Stantec

Addendum #1

To:	Addendum #1 Hutchinson Square Park Improvements for Town of Summerville	From:	Josh Lilly, PE 4969 Centre Pointe Drive, Suite 200 North Charleston SC 29418-6952
File:	178420699	Date:	February 13, 2018

Reference: Addendum – Hutchinson Square Park Improvements – Road and Park Bid

This Addendum is being issued for both bids associated with the Hutchinson Square Park and should be acknowledged in the bid form for both the Park and the Road.

The following changes have been made to the bidding and contract documents dated January 24th, 2018:

Pre-Bid Meeting: Meeting minutes for this meeting are included in this Addendum

Clarification:

1. The need for the contractor to include an Arborist in this bid has been removed. The Town will use their in-house Arborist to observe construction around the Grand Oak Trees, and will be on site as required. Any recommendations for fertilization and care for the Grand Oak Trees that comes as a recommendation from the Arborist will be paid for by the Town.

2. ADA Ramps – The Road Contractor is responsible for the curb and gutter at each ramp and turn back curb where required. The Park Contractor is responsible for the ADA Detectable warning pavers and all pavers behind the gutter line shown as walkways. The line items for ADA Ramp at each corner have been removed from the Park Bid Form.

Bid Form

3. The Bid form for the Park and the Road has been removed and replaced with the Bid Forms enclosed with this Addendum.

Road Plan Set – Plan Sheets C15 and C16

4. Replace these sheets with the Sheets included in this Addendum

Park Plan Set – Plan Sheets L5

5. Replace this sheet with the Sheet included in this Addendum.

Questions:

6. Q – Are there any DBE Requirements?

   A – No DBE requirements for this project.

Reference: Addendum – Hutchinson Square Park Improvements – Road and Park Bid

7. Q – Can the Town and Engineer provide some guidelines on the requirements of the Arborist?

   A – See clarification above. The Town will use their in-house arborist for all of these services.

8. Q – Does the town anticipate the closing of Little Main?

   A – Yes, the closing of Little Main for the construction associated with the Roadway is anticipated and expected. The Town will work with the contractor as to minimalize this close sure to the best extent practical.

9. Are you expecting any reuse of the existing pavers, excluding the historical bricks?

   A – No, all paver should be new, except for the historical pavers.

10. Q – Some rim elevations like CICB A.2 and GI C.1 seem to be in conflict with surrounding EP spots and flow arrows. Please advise.

    A – The rim elevations should be as follows: CICB A.2 – Rim= 70.00 and GI C.1 – Rim=70.75

11. Trench details show 3' minimum cover of concrete, Proposed storm lines will not have enough cover.

    A – Ignore the 3' dimension. Flowable fill is to be installed from the spring line of the pipe to 4" below finish surface.

12. Can 12" RCP be replaced with suitable alternate?

    A – No.

13. Water line to be abandoned – will this require installation of any new water systems beyond the irrigation in the park?

    A – No, there will be a new waterline installed by others, prior to the Notice to Proceed.

14. Where is the location for a lay down yard/is there a suitable place for stockpiling soils and demo materials?

    A – There will be a laydown area provided to the contractor that is no more than 2 miles from the construction site to be used by the contractor, if they so desire.

15. Are there any liquid damages?

    A – Yes, liquidated damages for the project are as follows: Roadway $500 calendar days; Park $200 Calendar Days.

16. On page 17 of 18 in the contract documents, it states "the above unit prices include all labor etc." Should we attach the bid form you provided before this page to show our unit prices and lump sum bid amount? Where do we enter our lump sum bid amount? In the grand total area at the bottom of the unit price sheet?

    A – Bid form has been replaced, see new bid form.

Reference: Addendum – Hutchinson Square Park Improvements – Road and Park Bid

17. Is this a unit price job, or a lump sum bid job? Are all the unit prices added together supposed to equal the lump sum, or can the lump sum amount be different?

    A – This is a lump sum project. Yes, all unit prices should be summed to equal the lump sum.

18. Are there any additional specs relating to the scope of work other than what is on the plans themselves? The only thing I see on the website is the plans, bid documents, and the bid forms.

    A – No, items on the website, and this Addendum complete the bid package.

19. The granite curbing around the bluestone says that it is to be split face, the detail appears to have radius corners with a smooth top and face. Which type are you looking for?

    A – The granite curbing should be split vertical faces with a split face top surface.

20. Pavilion – Are the structural timbers for the pavilion to be rough cut or dressed?

    A – Timbers should be dressed.

21. Pavilion – Can you verify that the only "treated" wood timbers will be the (4) 10"x10" Columns?

    A – All wood shall be kiln dried and pressure treated.

22. Park Sign – Looking at section 5, it appears that the sign will be built as a cabinet, approximately 3 inches thick judging by the size of the beam. It appears that it will be installed onto the face of the beam. Since this is a double faced sign, would there be 2 sign cabinets, (1) for the front face, and the other to be installed on the backside of the beam? Is this correct?

    A – The sign is shown as being a metal box fully wrapping (connecting to) a steel beam. Details of the sign will need to be completed by the sign company. The steel beam is sized to carry the weight of the metal sign.

23. Planting – what are the specs on the plant mix?

    A – The planting mix is 20% peat moss, 40% topsoil, and 40% sandy loam.

24. Irrigation – is the 5/8" irrigation meter supposed to accommodate all 15 circuits?

    A – Yes, the irrigation design is based on the 5/8" irrigation meter.

25. Fountain – What is the GPM, feet of head and voltage required for the submersible pump?

    A – The design intent of the fountain is to have a constant unbroken ribbon of water over the lip of the fountain bowl. The estimated GPM required for this is 1,200 gallons per hour **per**

linear foot of the fountain bowl edge. The approximate vertical feet of head to the base of the bowl is 4'. Feet of head along the piping route to the base of the fountain is approximately 6'. Contractor to coordinate with pump manufacturer to size pump based on the fountain design intent. The park electrical can accommodate 120V or 240V power for the pump if required.

26. Fountain – What is the quantity of LED lights in the upper bowl and what are they to illuminate?

    A – Two lights are proposed for the upper bowl to provide a glow to the water surface. Light placement will be field adjusted for desired effect.

27. Fountain – What is the quantity of LED lights in the lower pool and are they to illuminate the upper weir edge lip only?

    A - Three lights are proposed for the lower pool to illuminate the ribbon of water and underside / wier of the bowl. Light placement will be field adjusted for desired effect.

28. Fountain – What is the wattage desired for the LED lights?

    A- 7 watt – 450 lumen LED lights should be sufficient to illuminate the fountain.

29. Where are the controls to operate the pump and lights going to be installed?

    A – These will be placed in the field in a location agreed to by the owner and engineer. It will be located generally around the fountain area.

30. Will the owner be paying for all testing requirements?

    A – Yes

31. On sheet C-5, on the NE corner there is an 18" magnolia tree to be removed. This tree shows up on the roadway plans and the park improvements plan. Which job should this be included in for pricing?

    A – The removal of the Magnolia Tree will be by the Park contractor.

32. On page C-8 and C-9 on the lower left hand corner of the page there is a note – eradicate existing pavement painting – crosswalk to be stamped with traffic scapes traffic pattern. This work appears to be outside the limits of construction. Can you please verify the limits/quantity for this work and give information on the stamped traffic scape patterns?

    A – In total, 5 crosswalks are to be repainted with double solid white lines and new Traffic Scapes. Sheet C8, crosswalks at Main Street and Richardson (2 crosswalks), and replacing the crosswalk on Richardson at Little Main. On Sheet C9, replace the crosswalks on West Doty, and Main Street. The one crosswalk across Main Street (closets to the tracks) is to be eradicated completed and NOT replaced.

Reference: Addendum – Hutchinson Square Park Improvements – Road and Park Bid

Attachments:

- Pre-bid Meeting Minutes with sign in sheet
- Updated Bid Form – Road
- Updated Bid Form – Park
- Revised Sheets C15 and C16 from the Road
- Revised Sheet L5 from the Park
- Geotechnical Report

STANTEC CONSULTING SERVICES INC.

Josh Lilly, P.E.
Civil Engineer
Phone: (843) 740-6332
Fax: (843) 740-7707
Josh.Lilly@stantec.com

End of Addendum

Stantec

Agenda

Town of Summerville Hutchinson Square Park Improvements
Phase 2 | Roadway and Park Pre-Bid Meeting

200 S Main Street
Summerville, SC
January 31, 2018

---

1. Welcome and thank you for your interest in this project for the Town of Summerville (Town)
2. This is a **mandatory** pre-bid meeting, be sure you sign in on the sign in sheet up front.
3. Important Dates:
    a. Bid Opening: **February 20, 2018, 2:00 PM.** Bid will be opened at 200 S. Main Street, Summerville, in the training room, this same room.
    b. Last day for questions will be **February 9th, 2018**, end of the day.
        i. All questions shall be e-mailed to Josh Lilly (josh.lilly@stantec.com) Kevin Vollnogle (kevin.vollnogle@stantec.com) and Doyle Best (dbest@summervillesc.gov). Questions over the phone will not be answered.
        ii. Answers will be provided in an addendum.
    c. Contract Award and Notice to Proceed: Actual dates to be determined. The intent of the Town is to start construction after April 8th (Flowertown Festival)
4. Bid documents can be downloaded from the Town of Summerville web site:
    a. https://vrapp.vendorregistry.com/Bids/View/Bid/ca90a37f-448e-417f-9df7-149d466ae601
5. Refer to the bid documents page 5 of 18 for all bid submittal requirements. This is a lump sum contract; however unit prices shall be submitted with each bid as laid out in the contract documents.
    a. Contractor is responsible for verifying quantities and if there is a discrepancy, contractor is to note this on the bid form.
6. Project Introduction and Description
    a. Little Main Roadway Bid – demolition and construction associated with the improvements to Little Main including the improvements within West Doty, West Richardson and Main Street. Including, but not limited to:
        i. Demolition of Little Main, portions of West Richardson, portions of West Doty and the small parking lot "inside" the park
        ii. Roadway improvements to Little Main, from existing curb to new curb line
        iii. Drainage Improvements
        iv. Relocation of overhead communication lines along West Doty
        v. Overlay and stripping of West Richardson
        vi. Striping and crosswalk improvements along West Doty, Richardson and Main Street

b. Hutchinson Square Park Improvements – select demolition and construction associated with the new Park. Including, but not limited to:

    i. Sidewalk and hardscape improvements
    ii. New Pavilion Building
    iii. New Monument Sign
    iv. Fountain
    v. Drainage Improvements
    vi. Landscaping and irrigation
    vii. Site Electrical
    viii. Replacing historic Bricks and Plaques.

7. Anticipated Construction Time Frames:

    a. Road – 3 Month construction schedule
    b. Park – 9 Month construction schedule.

8. Construction Disruption to Little Main – This is of great concern of the Town and the businesses surrounding the improvement project. Contractor shall be aware that pedestrian access to these shops must be maintained for the length of the project.

    a. Closing of Little Main is expected, and shall be limited to the greatest extent practical.

9. Existing Grand Trees: Existing trees are of great concern for the Town. An arborist shall be included in the contract of the park.

    a. Work around all these existing grand trees shall be done with extreme caution.

10. Existing Holly Tree: The bid documents for the Park call for the removal, transportation, and replanting of the existing Holly Tree at a location determined by the Town. This tree is to be then relocated back in the park when hardscaping around the tree is complete.

    a. Maintenance of the tree while at its temporary will be at the responsibility of the Town.
    b. Bid Alternate #1 includes a price to replace this Existing Holly in the event that it's not relocated back to the park.

11. The Town will retain existing trash cans and benches within the park that will be re-used throughout the town.

12. Existing sculptures are to be kept in a safe location and are to be re-used on site in a new location. The contractor is responsible for the safe keeping of these structures (lady in the rocking chair and the geese).

13. At least one Addendum will be issued which will contain the meeting minutes from the Pre-bid. Addendums will be sent out to all of those who signed the sign-in sheets. Addendums will also be posted on the Town Web site. Be sure to acknowledge each Addendum on your bid form.

14. **Method of award:** The Contract will be awarded to the responsive, responsible Bidder submitting the lowest Bid complying with the conditions of the Contract Documents.

    a. This will be a Lump sum contract.
    b. There will be a low bidder for each Project, Roadway and Park.
    c. As part of the Park bid form, there is an Alternate Number 2 that allows for a potential deduct in the event that they are awarded the contract for the Roadway.
    d. The Owner shall have the right to award the Contract(s) to the low Bidder(s) based on any the best combination of bids received.

15. Any Questions? – See Addendum 1 for complete list of questions and responses

16. Site Visit to Followed

Stantec

Sign-in Sheet

Pre-Bid Meeting – Town of Summerville

Hutchinson Square Park Improvements – Phase 2 | Roadway and Park Projects

January 31st, 10:00 AM

Name	Company	Best Phone Number to be Reached on	E-mail address
Joshua Lilly, PE	Stantec	843.740.6332	Josh.lilly@stantec.com
Kevin Vollnogle	Stantec	843.740.6353	Kevin.vollnogle@stantec.com
Doyle Best	Town of Summerville	843.851.5211	dbest@summervillesc.gov
Jared Holland	The Greenery Inc	843-247-1247	jaredholland@thegreeneryinc.com
Mike laCola	ADS Specialty	240-447-1534	mlacola@aossc.org
Harmon Todd	Gulf Stream Construction	843-513-0006	htodd@gulfstreamconstruction.com
David Burt	LS3P	843-577-4444	davidburt@ls3p.com
Lon Ostro	Charles Smith CO	803-469-7207	lostro@ftl-1.net
Bryan Duff	Gulf Stream Construction	843-278-1132	bduff@gulfsteamconstruction.com
Andrew Hargeit	Yellow Stone landscape	843-810-1337	ahargett@yellowstonelandscape.com

Eddie Wolfe	Palmetto Sitework Services	803-536-3143	ewolfe@pswsllc.com
Cole Crosby	Wildwood Contraction	843-549-2575	ccrosby@lowcountry.com
Rem Phillps	Yellowstone	704-201-5183	rphillips@yellowstonelandscape.com
Alex Cortes	Endies/Diva D	843-560-8149	Alex@eadiesconstruction.com
Arthur Dehay JR	Murray Sand	843-200-5054	arthur@murraysand.com
Charles Brunson	Howell & Howell Inc	843-343-0877	Bids@howellandhowellinc.com

BID FORM - **PARK**

Hutchinson Square Improvements – Phase II

Park Bid Form

Town of Summerville, SC

Summerville, SC
Date: February 20th, 2018
Project No. 178420699

PROPOSAL OF _____, doing business as a corporation / a partnership / an individual (Strike out inapplicable terms), with its principal office in the City of _____, County of _____, State of _____, (hereinafter called "Bidder").

TO: Town of Summerville
(hereinafter called "Owner"),

Gentlemen:

The Bidder, in compliance with your invitation for bids for the construction of Hutchinson Square Improvements – Phase II – Park Bid, having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the project within 270 consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages the sum of $200.00 for each consecutive calendar day thereafter.

The drawings, specifications and addenda are complementary of each other. What is called for by one shall be as binding as if called for by all. If a conflict between any of the above is discovered by the Contractor, the problem shall be referred to the Engineer as soon as possible for resolution by the Engineer. Should a conflict occur which is not resolved before bid time and/or is necessary to comply with mandatory requirements (i.e., codes, ordinances, etc.), it shall be the Contractor's responsibility to price and bid the more expensive method.

Bidder acknowledges receipt of the following addendum:

No. _____ Dated _____ No. _____ Dated _____
No. _____ Dated _____ No. _____ Dated _____

Part I – Base Bid:

Bidder agrees to perform all of the Improvements associated with the construction of the Hutchinson Square Park, excluding those items of work listed as Alternate Additions/ Substitutions in Part II as described in the specifications and on the plans for the sum of _____ _____ Dollars _____ Cents. ($_____)
(Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

A breakdown of the Lump Sum price above is broken down by the following unit prices:

	Description		Quantity	Unit	Unit Price	Total
	General Conditions					
1	Construction Management		1	LS		
2	Mobilization and Demobilization		1	LS		
3	Bonds		1	LS		
4	Construction Staking		1	LS		
5	Tree protection fencing		338	LF		
	Demolition and Erosion Control					
6	Remove and transplant Existing Christmas Holly to temporary location		1	LS		
7	Remove, transport, and replant Existing Christmas Holly to final location		1	LS		
8	Demolition (existing brick border, pervious path, concrete, etc.)		1	LS		
9	Silt Fence		500	LF		
10	SWPPP Maintenance		1	LS		
	Park Hardscape Improvements					
11	General Grading		2400	SY		
12	Fine Grading		1500	SY		
13	Fill Material		400	CY		
14	Blue Stone Paving (mortar set over GABC, no mortar joints)		2380	SF		
15	Granite Bed Edge at Bluestone		255	LF		
16	Brick Paver Sidewalk with Soldier Course Border		4309	SF		
17	Salt finish Concrete Sidewalk with Soldier Course Brick Paver Border		2016	SF		
18	Salt finish Concrete Sidewalk (no border)		2688	SF		
19	Remove, store, and place historic pavers		162	SF		
20	Seat Wall at Holly Tree (16" wide x 18" tall with brick cap and foundation)		55	LF		
21	Seat Wall at Fountain (16" wide x 18" tall with brick cap and foundation)		75	LF		
22	Masonry Column at Fountain (24" x 24" wide x 18" tall with brick cap and foundation)		8	EA		
23	Masonry Column at Pavilion (24" x 24" wide x 36" tall with brick cap and foundation)		2	EA		
24	Precast Stone Urn at Columns		8	EA		
25	ADA Ramp Detectable warning pavers - Little		16	SF		

	Main and West Doty					
26	ADA Ramp Detectable warning pavers- Little Main and Richardson		12	SF		
27	ADA Ramp Detectable warning pavers - West Doty and Main Street		40	SF		
28	ADA Ramp Detectable warning pavers - West Richardson and Main Street		18	SF		
29	ADA Signage		2	EA		
30	Fountain Basin, Cast Stone Base, and 5' Cast Iron Bowl		1	LS		
31	Fountain Mechanical and Plumbing		1	LS		
32	Fountain Lighting		1	LS		
33	5' Bench		12	EA		
34	6' Bench		4	EA		
35	Trash Receptacle		6	EA		
36	Loop Bike Rack		6	EA		
37	Remove, store, and place sculptures and plaques (lady in rocking Chair and Geese)		1	LS		
38	Adjust monitoring wells to grade		6	EA		

Storm Drainage

39	Concrete Junction box		1	EA		
40	12" RCP		72	LF		
41	10" PVC Storm Drain		81	LF		
42	6" PVC Storm Drain		146	LF		
43	6" Underdrain		123	LF		
44	Yard Inlets with 12" grate		8	EA		
45	Cleanouts		2	EA		
46	Replace Drainage Box Lids on Main St.		2	EA		

Pavilion

47	Compacted Subgrade (24" of Structural Fill)		72	CY		
48	Foundation (slab, steps and brick paver band)		756	SF		
49	Structure		756	SF		
50	Electrical, including Fan		1	LS		

Monument Sign

51	Column and Foundation		2	EA		
52	Double Faced Sign, Lettering, and Beam		1	LS		

Site Electrical

53	Selective Demolition of Existing Electrical		1	LS		
54	Street Acorn Lights		14	EA		
55	Relocate Existing Acorn Light		1	EA		
56	Bollard Lights		20	EA		
57	Sign Uplights (existing sign)		2	EA		
58	Brick Lights in Seat Walls		8	EA		
59	In-ground receptacles		15	EA		
60	New Electrical Panels		1	LS		

61	Upgrade existing Acorn Lights to LED		10	EA		
62	General Electrical (wiring, conduits, ect.)		1	LS		

Landscaping

63	Top Soil (4" in Lawn)		102	CY		
64	Planting Mix (4" depth in Plant Beds)		146	CY		
65	Mulch (Hardwood Shredded)		111	CY		
66	Pre-emergent and Post-emergent Herbicide		1	LS		
67	Lagerstroemia Fauriei `Arapaho` / Crape Myrtle	MULTI	15	EA		
68	Prunus x Okame / Okame Cherry	3"CAL	8	EA		
69	Quercus phellos / Willow Oak	3"CAL	2	EA		
70	Ulmus parvifolia `Allee` / Allee Lacebark Elm	3"CAL	2	EA		
71	Azalea indica `George Tabor` / George Tabor Azalea	7 GAL	19	EA		
72	Azalea indica `Mrs. G.G. Gerbing` / Mrs. G.G. Gerbing Azalea	7 GAL	45	EA		
73	Azalea satsuki hybrid 'Gumpo Pink' / Pink Satsuki Azalea	3 GAL	138	EA		
74	Azalea satsuki hybrid 'Gumpo White' / White Satsuki Azalea	3 GAL	87	EA		
75	Camelia sasanqua `Chansonette` / Camelia 'Chansonette'	7 GAL	14	EA		
76	Camelia sasanqua `Setsugekka` / Camelia 'Setsgekka'	25 GAL	6	EA		
77	Hydrangea quercifolia / Oakleaf Hydrangea	7 GAL	22	EA		
78	Ilex cornuta `Carissa` / Carissa Holly	7 GAL	73	EA		
79	Loropetalum chinense `Daruma` / Daruma Dwarf Loropetalum	7 GAL	36	EA		
80	Podocarpus macrophyllus `Dwarf Pringles` / Dwarf Podocarpus	7 GAL	4	EA		
87	Serenoa repens 'Cinera' / Silver Saw Palmetto	7 GAL	20	EA		
82	Adiantum capillus - veneris / Maidenhair Fern	3 GAL	93	EA		
83	Dietes iridiodes / Fortnight Lily	3 GAL	215	EA		
84	Hedychium coronarium / White Ginger	3 GAL	62	EA		
85	Liriope muscari 'Evergreen Giant' / Evergreen Giant Liriope	3 GAL	97	EA		
86	Liriope muscarii 'Super Blue' / Super Blue Liriope	1 GAL	1359	EA		
87	Muhlenbergia capillaris / Pink Muhly	3 GAL	95	EA		
88	Rosmarinus officinalis `Prostratus` / Creeping Rosemary	1 GAL	32	EA		
89	Zoysia tenuifolia / Korean Grass	SOD	8118	SF		
90	Irrigation		1	LS		
91	Sleeving		1	LS		

GRAND TOTAL (To match the Amount written above) _____

For changing quantities of work items from those indicated by the contract drawings, upon written instructions from the Engineer, the unit prices above shall apply. The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc. to cover the finished work of the several kinds called for. Changes shall be processed in accordance with contract documents.

The Owner may award the contract on the basis of the base bid proposal, or the base bid combined with one or more of the alternate additions/substitutions listed below. Alternate additions may be selected by the owner for inclusion in the contract in any order of the Owner's Choosing. The award will be made to the lowest qualified bidder, subject to determination of such based on this prescribed method.

Part II – Alternate Additions/Substitutions:

Bidder agrees to perform all of the work required for the following alternative additions/substitutions to the Regional Recreation Complex, Football and Multi Use Fields for the following lump sum pricing:

A. Alternate Additions Number One (1)

All work, labor and materials associated with installing a new Specimen Holly in lieu of Replanting Existing Christmas Holly. [Ilex Opaca 'Satyr Hill' / Satyr Hill American Holly; 14-16 feet tall 8-10 foot spread.

ADD to Base Bid:

_____Dollars _____Cents

$_____

B. Alternate Additions Number Two (2)

If awarded both the Park and Roadway contracts:

DEDUCT from Base Bid:

_____Dollars _____Cents

$_____

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 45 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 10 days and deliver a Surety Bond or Bonds. The bid security attached in the sum of ____ _____ Dollars _____ _____ Cents ($_____) is to become the property of the Owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

By submission of this bid, each bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this bid, with any other bidder or with any competitor.

[SEAL – (If bid is by a corporation)]

Respectfully submitted:

BY: _____

_____
(Print Name)

_____
(Title)

_____
(Business Address)

BID FORM - **ROAD**

Hutchinson Square Improvements – Phase II

Roadway Bid Form

Town of Summerville, SC

Summerville, SC
Date: February 20th, 2018
Project No. 178420699

PROPOSAL OF _____, doing business as a corporation / a partnership / an individual (Strike out inapplicable terms), with its principal office in the City of _____, County of _____, State of _____, (hereinafter called "Bidder").

TO: Town of Summerville
(hereinafter called "Owner"),

Gentlemen:

The Bidder, in compliance with your invitation for bids for the construction of Hutchinson Square Improvements – Phase II – Roadway Bid, having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the project within 90 consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages the sum of $500.00 for each consecutive calendar day thereafter.

The drawings, specifications and addenda are complementary of each other. What is called for by one shall be as binding as if called for by all. If a conflict between any of the above is discovered by the Contractor, the problem shall be referred to the Engineer as soon as possible for resolution by the Engineer. Should a conflict occur which is not resolved before bid time and/or is necessary to comply with mandatory requirements (i.e., codes, ordinances, etc.), it shall be the Contractor's responsibility to price and bid the more expensive method.

Bidder acknowledges receipt of the following addendum:

No. _____ Dated _____ No. _____ Dated _____
No. _____ Dated _____ No. _____ Dated _____

Part I – Base Bid:

Bidder agrees to perform all of the Improvements associated with the construction of the Hutchinson Square Roadway, excluding those items of work listed as Alternate Additions/ Substitutions in Part II as described in the specifications and on the plans for the sum of _____ _____ Dollars _____ Cents. ($_____)
(Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

A breakdown of the Lump Sum price above is broken down by the following unit prices:

Item	Description	Quantity	Unit	Unit Price	Total
General Conditions					
1	Construction Management	1	LS		
2	Mobilization and Demobilization	1	LS		
3	Bonds	1	LS		
4	Construction Staking	1	LS		
5	Traffic Control	1	LS		
6	Road/Sidewalk Closed Signage	6	EA		
Demolition and Erosion Control					
7	Tree Protection Fencing	626	LF		
8	Inlet Protection	5	EA		
9	Erosion Control Maintenance and SWPPP Monitoring	1	LS		
10	Demolition (Little Main, SCDOT Roadways)	1	LS		
11	Demolition (Parking Lot)	1	LS		
12	Demolition of Storm Drain	1	LS		
Overhead to Underground Conversion					
13	4" Conduit installed via HDD for AT&T	200	LF		
14	4" Conduit installed via Open Cut	100	LF		
15	2" Conduit installed via HDD for WOW!	200	LF		
16	2" Conduit installed via HDD for Time Warner Company	200	LF		
17	3" Conduit installed via HDD for SCE&G - into the park	72	LF		
18	3" Conduit installed via HDD for SCE&G - to existing light pole at tracks	125	LF		
19	3" Conduit installed via Open Trench for SCE&G along Doty	190	LF		
20	SCE&G Hand Hole	2	EA		
21	Hand Hole	1	LS		
22	Open trench connections at existing Poles	1	LS		
23	Acorn Street Lights	2	LS		
24	AT&T Hand Hole	1	EA		

Little Main Street Construction

25	Grading Roadway	1790	SY		
26	Asphalt - Binder Course - Little Main	1790	SY		
27	Asphalt - Surface Course - Little Main	1790	SY		
28	Road Base Course	796	TN		
29	18" Curb and Gutter - Non SCDOT	470	LF		
30	Brick Pavers, set in GABC	3440	SF		
31	Ribbon Curb - Brick Pavers	250	LF		
32	Fine Grading	1790	SY		
33	24" Stop Bar	1	EA		
34	Parking Lot Stripping	1	LS		
35	"Stop", "Do Not Enter" and "Right Turn Only" Sign - Little Main	1	EA		
36	ADA Stripping and Decal	1	EA		
37	Brick Paver Crosswalks	430	SF		
38	Ribbon Curb at Crosswalks	75	LF		
39	Turn Back Curb for Future Ramp (Little Main and Richardson)	1	LS		
40	Wheel Stops (Replace Existing)	36	EA		
41	Wheel Stops (additional wheel stops)	32	EA		
42	Removable Bollards	12	EA		

Storm Drainage

43	12" RCP - Across West Richardson	87	LF		
44	Connect to Existing Storm box	1	EA		
45	New Grate Inlet	1	EA		
46	12" RCP - Little Main	82	LF		
47	New Grate Inlet	3	EA		
48	New Junction Box	1	EA		

West Richardson

49	Mill Existing Roadway	660	SY		
50	Asphalt Overlay	660	SY		
51	Replace Existing Pavement Markings	1	LS		
52	Crosswalk Thermoplastic Traffic Scapes Patterns LT (W. Richardson)	400	SF		
53	Crosswalk Thermoplastic Traffic Scapes Patterns LT (Main Street)	950	SF		
54	Re-Paint Crosswalk Painting at Main Street and W. Richardson	1	LS		
55	18" Curb and Gutter	120	LF		

West Doty

56	18" Curb and Gutter	157	LF		
57	Eradicate Existing Pavement Markings	1	LS		
58	West Doty Pavement Markings	1	LS		

59	Re-Paint Crosswalk Painting at Main Street and W. Doty	1	LS		
60	Crosswalk Thermoplastic Traffic Scapes Patterns LT	490	SF		

Main Street

61	Eradicate Existing Parallel Parking Spaces	1	LS		
62	Re-Paint Parallel Parking Spaces	1	LS		

Grand Total (To match the Amount above) _____

For changing quantities of work items from those indicated by the contract drawings, upon written instructions from the Engineer, the unit prices above shall apply. The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc. to cover the finished work of the several kinds called for. Changes shall be processed in accordance with contract documents.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 45 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 10 days and deliver a Surety Bond or Bonds. The bid security attached in the sum of ___ _____ Dollars _____ _____ Cents ($_____) is to become the property of the Owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

By submission of this bid, each bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this bid, with any other bidder or with any competitor.

[SEAL – (If bid is by a corporation)]

Respectfully submitted:

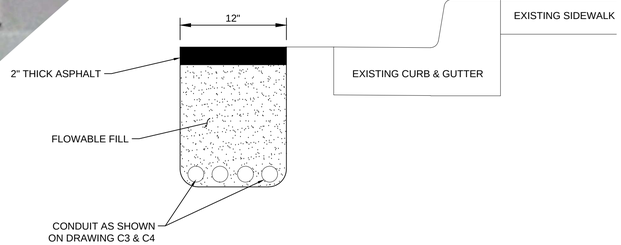
BY: _____

_____
(Print Name)

_____
(Title)

_____
(Business Address)

1 REVISED ENTIRE SHEET



TYPICAL OPEN TRENCH DETAIL

NOT TO SCALE

LEGEND

- EXISTING POWER POLE
- EXISTING STORM DRAIN
- PROPOSED OPEN CUT
- PROPOSED DIRECTIONAL DRILL
- PROPOSED NEW LIGHT POLE (BY OTHERS)
- PROPOSED NEW SINGLE PHASE TRANSFORMER
- PROPOSED COMCAST VAULT
- PROPOSED AT&T HAND HOLE
- PROPOSED AT&T PEDESTAL
- PROPOSED SCE&G HAND HOLE
- TEMPORARY HAND HOLE

0 20' 40'

1" = 20'

NOTES:

1. THIS PLAN IS INTENDED TO SHOW THE AREAS WHERE THE CONDUITS ARE TO BE INSTALLED BY DIRECTIONAL DRILL OR OPEN CUT.
2. ALL SCE&G CONDUITS MUST BE INSTALLED WITH THREE (3) FEET MIN. OF COVER.
3. SEE SHEET C16 FOR NUMBER AND SIZE OF CONDUITS TO BE INSALLED.
4. COORDINATE ALL WORK WITH SCE&G, WOW ADN TIME WARNER CABLE
5. COORDINATE THE REMOVAL OF LINE WITH ALL UTILITY COMPANIES.

UTILITY CONTACT INFORMATION:

SCE&G RICHARD GILBERT 129 SPANIEL LANE, SUMMERVILLE SC (843) 873-4552 RGILBERT@SCANA.COM	AT&T ANDY FOLZ MGR. OSP PALNNING & ENGINEERING DESIGN+ SOUTHEAST ENGINEERING 3246 FORTUNE DRIVE, N. CHARLESTON SC (843) 552-7279 AF1896@ATT.COM	WOW HERBERT DRIGGERS (843) 614-1731	TIME WARNER MICHAEL SIZEMORE (843) 285-7621 OFFICE (843) 408-8283 CELL MICHAEL.S.SIZEMORE@CHARTER.COM

811 Know what's **below.** **Call** before you dig.

Stantec

4969 Centre Pointe Dr. Suite 200
North Charleston, SC 29418
Tel.
www.stantec.com

Consultants

Legend

Notes

811 Know what's **below.** **Call** before you dig.

Revision	By	Appd.	YY.MM.DD
ADDENDUM #1	KV	JJL	18.02.13
BID DOCUMENTS	KV	JJL	18.01.24

Issued	By	Appd.	YY.MM.DD

File Name:	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION STANTEC CONSULTING SERVICES, INC. No. C02310

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 28556 JOSEPH J. LAFFEY

1/24/2018

Client/Project

Town of Summerville

HUTCHINSON SQUARE IMPROVEMENTS - PHASE II
BID SET - ROAD

Summerville, SC

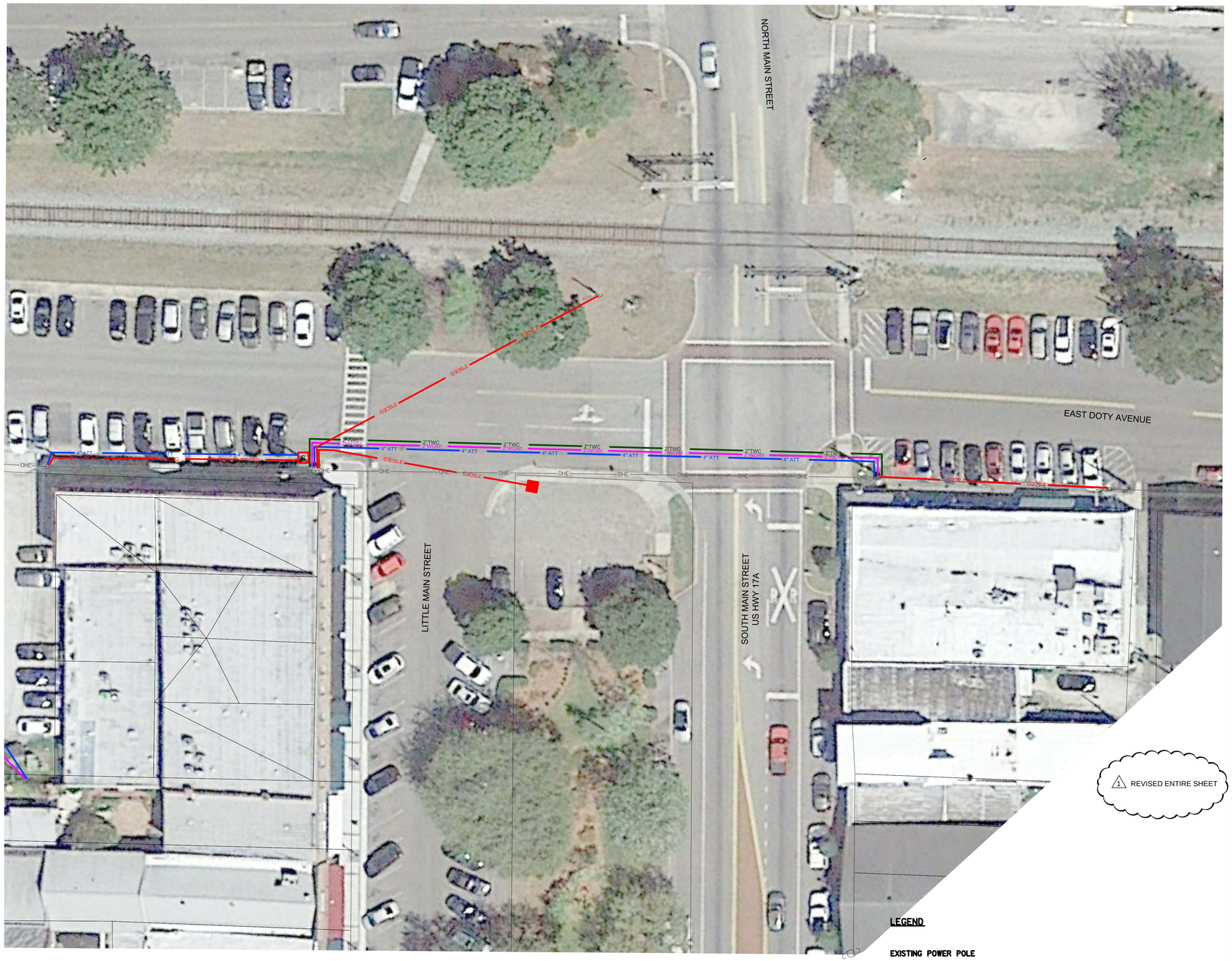
Title

UTILITY RELOCATION PLAN

Project No.	Scale	
178420699		
Drawing No.	Sheet	Revision
C15	16 of 17	0

V:\1784\active\178420699-hutchinson_square_ph1\urban_land\drawings\base\699_overhead.dwg
2018/02/13 2:29 PM By: Hannah Berh

ORIGINAL SHEET - ARCH D



1 REVISED ENTIRE SHEET

LEGEND

- EXISTING POWER POLE
- PROPOSED OPEN CUT
- PROPOSED DIRECTIONAL DRILL
- PROPOSED NEW LIGHT POLE (BY OTHERS)
- PROPOSED NEW SINGLE PHASE TRANSFORMER
- C — PROPOSED COMCAST VAULT
- A — PROPOSED AT&T HAND HOLE
- AP — PROPOSED AT&T PEDESTAL
- S — PROPOSED SCE&G HAND HOLE
- X" SCEG — SCE&G CONDUIT W/ SIZE
- X" ATT — AT&T CONDUIT W/ SIZE
- X" COM — COMCAST CONDUIT W/ SIZE
- X" TWC — TIME WARNER CONDUIT W/ SIZE
- X" WOW — WOW TV CONDUIT W/ SIZE

NOTES:

1. THIS PLAN IS INTENDED TO SHOW THE AREAS WHERE THE CONDUITS ARE TO BE INSTALLED BY DIRECTIONAL DRILL OR OPEN CUT.
2. ALL SCE&G CONDUITS MUST BE INSTALLED WITH THREE (3) FEET MIN. OF COVER.

0 20' 40'
1" = 20'

UTILITY CONTACT INFORMATION:			
SCE&G RICHARD GILBERT 129 SPANIEL LANE, SUMMERVILLE SC (843) 873-4552 RGILBERT@SCANA.COM	AT&T ANDY FOLZ MGR. OSP PALNNING & ENGINEERING DESIGN+ SOUTHEAST ENGINEERING 3246 FORTUNE DRIVE, N. CHARLESTON SC (843) 552-7279 AF1896@ATT.COM	WOW HERBERT DRIGGERS (843) 614-1731	TIME WARNER MICHAEL SIZEMORE (843) 285-7621 OFFICE (843) 408-8283 CELL MICHAEL.S.SIZEMORE@CHARTER.COM

811 Know what's **below.** **Call** before you dig.

V:\178420699\active\178420699-Hutchinson_square_ph1\urban_land\drawings\base\699_overhead.dwg
2018/02/13 2:29 PM By: Harrell, Beth

ORIGINAL SHEET - ARCH D

Stantec
4969 Centre Pointe Dr. Suite 200
North Charleston, SC 29418
Tel.
www.stantec.com

Consultants

Legend

Notes

Revision	By	Appd.	YY.MM.DD
ADDENDUM #1	K.V	J.R.	18.02.13
BID DOCUMENTS	K.V	J.R.	18.01.24

Issued	By	Appd.	YY.MM.DD

File Name:	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

STANTEC CONSULTING SERVICES, INC. No. C02310 — CERTIFICATE OF AUTHORIZATION — SOUTH CAROLINA

SOUTH CAROLINA — PROFESSIONAL ENGINEER — No. 28556 — JOSEPH J. [illegible] — 1/24/2018

Client/Project

Town of Summerville

HUTCHINSON SQUARE IMPROVEMENTS - PHASE II
BID SET - ROAD

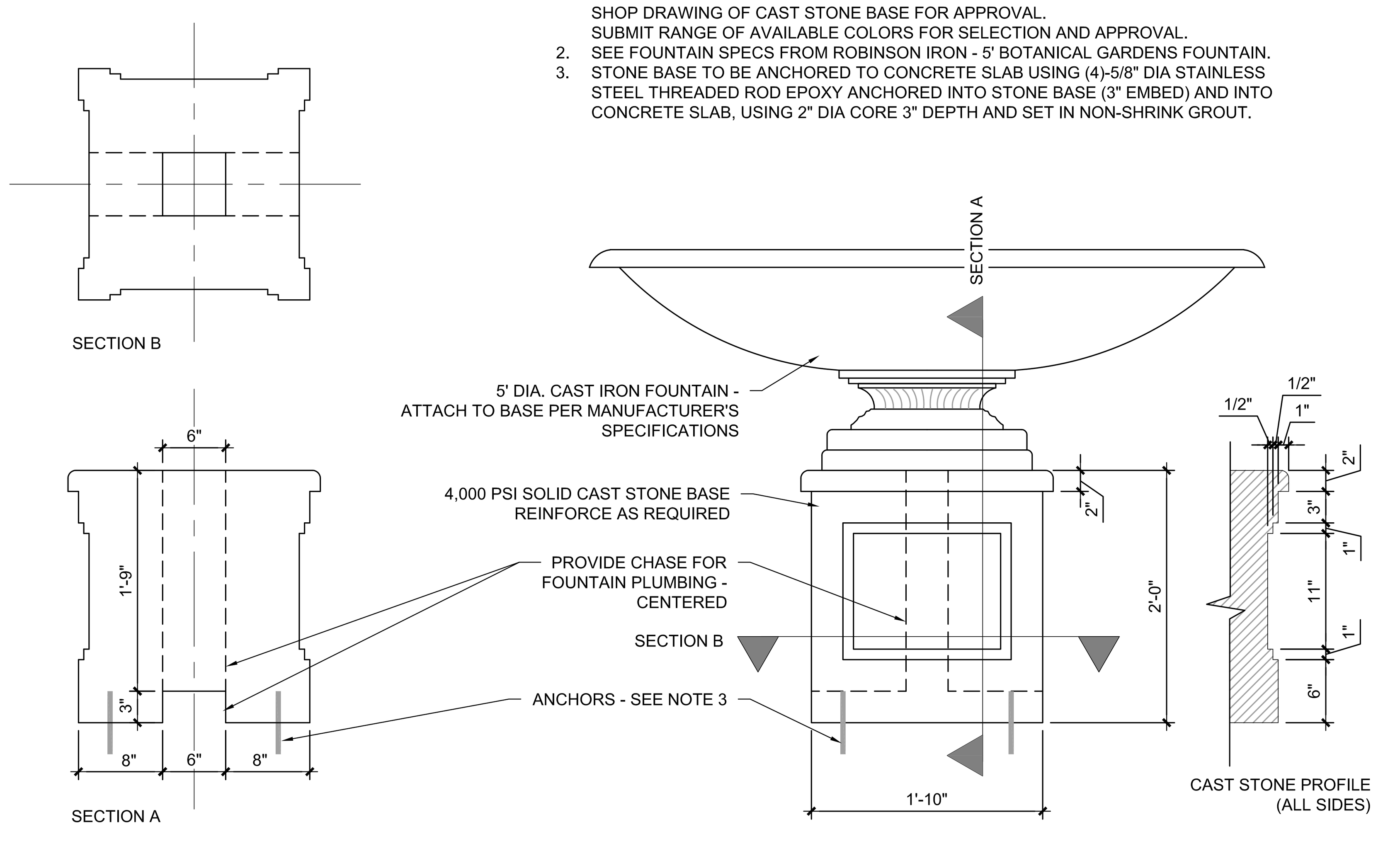
Summerville, SC

Title

UTILITY CONDUIT ROUTING SHEET

Project No.	Scale	
178420699	1" = 20'	
Drawing No.	Sheet	Revision
C16	17 of 17	0

NOTES:
1. CONTRACTOR SHALL SUBMIT SEALED STRUCTURAL SHOP DRAWING OF CAST STONE BASE FOR APPROVAL. SUBMIT RANGE OF AVAILABLE COLORS FOR SELECTION AND APPROVAL.
2. SEE FOUNTAIN SPECS FROM ROBINSON IRON - 5' BOTANICAL GARDENS FOUNTAIN.
3. STONE BASE TO BE ANCHORED TO CONCRETE SLAB USING (4)-5/8" DIA STAINLESS STEEL THREADED ROD EPOXY ANCHORED INTO STONE BASE (3" EMBED) AND INTO CONCRETE SLAB, USING 2" DIA CORE 3" DEPTH AND SET IN NON-SHRINK GROUT.

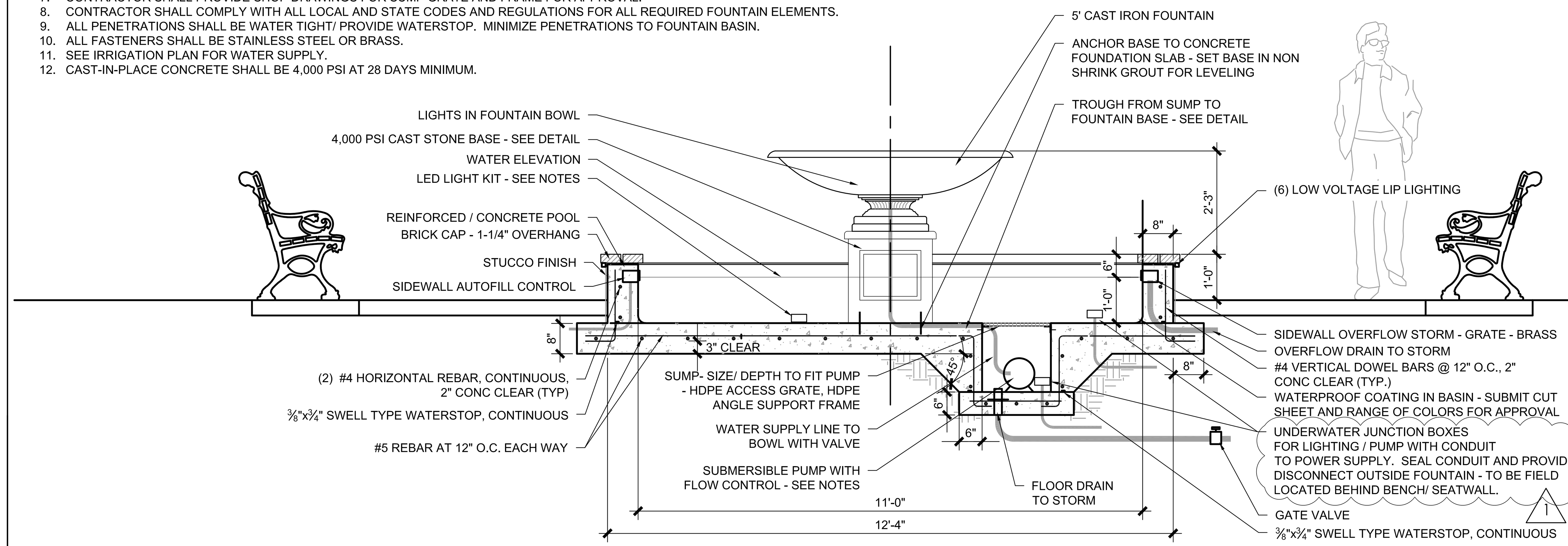


1 CAST STONE FOUNTAIN BASE

SCALE: 1"=1'-0"

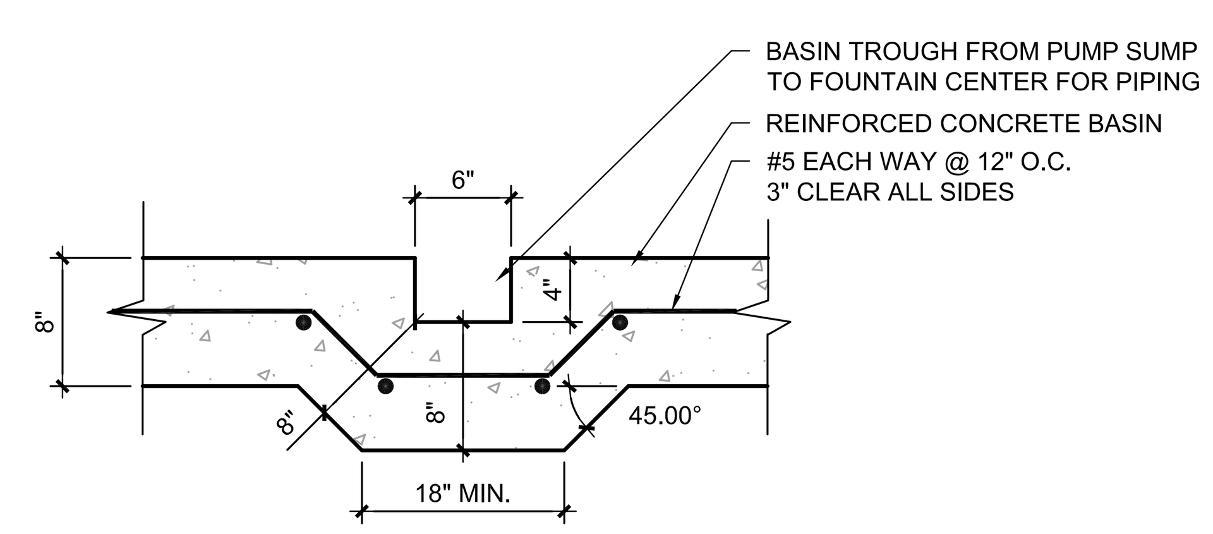
NOTES:
1. FOUNTAIN BOWL BY ROBINSON IRON - 5' BOTANICAL GARDENS FOUNTAIN. COLOR: VERDE GRIS. INSTALL PER MANUFACTURERS SPECIFICATIONS. INCLUDE BOWL DRAIN PLUG AND ELECTRICAL CORD SEAL IN BOWL. SUBMIT CUT SHEET AND SHOP DRAWINGS FOR APPROVAL. WWW.ROBINSONIRON.COM
2. CONTRACTOR SHALL COORDINATE ELECTRICAL SUPPLY TO FOUNTIAN.
3. CONTRACTOR SHALL PROVIDE AUTO-FILL KIT MODEL AF-1000 $\frac{1}{2}$" BY ATLANTIC OR APPROVED EQUAL.
4. CONTRACTOR SHLL PROVIDE OVERFLOW DRAIN - SUBMIT CUT SHEETS AND SHOP DRAWINGS FOR APPROVAL.
5. CONTRACTOR SHALL SIZE PUMP WITH VARIABLE CONTROL TO PROVIDE CONSTANT RIBBON OF WATER OVER ALL EDGES OF FOUNTAIN BOWL. SUBMIT CUT SHEET AND DATA FOR PUMP PERFORMANCE. PUMP SHALL PROVIDE 1200 GAL. PER HOUR PER LINEAR FOOT OF BOWL EDGE.
6. CONTRACTOR SHALL PROVIDE CUT SHEETS FOR LOW VOLTAGE FOUNTAIN LIGHTING SYSTEM TO INCLUDE:
   6.1. LOW VOLTAGE TRANSFOMER SIZED PER LIGHTING REQUIREMENTS BY FOCUS INDUSTRIES OR APPROVED EQUAL. WWW.FOCUSINDUSTRIES.COM
   6.2. UNDERWATER JUNCTION BOXES - FA-H20-J BY FOCUS INDUSTRIES OR APPROVED EQUAL. QUANTITY AS REQUIRED. WWW.FOCUSINDUSTRIES.COM
   6.3. (5) UNDERWATER LED LIGHTING - SL11-LED-M BY FOCUS INDUSTRIES OR APPROVED EQUAL. PROVIDE COLOR LENSES FOR LIGHTS. WWW.FOCUSINDUSTRIES.COM - LED LIGHTING TO BE FIELD ADJUSTED FOR DESIRED EFFECT.
   6.4. (6) BASIN LIP LIGHTING (OUTSIDE FOUNTAIN) - VISTA 4260 BY VISTA PROFESSIONAL OUTDOOR LIGHTING OR APPROVED EQUAL. WWW.VISTAPRO.COM
7. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR SUMP GRATE AND FRAME FOR APPROVAL.
8. CONTRACTOR SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND REGULATIONS FOR ALL REQUIRED FOUNTAIN ELEMENTS.
9. ALL PENETRATIONS SHALL BE WATER TIGHT/ PROVIDE WATERSTOP. MINIMIZE PENETRATIONS TO FOUNTAIN BASIN.
10. ALL FASTENERS SHALL BE STAINLESS STEEL OR BRASS.
11. SEE IRRIGATION PLAN FOR WATER SUPPLY.
12. CAST-IN-PLACE CONCRETE SHALL BE 4,000 PSI AT 28 DAYS MINIMUM.

1



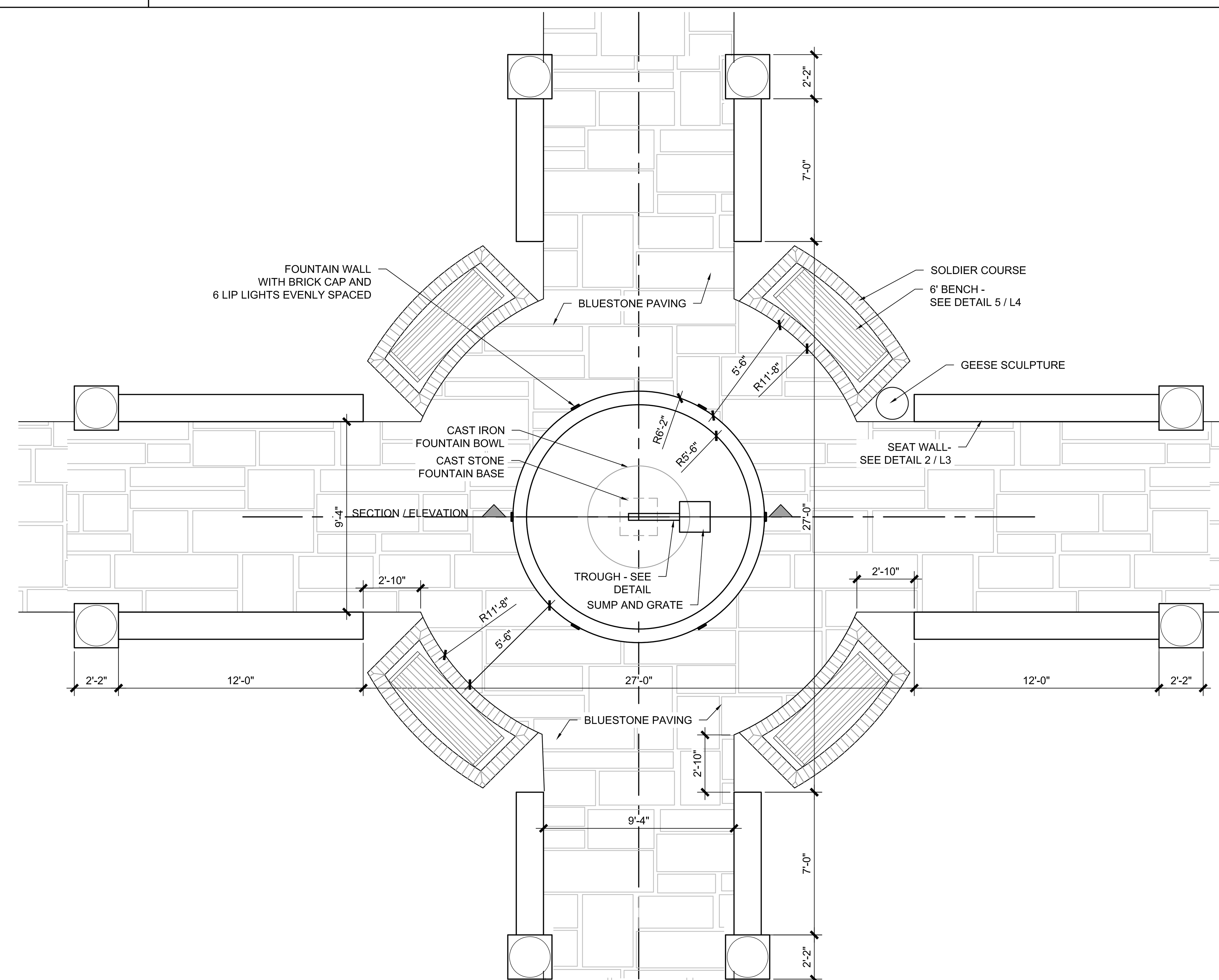
2 FOUNTAIN SECTION / ELEVATION

SCALE: 1/2"=1'-0"



3 TROUGH DETAIL

SCALE: 1"=1'-0"



4 FOUNTAIN DETAIL PLAN

SCALE: 1/4"=1'-0"

811 Know what's below. Call before you dig.

V:\1784\active\178420699-Hutchinson_square_ph1\urban_land\drawings\sheet\phase_2-4\park_sheets\699_pk_lo Details.dwg
2018/02/12 4:47 PM By: Vallnagle, Kevin

ORIGINAL SHEET - ARCH D

Stantec

4969 Centre Pointe Dr, Suite 200
North Charleston, SC 29418
Tel.
www.stantec.com

Consultants

Legend

Notes

ADDENDUM #1	KV	JLL	18.02.13
Revision	By	Appd.	YY.MM.DD

FOR BID	KV	JLL	18.01.24
DESIGN DEVELOPMENT	KV	JLL	17.08.24
Issued	By	Appd.	YY.MM.DD

File Name: Dwn. Chkd. Dsgn. YY.MM.DD

Permit-Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION STANTEC CONSULTING SERVICES, INC. No. C02310

State of South Carolina Landscape Architect ... RANDALL VOLLNOGLE

01/24/2018

Client/Project

Town of Summerville

HUTCHINSON SQUARE IMPROVEMENTS - PHASE II
BID SET - PARK

Summerville, SC

Title

SITE DETAILS

Project No.	Scale	
178420699		
Drawing No.	Sheet	Revision
L5	17 of 26	0

December 10, 2015

Ms. Jenny Horne
Senior Landscape Architect
Stantec
4969 Centre Pointe Drive, Suite 200
North Charleston, South Carolina 29418-6952

Re: Report of Subsurface Exploration and
Geotechnical Engineering Analysis
Hutchinson Square Redevelopment
Summerville, South Carolina

ECS Project No.: 34.2677

Dear Ms. Horne,

As authorized by your acceptance of our proposal numbered 34.2075-GP dated September 11, 2015, ECS Carolinas, LLP (ECS) has completed a subsurface exploration and geotechnical engineering analysis for the subject project. This report presents the results of the field exploration and engineering analysis, along with our recommendations for design of geotechnical related items.

We appreciate the opportunity to be of service to you during the design phase of this project and look forward to our continued involvement during the construction phase. If you have any questions concerning the information and recommendations presented in this report, please contact us at (843) 654-4448 for further assistance.

Respectfully submitted,

ECS CAROLINAS, LLP

Jarred R. Wadford, EIT
Assistant Project Manager

Meredith L. Long, P.E.
Geotechnical Department Manager
South Carolina License No. 28188

Allen R. Parker, Jr., P.E., M.B.A
Principal Engineer
South Carolina License No. 25119

REPORT OF SUBSURFACE EXPLORATION
AND
GEOTECHNICAL ENGINEERING ANALYSIS
HUTCHINSON SQUARE REDEVELOPMENT
SUMMERVILLE, SOUTH CAROLINA

PREPARED FOR:

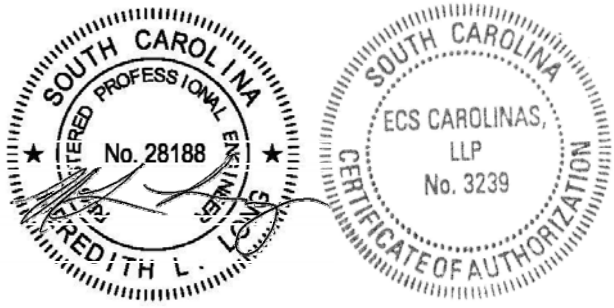
MS. JENNY HORNE
SENIOR LANDSCAPE ARCHITECT
STANTEC
4969 CENTRE POINT DRIVE, SUITE 200
NORTH CHARLESTON, SOUTH CAROLINA 29418-6952

PREPARED BY:

ECS CAROLINAS, LLP
3820 FABER PLACE DRIVE, SUITE 500
NORTH CHARLESTON, SOUTH CAROLINA 29405

ECS CAROLINAS, LLP PROJECT NO.: 34.2677
FIRM NO. 3239

MEREDITH L. LONG, P.E.



SC LICENSE NO. 28188

DECEMBER 10, 2015

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

This report contains the results of our subsurface exploration and geotechnical engineering analysis for the proposed Hutchinson Square Redevelopment located along North Main Street, between its intersection with West Richardson Avenue and Doty Avenue, in Summerville, South Carolina. We understand that the project will consist of redeveloping the park to include a gateway entry and a covered pavilion on the north end of the park, near intersection with Doty Avenue. Other possible improvements include a garden feature with seating in the center of the park and a plaza with seating on the south side of the park. As part of the improvements, Little Main Street will be regraded to connect the edges of the park and the businesses along Little Main Street for pedestrian circulation. Based on conversations with Mr. Josh Lilly of Stantec, we understand cuts on the order of 6 to 12 inches and fill on the order of 12 to 18 inches will be required to re-grade Little Main Street. We understand that minimal to no new fill will be required to grade the park area aside from the planter/garden features.

Initially, test locations C-2, HA-1, HA-2, HA-3, and HA-4 encountered surficial materials consisting of approximately 7 to 8 inches of asphalt and concrete was found underlying the asphalt at boring location C-2. Boring locations C-1, C-3, and C-4 encountered surficial materials consisting of approximately 6 to 10 inches of organic laden topsoil.

Below the surficial materials, the exploration generally encountered loose to dense sand with varying amounts of clay and silt to approximately 4 feet below the ground surface. Below the sand, the exploration encountered soft to firm clay with varying amounts of sand to approximately 7 feet below the ground surface. The exploration then encountered loose to medium dense sand to approximately 17 feet below the ground surface. Below the sand, the exploration encountered soft to stiff clay with varying amounts of sand to approximately 35 feet below the ground surface. Below the clay, the exploration encountered very dense sand to the final refusal depth of approximately 40 feet below the ground surface.

In summary, for foundations designed and constructed in accordance with the recommendations provided in this report, a net allowable soil bearing pressure of 2,000 pounds per square foot (psf) is recommended for use in proportioning shallow foundations for the pavilion and gateway entry structure. Up to 2 feet of undercutting may be required below Little Main Street. Once on site grades, traffic numbers, and structural loads are finalized we request the opportunity to review our recommendations and make any necessary changes.

Specific information regarding the subsurface exploration procedures used, the site and subsurface conditions at the time of our exploration, and our conclusions and recommendations concerning the geotechnical design and construction aspects of the project are discussed in detail in the subsequent sections of this report. Please note this Executive Summary is an important part of this report and should be considered a ***"summary"*** only. The subsequent sections of this report constitute our findings, conclusions, and recommendations in their entirety.

Prepared By:
Jarred R. Wadford, EIT
Assistant Project Manager

Senior Review By:
Meredith L. Long., P.E.
Geotechnical Department Manager

Principal Review By:
Allen R. Parker, Jr., P.E.
Principal Engineer

2.0 PROJECT OVERVIEW

2.1 Project Information

This report contains the results of our subsurface exploration and geotechnical engineering analysis for the proposed Hutchinson Square Redevelopment located along North Main Street, between its intersection with West Richardson Avenue and Doty Avenue in Summerville, South Carolina. We understand that the project will consist of redeveloping the park to include a gateway entry and a covered pavilion on the north end of the park, at the intersection with Doty Avenue. Other possible improvements include a garden feature with seating in the center of the park and a plaza with seating on the south side of the park. As part of the improvements, Little Main Street will be regraded to connect the edges of the park and the businesses along Little Main Street for pedestrian circulation. Based on conversations with Josh Lilly from Stantec, We understand cuts on the order of 6 to 12 inches and fill on the order of 12 to 18 inches will be required to re-grade Little Main Street. We understand that minimal to no new fill will be required to grade the park area aside from the planter/garden features.

2.2 Scope of Work

The conclusions and recommendations contained in this report are based on the results of:

- Four (4) electronic cone penetration test (CPT) soundings,
- Nine (9) hand auger borings,
- Five (5) Kessler Dynamic Cone Penetrometer (DCP) tests,
- Engineering analyses of the field findings with respect to the provided project information.

2.3 Purposes of Exploration

The purposes of this exploration program were to determine the soil and groundwater conditions at the site and to develop engineering recommendations to assist in the design and construction of the proposed project. We accomplished these objectives by:

- Performing a site reconnaissance to observe the existing site conditions,
- Performing CPT soundings, Kessler DCPs, and hand auger borings to explore the subsurface soil and groundwater conditions,
- Analyzing the field data to develop appropriate geotechnical engineering design and construction recommendations.

3.0 EXPLORATION PROCEDURES

3.1 Subsurface Exploration Procedures

3.1.2 Cone Penetration Testing

Four (4) electronic cone penetration test (CPT) soundings were performed generally within the footprint of the proposed structures during our field exploration. The CPT sounding at location C-2 was unable to penetrate the materials at the ground surface and was offset approximately 20 feet. The cone penetration test soundings were performed in general conformance with ASTM D 5778 by our subcontractor. The soundings were performed with a track mounted rig. The approximate locations of the CPT soundings are indicated on the Test Location Plan in Appendix A.

The cone used in the soundings has a tip area of 15 cm^2 and a sleeve area of 225 cm^2. The CPT soundings recorded tip resistance and sleeve friction measurements to assist in determining pertinent index and engineering properties of the site soils. The ratio of the sleeve friction to tip resistance is then used to aid in assessing the soil types through which the tip is advanced. The results of the CPT soundings are presented in Appendix B.

3.1.2 Hand Auger Borings

Nine (9) hand auger borings were performed, one (1) adjacent to each sounding and five (5) along Little Main Street, during our field exploration to further explore the near surface soils across the site. The hand auger borings were conducted in general conformance with ASTM D 1452. The approximate locations of the hand auger borings are indicated on the Test Location Plan in Appendix A.

In this procedure, the auger boring is made by rotating and advancing an auger to the desired depths while periodically removing the auger from the hole to clear and examine the auger cuttings. The auger cuttings were visually classified in the field. Stratification lines shown on the hand auger boring logs represent approximate boundaries between physical soil types. The hand auger boring logs are presented in Appendix C.

3.1.3 Kessler Dynamic Cone Penetrometer

Four (4) Kessler dynamic cone penetrometer (DCP) tests were performed along Little Main Street, during our field exploration. An additional DCP was performed at test location C-2 to supplement the offset sounding.

The Kessler DCP was improved and patented by the US Army Corps of Engineers. The Kessler DCP used for testing has a 4.8 kg (10 lb) hammer. The DCP is primarily used to determine in place soil shear strength in road construction. It can be used to determine in-situ CBR in a range of less than 0.5 to 100% and bearing capacities from 430 to 10,800 psf.

4.0 EXPLORATION RESULTS

4.1 Site Conditions

The site for the proposed Hutchinson Square Redevelopment is located along North Main Street, between its intersection with West Richardson Avenue and Doty Avenue, in Summerville, South Carolina. At the time of our exploration, the site was an existing roadway with a large open grassy median with mature live oak trees. Topographic information was not provided; however, the site appeared to be relatively flat. The site is bordered by Doty Avenue to the north, existing businesses to the west, North Main Street to the east, and West Richardson Avenue to the south.

4.2 Regional Geology

The site is located in the Coastal Plain Physiographic Province of South Carolina. The Coastal Plain is composed of seven terraces, each representing a former level of the Atlantic Ocean. Soils in this area generally consist of sedimentary materials transported from other areas by the ocean or rivers. These deposits vary in thickness from a thin veneer along the western edge of the region to more than 10,000 feet near the coast. The sedimentary deposits of the Coastal Plain rest upon consolidated rocks similar to those underlying the adjacent Piedmont Physiographic Province. In general, shallow unconfined groundwater movement within the overlying soils is largely controlled by topographic gradients. Recharge occurs primarily by infiltration along higher elevations and typically discharges into streams or other surface water bodies. The elevation of the shallow water table is transient and can vary greatly with seasonal fluctuations in precipitation.

4.3 Subsurface Conditions

Details of the subsurface conditions encountered by the soundings, the hand auger borings, and Kessler DCPs are shown on the logs in the Appendix B, Appendix C, and Appendix D respectively. These logs represent our interpretation of the subsurface conditions based upon the field data. Stratification lines on the sounding logs represent approximate boundaries between soil behavior types[1]; however, the actual transition may be gradual. The general subsurface conditions and their pertinent characteristics are discussed in the following paragraphs.

Initially, test locations C-2, HA-1, HA-2, HA-3, and HA-4 encountered surficial materials consisting of approximately 7 to 8 inches of asphalt and concrete was found underlying the asphalt at boring location C-2. Boring locations C-1, C-3, and C-4 encountered surficial materials consisting of approximately 6 to 10 inches of organic laden topsoil.

Below the surficial materials, the exploration generally encountered loose to dense sand with varying amounts of clay and silt to approximately 4 feet below the ground surface. Below the sand, the exploration encountered soft to firm clay with varying amounts of sand to approximately 7 feet below the ground surface. The exploration then encountered loose to medium dense sand to approximately 17 feet below the ground surface. Below the sand, the exploration encountered soft to stiff clay with varying amounts of sand to approximately 35 feet below the ground surface. Below the clay, the exploration encountered very dense sand to the final refusal depth of approximately 40 feet below the ground surface.

[1] Soil Behavior Type is calculated based on empirical correlations which use the three fundamental penetrometer measurements (i.e., tip resistance, sleeve friction, and pore pressure). A CPT may define a soil based on its behavior as one type, while its grain size and plasticity (the traditional basis for soil classification) may define it as a different type.

4.4 Groundwater Conditions

Groundwater measurements were made within the soundings and hand auger borings. At the time of our exploration, the groundwater was measured to be approximately 4 to 7 feet below the ground surface in the soundings. Groundwater was encountered within all hand auger borings, except at locations C-3 and C-4, at approximately 3 to 4 feet below the ground surface.

The highest groundwater observations are normally encountered in the late winter and early spring. Variations in the location of the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, and other factors not immediately apparent at the time of this exploration. If long term water levels are crucial to the development of this site, it would be prudent to track water levels with the use of perforated pipes or piezometers.

5.0 ANALYSIS AND RECOMMENDATIONS

The exploration indicates the site is adaptable for the proposed construction. The recommendations provided in this report are based upon our understanding of the proposed construction, the information provided to us during this study and our past experience with similar conditions. Should the information provided to us be changed prior to final design, ECS should review these recommendations and make appropriate revisions, if necessary.

5.1 Subgrade Preparation

The first step in preparing the site for the proposed construction should be to remove vegetation, rootmat, topsoil, deleterious materials, organic materials, and other remnants of previous developments from the existing ground surface. These operations should extend at least 10 feet beyond the planned limits of the proposed structures and 5 feet beyond the planned pavement areas, where practical.

After proper clearing, stripping, grubbing, and prior to fill placement, foundation, slab, or pavement construction, the exposed subgrade soils should be carefully evaluated by an experienced Geotechnical Engineer to identify localized unstable or otherwise unsuitable materials. This evaluation should include proofrolling with a fully loaded, tandem-axle dump truck or similar equipment assessed suitable by the Geotechnical Engineer. Areas that pump or rut excessively under proofrolling should be densified in-place or undercut to stable materials and replaced with compacted engineered fill. Undercutting operations should be observed by the Geotechnical Engineer to document that unsuitable materials are removed and that suitable materials are not over-excavated.

The test locations along Little Main Street and at the proposed pavilion location encountered uncontrolled fill and soft clayey soils to depths up to 5 feet. Some undercutting and over excavation of the pavilion footings should be expected. Detailed recommendations concerning undercutting should be provided by ECS during construction.

The preparation of fill subgrades, as well as proposed building subgrades, should be observed on a full-time basis by a representative of ECS. These observations should be performed by an experienced geotechnical engineer, or his representative, to ensure that unsuitable materials have been removed and that the prepared subgrade is suitable for support of the proposed construction and/or fills.

5.2 Engineered Fill Placement

Following the removal of deleterious surface and subsurface materials, and after achieving a stable subgrade, engineered fills can be placed and compacted to achieve the desired site grades. Engineered fill for support of the proposed construction and for backfill of utility lines within expanded building and pavement limits should consist of an approved material, free of organic matter and debris and cobbles greater than 3 inches, and have a Liquid Limit (LL) and Plasticity Index (PI) less than 35 and 9, respectively. The fill should exhibit a maximum dry density of at least 100 pounds per cubic foot, as determined by a Modified Proctor compaction test (ASTM D 1557).

Unsuitable fill materials include topsoil, organic materials (OH, OL), and high plasticity clays and silts (CH, MH). Such materials removed during grading operations should be either stockpiled for later use in landscape fills, or placed in approved on or off-site disposal areas.

Existing soils containing significant amounts of organic matter will not be suitable for re-use as engineered fill. As such, the organic content of the near surface soils should be evaluated to determine if some of these soils will be suitable for re-use as engineered fill. Natural fine-grained soils classified as clays or silts (CL, ML) with LL and PI greater than 35 and 9, respectively, should be evaluated by the geotechnical engineer at the time of construction to determine their suitability for use as engineered fill.

We recommend that moisture control limits of -2 to +2 percent of the optimum moisture content be used for placement of project fill with the added requirement that fill soils placed wet of optimum remain stable under heavy pneumatic-tired construction traffic. During site grading, some moisture modification (drying and/or wetting) of the onsite soils will likely be required.

Engineered fill should be compacted to at least 95 percent of its Modified Proctor (ASTM D 1557) maximum dry density. The maximum loose lift thickness depends upon the type of compaction equipment use. The table below provides maximum loose lifts that may be placed based on compaction equipment utilized.

LIFT THICKNESS RECOMMENDATIONS

Equipment	Maximum Loose Lift Thickness, in.
Large, Self-Propelled Equipment	12
Small, Self-Propelled or Remote Controlled (Rammax, etc.)	8
Hand Operated (Plate Tamps, Jumping Jacks, Wacker-Packers)	6

ECS recommends that fill operations be observed and tested by an engineering technician to determine if compaction requirements are being met. The testing agency should perform a sufficient number of tests to confirm that compaction is being achieved. For mass grading operations we recommend a minimum of one density test per 2,500 SF per lift of fill placed or per 1 foot of fill thickness, whichever results in more tests. We recommend at least one test per 1 foot thickness of fill for every 100 linear ft of utility trench backfill. When dry, the majority of the site soil should provide adequate subgrade support for fill placement and construction operations. When wet, the soil may degrade quickly with disturbance from construction traffic. Good site drainage should be maintained during earthwork operations to prevent ponding water on exposed subgrades.

Fill materials should not be placed on soils which have been recently subjected to precipitation. Wet soils should be removed prior to the continuation of site grading and fill placement. Borrow fill materials, if required, should not contain excessively wet materials at the time of placement.

If problems are encountered during the site grading operations, or if the actual site conditions differ from those encountered during our subsurface exploration, the geotechnical engineer should be notified immediately.

5.3 Seismic Site Class Determination and Liquefaction Potential

A liquefaction[2] analysis based on the 2012 International Building Code (IBC 2012) design earthquake[3] indicates sands encountered below the water table have the potential to liquefy during the design seismic event. Liquefaction can create two potential problems: ground surface disruption and volumetric compression.

When soils susceptible to liquefaction are located within approximately 10 ft of the surface, ground surface disruptions (i.e., sand boils) are possible. Such disruptions beneath at-grade structures would result in bearing capacity failure. Since the potentially liquefiable sands are not located in the upper 10 ft at this site, there is a low risk of ground surface disruption. Our analysis indicates that at-grade structures such as parking, slabs and shallow foundations could potentially settle up to 2 inches during and immediately following the design seismic event. This settlement would result from volumetric compression of the liquefiable sand layers which occurs as seismically-induced excess soil porewater pressures dissipate.

Section 1613.3.2 of the IBC 2012 classifies sites with the potential for liquefaction as Seismic Site Class F. However, the IBC 2012 allows the design spectral response accelerations for a site to be determined without regard to liquefaction provided buildings have a fundamental period of less than or equal to 0.5 seconds and the risks of liquefaction are considered in design. The building should meet this criterion; however, this must be confirmed by the Structural Engineer. Based on the results of the CPT soundings it is our interpretation the site may be considered a Site Class D. The spectral response accelerations and site coefficients for the site are given below.

Seismic Design Parameters

IBC	Site Class	S_s	S_1	F_a	F_v	S_{DS}	S_{D1}
2012	D	1.64g	0.56g	1.00	1.50	1.10g	0.56g

Ground improvement techniques such as vibro-replacement or geo-composite drains could be designed to mitigate or reduce the site's susceptibility to liquefaction. Alternatively, the use of post tension slabs may mitigate the effects of liquefaction without the need for ground improvement. Details for preliminary ground improvement techniques can be provided upon request.

5.4 Foundations Recommendations

Provided the subgrade preparation and earthwork operations are completed in strict accordance with the recommendations of this report, the proposed structures can be supported on conventional shallow foundations. We recommended a net allowable design soil bearing

[2] Liquefaction, the loss of a soil's shear strength due to the increase in porewater pressure resulting from seismic vibrations, is always a potential concern in coastal South Carolina.

[3] The IBC design earthquake has a 2% probability of exceedance in 50 years. Our liquefaction analysis was based on an earthquake with a magnitude of 7.3 and ground surface acceleration of 1.154 g.

pressure of 2,000 psf. To reduce the possibility of foundation bearing failure and excessive settlement due to local shear or "punching" failures, we recommend that continuous footings have a minimum width of 18 inches and square footings have a minimum width of 24 inches. Furthermore, all footings should bear at a depth to provide adequate frost cover protection. For this region, we recommend the bearing elevation be a minimum depth of 12 inches below the finished exterior grade or in accordance with the local building code requirements.

The net allowable soil bearing pressure refers to that pressure which may be transmitted to the foundation bearing soils in excess of the final minimum surrounding overburden pressure. The final footing elevation should be evaluated by ECS personnel to document that the bearing soils are capable of supporting the recommended net allowable bearing pressure and suitable for foundation construction. These evaluations should include visual observations, hand rod probing, and dynamic cone penetrometer (ASTM STP 399) testing, or other methods deemed appropriate by the geotechnical engineer at the time of construction, in each column footing excavation and at intervals not greater than 25 feet in continuous footing excavations.

The settlement of a structure is a function of the compressibility of the bearing materials, bearing pressure, actual structural loads, fill depths, and the bearing elevation of footings with respect to the final ground surface elevation. Estimates of settlement for foundations bearing on engineered or non-engineered fills are strongly dependent on the quality of fill placed.

Factors which may affect the quality of fill include maximum loose lift thickness of the fills placed and the amount of compactive effort placed on each lift. Provided the recommendations outlined in this report are strictly adhered to, we expect that total settlements for the proposed construction to be on the order of 1 inch or less, while the differential settlement will be approximately 1/2 of the anticipated total settlement. This evaluation is based on our engineering experience and the structural information provided for this structure, and is intended to aid the structural engineer with his design.

5.5 Suitability of On-Site Soils

Based on the hand auger borings, some of the soils encountered below the fill/topsoil should be suitable for use as select engineered fill. The soils encountered appeared to be primarily clean sand to clayey sand. We note that materials that contain significant amounts of clay/silt, will be moisture sensitive and may require additional efforts (i.e., drying) to obtain proper compaction if used as engineered fill. Hand augers HA-2, HA-3, and HA-4 encountered material that contained brick debris. This material will not be suitable for use as engineered fill. Soils containing organic material will not be suitable for use as engineered fill.

5.6 Pavement Design Considerations

We have performed pavement design analyses for new flexible (asphalt) and rigid (concrete) pavement using the AASHTO *Guide for Design of Pavement Structures* and associated literature. Due to the presence of soft soils near the surface, some undercutting may be required and replaced with engineered fill. Assuming the pavements will be supported on stable existing subgrade or new engineered fill, we based our pavement analyses on an assumed California Bearing Ratio (CBR) value of 5 percent. The CBR value should be confirmed with laboratory testing during construction. The CBR value was correlated to a subgrade resilient modulus of 7,500 psi, based on correlations established by The Asphalt Institute. The recommended minimum pavement sections are as follows:

MATERIAL	FLEXIBLE PAVEMENT		RIGID PAVEMENT	
	Heavy Duty	Light Duty	Heavy Duty	Light Duty
Graded Aggregate Base Course	8 in.	6 in.	-	-
Asphaltic Concrete Surface Course (9.5 mm)	3 in.*	2 in.*	-	-
Portland Cement Concrete (f'_c = 4000 psi)	-	-	5 in.	4 in.

* A minimum placement thickness of 1.5 inches should be used.

The pavement sections listed above can sustain design traffic loads of approximately 15,000 ESAL and 85,000 ESAL over 20 years for light duty pavement and heavy duty pavement, respectively. Light duty pavement is suitable for parking and drive areas subject only to automobile traffic. Heavy duty pavements should be used in any areas subject to heavy truck traffic. The CBR values should be confirmed during grading by engineering evaluation and field and laboratory testing.

The standard and heavy-duty rigid pavement sections should be a minimum of 4-in. and 5-in. thick concrete, respectively. Rigid pavements are recommended for trash dumpster and other areas where heavy wheel loads will be concentrated. Construction traffic (i.e., concrete trucks, dump trucks, etc.) should be considered when determining the actual traffic volume.

A stable subgrade is very important to pavement performance. Immediately prior to paving, the subgrade should be proofrolled and unstable areas repaired. The base course should be compacted to at least 98% of the maximum dry density, as determined by the modified Proctor compaction test (ASTM D 1557). To document that the base course has been uniformly compacted, in-place field density tests should be performed by a qualified Materials Technician and the area should be methodically proofrolled under their observation. The base course thickness should not be deficient by more than 1/2 in. The asphalt pavement thickness should not be deficient by 1/4 in.

Concrete paving shall meet requirements for construction joints, control joints, and saw cuts as recommended by the Portland Cement Association (PCA). Proper jointing of rigid pavement is critical to keep stresses in the pavement within the appropriate limits, achieve adequate load transfer across joints, and reduce the potential for irregular crack formation. Control joints should be sawed joints (at least one-forth of the pavement thickness) spaced at a maximum of 12 feet apart. The panels should be cut as square as practical to limit irregular cracking. Sawing should be done as soon as the concrete has hardened sufficiently to prevent raveling.

The performance of pavements will be dependent upon a number of factors, including subgrade conditions at the time of paving, rainwater runoff, and traffic. Rainwater runoff should not be allowed to seep below pavements from adjacent areas. Therefore, drainage swales or underdrains may be required. Immediately prior to paving, the exposed subgrade should be thoroughly evaluated using thorough proofrolling and any unstable areas should be repaired. These recommendations are very important for long-term performance of the pavements. Because pavement design typically has relatively low factors of safety, it will be very important that the specifications are followed closely during pavement construction. Our preliminary analysis was based on a 20-year design life; however, some isolated areas could require repair in a shorter period of time.

5.8 Site Drainage

The proper diversion of surface water during site grading and construction will help reduce the potential for delays associated with periods of inclement weather. The proper diversion of surface water is especially critical due to the presence of shallow water and clayey near surface soils. Based upon our past experience, the use of “crowning” large areas of exposed soils should be useful to help divert surface water from the prepared subgrades.

Positive drainage should be provided around the perimeter of the structure to minimize the potential for moisture infiltration into the foundation and slab subgrade soils. We recommend that landscaped areas adjacent to the structure and pavements be sloped away from the construction and maintain a fall of at least 6 inches for the first 10 feet outward from the structure. Roof drains should discharge at least 5 feet from the building perimeter or directly into below grade stormwater piping. The parking lots, sidewalks, and any other paved areas should also be sloped to divert surface water away from the proposed building.

5.9 Construction Considerations

It is imperative to maintain good site drainage during earthwork operations to help maintain the integrity of the surface soils. The surface of the site should be kept properly graded to enhance drainage of surface water away from the proposed construction areas during the earthwork phase of this project. We recommend that surface drainage be diverted away from the proposed building and pavements areas without significantly interrupting its flow. Other practices would involve crowning and sealing the exposed soils daily with a smooth-drum roller at the end of the day’s work to reduce the potential for infiltration of surface water into the exposed soils.

The key to minimizing disturbance problems with the soils is to have proper control of the earthwork operations. Specifically, it should be the earthwork contractor's responsibility to maintain the site soils within a workable moisture content range to obtain the required in-place density and maintain a stable subgrade. Scarifying and drying operations should be included in the contractor's price and not be considered an extra to the contract. In addition, construction equipment cannot be permitted to randomly run across the site, especially once the desired final grades have been established. Construction equipment should be limited to designated lanes and areas, especially during wet periods to minimize disturbance of the site subgrades. It will likely be necessary to utilize tracked equipment during grading operations particularly if the subgrade soils exhibit elevated moisture conditions.

6.0 CLOSING

Our geotechnical evaluation of the site has been based on our understanding of the site, the project information provided to us, and the data obtained during our exploration. The general subsurface conditions utilized in our evaluations have been based on interpolation of subsurface data between the borings. If the project information provided to us is changed, please contact us so that our recommendations can be reviewed and appropriate revisions provided, if necessary. The discovery of any site or subsurface conditions during construction which deviate from the data outlined in this exploration should be reported to us for our review, evaluation and revision of our recommendations, if necessary. The assessment of site environmental conditions for the presence of pollutants in the soil and groundwater of the site is beyond the scope of this geotechnical exploration.

APPENDICES

APPENDIX A

FIGURES

Approximate Hand Auger Boring/CPT Location

Approximate Hand Auger Boring/DCP Location

Base drawing was provided by Stantec and adapted by ECS Carolinas, LLP.
Test locations are approximate. This drawing should not be used for design or construction.

Project No.: 34.2677 **Date: December 2015** **Not To Scale**	ECS	**TEST LOCATION PLAN** HUTCHINSON SQUARE REDEVELOPMENT NORTH MAIN STREET SUMMERVILLE, SOUTH CAROLINA	**Figure No.** **1**

APPENDIX B

CPT SOUNDING LOGS

ECS Carolinas, LLP

Test ID: C-1 Entry Way

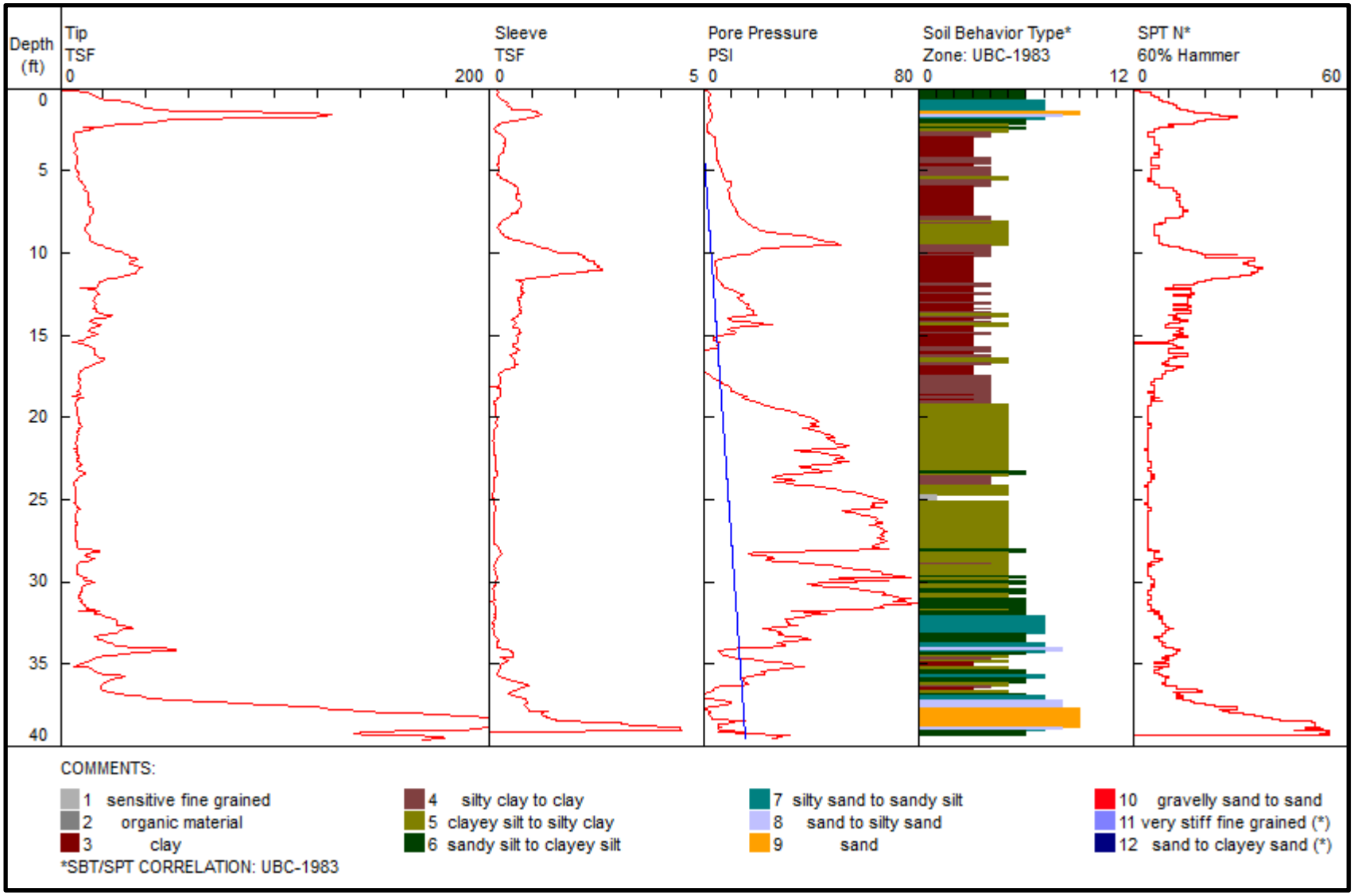
Test Date: 11/16/2015

Project: Hutchinson Square Redevelopment

Project Number: 34.2677

Location: Summerville, South Carolina

Water Table: 4 ft



ECS Carolinas, LLP

Test ID: C-2A Pavillion

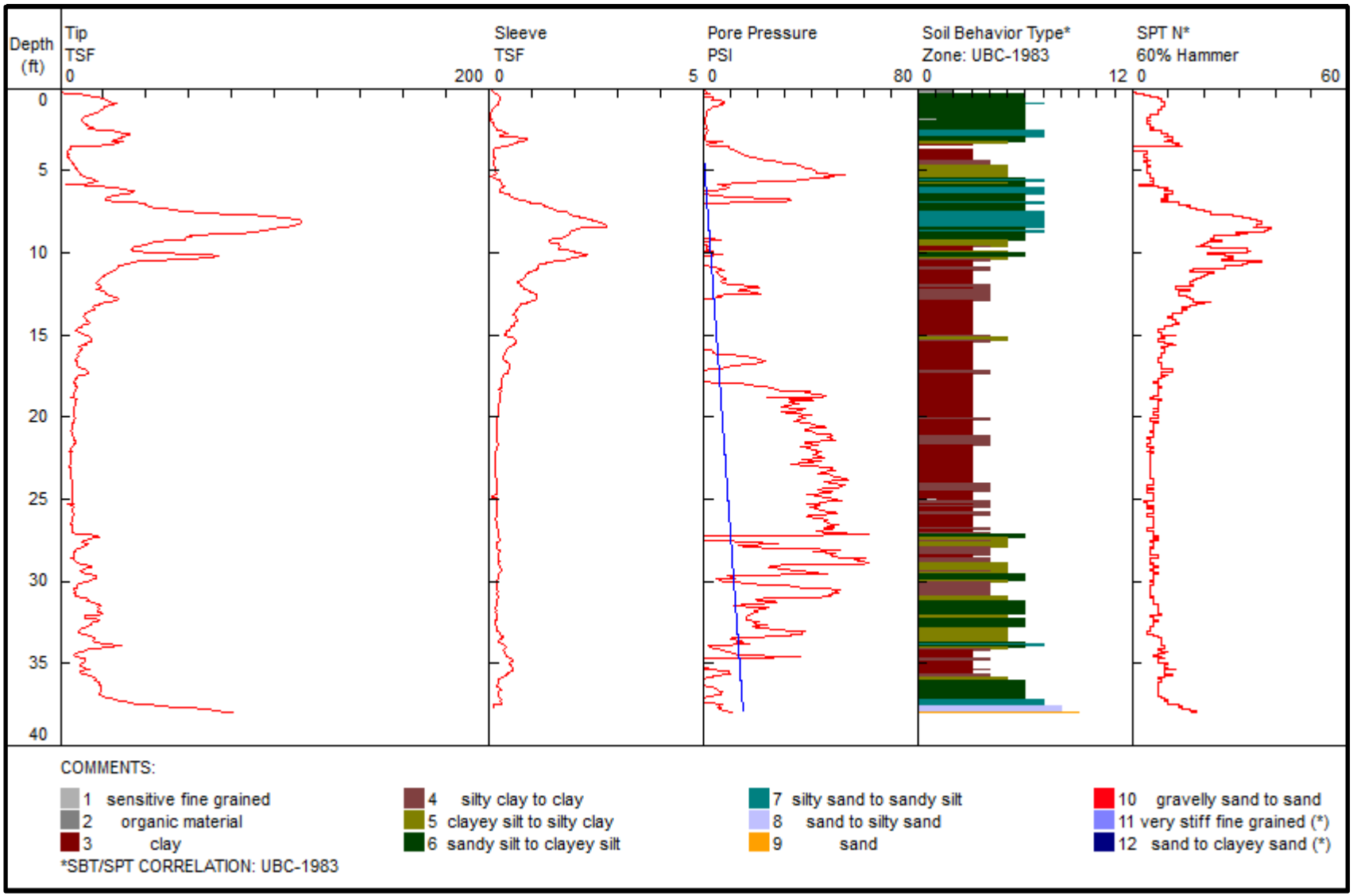
Test Date: 11/16/2015

Project: Hutchinson Square Redevelopment

Project Number: 34.2677

Location: Summerville, South Carolina

Water Table: 4 ft



ECS Carolinas, LLP

Test ID: C-3 Northern Planter Box

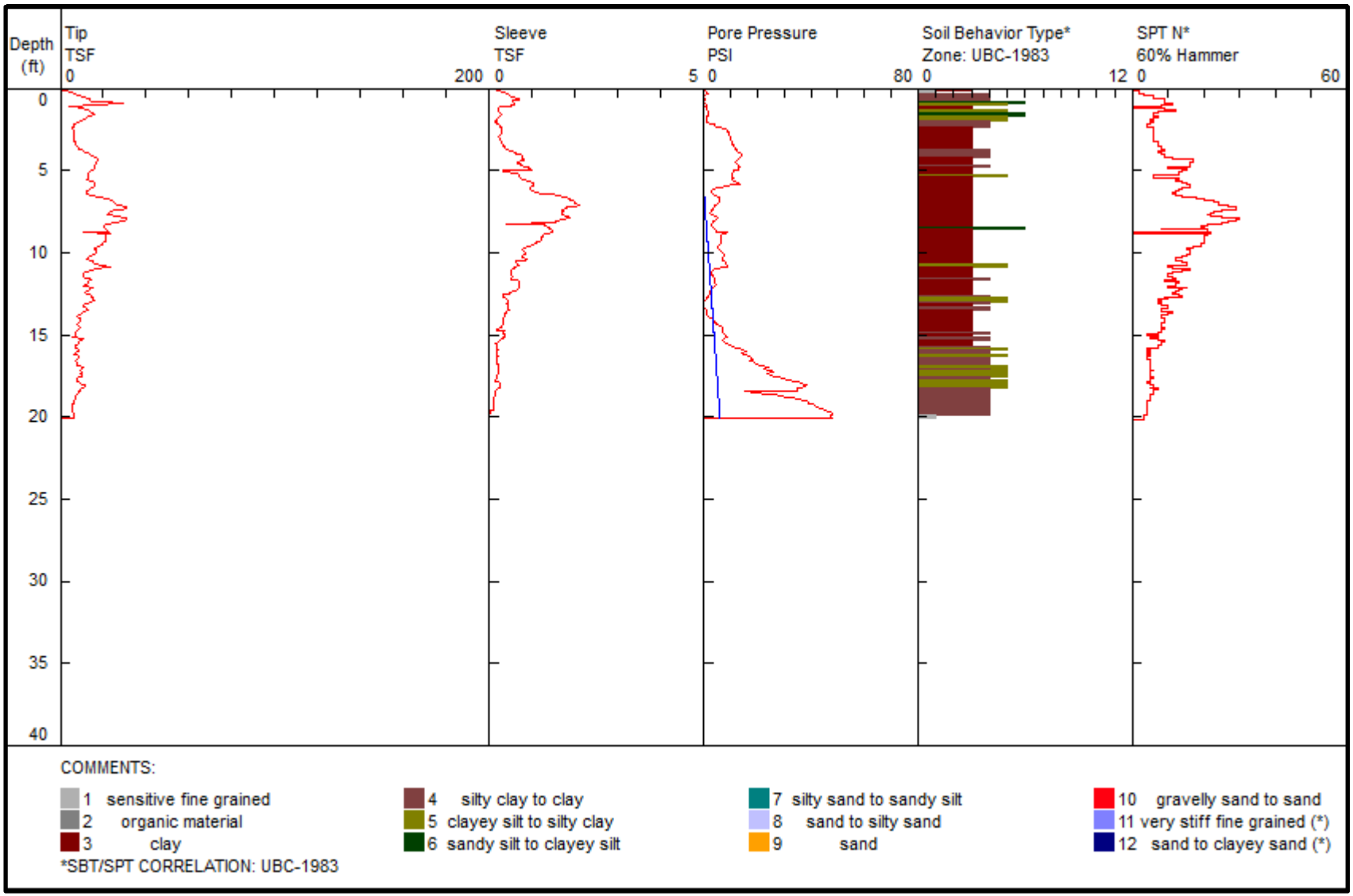
Test Date: 11/16/2015

Project: Hutchinson Square Redevelopment

Project Number: 34.2677

Location: Summerville, South Carolina

Water Table: 6 ft



ECS Carolinas, LLP

Test ID: C-4 Southern Planter Box

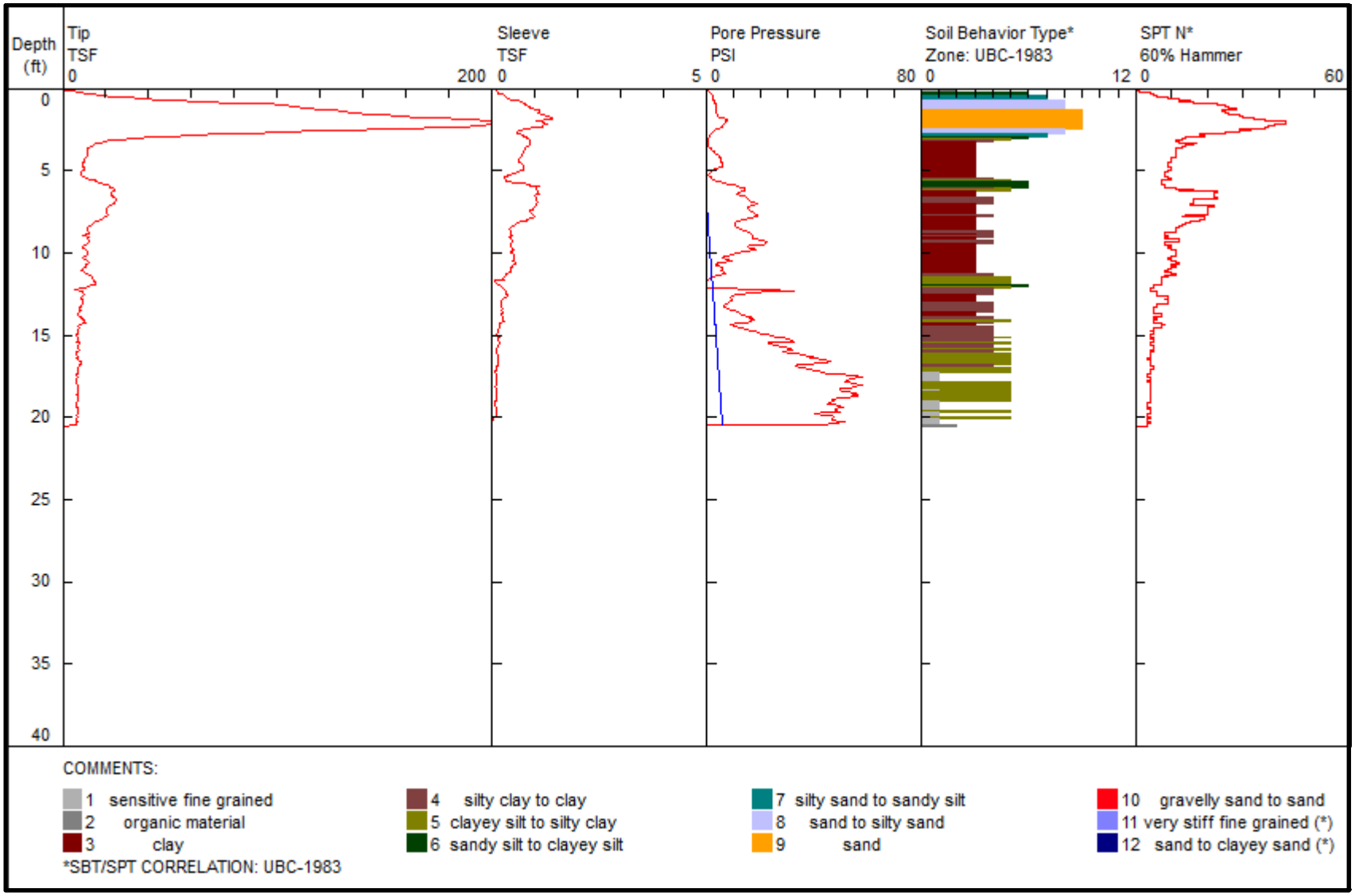
Test Date: 11/16/2015

Project: Hutchinson Square Redevelopment

Project Number: 34.2677

Location: Summerville, South Carolina

Water Table: 7 ft



APPENDIX C

HAND AUGER BORINGS

CLIENT	JOB #	BORING #	SHEET
Stantec	34.2677	HA-1	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Hutchinson Square Redevelopment	

SITE LOCATION

Little Main Street, Summerville, South Carolina

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% — WATER CONTENT% — LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Asphalt Depth [8"]			
1					(SP) FINE TO MEDIUM SAND, Light Brown, Moist			
2					(SC) CLAYEY SAND, Light Orangish Brown, Moist to Saturated			
3						▽		
4					END OF HAND AUGER @ 4'			
5								
6								

BOTTOM OF CASING ➧ LOSS OF CIRCULATION (100%)

SURFACE ELEVATION

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 3.5 WS ☐ WD ☐	BORING STARTED 11/20/15	CAVE IN DEPTH
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 11/20/15	HAMMER TYPE
▽ WL	RIG FOREMAN	DRILLING METHOD

CLIENT	JOB #	BORING #	SHEET
Stantec	34.2677	HA-2	1 OF 1

PROJECT NAME: Hutchinson Square Redevelopment

ARCHITECT-ENGINEER:

SITE LOCATION: Little Main Street, Summerville, South Carolina

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Asphalt Depth [7"]			
1					(DEBRIS FILL) Crushed Bricks			
2					(SC) CLAYEY FINE TO MEDIUM SAND, Light Brown, Moist			
3					(SC) SLIGHTLY CLAYEY FINE TO MEDIUM SAND, Light Gray to Dark Gray, Moist to Saturated	▽		
4					END OF HAND AUGER @ 4'			
5								
6								

BOTTOM OF CASING | LOSS OF CIRCULATION (100%)

SURFACE ELEVATION

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 3.5 WS ☐ WD ☐	BORING STARTED 11/20/15	CAVE IN DEPTH
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 11/20/15	HAMMER TYPE
▽ WL	RIG FOREMAN	DRILLING METHOD

CLIENT	JOB #	BORING #	SHEET
Stantec	34.2677	HA-3	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Hutchinson Square Redevelopment	

SITE LOCATION

Little Main Street, Summerville, South Carolina

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Asphalt Depth [8"]			
1					(SC) CLAYEY FINE TO MEDIUM SAND, Contains Brick, Light Brown, Moist			
					(SC) CLAYEY FINE TO MEDIUM SAND, Light Grayish Brown, Moist			
2								
3					(SC) SLIGHTLY CLAYEY FINE TO MEDIUM SAND, Dark Gray, Moist to Saturated	▽		
4					END OF HAND AUGER @ 4'			
5								
6								

BOTTOM OF CASING ➧ LOSS OF CIRCULATION (100%)

SURFACE ELEVATION

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 3 WS ☐ WD ☐	BORING STARTED 11/20/15	CAVE IN DEPTH
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 11/20/15	HAMMER TYPE
▽ WL	RIG FOREMAN	DRILLING METHOD

CLIENT	JOB #	BORING #	SHEET
Stantec	34.2677	HA-4	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Hutchinson Square Redevelopment	

SITE LOCATION

Little Main Street, Summerville, South Carolina

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Depth [8"]			
1					(SP) FINE TO MEDIUM SAND, Contains Brick, Dark Gray, Moist			
2					(SP) FINE TO MEDIUM SAND, Light Tan, Moist			
3					(SC) CLAYEY FINE TO MEDIUM SAND, Light Orangish Tan, Moist to Saturated	▽		
4					END OF HAND AUGER @ 4'			
5								
6								

BOTTOM OF CASING ➧ LOSS OF CIRCULATION 100%

SURFACE ELEVATION

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 3 WS ☐ WD ☐	BORING STARTED 11/20/15	CAVE IN DEPTH
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 11/20/15	HAMMER TYPE
▽ WL	RIG FOREMAN	DRILLING METHOD

CLIENT	JOB #	BORING #	SHEET
Stantec	34.2677	C-1	1 OF 1

PROJECT NAME: Hutchinson Square Redevelopment

ARCHITECT-ENGINEER:

SITE LOCATION: Little Main Street, Summerville, South Carolina

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Depth [6"]			
1					(SP) FINE TO MEDIUM SAND, Light Brown to Dark Gray, Moist			
2					(SC) SLIGHTLY CLAYEY FINE TO MEDIUM SAND, Light Orangish Brown, Moist			
3					(SC) CLAYEY FINE TO MEDIUM SAND, Light Orangish Brown, Moist to Saturated			
4					END OF HAND AUGER @ 4'	▽		
5								
6								

BOTTOM OF CASING | LOSS OF CIRCULATION (100%)

SURFACE ELEVATION

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 4 WS ☐ WD ☐	BORING STARTED 11/20/15	CAVE IN DEPTH
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 11/20/15	HAMMER TYPE
▽ WL	RIG FOREMAN	DRILLING METHOD

CLIENT	JOB #	BORING #	SHEET
Stantec	34.2677	C-2	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Hutchinson Square Redevelopment	

SITE LOCATION

Little Main Street, Summerville, South Carolina

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% — WATER CONTENT% — LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					BOTTOM OF CASING; LOSS OF CIRCULATION (100%); SURFACE ELEVATION			
					Asphalt Depth [8"], Concrete [4"]			
1					(SC) CLAYEY FINE TO MEDIUM SAND, Light Brown, Moist			
					(SC) SLIGHTLY CLAYEY FINE TO MEDIUM SAND, Light Grayish Brown, Moist			
2								
3					(SC) CLAYEY FINE TO MEDIUM SAND, Light Grayish Brown, Moist to Saturated	▽		
4					END OF HAND AUGER @ 4'			
5								
6								

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 3.5 WS ☐ WD ☐	BORING STARTED 11/20/15	CAVE IN DEPTH
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 11/20/15	HAMMER TYPE
▽ WL	RIG FOREMAN	DRILLING METHOD

CLIENT	JOB #	BORING #	SHEET
Stantec	34.2677	C-3	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Hutchinson Square Redevelopment	

SITE LOCATION

Little Main Street, Summerville, South Carolina

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% — WATER CONTENT% — LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Depth [10"]			
1					(SC) SLIGHTLY CLAYEY FINE TO MEDIUM SAND, Light Brown, Moist			
2					(SC) CLAYEY FINE TO MEDIUM SAND, Light Orangish Brown, Moist to Saturated			
3								
4					END OF HAND AUGER @ 4'			
5								
6								

BOTTOM OF CASING

LOSS OF CIRCULATION 100%

SURFACE ELEVATION

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☐	BORING STARTED 11/20/15	CAVE IN DEPTH
WL(BCR) WL(ACR)	BORING COMPLETED 11/20/15	HAMMER TYPE
WL	RIG FOREMAN	DRILLING METHOD

CLIENT	JOB #	BORING #	SHEET
Stantec	34.2677	C-4	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Hutchinson Square Redevelopment	

SITE LOCATION

Little Main Street, Summerville, South Carolina

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% — WATER CONTENT% — LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Depth [10"]			
1					(SP) FINE TO MEDIUM SAND, Light Gray to Light Brown, Moist			
2					(SC) CLAYEY FINE TO MEDIUM SAND, Light Orangish Brown, Moist to Saturated			
3								
4					END OF HAND AUGER @ 4'			
5								
6								

BOTTOM OF CASING

LOSS OF CIRCULATION 100%

SURFACE ELEVATION

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS ☐ WD ☐	BORING STARTED 11/20/15	CAVE IN DEPTH
WL(BCR) WL(ACR)	BORING COMPLETED 11/20/15	HAMMER TYPE
WL	RIG FOREMAN	DRILLING METHOD

APPENDIX D

KESSLER DCP LOGS

3820 Faber Place Drive, Suite 500
North Charleston, SC 29405
Phone: (843) 654-4448
Fax: (843) 884-7990

Project Number: 34.2677

DCP DATA SHEET

Project: Hutchinson Square
Date: November 20, 2015
Location: HA-1
Personnel: Jarred Wadford
Depth of zero point below: 0
Hammer Weight: 10 lb (4.6 kg)
Material Classification: SC
Weather: Sunny, 70 Degrees
Pavement Conditions: 8 "
Water Table Depth: 3.5 ft

(1) Number of Blows	(2) Cumulative Penetration (mm)	(3) Penetration Between Reading (mm)	(4) Penetration Per Blow (mm)	(5) Hammer Blow Factor	(6) DCP Index (mm/blow)	(7) CBR (%)	(8) Moisture Condition (wet/dry)
0	0	--	--	--	--	--	--
5	50	50	10.0	2	20.0	10	moist
5	100	50	10.0	2	20.0	10	moist
5	150	50	10.0	2	20.0	10	moist
4	200	50	12.5	2	25.0	8	moist
2	250	50	25.0	2	50.0	4	moist
2	300	50	25.0	2	50.0	4	moist
1	350	50	50.0	2	100.0	2	moist
2	400	50	25.0	2	50.0	4	moist
2	450	50	25.0	2	50.0	4	moist
2	500	50	25.0	2	50.0	4	moist
2	550	50	25.0	2	50.0	4	moist
2	600	50	25.0	2	50.0	4	moist
2	650	50	25.0	2	50.0	4	moist
3	700	50	16.7	2	33.3	6	moist
2	750	50	25.0	2	50.0	4	moist
3	800	50	16.7	2	33.3	6	moist
3	850	50	16.7	2	33.3	6	moist
3	900	50	16.7	2	33.3	6	moist
4	950	50	12.5	2	25.0	8	moist
3	1000	50	16.7	2	33.3	6	moist
4	1050	50	12.5	2	25.0	8	saturated
5	1100	50	10.0	2	20.0	10	saturated
6	1150	50	8.3	2	16.7	13	saturated
6	1200	50	8.3	2	16.7	13	saturated
5	1250	50	10.0	2	20.0	10	saturated

3820 Faber Place Drive, Suite 500
North Charleston, SC 29405
Phone: (843) 654-4448
Fax: (843) 884-7990

Project Number: 34.2677

DCP DATA SHEET

Project: Hutchinson Square
Location: HA-2
Depth of zero point below: 0
Material Classification: SC
Pavement Conditions: 7 "

Date: November 20, 2015
Personnel: Jarred Wadford
Hammer Weight: 10 lb (4.6 kg)
Weather: Sunny, 70 Degrees
Water Table Depth: 3.5 ft

(1) Number of Blows	(2) Cumulative Penetration (mm)	(3) Penetration Between Reading (mm)	(4) Penetration Per Blow (mm)	(5) Hammer Blow Factor	(6) DCP Index (mm/blow)	(7) CBR (%)	(8) Moisture Condition (wet/dry)
16	0	--	--	--	--	--	--
13	50	50	3.8	2	7.7	30	moist
11	100	50	4.5	2	9.1	25	moist
20	150	50	2.5	2	5.0	48	moist
20	200	50	2.5	2	5.0	48	moist
20	250	50	2.5	2	5.0	48	moist
9	300	50	5.6	2	11.1	20	moist
6	350	50	8.3	2	16.7	13	moist
2	400	50	25.0	2	50.0	4	moist
2	450	50	25.0	2	50.0	4	moist
1	500	50	50.0	2	100.0	2	moist
1	550	50	50.0	2	100.0	2	moist
1	600	50	50.0	2	100.0	2	moist
1	650	50	50.0	2	100.0	2	moist
1	700	50	50.0	2	100.0	2	moist
2	750	50	25.0	2	50.0	4	moist
2	800	50	25.0	2	50.0	4	moist
2	850	50	25.0	2	50.0	4	moist
3	900	50	16.7	2	33.3	6	moist
3	950	50	16.7	2	33.3	6	moist
3	1000	50	16.7	2	33.3	6	moist
3	1050	50	16.7	2	33.3	6	saturated
2	1100	50	25.0	2	50.0	4	saturated
2	1150	50	25.0	2	50.0	4	saturated
3	1200	50	16.7	2	33.3	6	saturated
3	1250	50	16.7	2	33.3	6	saturated

3820 Faber Place Drive, Suite 500
North Charleston, SC 29405
Phone: (843) 654-4448
Fax: (843) 884-7990

Project Number: 34.2677

DCP DATA SHEET

Project: Hutchinson Square
Date: November 20, 2015
Location: HA-3
Personnel: Jarred Wadford
Depth of zero point below: 0
Hammer Weight: 10 lb (4.6 kg)
Material Classification: SC
Weather: Sunny, 70 Degrees
Pavement Conditions: 8 "
Water Table Depth: 3.5 ft

(1) Number of Blows	(2) Cumulative Penetration (mm)	(3) Penetration Between Reading (mm)	(4) Penetration Per Blow (mm)	(5) Hammer Blow Factor	(6) DCP Index (mm/blow)	(7) CBR (%)	(8) Moisture Condition (wet/dry)
6	0	--	--	--	--	--	--
8	50	50	6.3	2	12.5	17	moist
9	100	50	5.6	2	11.1	20	moist
14	150	50	3.6	2	7.1	32	moist
16	200	50	3.1	2	6.3	37	moist
16	250	50	3.1	2	6.3	37	moist
9	300	50	5.6	2	11.1	20	moist
4	350	50	12.5	2	25.0	8	moist
2	400	50	25.0	2	50.0	4	moist
1	450	50	50.0	2	100.0	2	moist
1	500	50	50.0	2	100.0	2	moist
1	550	50	50.0	2	100.0	2	moist
1	600	50	50.0	2	100.0	2	moist
1	650	50	50.0	2	100.0	2	moist
1	700	50	50.0	2	100.0	2	moist
1	750	50	50.0	2	100.0	2	moist
1	800	50	50.0	2	100.0	2	moist
1	850	50	50.0	2	100.0	2	moist
1	900	50	50.0	2	100.0	2	moist
1	950	50	50.0	2	100.0	2	moist
1	1000	50	50.0	2	100.0	2	moist
1	1050	50	50.0	2	100.0	2	saturated
1	1100	50	50.0	2	100.0	2	saturated
1	1150	50	50.0	2	100.0	2	saturated
1	1200	50	50.0	2	100.0	2	saturated
1	1250	50	50.0	2	100.0	2	saturated

3820 Faber Place Drive, Suite 500
North Charleston, SC 29405
Phone: (843) 654-4448
Fax: (843) 884-7990

Project Number: 34.2677

DCP DATA SHEET

Project: Hutchinson Square
Date: November 20, 2015
Location: HA-4
Personnel: Jarred Wadford
Depth of zero point below: 0
Hammer Weight: 10 lb (4.6 kg)
Material Classification: SC
Weather: Sunny, 70 Degrees
Pavement Conditions: 8 "
Water Table Depth: 3.5 ft

(1) Number of Blows	(2) Cumulative Penetration (mm)	(3) Penetration Between Reading (mm)	(4) Penetration Per Blow (mm)	(5) Hammer Blow Factor	(6) DCP Index (mm/blow)	(7) CBR (%)	(8) Moisture Condition (wet/dry)
20	0	--	--	--	--	--	--
15	50	50	3.3	2	6.7	35	moist
20	100	50	2.5	2	5.0	48	moist
11	150	50	4.5	2	9.1	25	moist
6	200	50	8.3	2	16.7	13	moist
4	250	50	12.5	2	25.0	8	moist
3	300	50	16.7	2	33.3	6	moist
3	350	50	16.7	2	33.3	6	moist
4	400	50	12.5	2	25.0	8	moist
3	450	50	16.7	2	33.3	6	moist
2	500	50	25.0	2	50.0	4	moist
2	550	50	25.0	2	50.0	4	moist
2	600	50	25.0	2	50.0	4	moist
1	650	50	50.0	2	100.0	2	moist
2	700	50	25.0	2	50.0	4	moist
1	750	50	50.0	2	100.0	2	moist
1	800	50	50.0	2	100.0	2	moist
1	850	50	50.0	2	100.0	2	moist
1	900	50	50.0	2	100.0	2	moist
3	950	50	16.7	2	33.3	6	moist
3	1000	50	16.7	2	33.3	6	moist
2	1050	50	25.0	2	50.0	4	saturated
3	1100	50	16.7	2	33.3	6	saturated
2	1150	50	25.0	2	50.0	4	saturated
3	1200	50	16.7	2	33.3	6	saturated
4	1250	50	12.5	2	25.0	8	saturated

3820 Faber Place Drive, Suite 500
North Charleston, SC 29405
Phone: (843) 654-4448
Fax: (843) 884-7990

Project Number: 34.2677

DCP DATA SHEET

Project: Hutchinson Square
Location: C-2A
Depth of zero point below: 0
Material Classification: SC
Pavement Conditions: 8 " Asphalt over 4 " of brick

Date: November 20, 2015
Personnel: Jarred Wadford
Hammer Weight: 10 lb (4.6 kg)
Weather: Sunny, 70 Degrees
Water Table Depth: 3.5 ft

(1) Number of Blows	(2) Cumulative Penetration (mm)	(3) Penetration Between Reading (mm)	(4) Penetration Per Blow (mm)	(5) Hammer Blow Factor	(6) DCP Index (mm/blow)	(7) CBR (%)	(8) Moisture Condition (wet/dry)
15	0	--	--	--	--	--	--
13	50	50	3.8	2	7.7	30	moist
6	100	50	8.3	2	16.7	13	moist
3	150	50	16.7	2	33.3	6	moist
2	200	50	25.0	2	50.0	4	moist
1	250	50	50.0	2	100.0	2	moist
1	300	50	50.0	2	100.0	2	moist
1	350	50	50.0	2	100.0	2	moist
1	400	50	50.0	2	100.0	2	moist
1	450	50	50.0	2	100.0	2	moist
1	500	50	50.0	2	100.0	2	moist
1	550	50	50.0	2	100.0	2	moist
1	600	50	50.0	2	100.0	2	moist
1	650	50	50.0	2	100.0	2	moist
1	700	50	50.0	2	100.0	2	moist
1	750	50	50.0	2	100.0	2	moist
1	800	50	50.0	2	100.0	2	moist
1	850	50	50.0	2	100.0	2	moist
1	900	50	50.0	2	100.0	2	moist
1	950	50	50.0	2	100.0	2	moist
1	1000	50	50.0	2	100.0	2	moist
1	1050	50	50.0	2	100.0	2	saturated
1	1100	50	50.0	2	100.0	2	saturated
1	1150	50	50.0	2	100.0	2	saturated
1	1200	50	50.0	2	100.0	2	saturated
1	1250	50	50.0	2	100.0	2	saturated
1	1300	50	50.0	2	100.0	2	saturated
1	1350	50	50.0	2	100.0	2	saturated
1	1400	50	50.0	2	100.0	2	saturated
1	1450	50	50.0	2	100.0	2	saturated
1	1500	50	50.0	2	100.0	2	saturated
2	1550	50	25.0	2	50.0	4	saturated
3	1600	50	16.7	2	33.3	6	saturated
4	1650	50	12.5	2	25.0	8	saturated
3	1700	50	16.7	2	33.3	6	saturated

APPENDIX E

GENERAL CONDITIONS

General Conditions

The analysis, conclusions, and recommendations submitted in this report are based on the exploration previously outlined and the data collected at the points shown on the attached location plan. This report does not reflect specific variations that may occur between test locations. The soundings were located where site conditions permitted and where it is believed representative conditions occur, but the full nature and extent of variations between soundings and of subsurface conditions not encountered by any sounding may not become evident until the course of construction. If variations become evident at any time before or during the course of construction, it will be necessary to make a re-evaluation of the conclusions and recommendations of this report and further exploration, observation, and/or testing may be required.

This report has been prepared in accordance with generally accepted soil and foundation engineering practices and makes no other warranties, either expressed or implied, as to the professional advice under the terms of our agreement and included in this report. The recommendations contained herein are made with the understanding that the contract documents between the owner and foundation or earthwork contractor or between the owner and the general contractor and the foundation, excavating and earthwork subcontractors, if any, shall require that the contractor certify that all work in connection with foundations, slabs, pavements, compacted fills and other elements of the foundation or other support components are in place at the locations, with proper dimensions and tolerances, as shown on the plans and specifications for the project.

Further, it is understood the contract documents will specify that the contractor will, upon becoming aware of apparent or latent subsurface conditions differing from those disclosed by the original soil exploration work, promptly notify the owner, both verbally to permit immediate verification of the change, and in writing, as to the nature and extent of the differing conditions and that no claim by the contractor for any conditions differing from those anticipated in the plans and specifications and disclosed by the soil studies will be allowed under the contract unless the contractor has so notified the owner both verbally and in writing, as required above, of such changed conditions. The owner will, in turn, promptly notify this firm of the existence of such unanticipated conditions and will authorize such further exploration as may be required to properly evaluate these conditions.

Further, it is understood that any specific recommendations made in this report as to on-site construction review by this firm will be authorized and funds and facilities for such review will be provided at the times recommended if we are to be held responsible for the design recommendations.