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Chosen Valley Testing

Proposal for Geotechnical Engineering & Special Inspections

LaCrosse Center Expansion and Renovation
La Crosse, Wisconsin

Prepared for:

The City of LaCrosse
c/o Kevin Bills, AIA, LEED AP BD+ C
I&S Group

April 16, 2019

Chosen Valley Testing, Inc.

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City of La Crosse
C/O: Kevin Bills AIA, LEED AP BD+C
Project Architect
I&S Group
Kevin.Bills@is-grp.com

April 16, 2019

Re: Proposal for Design Phase Geotechnical Evaluation & Special Inspections
Proposed La Crosse Center Expansion & Renovation
300 Harborview Plaza
La Crosse, Wisconsin
CVT Proposal Number: 12284.17.WIL

Mr. Bills:

As requested, we are providing this proposal for geotechnical engineering services for the proposed La Crosse Center Expansion and Renovation, as well as associated special inspection services to help confirm conformance of the construction to the plans and specifications. CVT brings vast, recent geotechnical experience from a number of projects very close to the La Crosse Center. Our certified laboratory and experienced and certified field personnel have a proven track record for providing meaningful and timely results and observations, and are backed up by engineering personnel with having individual experience spanning more than three decades in construction of large urban structures such as this. Coupled with the stability of our staff, CVT provides that rare combination of broad knowledge and local experience desirable for the smooth delivery of such an important project.

Firm Overview

Chosen Valley Testing Inc. was founded in 1995 by Colby Verdegan, PE, with an experience base that included inspection of high capacity caissons, high strength and post-tensioned concrete, structural steel inspection, and fire proofing and water-proofing on 30 to 50 story building in Minneapolis. That experience facilitated geotechnical engineering design work in sequent years in St. Paul for such projects as a major addition to the St. Paul Civic Center and Ramp, the Minnesota History Center, the final interstate highway joining I-35-E and I-35E South in downtown St. Paul... and then later work on office buildings, parking ramps, judicial buildings, and many other structures in Rochester and LaCrosse, largely involving present CVT staff. This includes a large number of office buildings along the Mississippi River in La Crosse.

Services for this project would be provided by the CVT La Crosse office. The office was established in 2000 and holds accreditations through AASHTO, Army Corps of Engineers and Wisconsin DOT. The LaCrosse team has sister offices in Rochester, St. Paul and St. Cloud, Minnesota, as well as Mason City and Cedar Falls, Iowa.

Project Overview and Relevant Project Experience

CVT has on-going continuous experience with the technical and personnel demands of this type of project. Engineering and construction phase services have been provided on a number of heavily loaded structures in very close proximity to this project including Logistics Health I, II & III, Home2Suites, Riverside Municipal

Parking Ramp, Addition to the Riverside Municipal Parking Ramp, The Transit Center, Weber Center for the Performing Arts, as well as the same services for other nearby developments in La Crosse (see attached map). The foundations for these projects have all used either high capacity footings (up to 8,000 psf), geopiers, or vibro-floatation to support columns loads of up to 1,500 kips. The intention of the work scope is to include consideration of other alternatives as well as piling.

The following is a short list of relevant project experience.

Relevant Project Experience

Projects – La Crosse, Wisconsin

Riverside Municipal Parking Ramp (2006), Pine Street Parking Ramp (2016) and Belle Square (2014) - Soil subgrade observation/evaluation, compaction testing, concrete testing, post-tension inspection (tendon layout observations and post-tensioning observations/documentation). These projects included or are entirely post-tensioned structures. Post tensioned observations during layout and tensioning were provided by two CVT personnel having Certifications in post-tension inspections, and concrete for tensioning was evaluated using field cures. Foundations for these structures included high-soil soil bearing capacities.

Riverside Center I (2005), II (2007), & III (2010), Weber Center for the Performing Arts (2011) - Geopier installation observation, soil subgrade observation/evaluation, compaction testing, concrete testing, fireproofing, post-tension inspection (Riverside Center III), structural steel inspection. Ground improvements with Rammed Aggregate Piers (Geopiers) were used for these projects and CVT personnel were present to observe placement of the piers.

UW-La Crosse Student Center (2014), UW-La Crosse Science Building (2016) - Soil subgrade observation/evaluation, compaction testing, concrete testing. Foundations for these structures included high-soil soil bearing capacities

The schedules for some of the projects in this listing overlapped to a large extent, necessitating personnel from multiple offices, if needed.

Project: Al-Corn Ethanol Plant Expansion

Date: 2017 to present Location: Claremont, Minnesota.
Scope: Driven CIP Piling observations, compaction testing, concrete testing and reinforcement observations, masonry observations and testing, structural steel inspection.
Relevance: This is another large project, with multiple services often being required at the same time, necessitating personnel from multiple offices, if needed – such as during the 5 weeks of pile driving operation and round-the-clock concrete testing and observations during slip-forming of the concrete silo structures.

Project: Mayo Clinic Richard Jacobson Proton Building, Rochester, Minnesota

Date: 2012 through 2014 Location: Rochester, Minnesota.
Scope: Rock probes, anchor bolt testing, compaction testing, concrete testing and reinforcement observations, concrete temperature monitoring, water-proofing inspection, masonry observations and testing, structural steel inspection, fire-proofing.
Relevance: This project included high capacity foundations. The post-tensioned slab concrete required monitoring during curing, and the Jacobsen Building required specialized temperature monitoring over several weeks due to the extremely large mass of the concrete pours. Also, large projects can require multiple personnel – and the Jacobsen site required as many as 8 CVT field technicians to cover the largest pour (5,000 yards of concrete).

Geotechnical Exploration and Analysis

Key Personnel

Colby T. Verdegan, PE, would be our principle engineer for the project, and would be responsible for all technical and administrative decisions. Mr. Verdegan has over 35 years of experience and would be available as needed on site or over the phone. Fred Schuster, PE and Devin Ehler, PE would be the designated project managers. Mr. Schuster is the branch engineer for LaCrosse would direct most of the field data collection services. Devin Ehler, PE, would have primary responsibility as regards deep foundation evaluation and alternatives.

Geotechnical Scope

Exploration: The RFP indicated a work scope to consist of a total of 10 borings for the proposed building and 4 additional borings for infiltration requirements. Three of the borings are to be taken within the existing building, before demolition using a CPT. Considering the scale of the facility, we are of the opinion that the planned exploration is reasonable and adequate.

Using the layout provide, we propose a mixture of deep and shallow CPT and Standard Penetration Test Borings, as shown on the marked up boring location plan attached to this proposal. As shown on the attachment, the recommended scope includes:

- **2 x 100 ft Penetration test borings**
- **4 x 30 ft Penetration test borings**
- **2 x 140 ft CPT borings**
- **2 x 30 ft CPT borings**
- **4 x 20 ft Penetration Test borings, continuously sampled, for infiltration**

The deep CPT borings are intended to provide added depth and extra flexibility in exploring a variety of deep foundation options. All of the borings would be drilled to their planned depths or to auger refusal. If excessively soft or organic soils were encountered, the borings would be extended to suitable bearing materials. The borings would be grouted upon completion.

The penetration test borings will be sampled in accordance with the American Society for Testing and Materials (ASTM) Method of Test D1586 and D1587 procedures. CPT_u soundings will be performed in accordance with ASTM D3441-12 procedures. A 10 square centimeter cone with a maximum point capacity of 100 MPa will be used to perform the soundings. Observed values of point resistance, side friction, pore pressure (U_2 position), and tilt angle will be recorded continuously throughout the length of the soundings.

Exploration Alternatives

Unit Costs: The RFP included reference to scope alternatives, including unit costs per boring. Our experience is that variations are much more likely to occur in the upper profile and we have included unit costs applicable to the 30-foot SPT and CPT borings.

CPT vs SPT: The base includes task items which can only be fulfilled using a CPT exploratory drill. Despite the cost of CPT, it can provide deeper information rather quickly – even with very limited head room inside a building - and that (in our opinion) warrants deeper exploration if the method is required. The above being said, SPT borings are still the dominant exploration method and geotechnical analysis can be adequately completed without CPT data. If the CPT requirement were eliminated and more standardized SPT procedures were used at all locations, we would suggest an alternative scope which would result in 4 SPT borings to 100 feet in the building foot print and 30-foot SPT borings at all other building locations.

For this scenario, the borings inside the existing building would all be drilled to 30 feet using an SPT geoprobe equipped with an auto-hammer. Illustrations showing the basic and alternative scopes are attached to this proposal.

Pressuremeter Testing: Pressuremeter testing is often done on projects such as this. The general data has accumulated by been very similar, to the extent that we do not professionally believe there will be significant benefits to getting additional pressure meter data unless something is encountered which is markedly different than expected. We have included an alternative costs for obtaining pressuremeter meter data, in that event.

Environmental Screening: As per a prior request, CVT can provide an on-site environmental specialist during drilling operations to screen soils for organic vapors using a photo-ionization detector (PID). The PID screens soils for organic vapors in the parts per million range. Our on-site environmental specialist will also screen soils using olfactory means for signs of metals and/or foundry waste.

CVT personnel will note any signs of petroleum odors, petroleum staining, and PID readings on the geotechnical boring logs. If the soils appear to be unsuitable for geotechnical purposes we will discuss laboratory samples for landfill permitting with you prior to submitting any samples to the laboratory.

Geotechnical Laboratory Testing: The samples would be reviewed by a geotechnical engineer. Laboratory tests will be performed as needed to classify or otherwise identify the soil for engineering purposes. Pocket penetrometer and moisture content tests would be performed on cohesive samples at no added costs. We have included costs for 4 gradation tests, as required, for aid in stormwater analysis. In the event that organic or highly compressible/expansive soils are encountered and additional laboratory tests are warranted, we would contact you for authorization before performing any tests.

Reports: An engineering report will be provided for the project. The engineering report will summarize the results of the borings and provide our opinions and recommendations for the various geotechnical aspects of the project per the RFP. Our report would include analysis for piling alternatives. It is anticipated that other foundation options will likely have to be explored as well. As noted before, the buildings we have worked near this site have been able to use high capacity footings and geopiers. Regarding stormwater, our report will also include The Wisconsin DSPS Soil Evaluation – Storm forms would be filled out for the stormwater borings and attached to the report. An electronic PDF of the report will be forwarded to you and if requested up to three hard copies will be provided.

We have included costs for conference costs and up to two meetings in LaCrosse with the design team.

Access: The site appears to be in flat, paved or grassy areas that are likely accessible with standard, truck-mounted equipment. We have assumed that the borings near any existing structures, trees, etc. could be offset. We have included costs for a combined site visit and utility meet to determine the accessibility of the site. Holes will have to be cored in the floor of the existing building ahead of sampling.

Schedule: Prior to drilling, we would setup a locate meet with Diggers Hotline to have public utilities located on site. We have assumed that a groundskeeper or representative with the center familiar with utilities on site attend the utility meet to locate private utilities. We have visited the site and confirmed that overhead clearance is adequate for the planned interior drilling.

Our current schedule will allow us to mobilize drilling equipment the week of May 6, and potentially complete all drilling that week, subject to timely authorization, while also being dependent upon utility locating, holidays, and weather, etc. Depending on the findings, our intention would be to provide a factual

report – within about one week of completion of the borings. Completion of the full report is expected to require much more information than presently available. We anticipate providing a preliminary report within an additional 1 to 2 weeks, with the idea that refinements to foundations options might take much longer, and relevant additional analyses or data collection may be deemed advisable at that time.

Insurance: Our firm carries the normal types of insurances expected to conduct business in our field, at or above the minimums required by law. Certificates of insurance are available on request and can be provided to the client prior to commencement of services.

Costs

We will perform the work in accordance with the unit costs in cost estimates attached to this proposal. The total cost for the base scope with CPT sampling is estimated to be $19,687. If the CPT requirements is eliminated in favor or more conventional exploration at all locations, the total estimated cost reduces to $12,585. Both of these scope include the environmental sampling referenced, which could be eliminated if no longer needed. We have included a budget of up to 12 hours of time for meetings and supplemental consultation, and believe this would likely be adequate. As a matter of typical practice, we do not normally charge for additional consulting except in extreme and rare cases.

Any changes would be conducted at the unit rates included in the estimate. An invoice will be mailed after the drilling services are completed. Payment for services is expected within 30 days. Interest will be added to invoices over 30 days.

Special Inspections and Construction Testing

Lab and Personnel Qualifications

CVT has ICC Certified personnel available to meet all of the needs indicated in the Special Inspections requirement of this project. Services for The La Crosse Center Expansion will be performed out of our office in La Crosse, Wisconsin. The La Crosse laboratory has been open since 2000 and has 9 -15 employees, depending on the season.

CVT is rather unique in that all of its offices work closely together to provide a flexible balance of experienced and certified personnel to meet the varying and changing needs of the projects, markets, and geologies served by the corporation – and this is particularly true of Rochester and La Crosse offices. These are the two closest CVT offices, and this allows shared personnel and experience on virtually a daily basis.

Key Special Inspections and Construction Testing Personnel

Colby T. Verdegan, PE, would continue as principle engineer during construction, with Messrs. Schuster and Ehler project direct support as needed for daily operations.

Mr. Kraig McCoy would handle daily management of field technicians and has primary scheduling duties for CVT's testing and inspection personnel for CVT's La Crosse Laboratory. Mr. Alex Clason would be CVT's primary inspector for concrete and soils testing and has over 20 years of experience.

Mr. Robert Szwed would be our assistant project manager and would also be our primary inspector for structural steel and weather barrier inspections. Mr. Szwed has over 14 years of experience in the special inspections field, project management, and holds ICC certifications for Master of Special Inspection, Reinforced Concrete Special Inspector, Prestressed Concrete Special Inspector, Commercial and Residential

Building Inspector, Commercial Plans Examiner, Soils Special Inspector, Spray-applied Fireproofing Special Inspector, Structural Masonry Special Inspector, Structural Steel and Welding Special Inspector, Structural Steel and Bolting Special Inspector and Structural Welding Special Inspector.

In the event of unexpected environmental conditions, Matt Gikas, PG, is on staff and available. Mr. Gikas has 30 years of experience as an environmental specialist. The operated his own environmental consulting firm before joining CVT.

Scope and Unit Rates

The RFP requested hourly rates for a number of tests and inspections. The rates requested are listed below.

Soil:

Excavation Observations	$55.00/hour
Hand Auger Borings	$55.00/hour
Compaction Tests	$50.00/hour
Nuclear Density Meter	(included in hourly rates)

Soil Testing (Laboratory):

Standard Proctor	$125.00/test
Gradation (Granular Fill)	$80.00/test
Gradation (Aggregate Base)	$100.00/test

Special Foundations:

Caissons, screw piles, driven pile	$50.00/hour

Concrete/Grout:

Sampling & Testing	$50.00/hour
(minimum of once a day, 150 cubic yards, 5,000 sq.ft.)	
Forming Observations – continuous	$50.00/hour
Floor Flatness/Levelness	$400.00/pour

Reinforcing Steel:

Concrete & Masonry – periodic	$50.00/hour

Masonry:

Level B Quality Assurance	$50.00/hour

Structural Steel:

Bolting (including post-install anchors)	$75.00/hour
Field Welding	$75.00/hour
Erection Compliance	$75.00/hour

Other:

Pavement Observations & Testing	$50.00/hour
Fireproofing	$50.00/hour

Existing building survey completed with crack monitors installed	$50.00/hour

Estimated project administration/ project management effort during special inspections phase (lump sum)	3% of Testing Budget
Weather barrier inspection (spray applied and peal and stick) (EFIS / Architectural Component)	$75.00/hour

Inspections listed but not performed by Chosen Valley Testing:

Roof inspection
Window air/ water testing
Ground penetrating radar for below slab conditions
Vibration Monitoring

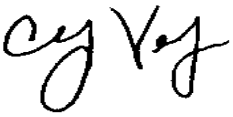
The above which are not performed by Chosen Valley Testing are not typically seen in this area and are not, to our knowledge, performed directly by anyone using local staff. Vibration monitoring, as a specific example, is also more commonly specified to be performed under the contractor performing the work. The above being said, with the exception of roof inspection, we routinely work with firms which provide the other services. Once a scope is better defined, we would be able to offer costs for subcontracting these tasks if that is determined to be needed.

Remarks

We appreciate the opportunity to propose services to you. If you have any questions about our proposal or the arrangements described, please contact us at (608) 782-5505.

Sincerely,
Chosen Valley Testing, Inc.

Kraig McCoy
Branch Manager



Colby T. Verdegan, PE
President/Sr. Geotechnical/Materials Engineer

Authorization to Proceed

Chosen Valley Testing

Project: Proposed La Crosse Center Expansion & Renovation
300 Harborview Plaza
La Crosse, Wisconsin

Design Phase Geotechnical Evaluation Proposal

Prepared by: Chosen Valley Testing, Inc.

CVT Number: 12284.17.WIL

Commencement of the above Project or Work Package, as outlined in the attached proposal document from Chosen Valley Testing, Inc., is hereby authorized.

Authorizing Person(s):

_____
Signed

_____ _____
Name / Title Date

CVT Geotechnical Base Scope

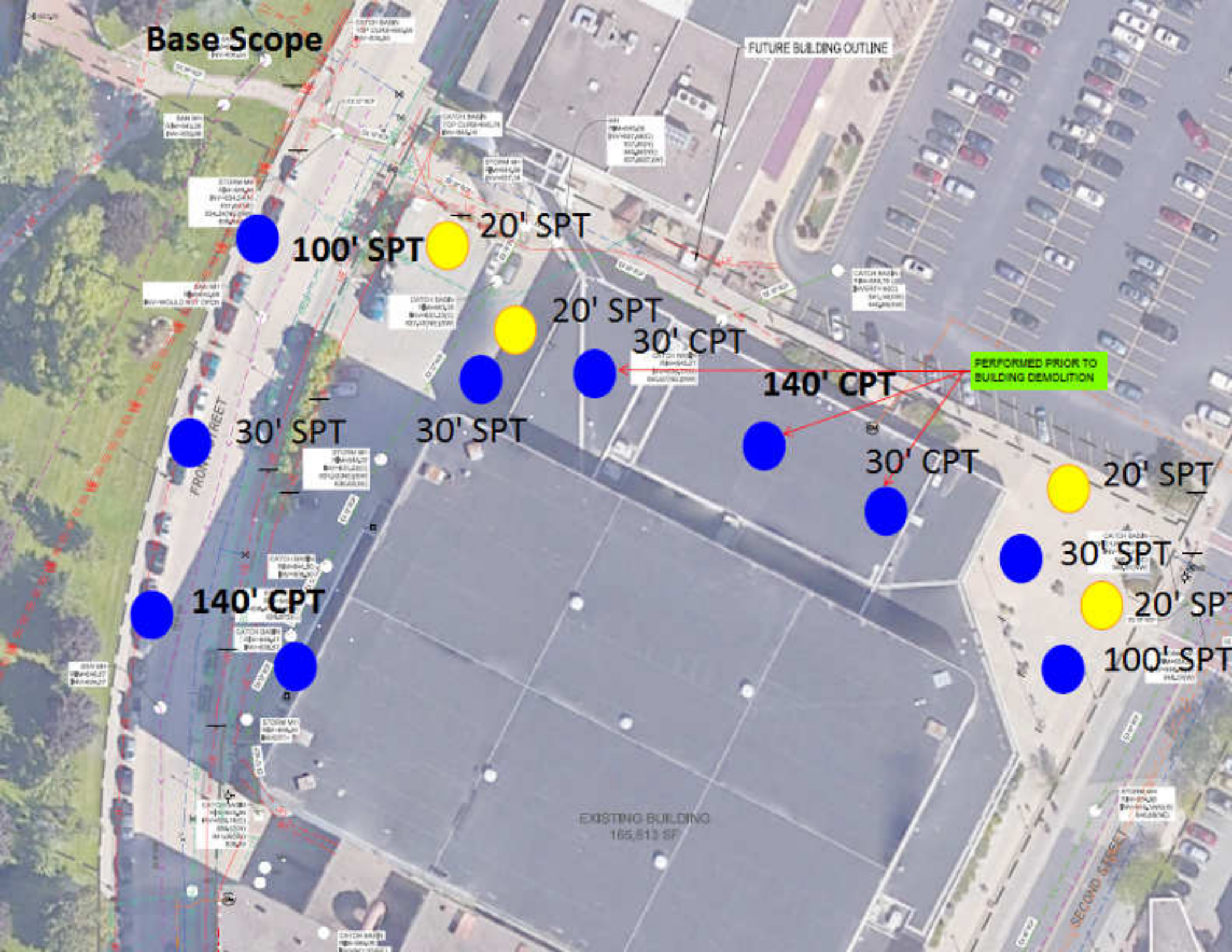
Drilling Scope: CPT 2x140', 2x30'; SPT: 2x100', 4x30', 4x20' continuous

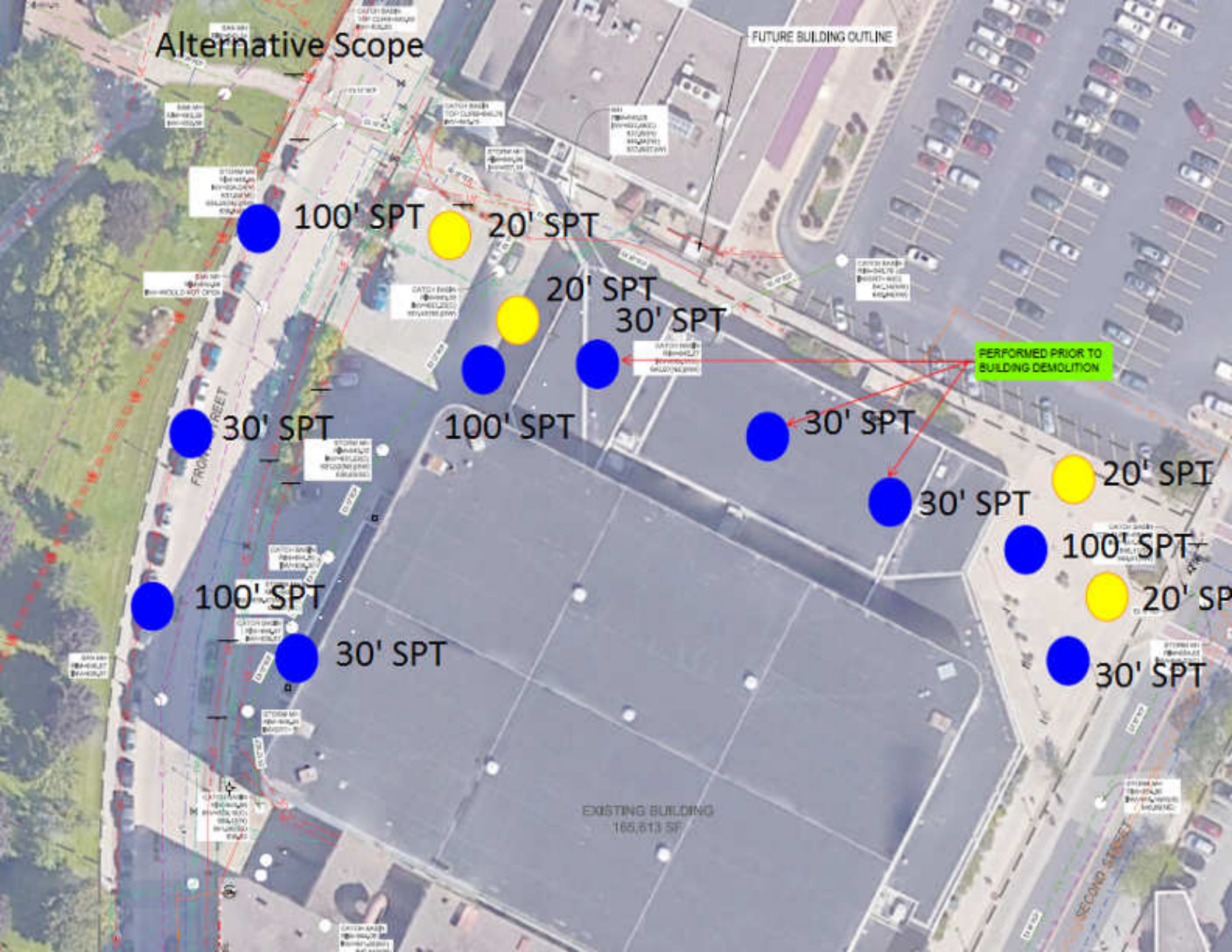
Unit	QTY.	ITEM DESCRIPTION			AMOUNT
		Drilling Services			
hour	6	Utility Clearance and Coring, per hour	$	50.00	$300.00
trip	1	vehicle trip charge	$	15.00	$15.00
		CPT Exploration			
lump sum	1	Mobilization/Demobilization	$	2,392.00	$2,392.00
day	2	CPT 6625	$	800.00	$1,600.00
hour	10	2 Person CPT Crew	$	270.00	$2,700.00
hour	6	2 Person CPT Crew, OT	$	340.00	$2,040.00
day	2	per diem	$	280.00	$560.00
hole	0	Additional 30-ft CPT hole, same mobilization	$	750.00	$0.00
		SPT Exploration - Drill Rig Borings			
day	2	Drill Exploration	$	300.00	$600.00
foot	320	Drill and Sampling, per foot	$	9.00	$2,880.00
foot	80	Drill and Continuous Sampling, per foot	$	12.00	$960.00
foot	400	Bore hole abandonment, per foot	$	2.00	$800.00
per diem	0	per diem	$	200.00	$0.00
hole	0	Additional 30-SPT hole, same mobilization	$	330.00	$0.00
		Environmental Screening of Samples			
day	3	Environmental Technician with PID	$	500.00	$1,500.00
		Laboratory Testing			
test	20	Moisture Content, per test	$	5.00	$100.00
test	0	Organic Content	$	30.00	$0.00
test	4	Infiltration Gradations	$	60.00	$240.00
		Engineering Services			
lump sum	1	Logging, Analysis and Geotechnical Report	$	3,000.00	$3,000.00
hour	12	Supple Consultation and 2 Meetings in LaCrosse	$	-	$0.00
hour	0	Additional out of scope engineering	$	125.00	$0.00
unit					
				Total	$19,687.00

CVT Geotechnical Alternative Scope

Drilling Scope: CPT 0x140', 0x30'; SPT: 3x100', 7x30', 4x20' continuous

Unit	QTY.	ITEM DESCRIPTION			AMOUNT
		Drilling Services			
hour	6	Utility Clearance and Coring, per hour	$	50.00	$300.00
trip	1	vehicle trip charge	$	15.00	$15.00
		CPT Exploration			
lump sum	0	Mobilization/Demobilization	$	2,392.00	$0.00
day	0	CPT 6625	$	800.00	$0.00
hour	0	2 Person CPT Crew	$	270.00	$0.00
hour	0	2 Person CPT Crew, OT	$	340.00	$0.00
day	0	per diem	$	280.00	$0.00
hole	0	Additional 30-ft CPT hole, same mobilization	$	750.00	$0.00
		SPT Exploration - Drill Rig Borings			
day	4	Drill Exploration	$	300.00	$1,200.00
foot	510	Drill and Sampling, per foot	$	9.00	$4,590.00
foot	80	Drill and Continuous Sampling, per foot	$	12.00	$960.00
foot	590	Bore hole abandonment, per foot	$	2.00	$1,180.00
per diem	0	per diem	$	200.00	$0.00
hole	0	Additional 30-SPT hole, same mobilization	$	330.00	$0.00
		Environmental Screening of Samples			
day	3	Environmental Technician with PID	$	500.00	$1,500.00
		Laboratory Testing			
test	20	Moisture Content, per test	$	5.00	$100.00
test	0	Organic Content	$	30.00	
test	4	Infiltration Gradations	$	60.00	$240.00
		Engineering Services			
lump sum	1	Logging, Analysis and Geotechnical Report	$	2,500.00	$2,500.00
hour	12	Supple Consultation and 2 Meetings in LaCrosse	$	-	$0.00
hour	0	Additional out of scope engineering	$	125.00	$0.00
				Total	$12,585.00


Base Scope
FUTURE BUILDING OUTLINE
100' SPT
20' SPT
20' SPT
30' CPT
140' CPT
PERFORMED PRIOR TO BUILDING DEMOLITION
30' SPT
30' SPT
30' CPT
20' SPT
30' SPT
20' SPT
140' CPT
100' SPT
EXISTING BUILDING
165,513 SF
SECOND STREET


Alternative Scope
FUTURE BUILDING OUTLINE
100' SPT
20' SPT
20' SPT
30' SPT
PERFORMED PRIOR TO BUILDING DEMOLITION
30' SPT
100' SPT
30' SPT
20' SPT
30' SPT
100' SPT
100' SPT
20' SP
30' SPT
EXISTING BUILDING
165,613 SF