

ADDENDUM NUMBER 2

Addendum Date: July 12, 2013

Addendum to Contract Documents dated June 21, 2013 entitled:

MINNESOTA STATE CAPITOL REPAIRS, RESTORATION & PRESERVATION
WORK PACKAGE NO. 1 (WP-1)
ST. PAUL, MINNESOTA

Hammel, Green and Abrahamson, Inc.
420 5th Street North, Suite 100, Minneapolis, Minnesota 55401-2338
HGA Commission Number: 0476-061-00
MSC Project #SCB-02CB0015

This Addendum forms a part of and modifies previously issued Contract Documents as indicated below or by attachments. Acknowledge receipt of this Addendum in space provided on Bid Form. Failure to do so may subject Bidder to disqualification. Items listed or attached are to be posted to Contract Documents and included in Bids submitted and Work performed. Drawing and Specification references made below are a general guide only. Bidder and Contractor must determine for themselves Work affected by Addendum items.

PROCUREMENT AND CONTRACTING REQUIREMENTS

C1 Sections Issued:

A. The following Sections are issued and attached as a part of this Addendum:

1. Section 000110 - Table of Contents - Revised
2. Section 002413 - Scopes of Work; Scope of Work 01 - Swing Parking - Revised
Note: Sub-base and asphalt paving for the contractor laydown area is to be constructed to the same standards and details as the parking lots.

SPECIFICATIONS

S1 Section Issued:

A. The following Section is issued and attached as a part of this Addendum:

1. Appendix 1 - Geotechnical Elevation Report (Addendum to) - Revised

DRAWINGS

G1 Drawing C300:

A. Add General Note 2 as follows: "Asphalt surfacing and base for the contractor staging & laydown area are to be constructed to the same standards as the Upper and Lower Mall Temporary Parking Lots. See surfacing legend on sheet C301."

ACKNOWLEDGE RECEIPT OF THIS ADDENDUM #2 ON BID FORM

**SECTION 000110
TABLE OF CONTENTS**

*Revised, Addendum No. 2, 07/12/2013
Revised, Addendum No. 1, 06/28/2013*

KEY ISS: ISSUED; REP: REPRINTED; REV: REVISED; REI: REISSUED (LESS EDITS); DEL: DELETED; FRO: FOR REFERENCE ONLY		WP-1	TBD	TBD	TBD	TBD
DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS						
000105	Certifications Page	ISS	----	----	----	----
000110	Table of Contents	ISS	----	----	----	----
000120	Project Directory	ISS	----	----	----	----
001116	Invitation to Bid <u>ADD-1</u>	ISS/ REV	----	----	----	----
002113	Instructions to Bidders	ISS	----	----	----	----
002413	Scopes of Work (To be issued by addendum) <u>ADD-1, ADD-2</u>	ISS/ REV	----	----	----	----
003000	Site Access Plan	ISS	----	----	----	----
003113	Milestone Schedule of Construction (To be issued by addendum)	ISS	----	----	----	----
004123	Bid Proposal Form <u>ADD-1</u>	ISS/ REV	----	----	----	----
005200	Contract Between Contractor and Subcontractor	ISS	----	----	----	----
005201	Material and Equipment Agreement	ISS	----	----	----	----
006113	Performance and payment Bond Form	ISS	----	----	----	----
006200	Subcontractor and Supplier Partial Waiver and Affidavit	ISS	----	----	----	----
006201	Bill of Sale	ISS	----	----	----	----
006202	Non-Negotiable Bailment Receipt	ISS	----	----	----	----
006276	Application and Certificate for Payment (AIA Documents G702 and G703)	ISS	----	----	----	----
006500	Subcontractor and supplier Final Waiver and Affidavit	ISS	----	----	----	----
007200	General Conditions	ISS	----	----	----	----
007300	Specific Project Requirements	ISS	----	----	----	----
007316	Insurance program - Dunn Controlled Insurance (DCIP) Manual	ISS	----	----	----	----
007336	Equal Opportunity & Project Labor Goals	ISS	----	----	----	----
007343	Prevailing Wage Requirements	ISS	----	----	----	----
DIVISION 01 GENERAL REQUIREMENTS				----	----	----
011100	Summary of Work	ISS	----	----	----	----
012200	Unit Prices	ISS	----	----	----	----
013300	Submittal Procedures	ISS	----	----	----	----

013310 Submittal Transmittal
 014200 References
 016210 Product Options and Substitution Requirements
 016211 Substitution Request Form
 017329 Cutting and Patching
 017420 Construction Waste Disposal and Recycling
 017700 Closeout Procedures
 017800 Closeout Submittals

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DIVISION 02 EXISTING CONDITIONS

024113 Selective Site Demolition
 024119 Selective Demolition

ISS	----	----	----	----
ISS	----	----	----	----

DIVISION 03 THROUGH 20 NOT USED

KEY ISS: ISSUED; REP: REPRINTED; REV: REVISED; REI: REISSUED (LESS EDITS); DEL: DELETED; FRO: FOR REFERENCE ONLY	WP-1	TBD	TBD	TBD	TBD
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DIVISIONS 21 FIRE SUPPRESSION

210500 Common Work Results for Plumbing
 211313 Wet-Pipe Sprinkler Systems

ISS	-----	-----	-----	-----
ISS	-----	-----	-----	-----

DIVISIONS 22 PLUMBING

220500 Common Work Results for Plumbing
 220523 General-Duty Valves For Plumbing Piping
 220529 Hangers and Supports for Plumbing Piping and Equipment
 220719 Plumbing Piping Insulation
 221116 Domestic Water Piping
 221316 Sanitary Waste and Vent Piping
 221413 Facility Storm Drainage Piping

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DIVISIONS 23 HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

230500 Common Work Results For HVAC
 230523 General-Duty Valves for HVAC Piping
 230713 Duct Insulation
 230719 HVAC Piping Insulation
 232113 Hydronic Piping
 233113 Metal Ducts

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DIVISION 24 THROUGH 25 NOT USED

DIVISION 26 ELECTRICAL

260500 Common Work Results for Electrical

DIVISIONS 27 COMMUNICATIONS

270500 Common Work Results for Communications Systems

DIVISIONS 28 ELECTRONIC SAFETY AND SECURITY

280500 Common Work Results for Electronic Safety and Security
 280513 Conductors and Cables for Electronic Safety and Security
 280526 Grounding and Bonding for Electronic Safety and Security
 280528 Pathways for Electronic Safety and Security
 281300 Access Control
 282350 IP (Network) Video Surveillance System
 283111 Fire Alarm System
 283123 Intercom System

DIVISION 29 THROUGH 30 NOT USED

DIVISION 31 EARTHWORK

310000 Earthwork
 312500 Storm Water Pollution Prevention

DIVISION 32 EXTERIOR IMPROVEMENTS

320190 Tree Preservation and Protection
 321216 Asphalt Paving
 321723 Pavement Markings and Traffic Control

APPENDIX

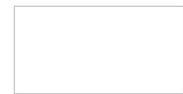
Soil Borings **ADD-2**

Photo Sheets **ADD-1**

Non-Destructive Asbestos & Lead Paint Inspection Report
ADD-1

ISS	-----	-----	-----	-----
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END OF SECTION



SCOPE OF WORK 01 - SWING PARKING (7/11/13)

SCOPE OF WORK

The Subcontractor shall execute the following portion of the Work described in the Contract Documents, including all labor, materials, equipment, services, superintendence, and other items required to complete such portion of the work:

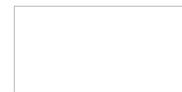
SWING PARKING - Including but not limited to, Specification Sections:

- Division 00 Procurement and Contracting Requirements
- Division 01 General Requirements
- 02 41 13 Selective Site Demolition
- 31 00 00 Earthwork
- 31 25 00 Storm Water Pollution Prevention
- 32 01 90 Tree Preservation and Protection
- 32 12 16 Asphalt Paving
- 32 17 23 Pavement Markings and Traffic Control

This work specifically includes, but is not limited to:

1. All work required to provide (2) complete parking lots, including but not limited to, site demo/clearing, excavation, filling, grading, compacting, saw-cutting, sub-base, asphalt paving, striping, signage, irrigation modifications and seeding/landscaping.
2. All work required to provide a contractor staging area/lot, including but not limited to, site demo/clearing, grading, saw-cutting, sub-base, asphalt paving, irrigation modifications, fencing and seeding/landscaping as required to complete the contractor staging area. The intent is to keep grading to a minimum to match existing contours/elevations. **Staging lot to be constructed to the same sub-base and asphalt thicknesses as the parking lots.**
3. All work associated with the (2) parking lots shall be completed no later than Wednesday August 28, 2013. This Subcontractor shall include all premium time as required to meet this completion date including but not limited to overtime, weekends and nights. Liquidated damages of \$750 per day will be assessed to the Subcontractor for each calender day the project goes beyond August 28, 2013.
4. All median modifications at Martin Luther King Jr. Blvd including, but not limited to, saw cutting and demo of existing paving, sub-base, paving, and asphalt nosings.
5. Remove, salvage, and provide new storm cast at north parking lot entrance.
6. All removed and unused topsoil is to be saved on site and spread out to create grass berms along/near the parking lots and staging area so it can be re-used at a later date.
7. Cap and modify existing irrigation system(s) to accommodate new parking lots and contractor staging area. Provide as-builts to Owner. Ensure all remaining grass and landscaping areas are sprinkled and can receive proper coverage. Existing irrigation system can not shut down for modifications any longer then 48 hours.
8. Clearing and grubbing of trees and vegetation only as necessary for new temporary parking lots and contractor staging area. Remove cleared vegetation and trees from the site.
9. Protection all trees and other vegetation that are to remain.
10. All layout and survey work required for the completion of this scope of work from

Initial: _____
Date: _____



benchmarks and control points, which will be provided by others. This subcontractor will be responsible for maintaining all benchmarks and control points throughout construction.

11. This Subcontractor is responsible for all necessary permits associated with scope of work (except for building permit), including the MPCA general storm water permit.
12. Dust control including, but not limited to, watering or chemical suppression as determined by necessity based on direction from the Construction Manager.
13. Replace/re-spread topsoil prior to landscaping operations at all areas disturbed by construction operations, including up to edges of new paving.
14. Perform utility locates prior to starting work.
15. All sub-base (aggregate and granular) and asphalt paving at required thickness and design mix.
16. Proof rolling of all sub-grades prior to start of asphalt work.
17. New to existing pavement transitions Trim/saw cut existing paving to ensure smooth and clean transition from existing paving to new paving.
18. All disturbed vegetation areas outside of the paved areas (parking lots and staging area), including new topsoil berms, are to receive grass seed and hydro mulch after all grading and paving work is complete. Erosion control blankets are required if any areas, in particular berms, have a slope greater than 4:1.
19. All pavement markings at parking lots, to be applied per manufacturer requirements. Utilize templates and stencils professionally made to industry standards. Clean pavement prior to applying any markings per manufacturer requirements.
20. Protect adjacent curbs, walks, fences and other items from receiving paint. Barricade marked areas during installation and until the marking paint is dried and ready for traffic.
21. Off-site disposal of all paint, containers, paint thinners and other hazardous material generated by this scope of work. Disposal to be in accordance with all federal, state and local laws/regulations.
22. Disposal of excess materials from this scope of work are to be disposed of by this Subcontractor off site.
23. All site signage, including signs, posts (break away posts and channel supports) and concrete footings. This subcontractor responsible to obtain and pay for required sign collars from the City of St. Paul.
24. Street sweeping for debris "drag out" generated under this scope of work.
25. Soil stabilization (lime screenings, fly ash, etc.) as required to achieve required compaction at parking lots.
26. It is the Subcontractor's responsibility to contact the testing agency directly to request all necessary and required testing including, but not limited to, moisture, compaction, proof rolls, asphalt thicknesses, etc.
27. All required grading, including cuts and fills as well as import and export of materials for mass over-lot grading to meet contours and elevations. All final grades to be per those shown on drawings.
28. All backfill and soil compaction, including any hand labor, to comply with density and moisture content testing as required.
29. Scarify native sub-grade material prior to placement of fill material.
30. Installation and maintenance of erosion control devices during construction including, but not limited to, silt fencing, hay bales, catch basin/inlet filters, rock construction entrance/exit, and tree protection fencing. Follow all requirements on drawings, specifications and project specific SWPPP. **Maintenance is required by this scope of work until the SWPPP permit is terminated and all disturbed areas are stabilized. Remove erosion control devices after permit is terminated and site is stabilized.**

Initial: _____
Date: _____



- 31. All dewatering necessary for completion of this scope of work. Maintain the project site, excavations, and construction free of water to maintain progress of the work. Comply with requirements of authorities having jurisdiction.
- 32. Meter and associated fees for construction water from available hydrant by this Subcontractor.
- 33. Access and egress to and from the site is under the control and direction of Contractor. All Subcontractors will be responsible for advising Contractor of their delivery schedules and will coordinate the work of various Subcontractors as to minimize delays.
- 34. Coordinate electrical rough-in for site lighting with electrical subcontractor. Ensure necessary rough-in is in place prior to paving.
- 35. All traffic control required in order to complete this scope of work.
- 36. Protect all roads, walks, curbs, utilities, plant materials, etc as necessary during construction. If damage to any existing, or to remain, items occurs, this Subcontractor will be responsible to restore or repair the damaged item to a condition equal to or better than the pre-construction condition, or as required by the Owner.

The following work is excluded:

- 1. Benchmarks and control points.
- 2. Site lighting.
- 3. Removal or maintenance of parking lots and contractor staging area after installation is complete.
- 4. Un-identified utility relocations or modifications, other than irrigation or included above.
- 5. Concrete curbs.
- 6. New trees and shrubs.

Addendum to Geotechnical Evaluation Report

State Capitol Restoration Project
Basement Level of the State Capitol Building
RECS Project No. 02CB0015
St. Paul, Minnesota

Prepared for

State of Minnesota

Professional Certification:

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.



Bradley J. McCarter, PE
Project Engineer
License Number: 48478
July 11, 2013



Project BL-13-01974

Braun Intertec Corporation

July 11, 2013

Project BL-13-01974

Ms. Talia Landucci-Owen
State of Minnesota
G10 Administration Building
50 Sherburne Avenue
St. Paul, MN 55155

Re: Addendum to Geotechnical Evaluation Report
State Capitol Restoration Project
Basement Level of the State Capitol Building
RECS Project No. 02CB0015
St. Paul, Minnesota

Dear Ms. Landucci-Owen:

We are pleased to submit this *Addendum to Geotechnical Evaluation Report* for the above-referenced project in St. Paul, Minnesota. This addendum report provides additional information following completion of Task 2 of our *Base Services* for this project. This addendum report should be attached to and included with our original *Geotechnical Evaluation Report* dated June 11, 2013 as the recommendations provided are still applicable.

Task 2 – Observation and Documentation of Existing Footings

This task of the project included documenting actual footing conditions at three select locations in the basement level of the building.

Observation and Documentation

Braun Intertec personnel visited the site on July 2, 2013 to document existing footing conditions. The State's contractor, J.E. Dunn, had removed the concrete slab and hand excavated soils around existing foundations at the three (3) select locations. These locations are denoted as follows:

- Location A – Room B55
- Location B – Room B12
- Location C – Room B9

The approximate area of each location is shown on the Basement Plan in Appendix A.

During our visit we documented the dimensions of existing footings at each location. Representative site photographs showing each location are provided in Appendix A. In addition, sketches depicting the dimensions of the footings as observed are also provided in Appendix A.

Due to the limits of the excavation performed by others, we could not document the full extent of footings at Locations B and C. It appears as though the bottom tier of the footing was exposed at Location B because refusal was not encountered during our subsurface evaluation. However, the top of the concrete footing was still present at Location C and could not be penetrated within the limits of the exposed excavation. This was discussed on site with the structural engineer at time of observation.

Subgrade Soils Encountered

During our observation of existing footing conditions, we documented and sampled subgrade soils present at each location. We also performed dynamic cone penetrometer (DCP) testing, where possible, to evaluate the consistency of subsurface soils present near foundation bearing elevations. Select soil samples obtained were subjected to grain-size analysis testing. The results of lab testing performed are provided in Appendix A.

Location A

At Location A, subsurface soils generally consisted of fine-grained, poorly-graded sands (SP). The penetration resistances of the DCP testing performed beginning at a depth of about 3 1/2 feet below slab level ranged from 42 to 50+ blows per 6 inches, indicating a dense to very dense condition. Laboratory grain-size analysis testing indicates a select sample of this material contained 95.2 percent particles by weight passing a size No. 40 sieve, about 74 percent passing a size No. 60 sieve, and 4.8 percent passing a size No. 200 sieve.

Location B

Subsurface conditions present at Location B generally consisted of sandy silts (ML). The penetration resistances of the DCP testing performed beginning at a depth of about 3 1/2 feet below slab level were 50+ blows per 6 inches, indicating a very dense condition. Laboratory grain-size analysis testing indicates a select sample of this material contained 100 percent particles by weight passing a size No. 40 sieve, 100 percent passing a size No. 60 sieve, and 83 percent passing a size No. 200 sieve.

Location C

At Location C, foundation subgrade soils could not be evaluated because the bottom of footing was not exposed at this time. However, below the slab and above the footing, rubble fill was encountered. The rubble fill was composed of bricks, gravel, cobbles, and sand. These materials are consistent with the materials encountered at refusal of our hand auger in this area during our previous geotechnical exploration.

Consistency of Existing Footings

During our field observations we used a Schmidt Hammer, or rebound hammer, to determine relative hardness of existing concrete footings. The results of our rebound hammer testing are summarized in Table 1 below and the approximate locations of rebound hammer tests performed are shown on the sketches in Appendix A.

Table 1. Results of Rebound Hammer Testing

Test Location	General Area of Test	Average Value of Hammer Impacts	Relative Hardness (PSI)
A Test #1	Upper Tier	32	3,800
A Test #2	Middle Tier	35	4,500
A Test #3	Lower Tier	29	3,000
B Test #1	Upper Tier	35	3,800
C Test #1	Footings	35	4,000

We note the relative hardness values are interpolated from available correlation tables used in standard test method (ASTM C 805).

Additional Lab Testing

We also performed supplemental lab testing of samples obtained during our original evaluation to further classify subsurface soils and provide aid in evaluation of soil stabilization methods. This additional lab testing included moisture content and grain-size analysis based on a size No. 200 sieve only. The results of the supplemental lab testing are provided on the revised Log of Boring Sheets in Appendix B. The revised logs should be used to replace the logs submitted in our original report as some soil classifications have been modified.

Additional Recommendations

Allowable Soil Bearing Capacity

In our original report we recommended a maximum allowable soil bearing capacity of 4,000 PSF for use in design of footings. Based on additional information recently provided, we understand the existing footings were designed for an allowable soil bearing capacity of 6,000 PSF. This includes a safety factor of 3 with regard to bearing capacity failure. Thus, an allowable soil bearing capacity of 6,000 PSF is acceptable for design of footings at this site.

Underpinning of Existing Footings

Based on information provided, there are several areas below the basement where new duct work will be constructed adjacent to and below existing slabs and footings. Typical installation depths appear to be generally less than 3 feet below bottom of footing grade. Where duct work is installed adjacent to footings care will need to be exercised not to undermine footings during or after construction. Where footings will be undermined for construction, stabilization of footings will need to be performed prior to construction.

We understand soil solidification, also known as permeation or micro grouting, is being considered for use in stabilizing soils under existing footings in areas where new duct work passes below footings. Permeation grouting includes injecting low pressure grout to fill voids and increase strength and cohesion of granular soils and is commonly used during underpinning and shoring activities below existing foundations. However, based on the results of our borings, observations of existing foundation and soil conditions, and lab testing of select soil samples obtained, it is our opinion soil solidification techniques would not be an effective technique for use at this site. The fine-grained nature of the sands and silts combined with their dense to very dense in-place condition would make solidification of these materials very difficult.

As an alternative to performing permeation grouting to stabilize soils under existing footings, consideration should be given to underpinning footings. One option for underpinning would consist of installing helical anchors which attach to the existing footing and are screwed into the ground until desired torque is achieved. There are a variety of helical anchor shafts (solid or hollow) and shapes typically ranging from 1 1/2 to 3 1/2 inches in diameter with helical plates typically ranging from 6 to 14 inches in diameter. The actual size, style and specified torque for design of helical anchors would be based on loading requirements necessary to support existing foundations. Subsurface materials encountered in our borings are suitable for support of helical anchors; however, the presence of cobbles or rubble would impede installation. Embedment depth would be dependent on design loads and specified torque to be achieved.

Helical anchors are typically capable of supporting loads of up to about 30 tons. If additional load capacity is necessary an underpinning system composed of micro-piles may be necessary. Micro piles are deep foundation elements constructed using steel casing typically less than 8 inches in diameter which are filled with grout and reinforced with a threaded steel bar. Capacities of micro-piles vary based on size and embedment materials but can reach capacities in excess of 200 tons. Embedment depth would be dependent on design loads to be achieved.

Another option for underpinning would be jet grouting. Jet grouting is a technique that injects grout and air into subgrade with steel casing to construct grouted columns or panels. Jet grouting can be performed beneath structures or to support excavations. Jet grouted columns can be designed to meet desired strength through grout modification based on loading conditions.

We recommend consulting with Braun Intertec in conjunction with a geotechnical specialty contractor with proven experience in installing underpinning systems to determine effectiveness of stabilization techniques. Underpinning systems should also be designed by a licensed structural engineer with experience in this type of construction.

Remarks

This addendum report should be attached to and included with our original *Geotechnical Evaluation Report* dated June 11, 2013 as the recommendations provided are still applicable.

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

Thank you for retaining Braun Intertec on this project. If you have any questions regarding the contents of this report, please feel free to contact Brad McCarter (952.995.2268 or bmccarter@braunintertec.com) or at your convenience.

Sincerely,

BRAUN INTERTEC CORPORATION



Bradley J. McCarter, PE
Project Engineer



Jeffrey A. Gebhard, PE
Vice President – Principal Engineer

Appendix A

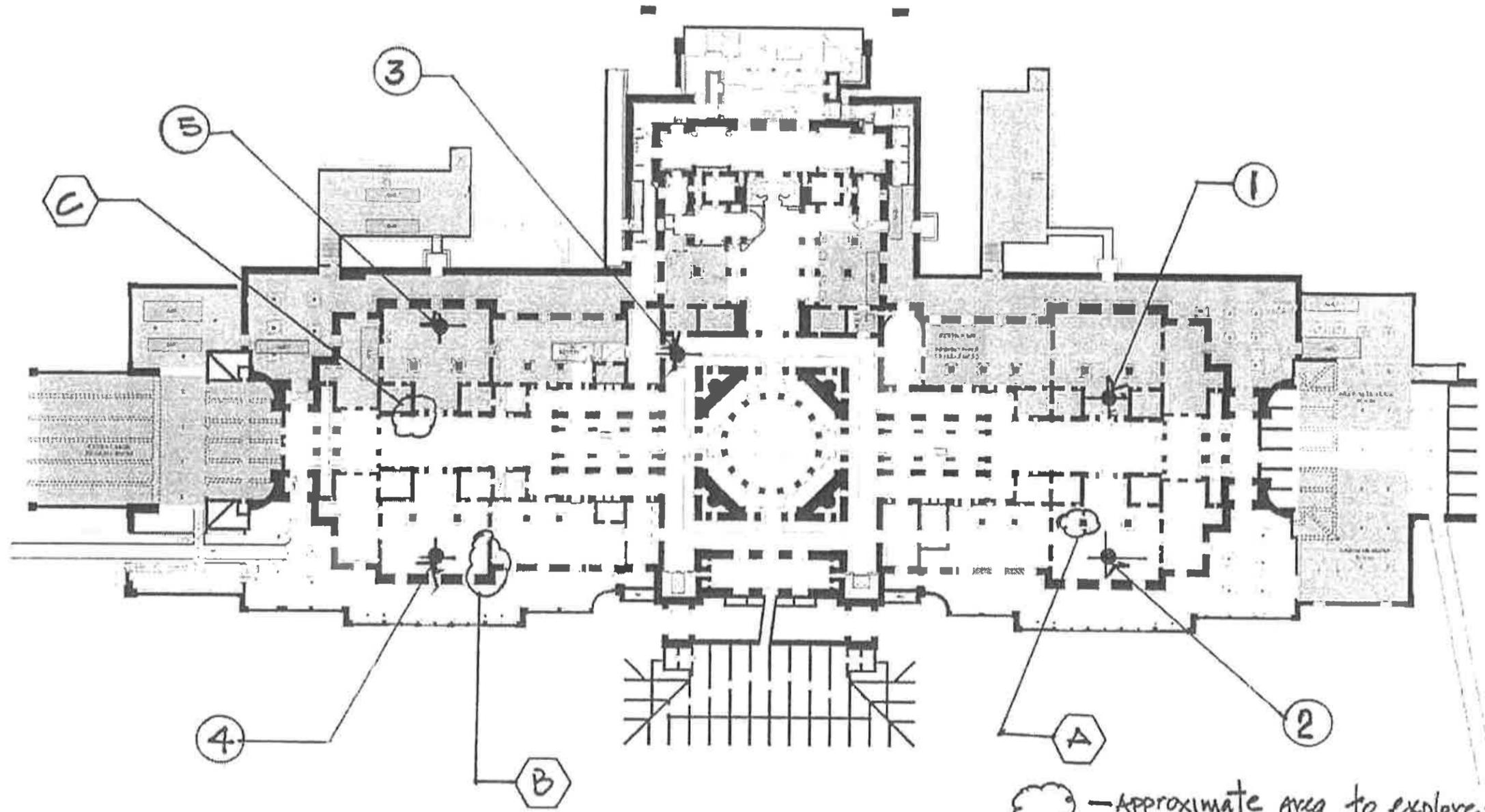
Basement Plan
Site Photographs (3 pages)
Footing Sketches (3 pages)
Lab Test Results (2 pages)

Appendix B

Revised Hand Auger Boring Logs
▪ HAB-1 through HAB-5

Appendix A

ATTACHMENT A
Basement Plan of Capitol Building with Boring and Footing Exploration Locations



Basement Plan

-  - Approximate Area to explore the EXISTING FOOTING COMPOSITION
-  - APPROXIMATE BORING LOCATION

0416-061-00 3/6/2013
REVISED  3/19/2013 VS



Photograph #: 1
Date: July 2, 2013
Direction: Facing north in Room B55 of basement level
Subject: Foundation excavation at Location A

BL-13-01974

BRAUN
INTERTEC



Photograph #: 2
Date: July 2, 2013
Direction: Facing south within foundation excavation
Subject: Stepped foundation at Location A

BL-13-01974

BRAUN
INTERTEC



Photograph #: 3
Date: July 2, 2013
Direction: Facing north in Room B12 of basement level
Subject: Foundation excavation at Location B

BL-13-01974

BRAUN
INTERTEC



Photograph #: 4
Date: July 2, 2013
Direction: Looking into excavation
Subject: Stepped foundation at Location B

BL-13-01974

BRAUN
INTERTEC



Photograph #: 5
Date: July 2, 2013
Direction: Facing south in Room B9 of basement level
Subject: Foundation excavation at Location C

BL-13-01974

BRAUN
INTERTEC

Description STATE CAPITOL FOOTING OBSERVATION

Project No: BL131974

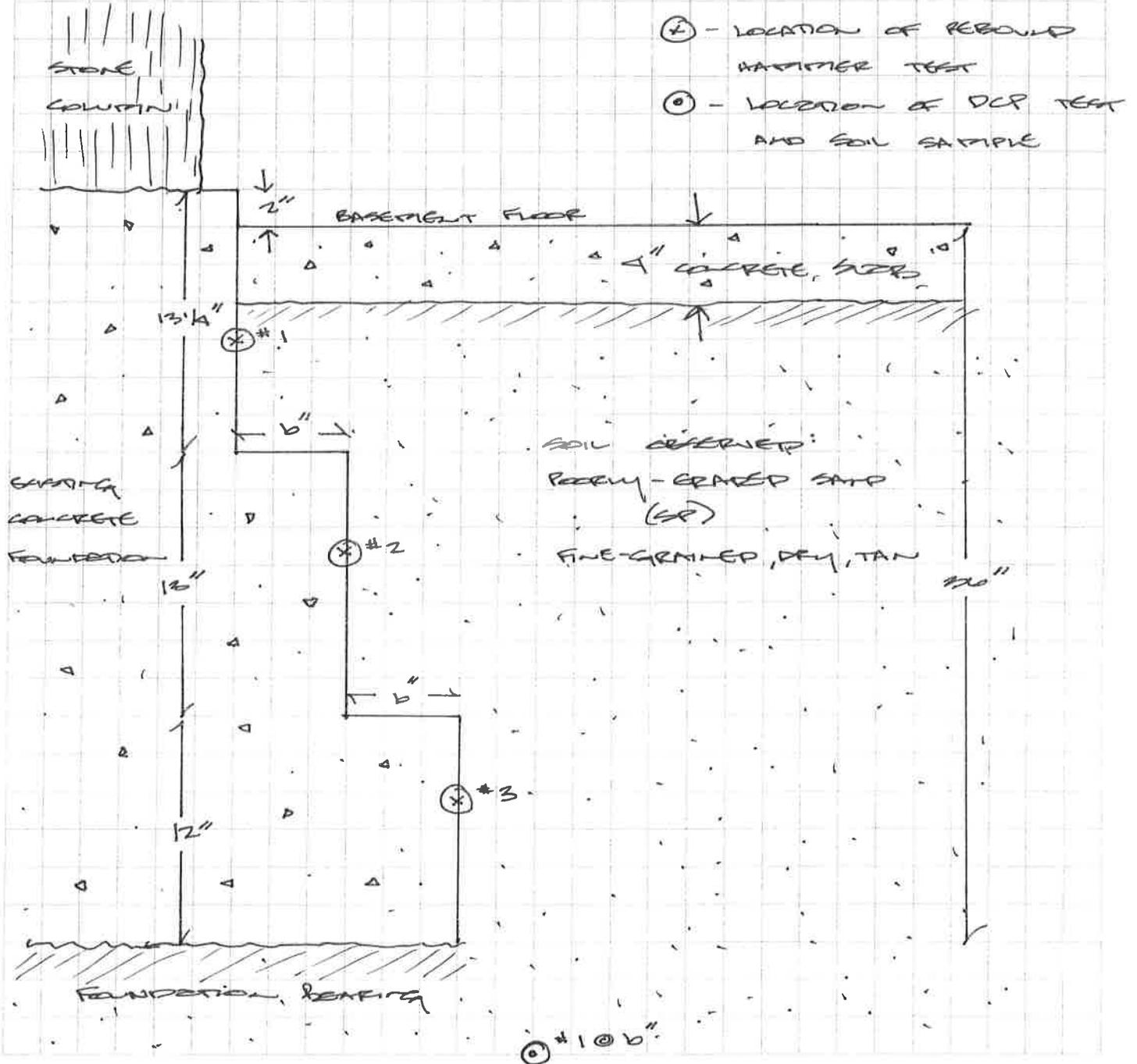
Date: 7/9/13

By: B. McCARTER

LOCATION A - ROOM 855

N.T.S.

PROFILE OF EXISTING FOUNDATION
AS OBSERVED ON JULY 2, 2013



Description STATE CAPITOL FOOTING OBSERVATION

Project No: BL1301974

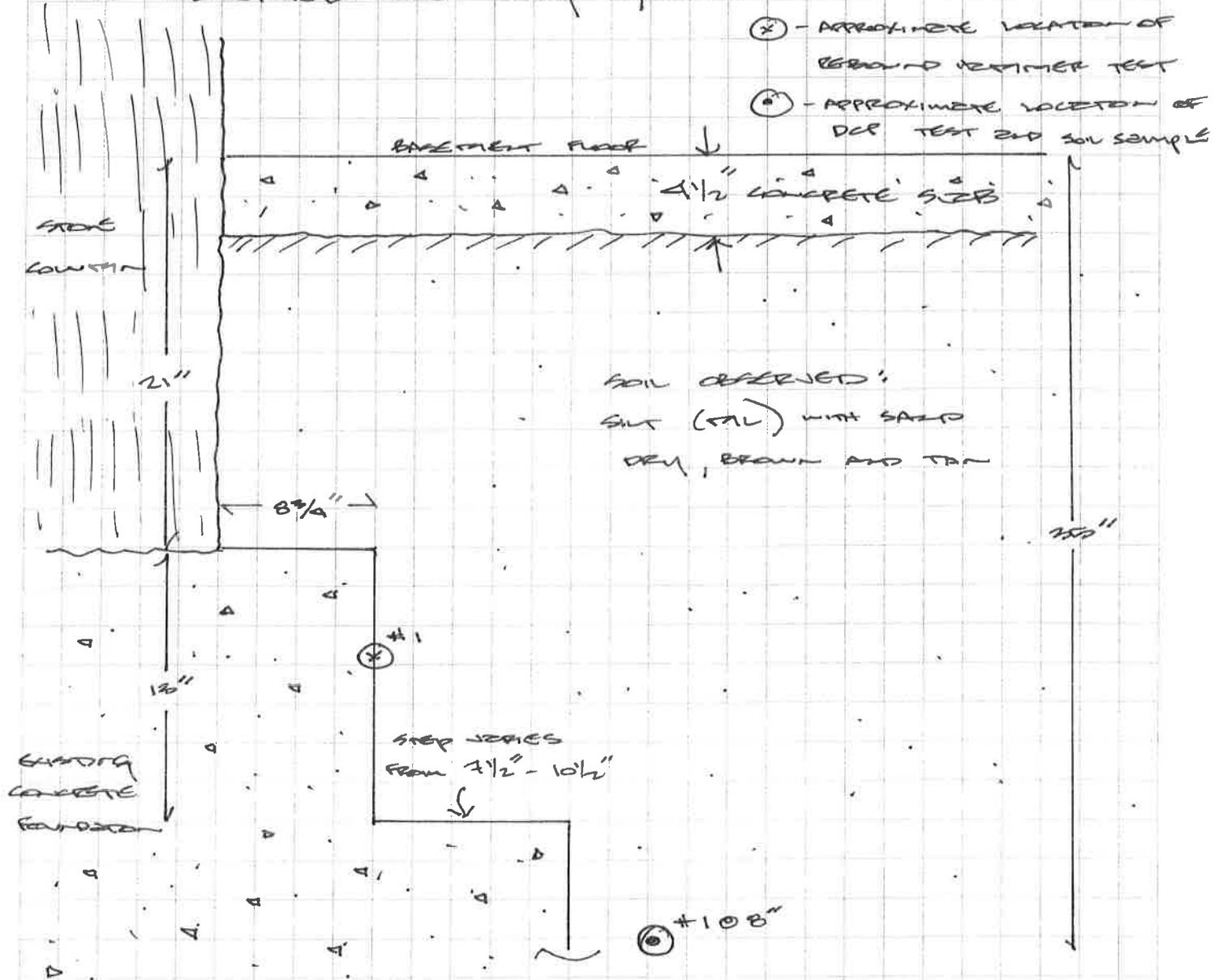
Date: 7/1/13

By: B. McCARTER

LOCATION B - ROOM B12

N.T.S.

PROFILE OF EXISTING FOUNDATION
AS OBSERVED ON July 2, 2013



Description STATE CAPITOL FEEDING OBSERVATION

Project No: 2013 0974

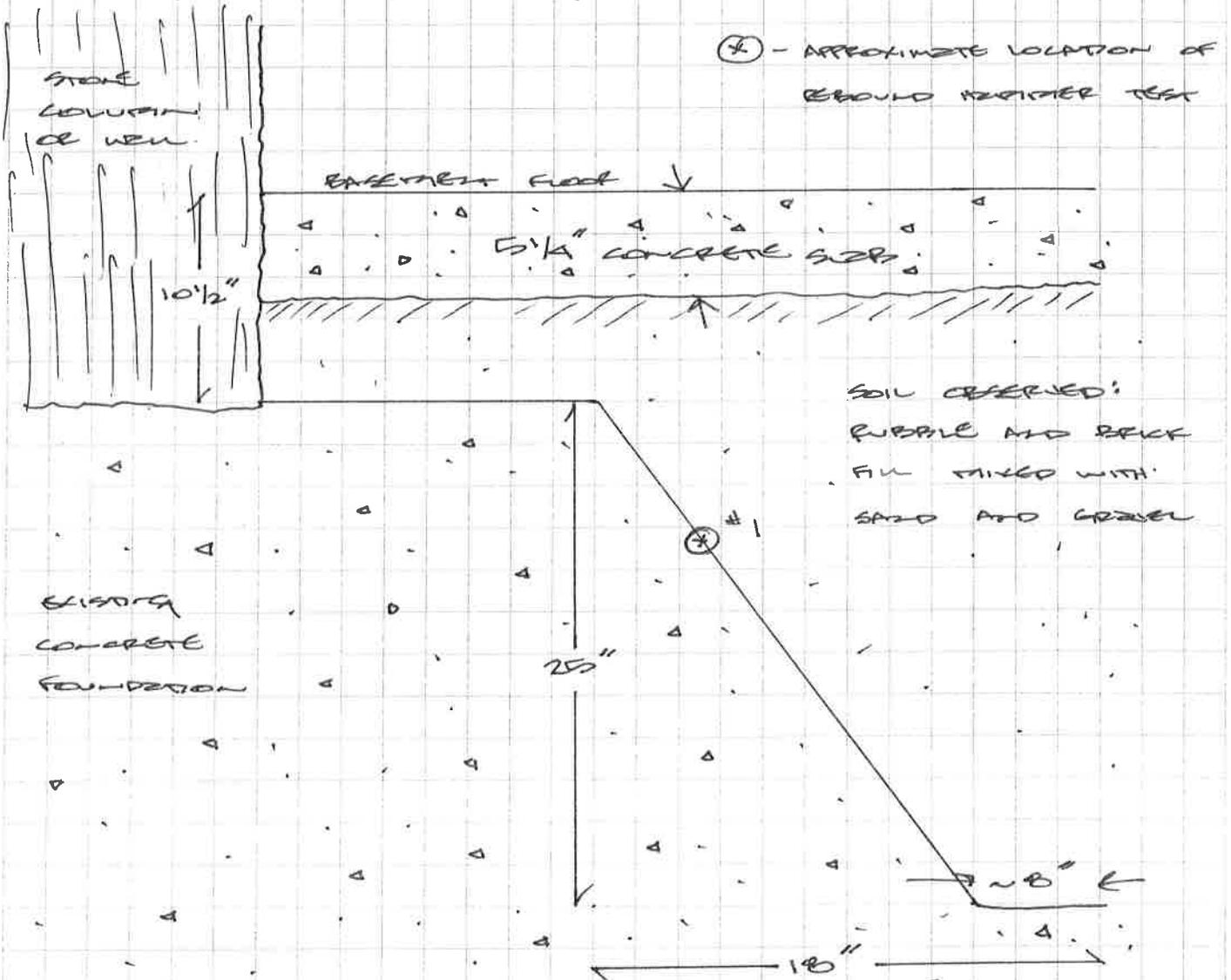
Date: 7/9/13

By: B. McCARTER

LOCATION C - ROOM 89

N.T.S.

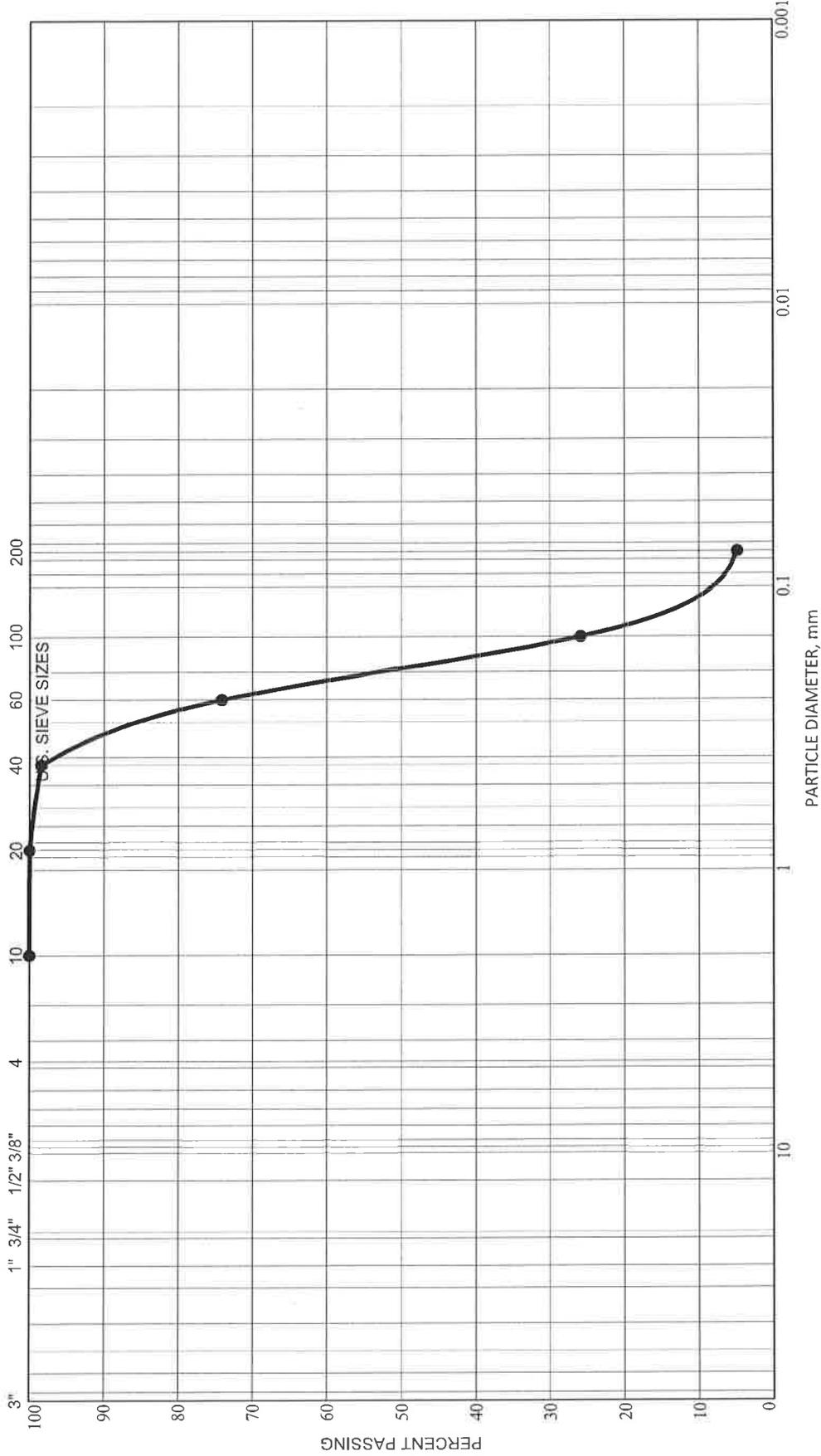
PROFILE OF EXISTING FOUNDATION
AS OBSERVED ON July 2, 2013



ACTUAL FOUNDATION EMBEDMENT DEPTH
NOT DETERMINED AS BOTTOM OF FOUNDATION
NOT EXPOSED WITHIN EXCAVATION

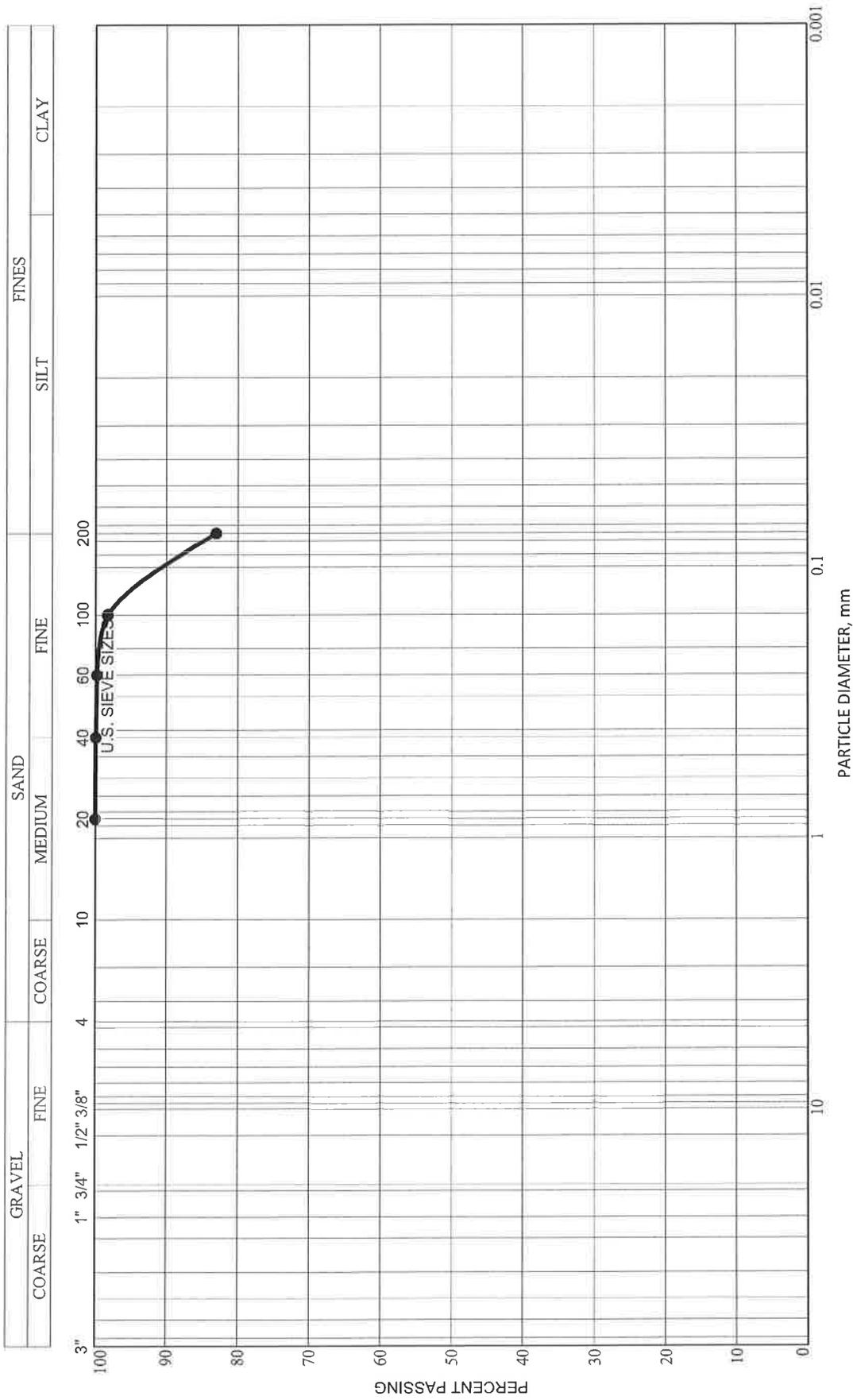
GRAIN SIZE ACCUMULATION CURVE (ASTM)

GRAVEL	FINE	COARSE	MEDIUM	SAND	FINE	SILT	FINES	CLAY
--------	------	--------	--------	------	------	------	-------	------



	<p>Braun Project BL-13-01974 HAND AUGER BORING State Capitol Restoration Project Basement Level of Capitol Building RSCS Proj #02CB0015, St. Paul, MN BORING: Location A DEPTH: 3.5'</p>	<p>CLASSIFICATION: POORLY GRADED SAND(SP)</p>
	<p>GRAVEL SAND FINES</p> <p>D60=0.215 D30=0.157 D10=0.089</p>	<p>0.0% 95.2% 4.8%</p> <p>Cu=2.4 Cc=1.3</p>

GRAIN SIZE ACCUMULATION CURVE (ASTM)



GRAVEL COARSE 1" 3/4" 1/2" 3/8" FINE	SAND COARSE MEDIUM FINE	FINES SILT CLAY
Braun Project BL-13-01974 HAND AUGER BORING State Capitol Restoration Project Basement Level of Capitol Building RSCS Proj #02CB0015, St. Paul, MN BORING: Location B DEPTH: 3.5'		
CLASSIFICATION: SILT with SAND(ML)	GRAVEL SAND FINES D60= D30= D10=	0.0% 17.0% 83.0% Cu= Cc=



BL-13-01974

Braun Intertec Corporation

Appendix B

Braun Project BL-13-01974 GEOTECHNICAL EVALUATION State Capitol Restoration Project Basement Level of the State Capitol Building RSCS Project No. 02CB0015, St. Paul, Minnesota				HAND AUGER: HAB-1 LOCATION: Room B56			
DRILLER: E. Knudson		METHOD: Hand Auger Probe		DATE: 5/21/13		SCALE: 1" = 4'	
Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	DCP	MC %	Tests or Notes
0.0							
0.2	CONC SP	3 1/4 inches of Concrete.					
		POORLY GRADED SAND, fine-grained, with Gravel, tan, dry.					
			X			31	
			X			23	
5.0	ML	SANDY SILT, brown, moist to wet.					
			X			49	19 P200=84%
			X			50	
10.5		END OF BORING.	X			57	
		Water not observed with 10 feet of bucket auger in the ground.					
		Boring then backfilled.					

HAND AUGER BORING N:\GINT\PROJECTS\MINNEAPOLIS\2013\01974.GPJ BRAUN (S) 05/26/13 10:00 AM

Braun Project BL-13-01974 GEOTECHNICAL EVALUATION State Capitol Restoration Project Basement Level of the State Capitol Building RSCS Project No. 02CB0015, St. Paul, Minnesota				HAND AUGER: HAB-3 LOCATION: Room B31			
DRILLER: E. Knudson		METHOD: Hand Auger Probe		DATE: 5/21/13		SCALE: 1" = 4'	
Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	DCP	MC %	Tests or Notes
0.0							
0.5	CONC SP	5 1/4 inches of Concrete. POORLY GRADED SAND, fine-grained, tan, dry.					
5.0	ML	SANDY SILT, brown, moist.					
10.5		END OF BORING. Water not observed with 10 feet of bucket auger in the ground. Boring then backfilled.					
					9		
					39		
					52	10	P200=73%
					50+		
					60		

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Braun Project BL-13-01974 GEOTECHNICAL EVALUATION State Capitol Restoration Project Basement Level of the State Capitol Building RSCS Project No. 02CB0015, St. Paul, Minnesota				HAND AUGER: HAB-5 LOCATION: Room B9			
DRILLER: E. Knudson		METHOD: Hand Auger Probe		DATE: 5/21/13		SCALE: 1" = 4'	
Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	DCP	MC %	Tests or Notes
0.0							
0.3	CONC	3 1/2 inches of Concrete.					
	SP	POORLY GRADED SAND, fine-grained, trace of Gravel, tan, dry.	X		29		
4.0	ML	SANDY SILT, brown, wet.	X		50+		
6.0	SP-SM	POORLY GRADED SAND with SILT, fine-grained, tan, dry.	X		50+	4	P200=8%
8.0	SM	SILTY SAND, fine-grained, tan, dry.	X		55	4	P200=28%
10.5		END OF BORING.	X		50+		
		Water not observed with 10 feet of bucket auger in the ground.					
		Boring then backfilled.					
		Boring encountered refusal below concrete slab. Two offsets performed at nearby locations. This log reflects the second offset.					

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