
P-105	28" from face of wall	4.0
P-106	33" from face of wall	4.1
P-107	34" from face of wall	No Refusal

Based on our auger probe data, we interpret the existing retaining wall footing is located about 4 feet below existing ground surface and extends approximately 2.7 feet from the face of the wall.

3.2 Groundwater

The soils encountered at the test borings were moist to wet from the ground surface. Saturated soils were encountered at a depth of about 18 feet at the time of exploration. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.



4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings, the proposed retaining wall construction appears feasible from a geotechnical standpoint. The principle geotechnical considerations include:

- Undocumented and uncontrolled fills extending to a depth of about 21 feet (interpreted as approximately 6 feet below the wall footing) were encountered behind the existing wall. The fills were generally medium dense to a depth of about 14 feet overlying loose to very loose silty sand with a layer of organics and debris. The fills were underlain by loose silty sands and compressible, medium stiff silty clay.
- Based on the loose to very loose silty sands, presence of organics, and silty clays we recommend the proposed retaining wall consist of a Segmental-block Retaining Wall (SRW) that is more tolerant to potential settlement. Additionally, we recommend the retaining wall be replaced in its current location.
- We recommend the existing CIP retaining wall be removed and the overexcavated area be backfilled with compacted Gravel Borrow up to within 2 feet for finish grades at the toe of wall.
- Following removal of the existing retaining wall, a SRW bearing on properly prepared subgrades appear suitable. We recommend the SRW be embedded at least 1 foot and be founded on a 12-inch layer of Crushed Stone wrapped in a non-woven geotextile fabric underlain by compacted Gravel Borrow. We anticipate the SRW will have reinforcement geotextile for internal stability.
- We recommend the retaining wall be backfilled with a minimum 1-foot (horizontal measure) of Crushed Stone directly behind the wall to reduce hydrostatic pressure. An underdrain pipe with gravity outlet should be installed within the Crushed Stone layer below the retaining wall.
- Subgrades across the site will consist of moisture-sensitive silty sands soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer, and Fall.



• Imported Gravel Borrow and Crushed Stone will be needed for construction. The existing fill within the anticipated excavation area are unsuitable for reuse as below the proposed retaining wall or as backfill.

4.2 Site and Subgrade Preparation

We recommend site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. Surficial organics, roots and topsoil and the existing retaining wall should be completely removed from the area of proposed construction. As much vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

Following removal of the existing CIP wall, the subgrade soils should be densified prior to backfilling. Soft or pumping soils should be over-excavated. The over-excavated area should be backfilled with compacted Gravel Borrow up to the bottom of the proposed SRW Crushed Stone leveling pad.

In general, subgrades for the proposed retaining wall will consist of silty sand with varying amounts of gravel.

4.3 Excavation and Dewatering

Excavation work will generally encounter fills consisting of silty sand with varying amounts of gravel. Care must be exercised during construction to limit disturbance of the bearing soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall.

Sumping and pumping dewatering techniques should be adequate to control groundwater in excavations. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities, and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

4.4 Retaining Wall

We recommend the existing CIP retaining wall be replaced with a SRW in its current location to reduce potential for settlement. We understand the proposed wall will be



approximately 150 feet in length with retained a retained height of about 10 feet and tapering down on the western end of the alignment. We recommend the existing retaining wall be completely removed and the over-excavated area backfilled with compacted Gravel Borrow up to about 1 foot from the bottom of the proposed wall.

We recommend the proposed wall be founded on at least 12 inches of compacted Crushed Stone wrapped in a non-woven geotextile fabric, such as Mirafi 160N, bearing on compacted Gravel Borrow. For design of SRW, such as Redi-Rock, we recommend the following geotechnical parameters for design:

Geotechnical Parameters for Segmental Retaining Wall									
Wall Segment	Friction Angle	Cohesion	Unit Weight						
Retained Backfill (modified Gravel Borrow)	34 degrees	0 psf	125 pcf						
Foundation (Gravel Borrow)	34 degrees	0 psf	125 pcf						
Net Allowable Soil Bearing Capacity	1.5 ksf (properly prepared subgrade)								
Anticipated Settlement	1-inch or less (post construction)								
Seismic Site Class (IBC 2015)	Ë								

** Modified Gravel Borrow consists of MaineDOT Gravel Borrow screened over the 3-inch sieve.

Design of the retaining wall and evaluation of base sliding, overturning, internal stability and global stability of the wall are the responsibility of the wall designer. The wall designer must account for construction loads and future live load conditions.

We recommend the retaining wall be backfilled with a vertical column of Crushed Stone directly behind the face of the wall for drainage. An underdrain should be installed within the Crushed Stone layer below the segmental blocks.

4.5 Backfill and Compaction

The fill soils should not be re-used below the retaining wall or as backfill. We recommend the following fill and backfill materials in accordance with the 2018 Maine Department of Transportation (MaineDOT) Standard Specification:

<u>Gravel Borrow</u>: Fill to raise grades in over-excavated areas below the retaining wall should meet the requirements of 2020 MaineDOT Standard Specification 703.20 Gravel Borrow.



<u>Modified Gravel Borrow</u>: Backfill for the retaining wall should meet the requirements of 2020 MaineDOT Standard Specification 703.20 Gravel Borrow, except the backfill material shall only contain material passing the 3-inch sieve.

<u>Crushed Stone</u>: Crushed Stone, used for the vertical drain behind the wall, should meet the requirements of 2020 MaineDOT Standard Specification 703.22 Type C Underdrain Aggregate.

<u>Placement and Compaction</u>: Fill and backfill should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should not exceed 12 inches. Lift thickness within 3 feet of the retaining wall should be limited to that which can be thoroughly compacted using small, hand operated or walk-behind compaction equipment to avoid over-compaction. We recommend wall backfill materials be compacted to 95 percent of its maximum dry density as determined by ASTM D-1557. We recommend Crushed Stone be compacted with 3 to 5 passes of a vibratory plate compactor having a static weight of at least 500 pounds.

4.6 Weather Considerations

Construction activity should be limited during wet and freezing weather and the site soils may require drying before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades and backfill soils must be protected during freezing conditions. Fill must not be placed on frozen soil; and once placed, the soil must be protected from freezing.

4.7 Design Review and Construction Testing

S.W.COLE should be retained to review the construction documents to determine that our geotechnical recommendations have been properly interpreted and implemented.

S.W.COLE should also be engaged to observe preparation of bearing surfaces as well as to provide testing of soils during construction to observe compliance with the design concepts, plans, and specifications.



5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.

Michael A. St. Pierre, P.E. Senior Geotechnical Engineer

MAS:prw



APPENDIX A

Limitations

This report has been prepared for the exclusive use of Kleinfelder for specific application to the proposed Retaining Wall Replacement project on Chamberlain Street and Higgins Street in Augusta, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

Figures





LEGEND

 \odot

APPROXIMATE BORING LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN PREPARED FROM ORTHOIMAGERY ENTITLED "ORTHOREGIONAL2018," PROVIDED BY THE MAINE GEOLIBRARY.

2. THE EXPLORATIONS WERE LOCATED IN THE FIELD BY MEASUREMENTS FROM EXISTING SITE FEATURES.

3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.

4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

	0	15	30	(60 	(90 Feet		
	S.V ENG	W.C Inee	COL RING, IN	E NC.					
KLEINFELDER EXPLORATION LOCATION PLAN									
RETAINING WALL REPLACEMENT CHAMBERLAIN STREET AUGUSTA, MAINE									
Job No Date:		21-067 02/07/	79.2 2022	S	Scale Sheet	1" 1	= 30'		

APPENDIX C

Exploration Logs and Key

		S	W IGINE	E E	CC ERIN)LE _{g,ing}		LIENT: <u>Kleir</u> ROJECT: <u>C</u> DCATION: (nfelde hamt Cham	BORING LOG r erlain Street Retaining Wall berlain Street, Augusta, Maine	BORING SHEET: PROJEC DATE ST DATE FI	NO.: _ T NO [ART: _ NISH:	B-101 1 of 2 21-0679.2 1/6/2022 1/6/2022
Drillin LOCA DRILL RIG T HAMM HAMM WATE	ng Infoi TION: <u>S</u> ING CO.: YPE: <u>T</u> IER TYP IER EFFI R LEVEL	rmatio See Ex : <u>S. V</u> rack M E: Au CIENC DEPT	on_ ploration I V. Cole Ex ounted Di- tomatic CY FACTO THS (ft):	_oc xplc edr DR: S	ation Pla prations, ich D-50 0.91 oils wet	an E LLC C J J J H H Below ±14	ELEVATIC DRILLER: AUGER ID HAMMER HAMMER HAMMER 4', saturat	DN (FT):	:	TOTAL DEPTH (FT): 38.6 LC DRILLING METHOD: Hollow Stem / /8 in SAMPLER: Standard Split-Spoon 0 CASING ID/OD: N/A /N/A CC	DGGED BY Auger DRE BARR	: <u>Micha</u> EL: <u>N//</u>	ael St. Pierre
KEY TO AND S	O NOTES YMBOLS:	<u>Wate</u> ⊻ At ¥ At ¥ Af	e <u>r Level</u> time of Dri Completio ter Drilling	lling n of	g Drilling	D = Split S U = Thin V R = Rock (V = Field \	Spoon Sam Valled Tube Core Samp /ane Shear	ple Pen. = e Sample Rec. = le bpf = mpf =	= Pene = Reco Blows Minut	$ \begin{array}{llllllllllllllllllllllllllllllllllll$	ld Vane Shea confined Con tion Angle (E ot Applicable	ar Strengt pressive stimated	h, kips/sq.ft. Strength, kips/sq.f)
Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	SAMPL Depth (ft)	E INFOR	RMATIOI Blow Count or RQD	N Field / Lab Test Data	Graphic Log	Sample Description & Classification	H ₂ 0 Depth		Remarks
	-		1D	X	1-3	24/10	10-13- 14-9			0.4 ⁻ ¬ <u>Topsoil</u> Medium dense to dense, brown, moist, Silty Gravelly SAND, (FILL)			
	-		2D	M	3-5	24/20	8-11- 20-22						
	- 5 -		3D		5-7	24/21	24-30- 28-35	ID 13733A w =4.8 %					
	-		4D	X	8-10	24/12	21-24- 19-17						
	- 10 -		5D	$\left \right\rangle$	10-12	24/8	16-14- 15-8						
	-		6D	M	12-14	24/0	15-6- 11-7			No recovery			
	- - 15		7D	M	14-16	24/10	3-4-2-2	ID 13734A w =9.9 %		Loose, brown, wet, Silty SAND, some fine gravel, (FILL)			
	-		8D	Ø	16-18	24/22	2-2-1-1						
	- 20 - 20		9D	X	20-22	24/20	1-1-1-1			20.0 Very loose, dark brown, wet, Silty SAND wit 20.7 organics (leaf debris) and debris (coal, ash) (Probable Relic Ground Surface / FILL) Loose, brown, wet to saturated, Silty SAND with rootlets	h ,		
Stratific bounda be grad	ation lines ry betwee lual. Wate	s repres n soil ty r level r	ent approxi pes, transit eadings hav	mat ions	e s may been					(Continued Next Page)			
Fluctua other fa measur	t times an tions of gr ctors than rements w	d under oundwa those p ere ma	conditions iter may oc present at tl de.	sta cur he ti	ited. due to ime						BORING	NO.:	B-101

	E								BORING LOG				ring n Eet:	10.: _ _	B-101 2 of 2
	E	=	S	.W)LL	۲	CLIENT: Klein	felde	er	PR		NO.	21-0679.2
			ΕN	GIN	ΕE	ERIN	G,ING	2.	LOCATION: C	ham	berlain Street, Augusta, Maine	DA	TE FIN	ISH:	1/6/2022
E	Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	SAMPL Depth (ft)	E INFO	RMAT Blov Cour or	ION w nt Field / Lab Test Data	iraphic Log	Sample Description & Classification		H₂0 Depth	-	Remarks
		-		10D	X	25-27	24/24	RQE WOF WOF WOF WOF	D R- R- H- H W_=37.7 % W_=42 W_P=18	0	25.0 Medium stiff, gray, saturated, Silty CLAY wi occasional fine sandy silt partings	th			
	-	- 30 - 30 		1V	Ø	30.6- 30.9	4/0		S _v =0.74/0.37ksf		ROD PROBE <u>Depth Resistance Interpreted Soil Type</u> 31-36.6 HYD Silty Clay	2			
_	-	-									36.6 ROD PROBE <u>Depth</u> <u>Resistance Interpreted Soil Type</u> 36.6-37.6 45 blows Granular Soil <u>37.6-38.6 47 blows</u> Bottom of Exploration at 38.6 feet	<u>e</u>			
2/4/22															
VCE TEMPLATE.GDT															
L 21-0679.2.GPJ SV	Stratifics	ation lines	S represe	ent approx	kima	te									
BORING / WEL	oundar e gradu nade at luctuati ther fac neasure	y betwee ual. Wate times an ions of gr ctors than ements w	n soil ty r level re d under oundwa those p vere mac	pes, trans eadings ha condition ter may o present at de.	ition ave b s sta ccur the t	s may been ated. due to time						во	RINGN	10.:	B-101

KEY TO NOTES & SYMBOLS Test Boring and Test Pit Explorations

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

- w water content, percent (dry weight basis)
- qu unconfined compressive strength, kips/sq. ft. laboratory test
- S_v field vane shear strength, kips/sq. ft.
- L_v lab vane shear strength, kips/sq. ft.
- q_p unconfined compressive strength, kips/sq. ft. pocket penetrometer test
- O organic content, percent (dry weight basis)
- W_L liquid limit Atterberg test
- W_P plastic limit Atterberg test
- WOH advance by weight of hammer
- WOM advance by weight of man
- WOR advance by weight of rods
- HYD advance by force of hydraulic piston on drill
- RQD Rock Quality Designator an index of the quality of a rock mass.
- γ_T total soil weight
- γ_{B} buoyant soil weight

Description of Proportions:

Description of Stratified Soils

		Parting:	0 to 1/16" thickness
Trace:	0 to 5%	Seam:	1/16" to 1/2" thickness
Some:	5 to 12%	Layer:	1⁄2" to 12" thickness
"Y"	12 to 35%	Varved:	Alternating seams or layers
And	35+%	Occasional:	one or less per foot of thickness
With	Undifferentiated	Frequent:	more than one per foot of thickness

REFUSAL: <u>Test Boring Explorations</u> - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: <u>Test Pit Explorations</u> - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

APPENDIX D

Laboratory Test Results



Report of Gradation

ASTM C-117 & C-136

		STANDARD		SSING (%)		
Material Source	B-101, 3D, 5-7 FT			Tested By	ERNEST FORGIONE JR	
Exploration	B-101			Date Completed	1/19/2022	
Client	KLEINFELDER, INC.			Date Received	1/14/2022	
Olient	RECONSTRUCTION/	REPLACEMENT - GEO	Lab ID	13733A		
Proiect Name	AUGUSTA ME - PRO	POSED RETAINING W	Project Number	21-0679 2		

DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150	C 11	400	
150 mm	0	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	96	
19.0 mm	3/4"	87	
12.5 mm	1/2"	81	
9.5 mm	3/8"	78	
6.3 mm	1/4"	72	
4.75 mm	No. 4	67	32.8% Gravel
2.00 mm	No. 10	52	
850 um	No. 20	38	
425 um	No. 40	31	48.1% Sand
250 um	No. 60	27	
150 um	No. 100	24	
75 um	No. 200	19.1	19.1% Fines





Report of Gradation

ASTM C-117 & C-136

		STANDARD		 	
Material Source	B-101, 7D, 14-16 F I			Tested By	BRANDON CHAPUT
Material Course				Date Completed	1/19/2022
Exploration	B-101			Date Received	1/14/2022
Client	KLEINFELDER, INC.			Data Reseived	4/44/0000
	RECONSTRUCTION/	REPLACEMENT - GEO	TECHNICAL	Lab ID	13734A
Project Name	AUGUSTA ME - PRO	POSED RETAINING W	Project Number	21-0679.2	

<u>STANDARD</u> DESIGNATION (mm/µm)	<u>SIEVE SIZE</u>	AMOUNT PASSING (%	1
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	98	
6.3 mm	1/4"	96	
4.75 mm	No. 4	93	6.7% Gravel
2.00 mm	No. 10	87	
850 um	No. 20	79	
425 um	No. 40	69	63.2% Sand
250 um	No. 60	59	
150 um	No. 100	45	
75 um	No. 200	30.1	30.1% Fines









	LEGEND
	 #5 REBAR WITH CAP (NCS 2080), OR AS NOTED, SET ON 7/12/22 FOUND IRON (SIZE & TYPE AS NOTED) UTILITY POLE (NUMBER AS NOTED) GUY WIRE ANCHOR FOUND DECIDUOUS TREE (SIZE AS NOTED) FOUND CONIFEROUS TREE (SIZE AS NOTED)
GRID NORTH	TREE LINE (APPROXIMATE) BOUNDARY LINE EASEMENT LINE EDGE OF GRAVEL EDGE OF PAVEMENT RIGHT-OF-WAY LINE ABUTTER LINE OHU
	[123.45'] IAX MAP-LOT BRACKETS DENOTE RECORD DATA FROM PLAN REFERENCE 4.a.
	NOTES
S REBAR HELD FOR LINE) TAIL A N.T.S.	 RECORD, UMAR DS. THE PARCEL SURVELD IS SINE OF WAIRE AS DESCRIED IN THE FOLLOW DREEDS. 572/185 FROM HARRIET BLAINE BEALE, DATED MARCH 10, 1919. 577/474 FROM FRANCES MORSE, DATED JULY 29, 1910. 577/474 FROM FRANCES MORSE, DATED JULY 29, 1910. 577/371 FROM HENRY T. CLARK, DATED JULY 29, 1910. 575/486 FROM ELIZABETH N. WHEELER, DATED JULY 29, 1919. 1624/142 FROM MAINE TEACHERS ASSOCIATION, DATED MARCH 29, 1973. 1140/351 FROM WALTER M. SANBORN AND GRACE J. ROLLINS, EXECUTORS AND TRUSTES UNDER THE WILL OF BERTHA N. CROCKER, DATED DECEMBER 24, 1958. 1247/201 FROM W.W. WEBSTER, DATED NOVEMBER 27, 1961. 1071AL LOT AREA IS: 3.64 Ac. THE PARCEL SURVEYED IS IDENTIFIED ON THE CITY OF AUGUSTA TAX ASSESSOR'S MAP 33, PARCELS 111 AND 119. THE BEARINGS SHOWN ON THIS PLAN ARE BASED ON MAINE COORDINATE SYSTEM OF 1983, WEST ZONE, GRID NORTH. PLAN REFERENCES: C. 'BOUNDARY SURVEYO FO THE GANNETT HOUSE FOR THE STATE OF MAINE" BY MORIN LAND SURVEYING, DATED APRIL 21, 2014, UNRECORDED. D. STATE OF MAINE D.O.T. RIGHT-OF-WAY MAP STATE AID HIGHWAY NO.14, AUGUSTA, FEDERAL AID PROJUCTI NO. M-1150(1), D.O.T. FLE. NO. 6-275, DATED JUNE 1986, SHEET 2 OF 4. G. STATE OF MAINE D.O.T. RIGHT-OF-WAY MAP STATE AID HIGHWAY NO.14, AUGUSTA, FEDERAL AID PROJUCTI NO. M-1150(1), D.O.T. FLE. NO. 6-275, DATED JUNE 1986, SHEET 2 OF 4. MAINE STATE HIGHWAY COMMISSION RIGHT-OF-WAY MAP STATE AID HIGHWAY NO.14, AUGUSTA, FEDERAL AID PROJUCTI NO. M-1150(1), D.O.T. FLE. NO. 6-275, DATED JUNE 1986, SHEET 2 OF 4. MAINE STATE HIGHWAY COMMISSION RIGHT-OF-WAY MAP STATE AID HIGHWAY NO.14, AUGUSTA, FEDERAL AID PROVIDET NO. AUGUSTA REFERENCE 4.0. SHARE T 3 OF 4. MAINE STATE HIGHWAY COMMISSION AUGUSTA, HIGHWAY OFFICE BUILDING STRE, SHAC, FILE NO. 6-151, DATED JUNE, 1986, SHEET 3 OF 4. MAINE STATE HIGHWAY COM
0.09'	 THE UTILITIES SHOWN ON THIS PLAN WERE FROM FIELD OBSERVATION ONLY. THERE MAY BE OTHER UTILITIES EXISTING THAT ARE NOT SHOWN. CONTACT DIG-SAFE (888)DIG-SAFE PRIOR TO ANY EXCAVATION WORK.
	Revision: By: Date: Change:
>	PROJECT: 42643 DRAWING NAME: 42643.dwg
FAIL B	ISSUED: MAY 5, 2022 SCALE: 1"=30' FB # 430 DRAWN BY: ASF
<u>V.T.S.</u>	FIELDED BY: ASF/TFM/CJB FIELD DATE: 4/6/2022 CHECKED BY: DMM / TFM Drawing Name and Location: BOUNDARY SURVEY
	Owner: STATE OF MAINE STATE HOUSE AUGUSTA MAINE
	Prepared For: BUREAU OF GENERAL SERVICES
5 REBAR W/CAP PLS 2157" .2' A.G. IELD FOR LINE)	SURVEYING • ENGINEERING • LAND PLANNING Northeast Civil Solutions Incorporated 381 PAYNE ROAD, SCARBOROUGH, MAINE 04074 tel 207.883.1000 fax e-mail / website info@northeastcivilsolutions.com www.northeastcivilsolutions.com
<u>FAIL</u> <u>C</u> N.T.S.	STAMP AND SIGNATURE
	TROY F. McDONALD MAINE PROFESSIONAL LAND SURVEYOR No. 2080

00 41 13 Contractor Bid Form

	Chamberlain Street Parking Retaining Wall	3172
Bid Form submitted by	: email only to email address below	
Bid Administrator: Jill Instasi Bureau of Gene 111 Sewall Stre 77 State House Augusta, Maine	ral Services et, Cross State Office Building, 4th floor Station 04333-0077	BGS.Architect@Maine.gov
Bidder:		
Signature:		
Printed name and title:		
Company name:		
Mailing address:		
City, state, zip code:		
Phone number:		
Email address:		
State of incorporation, if a corporation:		
List of all partners, if a partnership:		

The Bidder agrees, if the Owner offers to award the contract, to provide any and all bonds and certificates of insurance, as well as Schedule of Values, Project Schedule, and List of Subcontractors and Suppliers if required by the Owner, and to sign the designated Construction Contract within twelve calendar days after the date of notification of such acceptance, except if the twelfth day falls on a State of Maine government holiday or other closure day, or a Saturday, or a Sunday, in which case the aforementioned documents must be received before 12:00 noon on the first available business day following the holiday, other closure day, Saturday, or Sunday.

As a guarantee thereof, the Bidder submits, together with this bid, a bid bond or other acceptable instrument as and if required by the Bid Documents.

00 41 13 Contractor Bid Form

1. The Bidder, having carefully examined the <u>Chamberlain Street Retaining Wall</u> Project Manual dated <u>March 9, 2023</u>, prepared by <u>Kleinfelder</u>, as well as Specifications, Drawings, and any Addenda, the form of contract, and the premises and conditions relating to the work, proposes to furnish all labor, equipment and materials necessary for and reasonably incidental to the construction and completion of this project for the **Base Bid** amount of:

		\$		<u>.00</u>
2.	All No ins	lowances are not included on this project. Allowances eert brief name of Allowance		\$ 0 <u>.00</u>
3.	Alt <i>No</i> An	ternate Bids <i>are not included</i> on this project. <i>Alternate Bids</i> y dollar amount line below that is left blank by the Bidder shall be	read as a bid of \$0.00 .	
	1	insert title of Alternate or "not used"	\$.00
	2	insert title of Alternate or "not used"	\$.00

- *4 insert title of Alternate or "not used"* <u>\$_____00</u>
- 4. Bid security *is required* on this project. If noted above as required, or if the Base Bid amount exceeds \$125,000.00, the Bidder shall include with this bid form a satisfactory Bid Bond (section 00 43 13) or a certified or cashier's check for 5% of the bid amount with this completed bid form submitted to the Owner.
- 5. Filed Sub-bids *are not required* on this project. If noted above as required, the Bidder shall include with this bid form a list of each Filed Sub-bidder selected by the Bidder on the form provided (section 00 41 13F).

3 insert title of Alternate or "not used"

\$

.00

Chamberlain Street Retaining Wall Reconstruction Project Mandatory Pre-Bid Meeting March 30, 2023 10:00 AM

Name	Title	Company	Email Address	Phone
Paul Beers	Sales	Precast of Maine	pbeers@precastofmaine.com	207-729-1628
Tom Linindell	Estimator/Project Manager	McGee Construction	tlinindell@mcgeeconstruction.com	207-212-8841
Ben Millett	Estimator	Aceto Earthworks	ben@acetoearthworks.com	207-705-4225
Zack Stevenson	President	C. H. Stevenson	tknell@chstevensoninc.com	207-685-3600
Stephen Turner	GM	Eastwood Construction	Eastwoodconstructioninc@gmail.com	207-989-2530
Keith Wood	Project Manager/EOR	Kleinfelder	kwood@kleinfelder.com	207-626-4905
Peggy Duval	Program Manager	Kleinfelder	pduval@kleinfelder.com	207-458-9755
Jill Instasi	Project Manager	BGS	Jill.Instasi@maine.gov	207-624-7341

Chamberlain Street Retaining Wall Reconstruction Project Mandatory Pre-Bid Meeting March 30, 2023 10:00 AM

Name	Title	Company	Email Address	Phone
1AL DERRES	SAKS	DALOST OF MAINS	PARTO TACCATTOF MASAL COM	729-1428
Tom Linindall	Estimator / Rouget Marine	McGm construction	Himingel lancom trinter	217-8841
Ben Millett	Estimater	Ar. to Earth price	her Quile peur lin pr K5. Um	207-705-4225
24de STAINAN	PROJE	C 14 STATIEN LAN	THAMING CHETCHENING	685-3600
Participan	DM	KICIN CORDON	Ddi un Densedon	458-970
Cit Shen I winter	Gh	E aution of continue	- 2. Augocal contractor	inco angil gon-2
-stephen recent	Gen	E-isteer Court	Eggine orton	OLDA DED.
				189-2530
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