

THE STATE OF SOUTH CAROLINA
In The Court of Appeals

RECEIVED

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

MAR 20 2017

SC Court of Appeals

J.C. Nicholson, Jr., Circuit Court Judge

Appellate Case No. 2016-002003

Terratec, Inc., ... Appellant,

v.

Charleston County School District, ...Respondent.

RECORD ON APPEAL VOLUME I

James Edward Bradley, SC Bar # 66130
Moore Taylor Law Firm, P.A.
1700 Sunset Boulevard (29169)
P.O. Box 5709
West Columbia, SC 29171
(803) 796-9160
ward@mttlaw.com
Attorney for Appellant Terratec, Inc.

H. Brewton Hagood, SC Bar # 2438
Elizabeth F. Nicholson, SC Bar # 12402
Rosen, Rosen & Hagood, LLC
151 Meeting Street, Suite 400
P.O. Box 893
Charleston, SC 29402
(843) 577-6726
bhagood@rrhlawfirm.com
Attorneys for Respondent
Charleston County School District

THE STATE OF SOUTH CAROLINA
In The Court of Appeals

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

J.C. Nicholson, Jr., Circuit Court Judge

Appellate Case No. 2016-002003

Terratec, Inc., ... Appellant,

v.

Charleston County School District, ...Respondent.

RECORD ON APPEAL – VOLUME I

INDEX

Order of August 29, 2016	3
Order of September 17, 2013	4
Procurement Review Panel Order of April 10, 2014	8
Transcript of Record, July 18, 2016	28
Procurement Review Panel transcript, March 11, 2014	72

Terratec's Exhibits

1.....	243
2.....	244
3.....	245
4.....	246
5.....	249
6.....	270
7.....	305
8.....	307
9.....	308
10.....	312
11.....	322
12.....	324
13.....	326
14.....	328
15.....	330
16.....	337
17.....	343
18.....	344
19.....	346
20.....	349
21.....	355
22.....	373

Charleston County School District's Exhibits

1.....	413
2.....	432
3.....	437
4.....	444
5.....	452
6.....	457
7.....	468
8.....	476
9.....	558

10.....	618
11.....	619
12.....	621
13.....	622
14.....	625
15.....	645
16.....	648
17.....	649
18.....	650
19.....	659
20.....	666
21.....	673
22.....	682
23.....	689
25.....	719
26.....	722
 Terratec's Request for Administrative Review of November 27, 2013	 725
 Response of Charleston County School District of March 7, 2014.....	 728
 Notice of Appeal, May 8, 2014.....	 743
 Certificate of Counsel	 765

STATE OF SOUTH CAROLINA
COUNTY OF CHARLESTON
IN THE COURT OF COMMON PLEAS

FORM 4

JUDGMENT IN A CIVIL CASE

CASE NO. 2014-CP-10-2946

Terratec Inc.

Charleston County School District

PLAINTIFF(S)

DEFENDANT(S)

Submitted by:

Attorney for : ☐ Plaintiff ☐ Defendant
or
☐ Self-Represented Litigant

DISPOSITION TYPE (CHECK ONE)

- ☐ **JURY VERDICT.** This action came before the court for a trial by jury. The issues have been tried and a verdict rendered.
- ☒ **DECISION BY THE COURT.** This action came to trial or hearing before the court. The issues have been tried or heard and a decision rendered.
- ☐ **ACTION DISMISSED (CHECK REASON):** ☐ Rule 12(b), SCRPC; ☐ Rule 40(a), SCRPC (Vol. Nonsuit); ☐ Rule 43(k), SCRPC (Settled); ☐ Other
- ☐ **ACTION STRICKEN (CHECK REASON):** ☐ Rule 40(j), SCRPC; ☐ Bankruptcy; ☐ Binding arbitration, subject to right to restore to confirm, vacate or modify arbitration award; ☐ Other
- ☒ **DISPOSITION OF APPEAL TO THE CIRCUIT COURT (CHECK APPLICABLE BOX):**
☒ Affirmed; ☐ Reversed; ☐ Remanded; ☐ Other

NOTE: ATTORNEYS ARE RESPONSIBLE FOR NOTIFYING LOWER COURT, TRIBUNAL OR ADMINISTRATIVE AGENCY OF THE CIRCUIT COURT RULING IN THIS APPEAL.

IT IS ORDERED AND ADJUDGED: ☐ See attached order (formal order to follow) ☒ Statement of Judgment by the Court: This appeal was filed on June 1, 2016 and was argued before the Court on July 18, 2016. Upon review, this Court affirms the panel's decision, finding there was no due process violation and the decision was reasonable under the substantial evidence standard.

ORDER INFORMATION

This order ☒ ends ☐ does not end the case.

Additional Information for the Clerk :

INFORMATION FOR THE PUBLIC INDEX

Complete this section below when the judgment affects title to real or personal property or if any amount should be enrolled. If there is no judgment information, indicate "N/A" in one of the boxes below.

Judgment in Favor of (List name(s) below)	Judgment Against (List name(s) below)	Judgment Amount To be Enrolled (List amount(s) below)
N/A		\$
If applicable, describe the property, including tax map information and address, referenced in the order: N/A		

The judgment information above has been provided by the submitting party. Disputes concerning the amounts contained in this form may be addressed by way of motion pursuant to the SC Rules of Civil Procedure. Amounts to be computed such as interest or additional taxable costs not available at the time the form and final order are submitted to the judge may be provided to the clerk. Note: Title abstractors and researchers should refer to the official court order for judgment details.

Circuit Court Judge

2117
Judge Code

8/26/16
Date

STATE OF SOUTH CAROLINA
COUNTY OF CHARLESTON
TERRATEC, INC.,

Plaintiff,

vs.,

M.B. KAHN CONSTRUCTION CO., INC.,
CHARLESTON COUNTY SCHOOL
DISTRICT, and TRAVELERS CASUALTY
AND SURETY COMPANY OF AMERICA,

Defendants.

IN THE COURT OF COMMON PLEAS

CASE NO. 2013-CP-10-0252

FILED
2013 SEP 17 AM 10:11
JULIE J. ARMSTRONG
CLERK OF COURT
BY

CONSENT ORDER STAYING
CASE AND ESTABLISHING
SCHEDULING ORDER

This matter came before me on July 15, 2013 for a hearing on several motions filed by the Defendants, including motions to dismiss based on the Plaintiff's failure to exhaust its administrative remedies under the Consolidated Procurement Code for the Charleston County School District ("Procurement Code"). The Procurement Code establishes the procedure for resolving any controversy between the School District and a contractor or subcontractor when the subcontractor is a real party in interest, concerning a contract solicited and awarded pursuant to its provisions. The parties acknowledged that the administrative process had not been completed, but in lieu of dismissal the parties proposed staying this case until the dispute resolution procedure established by the Procurement Code is completed. That request was granted.

Defendant Heery International, Inc. moved to dismiss the Plaintiff's Complaint on separate grounds. That motion was granted and will be addressed by separate Order.

Defendants M. B. Kahn Construction Co., Inc. and Travelers Casualty and Surety Company of America filed additional Rule 12 motions to (1) strike the Plaintiff's prayer for

9/10/13

punitive damages, and (2) preserve the right to demand arbitration when the administrative process is completed. Those motions were not heard due to the stay being granted, and they are preserved for hearing when the stay is lifted.

The following tentative schedule is established for the administration of this case in a manner consistent with the ends of justice. The administrative review process under the Procurement Code is expected to take a minimum of 90 days, so it is understood that the below schedule may need to be modified after the remaining steps of the administrative review have been completed. The parties shall advise the Clerk of Court of the date of completion of the administrative review of the Plaintiff's claim, at which time a status conference will be held to discuss the posture of the case and establish definite dates for addressing any issues that remain after the administrative process is complete. This Order is not intended to establish any precedent as to the effect of any rulings made in the administrative process or the court's scope and standard of review of those administrative proceedings. Those issues will be addressed by the court once the administrative process is complete.

1. Motions to join other parties and amend the pleadings shall be filed no later than 30 days after completion of the final step of administrative review of Plaintiff's claim under the Consolidated Procurement Code for the Charleston County School District.

2. The Plaintiff shall file and serve a document identifying by full name, address and telephone number each person whom the party expects to call as an expert witness at any trial within 6 months of the completion of the administrative review of Plaintiff's claim.

3. The Defendants shall file and serve a document identifying by full name, address and telephone number each person whom the party expects to call as an expert witness at any trial within 90 days of Plaintiff's disclosure of expert witnesses.

9/10/13

4. Discovery shall be completed no later than 9 months from the completion of the administrative review process. All discovery requests shall be served in time for the responses thereto to be served by this date. De bene esse depositions must be completed by discovery deadline. No motions relating to discovery shall be filed until counsel have consulted and attempted to resolve the matter.

5. Motions in limine must be filed no later than 1 month prior to the date the case is scheduled to be ready for any trial.

6. All dispositive motions shall be filed no later than 60 days prior to the date the case is subject to being called to any trial.

7. Mediation shall be conducted by no later than 45 days prior to the date discovery is to be completed in order to allow any additional depositions to be scheduled prior to the end date for discovery.

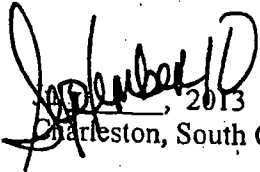
8. No later than 30 days from the date the case is subject to being called to trial, the parties shall file and exchange pretrial disclosures. Within fourteen (14) days thereafter, a party shall file and exchange objections, any objections to use of a deposition designated by another party and any deposition counter-designations.

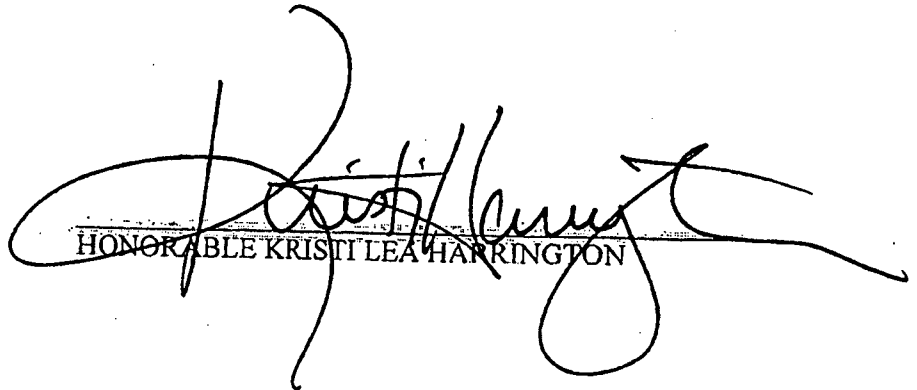
9. Parties shall furnish the Court pretrial briefs by 10 days before the case is subject to being called for trial. Attorneys shall meet at least five (5) business days prior to the date set for submission of pretrial briefs for the purpose of exchanging and marking all exhibits.

10. The Amended Consent Scheduling Order to be presented to the Court following completion of the administrative review of Plaintiff's claim will establish a date for which the case is subject to being called for any trial.

[Handwritten signature]
9/10/13

IT IS SO ORDERED,


September 10, 2013
Charleston, South Carolina


HONORABLE KRISTI LEA HARRINGTON

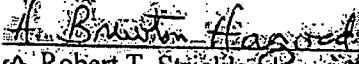
WE CONSENT:

MOORE, TAYLOR, AND THOMAS, P.A.
P.O. Box 5709
West Columbia, SC 29171
(803) 796-9160

WE CONSENT:

BARNES, ALFORD, STORK
& JOHNSON, LLP
P.O. Box 8448
Columbia, SC 29202
(803) 799-1111

By: 
for James Edward Bradley with permission
Attorney for Terratec, Inc.

By: 
for Robert T. Strickland with permission
Attorney for M.B. Kahn Construction
Co., Inc and Travelers Casualty and
Surety Company Of America

WE CONSENT:

ROSEN, ROSEN & HAGOOD, LLC
P.O. Box 893
Charleston, SC 29402
(843) 577-6726

By: 
H. Brewton Hagood
A. Bright Ariail
Attorneys for Charleston County
School District

STATE OF SOUTH CAROLINA	)	BEFORE THE PROCUREMENT REVIEW
	)	PANEL OF THE CHARLESTON COUNTY
COUNTY OF CHARLESTON	)	SCHOOL DISTRICT
IN RE: Request for Administrative Review	)	
By Terratec, Inc.	)	ORDER
	)	

This matter came before the Procurement Review Panel of the Charleston County School District ("Panel") on March 11, 2014, for a hearing on the request for administrative review submitted by Terratec, Inc. ("Terratec") through its counsel's letter to Wayne Wilcher of the Charleston County School District ("CCSD") dated November 27, 2013. The members of the Procurement Review Panel, who were appointed in accordance with the provisions of Section 4410.2 of the CCSD Procurement Code, are: (a) Mr. George T. Ducker, appointed by the CCSD Board of Trustees and who served as Chair of the Panel; (b) Ms. Denise Badillo, Procurement Director for the City of North Charleston, SC; (c) Mr. Matthew Brewer, Vice President, Division Manager for Choate Construction Company; (d) Mr. Jason McKinney, Joint Venture Audit Director for Roper Saint Francis Healthcare; and (e) Mr. Edward H. Stehmeyer, P.E., retired structural engineer. All members of the Panel were present for the entire hearing. John A. Massalon, an independent attorney selected to advise the Panel, was also present for the entire hearing and has been available to the Panel for guidance on legal issues.

James Edward Bradley appeared at the hearing as counsel for Terratec and H. Brewton Hagood appeared as counsel for CCSD. An independent court reporter was provided by CCSD to administer the oath to witnesses who testified at the hearing, to record the proceedings and to collect the exhibits entered into the record. At the outset of the hearing, Mr. Ducker informed counsel and the parties of the procedures which had been established by the Panel to govern the

conduct of the hearing by reading these procedures into the record. Mr. Ducker then asked if any members of the Panel would like to make any disclosures regarding any contacts or relationships with any of the parties or the persons who had been disclosed as potential witnesses. Mr. Stehmeyer disclosed that he had worked closely with William Lewis of CCSD when Mr. Lewis was a Captain in the U.S. Navy in charge of construction projects and Mr. Stehmeyer was a civilian engineer working on projects for the U.S. Navy. Mr. Stehmeyer also disclosed that he had worked as a consulting engineer for an independent engineering firm which had conducted some seismic studies for CCSD, but these studies did not involve the project which is the subject of Terratec's claim. Neither party objected to Mr. Stehmeyer's continued service on the Panel after these disclosures were made.

I. Stipulation As to Admission of Exhibits

Prior to the commencement of opening arguments and testimony, counsel for the parties stipulated that all 21 of the exhibits pre-marked by Terratec and all 22 of the exhibits pre-marked by CCSD were admitted into evidence for the purpose of the hearing without the necessity of laying an evidentiary foundation for each of the exhibits. The parties were given the opportunity to add additional exhibits during the hearing as they deemed necessary.

II. Decision On Scope of Matters to Be Heard By The Panel

Mr. Ducker asked counsel for the parties to make an opening statement to summarize their respective positions on whether the Panel had the jurisdiction to hear and decide all of the claims set forth in the Terratec Index of Claims which had been provided in the front of the notebook containing Terratec's exhibits. Mr. Bradley stated that Terratec wanted the Panel to hear and determine the following issues, which were listed as A., B., C. and D. on Terratec's Index of Claims:

- A. Additional testing and engineering work made necessary by information provided on ground conditions.

CO #2 (47) Tests	\$65,000.00
#3 (48) Engineering	\$46,143.27

- B. Additional footage of micropiles.

Original contract called for 66 foot micropiles with cost for each extra foot of \$45/foot. Piles were required to be 86 feet. Terratec has been paid for 8 extra feet, but not the remaining 12 feet.

CO #1B Contract Adjustment	\$338,580.00

- C. Additional costs based on changed working conditions.

The contract required that the concrete floor be shored so that Terratec's drill equipment could be mounted on the floor for work. Instead, M.B. Kahn completely removed the concrete requiring Terratec to build special rigging and operate the drills in swampy conditions.

Change Order # 5	\$473,626.34

- D. Delay/Inspection Charges

M.B. Kahn is holding funds based on alleged delays caused by Terratec. The additional footage and changed working conditions created the delay which should not be assessed against Terratec.

M.B. Kahn is also charging Terratec for additional inspection fees assessed by WPC. Terratec did not cause the delay, and WPC inspectors were not licensed to perform the inspections for which Terratec was charged.

CO # 1 Delay Charge	\$58,194.00
WPC Inspection Charge	\$35,154.00

Mr. Hagood stated CCSD's position that the Panel did not have jurisdiction to hear item C. labeled as "Additional costs based on changed working conditions" due to the fact that this claim item related to Terratec's position that it priced its bid to the General Contractor, M.B. Kahn ("Kahn"), on the assumption that Terratec would have the use of the existing concrete slab to

stage its equipment to perform its work. In addition, CCSD took the position that this claim item had never been presented by Terratec, through Kahn, as a proposed change order pursuant to Article 15 of the General Conditions of Kahn's Contract with CCSD which was marked as CCSD Exhibit 2. CCSD's position was that this item was a "means and methods" issue solely between Kahn and Terratec which did not involve CCSD and that the Panel's jurisdiction under the CCSD Procurement did not extend to this type of dispute. Terratec claimed that Kahn had cut out the concrete slab in many areas thereby requiring Terratec to stage its equipment on the ground which Terratec alleged added an additional cost of \$473,626.34.

As to Item D labeled "Delay/Inspection Charges relating to a deductive change order for \$93,584.00 which Kahn had issued to Terratec marked as Terratec Exhibit 16, CCSD's position was that CCSD had paid Kahn in full as evidenced by the Final Pay Application from Kahn to CCSD marked as CCSD Exhibit 21 and that the summary pages attached to the final pay application did not include a deduction by CCSD to Kahn for Kahn to seek to pass on to Terratec. CCSD's position was that this was also a dispute solely between Kahn and Terratec that did not involve CCSD and that the Panel did not have jurisdiction to hear this claim item D.

As to Item B set forth on the Terratec Index of Claims entitled "Additional footage of micropiles," CCSD's position was that Terratec had not presented a timely change order through Kahn for this item as required by Article 15 of the General Conditions, so this claim for \$338,580.00 should also not be heard by the Panel.

After hearing the opening statements and arguments of counsel as to the Panel's jurisdiction to hear the claims presented by Terratec, the Panel took a recess to consider the arguments made and to make a determination as to which claim items the panel would hear. The Panel then resumed the hearing and informed the parties that it would hear testimony and consider exhibits

related to Items A (CO # 2 and CO # 4) and B, but would not consider Items C and D set forth on the Terratec Index of Claims. Counsel for all parties were instructed from refrain from introducing evidence on issues listed as C and D above, and prohibited the parties from proffering this evidence. Counsel for Terratec noted Terratec's objection to the decision of the Panel and preserved this issue for appeal on the record.

III. List of Witnesses Heard And Additional Exhibits Entered Into The Record

Following the decision on the scope of the issues to be considered by the Panel, Terratec presented sworn testimony from the following witnesses who were examined by counsel for Terratec and then cross-examined by counsel for CCSD: (1) Chris Morrison, President of Terratec; (2) George Sambos, P.E. of GS2; and (3) Kenneth W. Timmerman, P.E. of Kyzer and Timmerman. Terratec also added Meeting Minutes for a June 22, 2011 as Terratec Exhibit 22 which was accepted into the record.

CCSD presented sworn testimony from the following witnesses who were examined by counsel for CCSD and then cross-examined by counsel for Terratec: (1) William M. Camp, III, P.E., D.Ge of S&ME; (2) John Y. Orvin, III, P.E. of Davis & Floyd; and William B. Wright, P.E. of WPC/Terracon. Counsel for CCSD noted for the record that he had also intended to present testimony of J. Rhett Reidenbach, P.E. of Davis & Floyd to discuss CCSD Exhibit 23 which had been admitted into evidence and William Lewis of CCSD to discuss the change order granted to Terratec and the reasons for denial of the other Terratec claims, but that CCSD was unable to present these witness since the time allowed for the hearing had expired. CCSD submitted the following additional exhibits: Davis & Floyd rejection of Terratec initial Micropile Load Test Plan which was marked as CCSD Exhibit 23; LLR Order of Dismissal as to Thomas Clark

Smoak, marked as Exhibit 25; and LLR Order of Dismissal as to Donald Accardo marked as CCSD Exhibit 26.

IV. Findings of Fact

Based upon consideration of the sworn testimony heard by the Panel and the review of the exhibits entered into the record by the parties, the Panel makes the following findings of fact:

1. CCSD, as the Owner, entered into a contract with M.B. Kahn Construction Company, Inc. ("Kahn") dated as of March 28, 2011, to serve as the general contractor for the project known as the Rivers Educational Center Seismic Retrofit, Exterior Restoration and Core Utilities ("Project"), which was marked as CCSD Exhibit 1. The contract sum was \$9,323,000.00, prior to adjustment for change orders.

2. CCSD's contract with Kahn identified Heery International, Inc. ("Heery") as the Program Manager and Davis & Floyd, Inc. ("Davis & Floyd") as the Architect for the Project.

3. Article 15 of the General Conditions for the Project, which was marked as CCSD Exhibit 2, entitled "Claims and Disputes" governs the requirements for providing notice and processing of claims for additional cost or additional time. Article 15.2 requires claims to be referred to the Architect for decision. Article 15.3 provided for a Dispute Resolution Board ("DRB") to provide a fair and equitable resolution to claims.

4. Terratec entered into a Subcontract with Kahn dated February 28, 2011 to provide the Micropile scope of work in Section 2369 of the specifications for the Project for an initial contract price of \$1,992,835. Terratec's subcontract with Kahn was marked as Terratec Exhibit 5 and CCSD Exhibit 3. Article VIII, §1, bound Terratec to the terms of Kahn's contract with CCSD. Article VIII, § 29 bound Terratec to the dispute resolution procedures in Kahn's contract

with CCSD, except for disputes which did not involve CCSD, which were to be decided by arbitration between Terratec and Kahn.

5. Terratec, through Kahn, did request that a Dispute Resolution Board be convened to hear Terratec's claims by Terratec's October 26, 2012 letter, and Kahn's October 29, 2012, which were marked as CCSD Exhibit 11.

6. The DRB held a hearing on Terratec's claims for Terratec Change Order # 2 (also referred to as Kahn CO # 47); Terratec Change Order 3 (Kahn CO # 48); and Terratec Change Order # 4 (Kahn CO # 49). The DRB issued a decision dated February 26, 2013, which was marked as CCSD Exhibit 15, in which Terratec claims for Change Orders # 3 and # 4 were denied and Change Order # 4 was partially granted.

7. Terratec requested administrative review of its claims by the Chief Procurement Officer for CCSD on August 21, 2013 and the Decision of Interim Director of Contract and Procurement Lawrence Lutrario, marked as CCSD Exhibit 20, was posted on November 22, 2013.

8. Terratec timely submitted its request for administrative review by the Panel via Ward Bradley's letter to Wayne Wilcher of CCSD which was marked as CCSD Exhibit 19, (without the enclosures referenced in the letter).

9. The Panel is charged with the responsibility to review and determine requests for review de novo pursuant to §4410.1 of the CCSD Procurement Code, so these findings and conclusions are based upon the evidence and testimony presented at the hearing held before the Panel on March 11, 2014 as opposed to a review of the decisions by the DRB or the Interim Director of Contract and Procurement.

10. Item A is identified in the Terratec Index of Claims as "Additional testing and engineering work made necessary by poor information provided on ground conditions and refusal to allow test in proper area" and lists:

CO # 2 (47) Tests	\$65,000.00
CO # 3 (48) Engineering	\$46,143.27

11. Terratec's Change Order Request No. 2 for \$65,000.00 was marked as Terratec Exhibit 9 and Terratec's Change Order Request No. 3 for \$46,143.27 was marked as Terratec Exhibit 10. Terratec claims that it should be paid for both of these change orders because the subsurface soil conditions encountered at the location where Terratec was required by Kahn to conduct its first test pile load test differed from the subsurface soil conditions represented in the Geotechnical Report prepared by S&ME, which was included in the design and contract documents put out for bid, and that this anomaly was the cause of the failure of the first load test. In Change Order # 2 (47) Terratec seeks compensation for having to perform a second test pile program at a different location when only one load test was required under the contract documents. In Change Order # 3 (48) Terratec seeks compensation for additional engineering and soils testing which Terratec claims it incurred to prove the existence of the unforeseen conditions at the site of the failed first load test and to test the soils at the location of the second pile load test program.

12. The entire file maintained by Heery, as Program Manager for CCSD, regarding the processing and consideration of Terratec Change Order No. 2, submitted through Kahn as Proposal CW-47, was marked as CCSD Exhibit 8, containing pages 001 through 082. This file indicates that Kahn submitted the Change Proposal Form dated May 8, 2012 (CCSD Exhibit 8, at page 016). This file indicates that Kahn actually received Terratec Change Order No. 2 dated

September 1, 2011 on March 12, 2012. The White Paper on Micropile Load Test Program Failure dated September 11, 2011, authored by John Orvin of Davis and Floyd (CCSD Exhibit 8, at page 014), shows that the first load test program was performed on June 9, 2011. CCSD has stated its position that this change order request was not timely submitted in accordance with the provisions of Article 15.1.2 of the General Conditions marked as CCSD Exhibit 2.

13. The entire file maintained by Heery, as Program Manager for CCSD, regarding the processing and consideration of Terratec Change Order No. 3, submitted through Kahn as Proposal CW-48, was marked as CCSD Exhibit 9, containing pages 001 through 0061. CCSD has stated its position that this change order request was not timely submitted in accordance with the provisions of Article 15.1.2 of the General Conditions marked as CCSD Exhibit 2.

14. The Panel has considered the merits of Terratec's claims for Change Orders 2 and 3 notwithstanding CCSD's position that these Change Order were not submitted timely.

15. Terratec's Pile Load Test Program Submittal dated March 11, 2011, with the mark-up during review and rejection by Davis and Floyd, was marked as CCSD Exhibit 23. The Pile Test Area identified on the site location sheet prepared by Kyzer & Timmerman dated April 7, 2011 showed the proposed location of the test pile program to be adjacent to Kahn's construction trailer. This document is located 5 pages from the back of CCSD Exhibit 23.

16. Terratec's resubmittal for the Pile Load Test Program dated May 10, 2011, which was approved by Davis & Floyd on May 10, 2011, was marked as Terratec Exhibit 9. The pile test area shown in the approved resubmittal is the same test pile location which had been indicated in the earlier submittal.

17. Chris Morrison of Terratec testified that the superintendent for Kahn required Terratec to relocate the test pile site further away from the building. There is no submittal in the

evidence presented at the hearing for the alternate location where the first test pile program was actually installed and tested. John Orvin of Davis & Floyd testified that he did not participate or have any input into the decision to move the test pile program to the alternate location directed by Kahn's superintendent. William Wright of WPC/Terracon which, was under contract with CCSD to observe the load test on test piles, testified that he was unaware of the alternate location until he came to the site to observe the load test.

18. It is undisputed that the test pile program performed by Terratec at the first location failed to meet the performance requirements of the specifications and the pertinent drawings for the project. The issues in dispute are whether the design team participated in the decision to relocate the test site from that approved in the submittal, whether the subsurface soils at the first test site differed from that represented in the S&ME Geotechnical Report provided to the bidders and the cause of the failure of the first test pile program.

19. George Sambos of GS2, one of the consulting engineers hired by Terratec to participate in the design of the micropiles, testified that SBT soil testing was conducted at the location of the failure of the first test pile program, after the failure. Mr. Sambos testified that this testing conducted after the failure indicated that there was a layer of sand below the initial layer of marl encountered at the site of the first pile test program which was different from that represented in the initial S&ME Geotechnical Report upon which the micropile design for the Terratec test pile program was based. Mr. Sambos identified cross sections of soil testing performed on behalf of Terratec at the site of the first test pile program and the alternate site selected and proposed for the second test pile program which was marked as Terratec Exhibit 7. Mr. Sambos' offered the opinion that the site of the second test pile program, which was adjacent to the building, more closely resembled the soils data contained in the S&ME report and that the

test pile program performed at the second site met the performance specification for the project. Mr. Sambos attributed the cause of the failure of the first test pile program to meet the performance specification to be the difference between the subsurface soils located at the site of the first test pile program and the subsurface soil located where the second test pile program was installed and tested.

20. William Camp of S&ME, the geotechnical consultant to Davis & Floyd, testified that he authored the S&ME Geotechnical Report which was included as part of the bid package to general contractors for the project. Mr. Camp explained that Seismic Cone Penetration Testing (SCPT) was conducted by S&ME at three locations around the perimeter of the building, which Mr. Camp stated is the preferred type of testing utilized in Charleston. Mr. Camp identified an aerial photograph contained on the fourth page of CCSD Exhibit 14 which shows the 3 locations in yellow where the initial SCPT testing was conducted by S&ME and referenced in the geotechnical report. The aerial photograph also shows the approved load test location adjacent to the construction trailer reflected on Terratec's approved submittal which was within 120 feet of one of S&ME's initial test locations. The location of the first load test actually conducted by Terratec was 320 feet away from the closest SCPT testing conducted by S&ME initially. Mr. Camp testified that no representations were made by S&ME regarding the subsurface soils conditions at the site of the first load test and that he was unaware of the actual location of the first test pile program until he was asked to conduct additional soil testing after the failure.

21. Mr. Camp testified that after the failure of the first test pile load test, S&ME was asked to conduct three supplemental CPT soundings, two at the location of the failed test pile load test and one at the potential location for the second test pile load test. Mr. Camp identified the June 17, 2011 S&ME report marked as CCSD Exhibit 6 which he authored. This report

indicated that although the depth at which the Cooper Marl was encountered at the site of the failed load test was deeper by 7 to 9 feet from the potential second location, he did not believe this difference was the cause of the failure of the load test on the first test piles.

22. In his testimony, William Wright of WPC/Terracon concurred with Mr. Camp's opinion that SCPT testing is the preferred method of testing subsurface soils in the Charleston area and provides a more accurate indication that the SBT testing conducted by Mr. Sambos. Mr. Wright testified that Terratec had equipment on site to test the soil at the location where the first test piles were installed and tested prior to the installation of the test piles. Mr. Wright identified his letter of April 20, 2012, which is located at pages 2 and 3 of CCSD Exhibit 8, in which he opined that the cause of the multiple failures Test Pile Program Location # 1 was due to installation procedures and lack of significant grout volumes beyond the theoretical volume.

23. The specifications section for the scope of work for the Micropiles was marked as CCSD Exhibit 4. The pertinent pages of the engineering drawings and details stamped by Mr. Orvin of Davis & Floyd were marked as CCSD Exhibit 5. Both Mr. Orvin and Mr. Wright described these contractual documents as performance specifications whereby the Micropile contractor was required to design and install the micropiles to meet the specified performance criteria of a minimum ultimate load capacity of 200 KIPS in compression and tension as noted on the Micropile Foundation Notes # 2 on Sheet S-402 in CCSD Exhibit 5. Section 3.4.2.d of the Micropile Specifications on page 02369-8 of CCSD Exhibit 4 provides that: "Contractor guarantees that should the test pile fail to give acceptable results, he will modify his design and install and test another pile at his expense".

24. The panel finds that Terratec has failed to meet its burden of proof on its position that the proximate cause of the failure of the first test piles to meet the load test requirements of

the contract documents was due to the alleged differing underlying soils at the location of the first test pile load test. No evidence was presented that CCSD or Heery or Davis & Floyd were provided with a revised submittal to approve the actual location where the first test piles were installed. Further the Geotechnical Report prepared by S&ME which was included with the contract documents did not make any representations as to the underlying soils at the location where the first test piles were installed and load tested. Therefore the Panel finds that Terratec has not proven entitlement to payment for Change Orders Requests 2 (47) or 3 (48) and these claims are denied.

25. Item B on the Terratec Index of Claims is described as follows: "Additional footage of micropiles. Original contract called for 66 foot micropiles with cost for each extra foot of \$45/foot. In fact, piles were required to be 86 feet. Terratec has been paid for 8 extra feet, but not the remaining 12 feet."

26. Terratec Change Order Request No. 1B dated May 17, 2012, was marked as Terratec Exhibit 14. In this document, Terratec outlines the basis for its claim that it is entitled to additional compensation of \$338,580.00. This Change Order Request was presented to Kahn, but there is no evidence in the record to indicate that this change order request was ever presented by Kahn as a change order request to Davis & Floyd as the Project Architect and the Initial Decision Maker under Article 6.1 of CCSD's Contract with Kahn and as required under Article 15 of the General Conditions.

27. CCSD's position is that its contract with Kahn, which was marked as CCSD Exhibit 1, is a fixed price contract for which the Contract Sum in Article 4.1 is \$9,323,000.00. CCSD argues that if Unit Prices had been established for additional compensation for pile lengths over a certain length, then this would have been provided for under Article 4.3 of its

contract with Kahn and this section was left blank and no "Schedule of Unit Prices" was attached as an exhibit to the contract.

28. According to Terratec Exhibit 18 entitled "Rivers Seismic Retrofit-Micropile Production Pile Project Timeline", Terratec installed its final pile on January 15, 2013, over four months prior to Terratec's submission of its Change Order No. 1B to Kahn.

29. CCSD Exhibit 7 indicates that Terratec, through Kahn, presented a timely change order request for additional pile length for which Kahn was granted additional compensation of \$247,874.00 and an increase in contract time of 44 days related to micropile installation. CCSD Exhibit 7 also reflects that this change order request went through the submission and review process called for under the contract and was approved by the Heery as Construction Manager, Davis & Floyd as Architect, Kahn as the Contractor and by CCSD as the Owner.

30. Mr. Morrison of Terratec testified that Terratec's change order request for additional pile length did not include the extra 12 feet Terratec is now requesting because Kahn told him to only request the extra 6 feet during the performance of the contract and that the claim for additional footage would be handled at the end of the job. Mr. Morrison did not indicate that the Architect, Construction Manager or the Owner was present or involved in this discussion. Mr. Morrison testified that he relied on Kahn to protect him on this claim.

31. Notwithstanding CCSD's position that Terratec's Change Order Request 1B was not timely submitted and that it was never presented by Kahn to CCSD, the Panel has considered the merits of Terratec's claim for additional pile length.

32. Terratec's claim for additional compensation for the increase in pile length from 66 feet to 78 feet is predicated on its position that the cross section shown on Sheet S-402 of Davis and Floyd's labeled as "TYPICAL MICROPILE ELEVATION" indicates "Pile Tip EL-

66" (Terratec Exhibit 2 and CCSD Exhibit 5). Mr. Morrison testified he interpreted this to mean that he should base his bid on a pile length of 66 feet. Mr. Timmerman also testified that he interpreted the drawing on Sheet S-4 the same way Mr. Morrison did.

33. Mr. Morrison testified that Terratec's bid to Kahn and other general contractors in the amount of \$1,992,835 for the micropile scope of work, which was marked as Terratec Exhibit 4, explained that although the geotechnical exploration details indicated a mean anticipated pile installation depth of 78 feet, Terratec based its proposal for the installation of piles to depths of 66 feet below ground surface. Mr. Morrison's testified that he interpreted "EL - 66" to be 66 feet "below ground surface".

34. Terratec's witnesses admitted under cross-examination that, to the best of their knowledge, Terratec's bid to the general contractors was not provided to CCSD, Heery or Davis & Floyd prior to the submission of bids by the general contractors. John Orvin of Davis & Floyd testified that he did not see Terratec's bid document (Terratec Exhibit 4) until Terratec submitted documents to the Dispute Resolution Board prior to the DRB hearing in February of 2013.

35. Mr. Camp of S&ME testified that all of the depths referred to in the Geotechnical Report referred to depth below ground surface because S&ME conducts its testing before there is a formal survey at the site to establish elevations.

36. John Orvin of Davis & Floyd is the engineer who sealed the structural drawings including Sheet S-4 identified the September 12, 2011 White Paper on Micropile Design-Contract Document Requirements Mr. Orvin authored, which is located in CCSD Exhibit 8 at pages 10-13. This document explains the relationship between the relevant parts of the Contract Documents (drawings, specifications and geotechnical report) which the micropile subcontractor needed to interpret to design and construct micropiles to meet the design intent. Mr. Orvin

explained in paragraph D. of Exhibit 8 at page 11 as follows: "From these elevations on sheet S-402 and the ground elevation of 12 feet (NAVD 88 Datum) given on the site plan shown on CS 102 and the elevations of the bottom of the first floor slab of 14.91 feet (NAVD 88 Datum) given in Section 1 on S-100, the lengths of each micropile can be determined." Mr. Ovin's White Paper further explained that: "The total length of the vertical exterior piles can be determined by subtracting the pile top and the pile tip elevations. The length of the vertical exterior piles is $7.5' - (-66) = 73.5'$. The length of the 30 degree batter piles can similarly be determined as $73.5 / \cos 30 \text{ degrees} = 84.9'$. For micropiles supporting new exterior shear walls, their top elevations can similarly be determined as $14.91' - 4.91' + 0.33' = 6.33'$. The length of the vertical interior piles is $6.33' - (-66) = 72.33$ feet and the length of the 30 degree batter piles is $72.33' / \cos 30 \text{ degrees} = 83.5'$." In his testimony at the hearing, Mr. Orvin explained that the designer of the micropiles would need to verify the data used by reviewing the Civil Site Drawings in addition to the Structural Drawings.

37. All of Terratec's witnesses admitted under cross examination that no formal requests for clarification or informal questions were asked of the design team prior to bid as to the datum reference for "PILE TIP EL -66" shown on Sheet S-402.

38. CCSD Exhibit 22 is a power point presentation entitled "Response to Claim for Additional Pile Length". The second page of this document includes excerpts of the pertinent pages of the S&ME Geotechnical Report adjacent to the Typical Micropile Elevation shown on S-402. The third page shows the relationship between Elevation 12 (NAVD 88) and the 0'bgs used in S&ME's report and the correlations to EL -66 shown on the Typical Micropile Detail. The excerpt from the Rejected Micopile Submittal highlighted on page 6 of Exhibit 22 shows that when Terratec submitted their first micropile submittal stating that the Marl is understood to

be present at a depth of roughly 43 feet bgs, the submittal reviewer for Davis & Floyd corrected Terratec to show that "Elevation is given as EL -43 ft or roughly 55 ft bgs. See Geotech Report". A full copy of this initial submittal by Terratec was marked as CCSD Exhibit 23. The approved resubmittal was marked as Terratec Exhibit 6. This document shows that Terratec understood that mean installation depth of the micropiles was 78 feet as noted on page 1 of Terratec Exhibit 6. Terratec also made the correction on page 2 requested by the Davis & Floyd reviewer of the submittal to show that the marl is understood to be 55 feet bgs rather than the 43 feet bgs Terratec had stated in the original submittal.

39. After hearing the sworn testimony of the witnesses, and after review and consideration of the documents entered into evidence, the Panel finds that Terratec has not met its burden of proof to support its claim for Item B. -Additional micropile length in the amount of \$338,580.00 based upon our findings that:

- (a) This claim was never presented by Terratec, through Kahn, to Davis & Floyd for review as a Change Order Request during the performance of the work within the timeframe called for under the General Conditions to Kahn's Contract with CCSD;
- (b) CCSD has closed out its contract with Kahn and made final payment as reflected in the Final Pay Application dated July 31, 2012, which was marked as CCSD Exhibit 21;
- (c) neither CCSD, nor its consultants, were privy to any qualification in Terratec's Bid to Kahn limiting its quoted price to 66 foot micropiles and no such qualification was included in Kahn's contract with CCSD;
- (d) Terratec's alleged assumption in its bid to Kahn limiting its price to a pile length of 66 feet was a unilateral mistake by Terratec, which was not based upon any representation or misrepresentation made by CCSD or its consultants, particularly in view of Terratec's

admission in both its bid to Kahn and its submittal and resubmittal to Davis & Floyd that the S&ME Geotechnical Report indicated a mean pile depth of 78 feet;

(e) a correct interpretation of the Contract Documents put out to bid would indicate that varying lengths of piles would be necessary as follows: vertical exterior piles of 73.5'; 30 degree batter piles of 84.9'; vertical interior piles of 72.3' and 30 degree batter piles of 83.5'; and

(f) CCSD and Kahn reached an accord and satisfaction as to any claim by Terratec for additional pile footage when Change Order Number 7 dated October 25, 2011 (CCSD Exhibit 7) was issued, approved and paid without any reservation or agreement to allow submission of an additional claim after Terratec had completed its work at the site.

VII. Conclusion

Based on the findings set forth above, it is the decision of the Panel that Terratec's claims for additional compensation from CCSD, listed as Items A. and B. on the Terratec Index of Claims attached to this document, are denied, with each party to be responsible for their respective costs and attorneys' fees.

Claim items C. and D. on the Terratec Index of Claims are disputes between Terratec and Kahn, which do not involve CCSD, so no decision is being rendered on these claims by the Panel as the Panel does not have jurisdiction to hear and decide these claims.

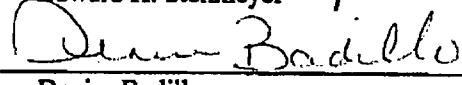
IT IS SO ORDERED.

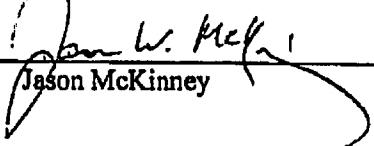
PROCUREMENT REVIEW PANEL OF THE
CHARLESTON COUNTY SCHOOL DISTRICT

By: _____
George T. Ducker, Chairman

By:  _____
Matthew Brewer

By:  _____
Edward H. Stehmyer

By:  _____
Denise Badillo

By:  _____
Jason McKinney

Charleston, South Carolina
~~March~~ 10th, 2014
April

By: 
George F. Ducker, Chairman

By: _____
Matthew Brewer

By: _____
Edward H. Stehmeyer

By: _____
Denise Badillo

By: _____
Jason McKinney

Charleston, South Carolina
March 10th, 2014
April

STATE OF SOUTH CAROLINA

COUNTY OF CHARLESTON

TERRATEC, INC.

Plaintiff

vs.

CHARLESTON COUNTY SCHOOL
DISTRICT

Defendant

THE COURT OF COMMON PLEAS

DOCKET NO. 2014-CP-10-2946

TRANSCRIPT OF RECORD

July 18, 2016
Charleston, South Carolina

B E F O R E:

THE HONORABLE J. C. NICHOLSON, JUDGE

A P P E A R A N C E S:

JAMES EDWARD BRADLEY, ESQ.
Attorney for the Plaintiff

H. BREWTON HAGOOD, ESQ.
Attorney for the Defendant

JOYCE C. RUEGER, CVR-M
Circuit Court Reporter

ROA000028

INDEX TO PROCEEDINGS

	PAGE
PROCEEDINGS	3
APPEAL	
Remarks by Mr. Bradley	5
Remarks by Mr. Hagood	26
CERTIFICATE OF THE COURT REPORTER	44

INDEX TO EXHIBITS

		PAGE
<u>COURT</u>		
<u>No.</u>	<u>Description</u>	<u>Marked / Admitted</u>
1	Hearing exhibit notebook	37
2	Hearing exhibit notebook	37
3	Hearing exhibit notebook	37

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

PROCEEDINGS

THE COURT: Who is here representing who?

MR. BRADLEY: Thank you, Judge. Ward Bradley; I'm here for Terratec.

MR. HAGOOD: Brewton Hagood. I'm here for Charleston County School District. Your Honor, I filed a memorandum this morning. I don't know if it made its way to the file.

THE COURT: Yes, I got it. It didn't do me much good this morning.

MR. HAGOOD: I understand. I didn't get his until Wednesday.

THE COURT: I'm sorry; what?

MR. HAGOOD: I didn't get his until Wednesday of last week so.

[Whereupon, the court reviews documents]

THE COURT: All right Mr. Bradley. Looking at the file it looks like Judge Young dismissed your appeal on March the 1st saying lack of prosecution. Apparently it was set for a hearing I guess and no one showed and gave you 10 days to show cause as to why you should be allowed to -- let me see -- plaintiff to have ten days from the date of this order to show just cause why the case should be restored. And I guess you filed a motion on March the 21st which was I guess 20 days rather than ten days.

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 I'll be glad to hear you.

2 MR. BRADLEY: Thank you, Judge. I'll address that
3 first.

4 THE COURT: Please do since he gave you ten days
5 and you didn't -- I don't know what transpired and why he
6 dismissed it but I'm not going to get into it. But he
7 gave you 10 days to show cause why it should be restored
8 and 20 days later you filed a motion.

9 MR. BRADLEY: Judge, I'll have to check those
10 dates. I know I filed within 10 days of when I got it.
11 All I can tell you is this as far as I know ---

12 THE COURT: --- you filed within 10 days of when
13 you received it?

14 MR. BRADLEY: I'm sure I did, Judge. I didn't
15 realize that was a problem until you just said it. I
16 thought the case had been restored and there wasn't a
17 problem with that.

18 THE COURT: Well, let me ask Mr. Hagood. Is there
19 a problem with that?

20 MR. HAGOOD: I don't think so, Your Honor because
21 whenever we talked to Ms. Leonard about this apparently
22 we had a case that was pending. It got stayed so this
23 administrative review could take place. He filed an
24 appeal. The Clerk's office didn't register that appeal
25 on a case that was already pending. They said it was a

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 case ---

2 THE COURT: --- so you don't have a problem with
3 him being outside that ten days?

4 MR. HAGOOD: Correct. That was a hearing that was
5 scheduled so that really wasn't in violation of that. So
6 we agreed to a consent order to allow him to reinstate it
7 and have it set.

8 THE COURT: Okay. I'll be glad to hear you.

9 MR. BRADLEY: Thank you, Judge. I did not miss a
10 hearing. There was some snafu and I'm not blaming
11 anybody except it never got called for a hearing and it
12 was dismissed by mistake essentially. Mr. Hagood and I
13 agreed on that and until you said that I didn't think
14 there was any problem ---

15 THE COURT: --- what is this talking about I think
16 Judge Young dismissed it. I don't know why he dismissed
17 it but he dismissed it.

18 MR. BRADLEY: I don't either, Judge.

19 THE COURT: Okay.

20 MR. BRADLEY: My understanding was until you said
21 that it was restored and no one had a problem with it.
22 If we're over it I'm ready to talk about the merits.

23 THE COURT: I'll be glad to hear it.

24 MR. BRADLEY: Thank you, Your Honor. I'm here for
25 Terratec but first I want to see do you have a copy of

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 the record and a copy of our memorandum?

2 THE COURT: I've got a copy of your memorandum,
3 yes. Do you have an extra copy?

4 MR. BRADLEY: Yes sir, I have an extra copy.

5 THE COURT: Pardon?

6 MR. BRADLEY: Yes, sir.

7 [Whereupon, the court reviews documents]

8 THE COURT: That's fine, I've got a copy. I
9 thought this was in the clerk's file but it's not. I've
10 got a copy; go ahead.

11 MR. BRADLEY: Yes, sir. And I've also got a copy
12 of the record. There should be a copy on file but I just
13 want to make sure that you have it.

14 THE COURT: Did you submit it with your memorandum?

15 MR. BRADLEY: I submitted it with the appeal, Your
16 Honor after it was typed up. There is a transcript with
17 exhibits. I have a copy if it will -- I just want you to
18 have it.

19 THE COURT: You got an extra copy of it?

20 MR. BRADLEY: Yes, sir.

21 THE COURT: Am I going to have to read the whole
22 transcript or you going to give me some excerpts?

23 MR. BRADLEY: I'm going to cite them and they are
24 cited in my brief but I also have the whole thing if you
25 want to look at it.

1 THE COURT: I'm not interested in looking at the
2 whole brief. I'll be glad for you to submit to me
3 whatever excerpts from that brief you want me to look at.

4 MR. BRADLEY: They're attached to the brief, Your
5 Honor.

6 THE COURT: Oh, they are attached?

7 MR. BRADLEY: Yes, sir.

8 THE COURT: All right, go ahead.

9 MR. BRADLEY: Thank you, Judge. I represent
10 Terratec. There was a sub-contractor on the Rivers
11 Education Center which is owned by the school board.
12 There was a seismic retrofit of the Rivers Education
13 Center which essentially means they were trying to shore
14 it up for earthquakes. Part of what they were doing was
15 fixing the foundation of the building. It was built in
16 the '30's.

17 My client is a foundation specialist and they
18 submitted a bid to put in what is called micropiles
19 underneath the Rivers Education Center. A micropile is
20 essentially a deep hole. These were about eight inches
21 in diameter, and in it is a piece of steel and it is
22 filled up with grout or concrete and it's used to hold up
23 a building. Terratec submitted a bid to design, test,
24 and install the micropiles underneath the Rivers
25 Education Center. M B Con was the general contractor and

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 Terratec was the sub-contractor for that part of the job.
2 Terratec got the bid to install the micropiles underneath
3 the Rivers Education Center. The first thing that had to
4 be done was they had to design the piles, what kind of
5 grout goes into them, how deep do they go, where do they
6 go. So that was what they did first.

7 They used the geotechnical information provided by
8 the school districts other professionals to do this. The
9 geotechnical information is essentially there is this
10 kind of sand underneath the ground and there is this kind
11 of clay underneath the ground; it's at these depths. So
12 they took that information and used it to design the
13 micropiles.

14 The first thing they had to do was test the
15 micropiles to see if they would hold the load that they
16 were supposed to hold. They submitted a test site and it
17 was approved by the school district's engineers. They
18 were not allowed to use that test site. They were forced
19 off by M B Con to a site farther away. They performed
20 the test and the test failed.

21 The piles they had designed would not hold up the
22 weight they were supposed to hold up. So there was a lot
23 of back and forth about why did they fail. Our people
24 thought it was because the geotechnical information was
25 wrong. But no one was interested in going back and

1 getting more geotechnical information. So Terratec hired
2 people to go back out and resample the ground. When they
3 did they found there was significantly more sand under
4 the ground than anybody thought. So they redesigned
5 these micropiles to be longer to hold up more weight.

6 When they redesigned the piles based on the new
7 geotechnical information that my client obtained the
8 piles passed and worked. The geotechnical information
9 and the redesign required the piles to be 20 extra feet
10 long than they were and there was over 600 piles so this
11 is a big deal so you have to dig and drill 20 more feet
12 and put in 20 more feet of steel and put in 20 more feet
13 of concrete.

14 My client went ahead and put in all the piles
15 underneath the Rivers Education Center. They are all
16 there; they are all working like they are supposed to
17 work. This dispute is whether my client should be paid
18 for change orders that had to do with the test of the
19 piles and with the additional length of the micropiles
20 that was required based on the original geotechnical
21 information.

22 Now what you've got is we had a hearing before the
23 panel below and the panel ruled against us. This was the
24 panel is appointed by the school board. So we are here
25 to appeal two issues on their findings and also the

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 procedure. And the procedure we're appealing is that Tom
2 Duffer who was the chairman of the panel we heard this
3 before is also the vice-chairman of the school board;
4 that is our opposing party. So our argument on the due
5 process is essentially ---

6 THE COURT: --- first of all back up and tell me
7 what this appeal process is. Is this -- I mean with this
8 panel. Educate me a little bit on this panel because I'm
9 not familiar with it.

10 MR. BRADLEY: Right.

11 THE COURT: And who -- is it a local thing for the
12 school board, a state statute or a local statute or what?

13 MR. BRADLEY: Absolutely; please go over that.
14 There is a state procurement code that sets forth
15 procurement through the state and how you have disputes
16 resolved in that. Charleston school board has its own
17 procurement code. It is modeled on the state procurement
18 code. There is a provision of state law that says you
19 can have your own procurement code for municipalities and
20 school districts as long as it is substantially similar
21 and I think the word is reasonable or something like this
22 to the state procurement code. So we're underneath the
23 Charleston school board's own procurement code that has a
24 set ---

25 THE COURT: --- the state statute gives the general

1 guidelines for the school boards and the local
2 governments to set up a procurement code?

3 MR. BRADLEY: Yes, sir.

4 THE COURT: I was in a procurement code case about
5 15 years ago in Columbia on the Family Court; a snafu on
6 collecting child support. That's how long it's been,
7 okay.

8 MR. BUNCHER: That was the biggest procurement code
9 case I've ever heard of. Is that the one with all the
10 computers that went off about 40 years -- 30 years?

11 THE COURT: That's right.

12 MR. BRADLEY: I don't think it's fixed yet, Judge.

13 THE COURT: Pardon

14 MR. BRADLEY: I don't think it's fixed yet but I
15 wasn't a part of that ---

16 THE COURT: --- I don't think it ever got fixed.

17 MR. BRADLEY: Hopefully ours won't take that long.

18 THE COURT: I've never heard of a procurement code
19 until then. But go ahead.

20 MR. BRADLEY: This is a local procurement code
21 passed by the Charleston school board and what it
22 outlines briefly that is relevant here is if you're in a
23 dispute with us over getting paid these are the steps you
24 have to go through. First, you have to talk to the chief
25 engineer and make your case in front of him. And if he

1 denies what you're asking for then you can come up in
2 front of a panel that we will appoint to hear your
3 dispute.

4 That's what we did. We went to the chief engineer
5 and then we had a panel appointed. Their own code
6 requires that the person who chairs the panel that we
7 hear our dispute in front of is a member of the school
8 board that we are in the dispute with. That's the due
9 process argument. The chairman of the five person panel
10 we had to argue in front of about our dispute is actually
11 on the school board himself and their procurement code
12 requires that. So that's the due process argument, Your
13 Honor.

14 Now going back to the argument on the merits the
15 first argument is and it is set out in the brief that we
16 should be paid for the additional geotechnical tests that
17 we had to do and for the extra load test when we tested
18 piles because the information that we had when we started
19 was not sufficient and was incorrect. That's why the
20 piles initially failed.

21 Those were the facts we put in front of the board
22 and the panel and the panel ruled against us on that.
23 But it's our belief that all the relevant information
24 that we put up shows what we had as far as geotechnical
25 information was not correct. When we got the right

1 geotechnical information we redesigned the piles and they
2 worked. And so we shouldn't have had to pay to get that
3 geotechnical information because it was supposed to be
4 provided as part of the contract.

5 THE COURT: Who provided the technical information
6 to begin with?

7 MR. BRADLEY: That was provided by the engineers
8 that the Charleston school district hired. I think it
9 was Davis and Floyd who actually put information ---

10 THE COURT: --- so the school board gave you the
11 technical information to begin with?

12 MR. BRADLEY: Yes, sir.

13 THE COURT: Then you found out it was not correct?

14 MR. BRADLEY: Yes, sir.

15 THE COURT: And how did you determine you needed 20
16 more feet on the pilings?

17 MR. BRADLEY: We went back and did our own
18 geotechnical test. You basically -- when I say a
19 geotechnical test you drive something into the ground.
20 There are different ways to do it and you see what comes
21 up. It's like looking at a layer cake and digging a hole
22 in it and pulling it out and seeing whether it's ---

23 THE COURT: --- who did y'all talk to at the school
24 board before you did that?

25 MR. BRADLEY: We were dealing with their engineers

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 and their construction supervisors which would be Carey
2 [phonetic] I believe was the supervisor and the engineers
3 were Davis and Floyd. And they didn't think the
4 geotechnical information was incorrect so we went back
5 and did our test and found that the soils were different
6 that was represented to ---

7 THE COURT: --- was that presented back to the
8 school board?

9 MR. BRADLEY: We presented it to the panel.

10 THE COURT: To the panel?

11 MR. BRADLEY: Yes sir, when we had ---

12 THE COURT: --- I'm talking about before you did
13 your work and before you did under Rivers School to put
14 the piles in did y'all go back to the school board with a
15 change order?

16 MR. BRADLEY: We went back and filed a change order
17 ---

18 THE COURT: --- or the modification of contract or
19 whatever you did?

20 MR. BRADLEY: Yes sir, they filed a change order
21 for that additional testing.

22 THE COURT: For the initial testing. How about the
23 additional money for installation?

24 MR. BRADLEY: Yes. We filed a change order for
25 that too.

1 THE COURT: What happened to that?

2 MR. BRADLEY: We filed a change order initially for
3 an extra eight feet and they awarded the extra eight feet
4 as to depth. Our position is we're entitled to the
5 entire additional depth, which would be 20 feet. So we
6 didn't get 12 feet of what we wanted. Our first change
7 order was for eight feet ---

8 THE COURT: --- did you ask for the 20 feet?

9 MR. BRADLEY: Yes, and we got ---

10 THE COURT: --- and they just awarded the eight
11 feet?

12 MR. BRADLEY: We asked for the eight feet first and
13 later asked for the entire 20 feet.

14 THE COURT: And that was rejected?

15 MR. BRADLEY: Yes, sir.

16 THE COURT: The 20 feet?

17 MR. BRADLEY: Yes, sir.

18 THE COURT: Okay.

19 MR. BRADLEY: And the basis for the rejection was
20 this. When we entered the contract with the school board
21 our bid was based on a 66 foot pile. And I've got a copy
22 of the bid.

23 THE COURT: On a 56 foot pile?

24 MR. BRADLEY: 66 foot ---

25 THE COURT: --- 66?

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 MR. BRADLEY: Yes, sir. I'm sorry; I didn't say
2 that very clearly.

3 THE COURT: Okay.

4 MR. BRADLEY: So ---

5 THE COURT: --- so you wound up needing 86 foot
6 piles in that right?

7 MR. BRADLEY: Yes, sir.

8 THE COURT: And that's what was installed?

9 MR. BRADLEY: Yes sir, that's what's there. And it
10 works. Nobody disputes whether it works. Everything
11 works like it's supposed to; it's just how much we get
12 paid ---

13 THE COURT: --- why did the school board deny the
14 payment for the 86 or the additional I guess 21 feet or
15 whatever it was?

16 MR. BRADLEY: It comes down to a dispute over how
17 the bid was set up when we submitted it.

18 THE COURT: Okay.

19 MR. BRADLEY: Our bid, and I have ---

20 THE COURT: --- I'm not talking about the panel.
21 I'm talking about the school board.

22 MR. BRADLEY: The change order was denied by the
23 architects as I recall. That would be what the school
24 board did initially. And then we had to appeal it
25 through the school board's engineer ---

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 THE COURT: --- I understand that ---

2 MR. BRADLEY: --- and then we went to the panel ---

3 THE COURT: --- so initially the school board
4 denied it because the architect said it wasn't necessary?

5 MR. BRADLEY: They said that it was necessary.
6 Everyone agrees that it was necessary. The question is
7 what did we bid for the length when we started. That's
8 their dispute is they said you should have made your bid
9 on a 78 foot pile and we said we made our bid on 66 foot
10 pile; that's the dispute. And I have a copy of our bid
11 if I could just make it easier I'll just hand it up.

12 THE COURT: Okay.

13 MR. BRADLEY: Mr. Hagood already has it.

14 [Whereupon, Mr. Bradley provides documents to the
15 court]

16 THE COURT: Well, the change order changed the bid
17 didn't it? What was your change order?

18 MR. BRADLEY: The initial change order that was
19 granted was for an extra eight feet and the further
20 change order was for the additional 12 feet to make it
21 all 20. So the second change order is the one they
22 denied. So we got eight feet. We thought we should get
23 20. And so we're asking for the extra 12.

24 THE COURT: Why did you do two change orders if you
25 knew you needed 20 feet to begin with?

1 MR. BRADLEY: That was explained at the hearing and
2 here's why they did it that way. Our guys were working
3 through Con construction and Con told them submit the
4 eight foot now and submit the 12 foot later so that's
5 what they did. That's the answer of why they didn't
6 submit all 20 ---

7 THE COURT: --- so we're talking about the 12 feet.
8 Why did they deny the 12 feet?

9 MR. BRADLEY: What the school district says -- and
10 I have a copy -- that bid sheet, our bid says we based
11 our bid on 66 feet because of the drawing shows a 66 foot
12 pile. It says, the geotechnical information says a 78
13 foot pile but we're submitting our bid based on the
14 drawings, which is a 66 foot pile. And the dispute is
15 did the drawing show a 78 foot pile or a 66 foot pile.
16 And there is -- I've got a copy of the drawing we are
17 relying on Judge if I could just hand it up.

18 THE COURT: So the school board says it showed 76
19 feet you said?

20 MR. BRADLEY: 78 feet.

21 THE COURT: 78 feet and y'all say it shows 80?

22 MR. BRADLEY: We said it shows 66 feet.

23 THE COURT: Shows what?

24 MR. BRADLEY: 66 feet.

25 THE COURT: Does this bid address the issue?

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 MR. BRADLEY: Yes sir, it says ---

2 THE COURT: --- the bid said depths of 66.

3 MR. BRADLEY: Yes, sir. And I've got a copy of the
4 drawing here.

5 [Whereupon, Mr. Bradley provides documents to the
6 court]

7 MR. BRADLEY: I apologize that that's hard to read.
8 The original drawing is like a poster. And if we could
9 get a copy of the original drawing if it comes up. But
10 you can see it says pile tip length.

11 [Whereupon, the court reviews document]

12 THE COURT: Okay. Go ahead.

13 MR. BRADLEY: I had the same problem. I had to get
14 my son to read it to me Judge.

15 THE COURT: I can't read it.

16 MR. BRADLEY: When it's shrunk -- the original is
17 as big as a poster and that's why it looks like that.
18 And I don't think there is any dispute with Mr. Hagood
19 that it says 66 feet because if you look at the original
20 it ---

21 THE COURT: --- it says 66 feet?

22 MR. BRADLEY: It says pile tip elevation 66 feet.

23 THE COURT: So 66 not 50 -- she thought it said 55.
24 I can't see it to tell.

25 MR. BRADLEY: I can bring the poster. I don't

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 think anybody is going to dispute what the actual
2 document says.

3 THE COURT: Okay.

4 MR. BRADLEY: The dispute is this; they say when
5 you look at that you should know that that means 66 feet
6 below sea level so you have to add an extra 12 feet
7 because this is 12 feet above sea level where you are.
8 And our people say no it says 66 feet elevation, which
9 means from the ground 66 feet down.

10 That's why they wouldn't pay us for the extra 12
11 feet. They say that drawing shows 78 feet because you
12 have to add another 12 feet to make it 66 feet below sea
13 level. But the drawing says 66 feet. That's our dispute
14 on the length of the piles.

15 THE COURT: What does the big drawing say as far as
16 sea level versus ground level?

17 MR. BRADLEY: There is nothing on the big drawing
18 that says that.

19 THE COURT: Okay.

20 MR. BRADLEY: That I know of. And there is a stack
21 of drawings that are like this high [indicates]. They
22 are as big as a poster but no one has pointed out to me
23 anything that says you should add 12 feet to our
24 measurements because they are all below sea level.

25 THE COURT: The bid very clearly says to depths of

1 66 feet below ground surface.

2 MR. BRADLEY: Yes sir, and that's our point is we
3 submitted our bid on 66 feet because of that document and
4 we should be paid for the extra 12 feet. And it's 45
5 dollars a foot and there is 680 piles. That was the
6 basis for it. That's the factual basis for us disputing
7 what the panel says.

8 THE COURT: Okay.

9 MR. BRADLEY: So the due process basis is I've laid
10 the facts out. Essentially what they did was appointed
11 their own vice chair to be the chairman of the panel. So
12 the chairman of the panel that we are arguing in front of
13 is also the vice chair of our opponent. That's the due
14 process violation. I've got a case here ---

15 THE COURT: --- how many people on the panel?

16 MR. BRADLEY: Five, Judge.

17 THE COURT: Counting the vice chairman?

18 MR. BRADLEY: Yes, sir.

19 THE COURT: So it's five total?

20 MR. BRADLEY: Yes, sir.

21 THE COURT: Okay. Who appoints the other four?

22 MR. BRADLEY: The board appoints everyone on the
23 panel.

24 THE COURT: Okay. So it's a board appointed?

25 MR. BRADLEY: Yes sir, completely board appointed.

1 And so the argument is they put -- there is a member of
2 the opposing party on the panel that decides the dispute
3 because of course the school board is represented by the
4 members on the board. That's why we say they are
5 basically being both the judge and the opposing party
6 putting him on the panel. And that's the due process
7 argument.

8 I have not found a case in South Carolina that
9 squarely addresses this situation. There are a lot of
10 cases that are cited in our memorandum that talk about
11 when you can and cannot do that. There is a recent case
12 from the United States Supreme Court that I've given to
13 Mr. Hagood.

14 THE COURT: What does it say?

15 MR. BRADLEY: I just want to hand you a copy.

16 THE COURT: What does it say?

17 MR. BRADLEY: It's from February of this year.

18 THE COURT: I'll be glad for you to hand me a copy
19 but just tell me what it says.

20 MR. BRADLEY: Yes, sir.

21 [Whereupon, Mr. Bradley provides documents to the
22 court]

23 MR. BRADLEY: Essentially it says you can't be the
24 judge and the opposing party. What happened is ---

25 THE COURT: --- what are the facts of that case? I

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 mean what are the facts the Supreme Court ---

2 MR. BRADLEY: --- it's a death penalty case, Judge.

3 THE COURT: Pardon?

4 MR. BRADLEY: A death penalty case.

5 THE COURT: Oh, okay.

6 MR. BRADLEY: And here's what happens. Mr.

7 Williams was prosecuted by a district attorney, which is
8 what they call them in Pennsylvania. The district
9 attorney who made the decision to prosecute him later got
10 elected to the Pennsylvania Supreme Court. He got the
11 death penalty in the lower case which was appealed to the
12 Pennsylvania Supreme Court and the district attorney who
13 had made the decision to prosecute him who was then on
14 the Supreme Court also made the decision to affirm his
15 death penalty.

16 THE COURT: So he didn't recuse himself when it
17 came up?

18 MR. BRADLEY: Yes, sir.

19 THE COURT: And so what did the U.S. Supreme Court
20 say?

21 MR. BRADLEY: The U.S. Supreme Court says you can't
22 do that because essentially you are putting the opposing
23 party on the bench. As the district attorney he was the
24 opposing party and then he's the judge ---

25 THE COURT: --- what does that have to do with a

1 procurement panel?

2 MR. BRADLEY: What it has to do with procurement is
3 it announces the general proposition that you cannot put
4 the opposing party on as the decision maker. And that's
5 the argument. And the language that I think -- it is
6 broad language under the due process clause but the
7 reason it's important is you're not supposed to have the
8 same party making the decisions that are opposite of you.
9 That's the proposition of law. And the court says on
10 page 6 ---

11 THE COURT: --- well if you accept that argument
12 and all the State procurement acts and all your local
13 procurement panels would go out the window.

14 MR. BRADLEY: That's not true, Judge because yes
15 procurement panels ---

16 THE COURT: --- you think it's okay for the school
17 board to appoint the panel as long as they don't appoint
18 one of their own members is that your point?

19 MR. BRADLEY: Yes, sir.

20 THE COURT: Okay.

21 MR. BRADLEY: They can't appoint their own person
22 to chair the panel. The rule is pretty clear in South
23 Carolina the procurement codes give the power to the
24 governor to appoint the panels. And so there is some
25 cases on that like can the legislature appoint members of

1 the legislature this, that, and the other. But the
2 question is the opposing party is the board. Their own
3 vice chairman is the chair of the panel that we are
4 arguing about. We have to argue the case in front of the
5 party that we are arguing about that is going to have to
6 pay us if we win. And that's the whole point of it.

7 And what the Supreme Court says on page 6 of that
8 head note that I'm talking about is it's talking about
9 bias and it says the court asks not whether a judge
10 harbors a actual bias but whether an objective matter the
11 average judge in his position is likely to be neutral or
12 whether there is an unconstitutional potential for bias.
13 That's the language the U.S. Supreme Court says.

14 And then it announces the broad rule that we're
15 talking about here which says the objective risk of bias
16 is reflected in the due process maxim that no man can be
17 a judge in his own case and no man is permitted to try
18 cases where he has an interest in the outcome. And
19 that's the point; the man is the vice chairman of the
20 board. The board is going to have to pay whatever is due
21 to us and he's also the chairman of the panel that
22 decides whether they are going to have to pay. That's
23 the reason for the due process challenge, Judge.

24 THE COURT: What's your standard review for a
25 procurement board?

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 MR. BRADLEY: The standard set out statutorily and
2 in the code in their procurement code is essentially the
3 same standard as a review from a worker's compensation
4 proceedings; it's substantial evidence.

5 THE COURT: Okay. So it's substantial evidence
6 rule?

7 MR. BRADLEY: Yes, sir. It comes from the
8 Administrative Procedures Act and the Charleston
9 procurement code expressly incorporates that.

10 THE COURT: Let me ask you this question. Let's
11 assume the court decides that the due process was -- your
12 argument is correct and the panel was improperly composed
13 and you set it aside. All that does is put you before
14 another panel is that right?

15 MR. BRADLEY: Yes, sir.

16 THE COURT: Okay. Mr. Hagood?

17 MR. HAGOOD: Your Honor, one thing I would like to
18 pass up because I'm not sure you have it is a copy of the
19 order since this is the order that is under appeal.

20 THE COURT: I would assume it is in his stack of
21 paperwork somewhere but I'll be glad to receive it from
22 you.

23 [Whereupon, Mr. Hagood provides documents to the
24 court]

25 THE COURT: Thank you. Did Mr. Massalon do the

1 order?

2 MR. HAGOOD: Well, Mr. Massalon he was selected to
3 serve as an independent attorney to advise the board.

4 THE COURT: Okay.

5 MR. HAGOOD: And I think you'll see that the school
6 district ---

7 THE COURT: --- is George Ducker the one that is on
8 the school board?

9 MR. HAGOOD: That's correct, Your Honor. And if
10 you look at the very first paragraph of the order I don't
11 think there is a dispute that the panel was appointed
12 pursuant to the ---

13 THE COURT: --- statute?

14 MR. HAGOOD: Procurement code. And to just kind of
15 put things in prospective if you are a school district
16 and you have a budget in excess of a certain amount of
17 money then you can adopt your own procurement code and
18 that's what the Charleston County did. They fell within
19 that category. They are one of the largest school
20 districts in the state and so their budget was of an
21 amount that they were entitled to adopt their own
22 procurement code. But they have to submit that to the
23 state engineer and he has to approve that what we're
24 submitting is substantially similar to what the state
25 procurement code does. And so if you look at it this

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 whole thing is designed to try to -- obviously if you are
2 arguing about buying copy machines you might want
3 different people on your panel that if you're talking
4 about a construction case like this that has some
5 technical issues. And so if you look at the very first
6 paragraph of the order it identifies correctly that Mr.
7 Ducker ---

8 THE COURT: --- do they have a standing panel or do
9 they appoint a new panel for every dispute?

10 MR. HAGOOD: It's set up where they could have a
11 standing panel but at the time this appeal was filed
12 there was not a standing panel so they appointed one
13 trying to get expertise that would understand the issues
14 in this case. So if you look at it ---

15 THE COURT: --- so does the ordinance provide them
16 to appoint a panel for each dispute or do they have a
17 standing panel?

18 MR. HAGOOD: They could have a standing panel.

19 THE COURT: Or they could appoint one for each
20 dispute?

21 MR. HAGOOD: Correct, if they don't already have
22 one that was in place. And to be candid with you they
23 don't have many of these appeals so they don't have one
24 that takes place because there are a number of levels
25 that had to occur before it got to this point.

1 THE COURT: Okay.

2 MR. HAGOOD: So when they filed their appeal -- in
3 other words if you look at it and I think we addressed it
4 in our brief the contracts provided, which is not unusual
5 these days, that you can have what they call a dispute
6 review board during the course of a project to hear a
7 dispute. And so they tried this same argument in front
8 of the dispute review panel and that was comprised of one
9 of them was a structural engineer; they denied the claim.

10 Then it went to the procurement officer from the
11 school district and he affirmed their denial of the
12 claim. And then the way the process works is they want
13 to appeal it to the procurement panel and that
14 procurement panel has a de novo hearing and they are not
15 bound by anything that has taken place before.

16 So we had a full day hearing. And the other people
17 that were on it you had a procurement officer, a
18 procurement director for the City of North Charleston,
19 you had a vice president for Choate Construction Company
20 here, and then you had a joint venture audit director for
21 Roper Saint Francis, and then you had a retired
22 structural engineer. So this panel who had some
23 expertise we had a full day hearing. They came in, they
24 presented all their witnesses. We had and that's what I
25 want to make sure is in the record there were exhibits;

1 all the things that they talk about. We had our
2 exhibits, about 25 of them I believe. They had 21
3 exhibits. They were allowed to put up their whole case.
4 The panel heard it and then the panel at the end of it
5 they asked that we present proposed orders. We both
6 presented proposed orders and they found in favor of the
7 school district.

8 So the deal with the due process argument is
9 absolutely unlike this case here where you had a
10 prosecutor who prosecutes a death penalty case and then
11 is later sitting as a judge reviewing what has happened
12 he had a direct participation in it. Other than being a
13 member of the school board Mr. Ducker didn't have
14 anything to do with this particular project. The school
15 district hires architects, engineers and so he wasn't
16 directly involved in it.

17 I can't dispute the fact that yes if they were to
18 prevail that the school district would have to pay it
19 besides Mr. Ducker writing a check out of his own
20 pocketbook, which is some of the cases that they talk
21 about where like the mayor was in charge of a budget and
22 he would have a direct pecuniary interest in it. All of
23 this construction that we are talking about here is
24 funded through sales tax ---

25 THE COURT: --- does your ordinance or I guess with

1 the school board it's a regulation. What do you call it;
2 regulation?

3 MR. HAGOOD: It's the procurement code. And I
4 attached ---

5 THE COURT: --- so you've got a procurement code.
6 Does the procurement code require the appointment of a
7 school board member as chairman?

8 MR. HAGOOD: Yes.

9 THE COURT: The procurement code requires that?

10 MR. HAGOOD: Right. I've attached to my
11 memorandum, which was exhibit number 9 at the hearing is
12 the excerpts of the consolidated procurement code. And
13 it tells you exactly what has to happen. The board of
14 trustees if you look at -- I think if you look on the
15 bottom right hand corner of your page 76 of the
16 procurement codes section 44-10 creates the procurement
17 panel.

18 And then if you look at the next page on page 77 it
19 says the membership you have to have a member of the
20 board appointed by the board who will chair the panel.
21 So that's what they did; they followed the procurement
22 code. And then you're supposed to select people from the
23 community that represent other industries or businesses
24 that would be affected by it.

25 THE COURT: Well ---

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 MR. HAGOOD: --- and so what they did was exactly
2 what was called for.

3 THE COURT: All right Mr. Hagood on the cases I
4 haven't read them; I haven't even read y'all's
5 memorandums. What do the cases say about appointing a
6 member of the board?

7 MR. HAGOOD: There is no case in ---

8 THE COURT: --- are you making the distinction the
9 cases they have been cited the individual involved in the
10 governing body, the city council, the county council or
11 whatever it was, was directly involved in the process?

12 MR. HAGOOD: Right. If you had something like that
13 they ---

14 THE COURT: --- do those cases say that is what is
15 required to deny the due process argument?

16 MR. HAGOOD: There is no case that supports his
17 argument in this scenario.

18 THE COURT: Okay.

19 MR. HAGOOD: So we're not going to find a case that
20 says if you have a school district procurement code that
21 says you've got to appoint a member as the chairman. And
22 what I would point out, Your Honor, is as you pointed out
23 initially with your question he's one of five people. If
24 you look at the decision that I just passed up to you
25 it's signed by all five members. They had an independent

1 attorney that is advising them. There is absolutely no
2 showing before you that Mr. Ducker somehow controlled
3 this panel. And if you look at the transcript ---

4 THE COURT: --- well, I don't think they would have
5 to show that for a due process type argument. It's the
6 set-up of the hen guarding -- the fox guarding the hen
7 house so to speak okay.

8 MR. HAGOOD: I understand that ---

9 THE COURT: --- that's the argument; not that he
10 could influence or had to influence it for it to be a
11 denial.

12 MR. HAGOOD: Well, if you look at the cases and you
13 look at the statute they talk about bias and prejudice
14 there is no prejudice. And in fact like I said ---

15 THE COURT: --- well, I'm sure his argument is it
16 is an inherent prejudice because he's a member of the
17 board that has to pay the money.

18 MR. HAGOOD: He is a member of the board ---

19 THE COURT: --- as you know in the legal side it's
20 the appearance of impropriety. But that's not the
21 standard I know.

22 MR. HAGOOD: I think we're dealing with a whole
23 different scenario ---

24 THE COURT: --- you're dealing with a whole
25 different scenario; I understand.

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 MR. HAGOOD: And so as you pointed out anytime
2 you're going to have procurement with the state if you
3 have something like this you're going to throw it out
4 just because of that; you know you're going to turn it
5 all on its head.

6 And so what I'm telling you is other than saying
7 yes, they are complying with the provision of the code,
8 the procurement code that says you appoint a member of
9 the board to serve as the chair that's the only thing
10 they put before you. That alone I don't think would be
11 enough for you to say they've been denied due process.

12 So that's why I wanted to make certain that the
13 record on appeal here in case this ends up because
14 they've been pretty tenacious about carrying it through
15 every level they can go for I want to make certain that
16 our record on this appeal has the entire transcript, all
17 the exhibits because that is the record that you're
18 charged with reviewing to determine if there is
19 substantial evidence to support ---

20 THE COURT: --- well, have y'all filed it with the
21 clerk or do we need to file it as a court's exhibit?
22 Whatever you want to do I'll agree with you.

23 MR. HAGOOD: I think they sent down to the Clerk's
24 office and I think that's what she was saying. Whenever
25 the court reporter issues the transcript they usually

1 seal it and the court is the one who opens it ---

2 THE COURT: --- so you think it's in the Clerk's
3 file because I don't have the Clerk's file. She looked
4 it up; all we've got is the computer screen. They don't
5 give us the paper anymore.

6 MR. HAGOOD: Okay. I think she said it is sealed
7 and I think -- I would ask that you unseal it and make
8 sure it's part of the record so that we have a full
9 record.

10 THE COURT: Well, if somebody has a copy of it I'll
11 be glad to mark it as court's exhibit number 1 right now
12 or appellant's exhibit number 1 then I know it's there;
13 if somebody has a copy of it. Or I'll go get the copy
14 downstairs and unseal it and mark it as a court's
15 exhibit. It's not in this paper file that we have
16 because I do have the paper file here today.

17 MR. HAGOOD: I don't know what they do with it. He
18 sent it down last week.

19 THE COURT: Does anybody have a copy of it?

20 MR. BRADLEY: Yes, Your Honor. I have a copy
21 except for the two exhibits ---

22 THE COURT: --- you gave it to the clerk last week?

23 MR. BRADLEY: I've sent it twice. When we appealed
24 it and I got it I sent it because the court reporter sent
25 me the original which is the one I sent down here. I had

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 the same discussion that you and Mr. Hagood have just had
2 with the Clerk's office ---

3 THE COURT: --- I'll find it and I'll mark it ---

4 MR. BRADLEY: --- so I sent it again last week.
5 And I have another copy right here I'll be happy to give
6 you.

7 THE COURT: No, I'll find it and mark it. I'll
8 make sure that happens.

9 MR. HAGOOD: And then there are also the exhibits
10 that were marked at the hearing ---

11 THE COURT: --- did the court ---

12 MR. HAGOOD: --- that was subject of the testimony
13 and I think those were sent down as well.

14 MR. BRADLEY: All I can tell you Judge is I've sent
15 this down here twice. I've had this discussion or at
16 least my paralegal has with somebody here twice; I don't
17 know who. And I'm not throwing stones at all. I'll be
18 glad to send it again or I'll be glad to hand you what I
19 have right here. But I want you to have what you need
20 and I'll make sure you have it ---

21 THE COURT: --- are the exhibits in those
22 notebooks?

23 MR. BRADLEY: Everything except the two I just
24 handed you is in there. I'll hand it to you right now
25 and you can have it.

1 THE COURT: It doesn't matter to me. If you want
2 to go ahead and mark it all put it up here and we'll mark
3 it appellant's exhibit number 1 or court's exhibit number
4 1 then I'll know it's there.

5 MR. BRADLEY: Okay.

6 THE COURT: Mark all those as court's exhibits 1,
7 2, and 3, okay?

8 THE COURT REPORTER: Okay.

9 THE COURT: I think there are three notebooks.

10 [Whereupon, court's exhibit numbers 1, 2, and 3 are
11 marked by the court reporter]

12 THE COURT: But go ahead.

13 MR. HAGOOD: So on the due process argument we've
14 complied with the statute. There has been no showing of
15 any bias. He was one of a five member panel. And I
16 think if you look at the testimony you'll see this was
17 conducted similar to a board hearing. He put up
18 witnesses and I was able to cross-examine them, I put up
19 witnesses and he was able to cross-examine them.

20 If you look at the cases that talk about due process
21 it's really notice and opportunity to be heard. So I
22 don't think there is any dispute that he had an
23 opportunity to be heard and have this issue passed upon
24 by them. So the standard of review assuming you accept
25 that our compliance with the procurement code and

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 following its procedure is proper is he has to show that
2 there is a lack of substantial evidence to support the
3 decision. And I submit Your Honor if you look at the
4 order you will see that ---

5 THE COURT: --- let me ask you a question without
6 looking at the order, and I will look at the order, do
7 you agree that -- and my footage may be wrong -- we
8 talked about 12 feet and how many piles?

9 MR. HAGOOD: We don't dispute the number of piles.

10 THE COURT: How many piles were they?

11 MR. HAGOOD: He says 300. I'm not going to argue
12 whether it's 3 or 325 ---

13 THE COURT: --- do you agree that you're talking
14 about not paying them for what was it 18 feet or 12 feet
15 -- not paying them for 12 feet?

16 MR. HAGOOD: He was asking for an additional 12
17 feet.

18 THE COURT: And y'all paid him for how much?

19 MR. HAGOOD: We paid him six originally I believe
20 or maybe it was eight.

21 THE COURT: You paid him for ---

22 MR. HAGOOD: --- there is exhibit number 7 that was
23 marked was a change order. We gave an additional 247,000
24 dollars to extend the length of the pile from 78 feet to
25 86 feet.

1 THE COURT: From 78 to 86?

2 MR. HAGOOD: Correct.

3 THE COURT: And what was actually installed?

4 MR. BRADLEY: 86.

5 THE COURT: So it's ten -- originally it was 66
6 feet?

7 MR. HAGOOD: Well, we have a serious disagreement
8 on that in the board.

9 THE COURT: That's why I was going to ask you.
10 Looking at the change order which is exhibit number 4 or
11 exhibit number 5 I guess at your hearing and exhibit
12 number 4 at this hearing it says project specifications
13 and drawings dictate that our proposal include a bid for
14 installation of the micropiles to a depth of 66 feet
15 below ground surface. Now do you agree with his argument
16 that y'all took the position it was below sea level?

17 MR. HAGOOD: Correct because that's what you have
18 to do. What happens is this and this is all passed upon
19 and this is really why I want to stress to you ---

20 THE COURT: --- this very clearly says ground level
21 and not sea level.

22 MR. HAGOOD: Okay. And that is a bid that is
23 submitted by Terratec to the general contractor. It
24 doesn't even go to the school district. The school
25 district did not receive this. What they found -- they

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 anticipated that they were going to have to put them in
2 more than 66 feet. And they gave a bid -- we get a lump
3 sum price that includes their million 9 that they
4 originally had with their contract with M B Con. We gave
5 M B Con a contract with close to 10 million dollars. And
6 there is a process, as Your Honor already pointed out,
7 where you go by and ask for change orders.

8 They came and they asked to get the additional eight
9 feet which we gave them. And testimony at the hearing
10 was well Con said just ask for this right now and then go
11 back later. Well, we've already closed out our contract
12 with Con. We've already got final payouts and everything
13 like that. And so they are trying to come back after all
14 the work has been done to ask for this additional money.
15 But what I really want to stress, Your Honor, is you're
16 supposed to look at the record and see if there is
17 substantial evidence ---

18 THE COURT: --- I thought that's what I was looking
19 at. That's exhibit 5 I assume at your hearing. Now
20 somebody here has marked it as exhibit 4. I don't know
21 which exhibit hearing that applies to. And that's what I
22 was reading to you it very clearly says ground level not
23 sea level.

24 MR. HAGOOD: And that is a bid they submitted to
25 Con. That is not something that came to the school

Terratec, Inc. v Charleston County School District
Appeal
July 18, 2016

1 district and ---

2 THE COURT: --- well I understand but his argument
3 was that's the reason you denied it.

4 MR. HAGOOD: No, we denied it because he was
5 supposed to have it to the 78 feet originally. The fact
6 that they helped him have a chance to get this contract
7 and put something in there in their bid with Con, which
8 is not in our bid with Con. We get a lump sum price.
9 You know how it works. You submit it out to eight or
10 ten contractors and you get prices and under the typical
11 scenario you pick the lowest one so if they low-balled
12 their bid and try to help get the contract that's a risk
13 that they took. And I think he is correct about this;
14 the whole dispute is whether you are measuring from the
15 ground surface or whether you're measuring from a data
16 point that is sea level.

17 So whenever the geotechnical engineers go out there
18 hasn't been a survey of the site and so the only thing
19 they go by is the ground level at that point. You then
20 have to coordinate after there has been a survey by the
21 civil engineering firm to figure out where exactly is the
22 level of the floor on that site over there where the
23 Rivers school is located and bring it up here. So it
24 very clearly was explained by the project engineer that
25 you have to add to the ground level wherever you are to

1 figure out how long it has to be. And so we've got a
2 structural engineer, we got a construction man that hears
3 all this testimony and they disagreed with them.

4 And so what I'm saying is your charge I believe
5 respectfully is to look at the order and find out if
6 there was substantial evidence to support their decision.
7 And I think what you will see is that every argument that
8 they made was clearly considered. They made reference,
9 like I said there were 39 findings of fact here. They
10 made reference to the testimony. They said what his
11 engineer said, what our engineer said and made a
12 decision. And so that decision was that they had not
13 proven entitlement for that.

14 And part of it was based on the fact that they had
15 already asked for additional pile length and we gave them
16 a 250,000 dollar change order for that -- 247. So that
17 issue was decided and I submit that there is substantial
18 evidence to support their decision and you need only look
19 at the findings of fact dealing with those issues to
20 reach that conclusion.

21 Now the other part he talks about is the testing.
22 Well, what happened here is again this is something
23 between Terratec and M B Con the general contractor.
24 They originally were going to do a load test that was
25 going to be closer to the building. Well, M B Con put

1 their construction trailer where they were going to do
2 the test. So the evidence at the hearing was M B Con
3 said well you can't do it here; you do it over there.
4 Well, that was something between the general contractor
5 and Terratec. The school district had nothing to do with
6 that decision. There was no testimony to support that.
7 So that's the other piece of what he is asking for.

8 Again, I know it's a lot of material but the issue
9 for you to decide is was there substantial evidence for
10 this panel to make the findings that they did. And I
11 think that you only need to look at the order and see
12 that they carefully considered all the arguments that
13 were made. They gave the reasons as to why. They denied
14 their appeal and it was consistent as I said with earlier
15 reviews of this same claim by them.

16 So I think that's what Your Honor is required to do.
17 I'd ask unfortunately that you would have to at least
18 look at the order and I think if you look at the order
19 you'll see they carefully considered every argument they
20 made and there is substantial evidence to support it.

21 THE COURT: All right. Thank you, Mr. Hagood.
22 Thank y'all so very much. I appreciate it.

23 MR. BRADLEY: Thank you for your patience, Judge;
24 nice to see you.

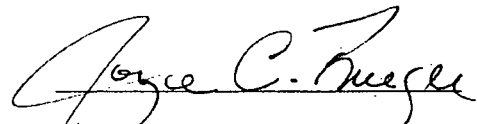
25 *****END OF TRANSCRIPT OF RECORD*****

C E R T I F I C A T E

I, the undersigned, Joyce C. Rueger, Official
Circuit Court Reporter for the Ninth Judicial Circuit of
the State of South Carolina, do hereby certify that the
foregoing is a true, accurate, and complete Transcript of
Record of the proceedings had and evidence introduced in
the trial of the captioned case, relative to appeal, in
the Court of Common Pleas for Charleston County, South
Carolina on the 18th day of July, 2016.

I do further certify that I am neither of kin,
counsel, nor interest to any party hereto.

October 16, 2016


Joyce C. Rueger, CVR-M
Court Reporter.

Deposition of Procurement Review Panel Hearing

1 CHARLESTON COUNTY SCHOOL DISTRICT
2
3 PROCUREMENT REVIEW PANEL HEARING
4
5
6
7
8
9
10

11 Given before Molly C. Newton, Court Reporter
12 and Notary Public, at 75 Calhoun Street, Charleston,
13 South Carolina, on Tuesday, March 11th, 2014, commencing
14 at 9:00 o'clock, a.m.
15
16
17
18
19
20
21
22
23
24
25

Deposition of Procurement Review Panel Hearing

A P P E A R A N C E S

For the School District: Brewton Hagood, Esquire
151 Meeting Street
Charleston, SC

For Terratec: James Edward Bradley, Esquire
Post Office Box 5709
West Columbia, SC 29171

Panel Members:

Tom Ducker, Chair

Matt Brewer

Chip Stehmeyer

Denise Badillo

Jason McKinney

Deposition of Procurement Review Panel Hearing

1 MR. DUCKER: Morning. Welcome to the board
2 room. Today we are here on the appeal filed by
3 Terratec, Incorporated in the decision that was
4 posted on November 22nd, 2013. Terratec worked
5 as a subcontractor for MB Kahn Construction
6 Company, Inc. On Rivers Education Site retro fit
7 and interior renovation utilization project
8 owned by CCSD. I'm Tom Ducker. I'm the chair of
9 this panel. I'm also vice chair of the
10 Charleston County School Board. The other panel
11 members are Denise Badillo, Matt Brewer, Jason
12 McKinney and Chip Stehmeyer. Additionally, John
13 Massalon is present as independent legal counsel
14 for the panel. Mr. Massalon is not part of the
15 panel and will not participate in the decision
16 of the panel. Counsel for Terratec is Ward
17 Bradley, thank you. Counsel for CCSD is Brew
18 Hagood. Thank you. The hearing is being
19 conducted pursuant to CCSD consolidated code
20 version 1.5 with an effective date July 21, 2008
21 and with a revision date of January 7, 2011. In
22 particular, this panel has been convened under
23 section 4410 of the code. As a reminder the
24 panel has retained a Court Reporter to record
25 this hearing. The panel has previously advised

Deposition of Procurement Review Panel Hearing

1 that the following procedures will apply: The
2 panel would like to finish today's hearing by
3 five o'clock, at least one board member has a
4 hearing today which would require the panel to
5 adjourn, the Panel will plan to take a 15 minute
6 mid-morning break, an hour long lunch break
7 around noon, and a mid-afternoon break for 15
8 minutes. The hearing is being held in the board
9 room of the School District offices at 75
10 Calhoun Street. The panel received some
11 documents to review prior to the hearing but
12 those documents have not been received into
13 evidence to the extent that you can agree on the
14 exhibits to be admitted into the record. The
15 panel would like you to introduce them at the
16 beginning of the hearing and only present
17 disputed exhibits separately during the hearing.
18 Prior to the hearing the panel received a list
19 of proposed witnesses. At this time the chair
20 will recognize anyone on the panel who would
21 like to comment on witnesses listed and disclose
22 any relationships with the witnesses.

23 MR. STEHMEYER: I am Chip Stehmeyer. I
24 would like to let you know that I have worked in
25 the past very closely with Mr. Bill Lewis. Bill

Deposition of Procurement Review Panel Hearing

1 was my commanding officer approximately 15 years
2 ago when I was Chief Engineer and Director of
3 Capitol Improvements. We worked very closely
4 there but certainly never on the Rivers Project
5 together. Since retirement from Centers of
6 Disease Control I've worked with Collins
7 Engineers as a consultant on some site studies
8 for Charleston County School District but not
9 the Rivers Project.

10 MR. DUCKER: Are there any objections to
11 Mr. Stehmeyer being here?

12 MR. HAGOOD: None.

13 MR. BRADLEY: We don't object.

14 MR. DUCKER: Okay. Thank you. The panel,
15 acting through Mr. Massalon, asked the attorneys
16 if they would like the witnesses sequestered and
17 it's my understanding that the attorneys agreed
18 not to sequester the witnesses so the panel will
19 respect that. The panel was informed of other
20 claims by Terratec pending against MB Kahn. If
21 the parties disagree about the scope of this
22 hearing and whether all the claims are properly
23 before the panel, the panel would like to begin
24 by having you address the scope of the hearing.
25 Questioning of the witnesses will proceed in the

1 usual manner as if you were at trial. We will
2 begin with Terratec's presentation and CCSD's
3 presentation of evidence will follow. The party
4 who calls the witness will question him or her
5 first, cross examination will follow, then the
6 re-direct, finally the panel may follow with any
7 remaining questions and I ask that the panel be
8 recognized by the chair before you ask your
9 question. Please, if you have any phones, please
10 turn those phones on vibrate. Are there any
11 questions? Okay. Then we will proceed with
12 Terratec.

13 MR. BRADLEY: Thank you, Mr. Ducker.
14 Before we start I have something to say about
15 the evidence and that is, since you asked the
16 question, Mr. Hagood and I have conferred on the
17 evidence and we've agreed to just introduce and
18 consent that all the exhibits that have been
19 provided to you by the School District and by us
20 will come into evidence so we won't have to
21 formally introduce them and it will move more
22 quickly through the presentation so that we can
23 hopefully get through this quicker.

24 MR. DUCKER: May I ask a question? We
25 received, I guess, an exhibit online; which

Deposition of Procurement Review Panel Hearing

1 exhibit will that be?

2 MR. BRADLEY: I have a way to make it a
3 little easier, I think. I have a new index and
4 I have one exhibit printed that's an additional
5 exhibit that was sent by email, I think,
6 yesterday, as well as color replacements for
7 some that came in black and white. If I may
8 approach the board that may make things go a
9 little easier.

10 MR. DUCKER: All right. Sure. This is
11 the new exhibit in color?

12 MR. BRADLEY: Yes, sir.

13 MR. MCKINNEY: So it was 8, 17 and 18?

14 MR. BRADLEY: 7, 13 and 18. And this is
15 the additional 21 which is not in there yet.
16 That should be our exhibits in order up to
17 Exhibit 21.

18 MR. HAGOOD: Mr. Chairman, I agree we had
19 the conversation and so this is my understanding
20 there may be some additional exhibits. What
21 I've done is put them in a notebook here so the
22 witnesses may look at them so you can follow
23 along.

24 MR. DUCKER: Ward, do you have a copy for
25 our Court Reporter?

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: Yes. I'll have to replace
2 the exhibits but I'll get one to her.

3 MR. MASSALON: How about if I let her have
4 my copy.

5 COURT REPORTER: Okay. Thank you.

6 MR. BRADLEY: I think we have the exhibits
7 straight now. There was a question as to the
8 scope of this hearing and how it's defined as to
9 the code and what's going to be heard by the
10 panel. I can either address the opening to tell
11 what we believe is going on here or we can go
12 straight into that scope which should be in
13 Terratec index of claim which, I believe, should
14 be in your notebook. It's the option of the
15 panel which you would like me to do first.

16 MR. DUCKER: I think the panel would prefer
17 an opening statement, an overall view.

18 MR. BRADLEY: As I said, my name is Ward
19 Bradley. This is Chris Morrison; he's the owner
20 of Terratec. In addition, here with us today
21 are Ken Timmerman who is the Structural Engineer
22 and George Simbus who is the Geotechnical
23 Engineer on this job.

24 When this job was originally presented to
25 Terratec, Chris consulted with Ken and George to

Deposition of Procurement Review Panel Hearing

1 review the drawings to come up with a
2 subcontract bid for the job for the school
3 district to put in what are called micro-piles.
4 These are deep foundations that are essentially
5 a steel rod with concrete poured around it and
6 it's done with a drill rig. It's more
7 complicated than that but that's the basis of
8 it.

9 They submitted a bid based on the drawings
10 as they saw them. The bid they submitted was
11 for 66 feet deep micro pilings and their bid
12 actually says - One bid says 66 feet, the
13 geotechnical report says it could be 78 feet,
14 we're submitting our bid for 66 feet but \$45 a
15 foot after that. They submitted that bid in a
16 letter format to Kahn, which is in your books,
17 and it was accepted. So they began to get
18 started setting up the job.

19 One of the things that was required before
20 the job could continue was to test these
21 micropiles because as you know Charleston is
22 close to sea level and Charleston foundations
23 need to be tested to make sure they are going to
24 work as the engineers think they're going to
25 work before you put them underneath a school.

1 So the first thing in the contract was
2 they had to test these piles to make sure they
3 would hold the weight they thought they would
4 hold. They devised a plan based on the
5 geotechnical information they had, the
6 information of what had already been studied in
7 the soil of this project. The plan was accepted
8 and approved. They went to do the test. They
9 wanted to do the test right where they were
10 going to put in the production piles but they
11 were not allowed to do that. They were moved
12 off, two to three hundred yards off from where
13 they wanted to be to do the test. That was the
14 first problem they had and they had no control
15 over that. What they do for the test is they
16 drill the holes, they fill them with the steel
17 concrete and once it dries they put a load on it
18 to see how it will perform and once they did
19 that they found the piles didn't perform as they
20 wanted them to perform, as they expected them to
21 perform. So they tried to figure out what's the
22 problem, why aren't these piles performing as
23 they had been designed to perform. So they went
24 back to the geotechnical information, they went
25 back to the other engineers on the project who

Deposition of Procurement Review Panel Hearing

1 had provided geotechnical information and they
2 said, Well, your piles are just wrong, you
3 didn't do them the right way, but they didn't
4 have any evidence the piles were done wrong.
5 They wanted more geotechnical information to see
6 why the piles weren't holding. They needed to
7 know what was different in the earth but no one
8 was willing to pay to do additional geotechnical
9 information.

10 So Terratec decided to fix this problem
11 that it would hire GS2, George Simbus, to
12 actually do the geotechnical studies, to find
13 out what was under ground here. So they did
14 what is called an STP test where they drill a
15 hole in the ground and they see exactly what
16 comes up, to see what the different strata are
17 underneath the ground and how this micropile is
18 stuck in the strata. The idea was it was
19 supposed to go down a certain depth and hit what
20 is called the cooper marle. The cooper marle is
21 a green clay structure that runs completely
22 under Charleston and it's very heavy and hard
23 and that's where you want to stick the
24 foundation. You have to sink the foundation
25 into the cooper marle. What they found when

1 they did their own test underground was two
2 things. First, it was this huge sand lens.
3 It's called a lens but a layer underground of
4 sand where there was supposed to be clay. The
5 geotechnical studies they had been given showed
6 it was clay but it was in fact sand and they
7 know because they dug the sand out of the hole.
8 The second thing they found was the actual
9 cooper marle was much deeper than what they had
10 thought it was. Then they ran the same SPT test
11 at the production piles to find that same
12 information. They found that the cooper marle
13 was deeper but the sand wasn't at the production
14 site like it was where they were forced off to
15 the different test site.

16 So they had to run a second load test.
17 They ran the second load test with their
18 information that they had paid for that was
19 supposed to be provided by the engineers and
20 that test worked like it was supposed to work.
21 That was the test that got the approval to put
22 the micropiles in to hold up the school.

23 The first issue that we have in front of
24 you is, who needs to pay for the additional
25 testing, additional engineering, that was

Deposition of Procurement Review Panel Hearing

1 necessary for two reasons. One, they weren't
2 allowed to test on site where they wanted to
3 test to start with and the conditions were
4 different. And two, the actual geotechnical
5 information that was found when they did the
6 exploration was different from what they had
7 been given when they designed the micropiles to
8 start with. Once they had the correct
9 information they decided the piles would
10 properly hold up the school.

11 They haven't been paid for all that work
12 to create the second test and do all the
13 engineering work because nobody would agree to
14 do it at the time. They just did it, advanced
15 the money anyway and did the test so they could
16 come up with a pile that could hold the load
17 that needed to be held up.

18 The second issue and the second problem
19 they came up with was this, the actual piles
20 that was bid at 66 feet had to be 86 feet to
21 hold up the school because the cooper marle was
22 much deeper than anyone knew when they started.
23 The geotechnical information that had come to
24 them was not actually what they found when they
25 got out to the site and the piles had to go much

1 farther in the ground, an extra 20 feet per pile
2 but there were 637 piles. That's a big deal
3 because that's a lot of extra concrete, a lot of
4 extra steel and a lot of extra drilling.

5 Terratec's submitted change order has been
6 paid for an extra eight feet of pile but they
7 actually drilled 20 feet of extra pile so it's
8 remaining 12 feet of pile that Terratec has put
9 under the school, it's working like it's
10 supposed to, it's holding the school up,
11 everyone agrees it was necessary, everyone
12 agrees it was put in but Terratec hasn't been
13 paid for it pursuant to their bid. And that's
14 the second issue we have in front of you. The
15 extra \$338,000 for sinking these piles. Each
16 one of them 20 extra feet in the ground that was
17 not how this bid started.

18 When they got onto the site, and this
19 comes to the third issue in front of you, MB
20 Kahn, in the very first place they had to drill
21 for these piles, had cut the concrete out and
22 that is a huge deal for cutting out piles and
23 here's why: The machines that drill these piles
24 drill a hole as big as a dinner plate, eight
25 inches wide, 88 feet into the ground sometimes

Deposition of Procurement Review Panel Hearing

1 at an angle and they weigh six to eight thousand
2 pounds. They are big machines like a bobcat
3 that you can drive around on tractor treads.
4 They had to get them to where they had to dig
5 the piles and then they had to set them up to
6 dig the piles. When you set them on the
7 concrete you can drill a small hole in the
8 concrete or a slot in the concrete, put the
9 machine, drill the pile, pull it back up with
10 the machine and move on to the next hole, but
11 what MB Kahn had done is cut out all the
12 concrete so they had to build a special ramp and
13 hire a structural engineer to devise the ramp
14 that would get 8,000 piles down off the concrete
15 into this mud that was underground. Then they
16 had to devise special rigging to set their
17 machines on, then they had to drill the machines
18 four feet under the concrete, pull all the dirt
19 up and in addition the machines were on wobbly,
20 mushy ground the whole time so it was a lot more
21 difficult to drill the holes. That's our third
22 issue, the changed job conditions. They were
23 supposed to be able to drill it off the concrete
24 but were made to drill in mud and it's a lot
25 harder to drill these holes in the mud with

1 these big expensive drills.

2 The last issue somewhat dovetails onto the
3 first three and it's this, they have been back
4 charged \$100,000 by MB Kahn for inspections done
5 WPC who were hired by the school district and by
6 delays that Kahn discerns were caused by
7 Terratec. Terratec made their production
8 schedules with their change orders. They had
9 projected 78 working days to do this. They got
10 an additional 10 days on their first change
11 order for the depth. They actually took about
12 90 days to get the whole thing done. They
13 worked nights, they worked weekends, to try and
14 get this done because it was so much more
15 difficult because they had to drill the holes,
16 first of all, 20 feet deeper than the thought
17 they were going to have to do, put in 20 feet of
18 extra concrete and 20 feet of extra steel for
19 every one of the holes and drill them down in
20 the mud instead of up on the concrete slab like
21 they had been told. In addition, they don't
22 believe they should be charged extra for the
23 inspections from WPC because they did the work
24 they were supposed to do when they were supposed
25 to do it and the people who were doing the

1 inspections for WPC weren't even licensed to do
2 the inspections.

3 So that is a short overview of why we
4 think we are entitled to be paid, what we are
5 entitled to be paid and how it dovetails into
6 this panel's jurisdiction, if you might. The
7 law, which I'm sure Mr. Massalon can tell you,
8 indicates to the extent a dispute is between -
9 The subcontractor is the real interest in the
10 dispute it goes in front of the procurement
11 panel. I don't know exactly what that means and
12 how it is defined. This panel is just going to
13 have to decide what dispute is between us and MB
14 Kahn and us directly and the school district and
15 discuss whatever the panel feels needs to be
16 addressed.

17 Our position is this, we did the work we
18 were supposed to do, we did it in good faith, it
19 does exactly what we said it would do, we did it
20 exactly in conformity with the documents we
21 submitted and we should be paid for the work.
22 The school district got an excellent product, at
23 a much cheaper price they could have gotten from
24 lots of other things that were suggested from
25 other engineers. We would like to be paid for

1 the work we've expended on the school district's
2 behalf. Thank you.

3 MR. DUCKER: Any questions? I do have one
4 and it's not questions necessarily. You have
5 four issues as I understand. Can you enumerate
6 those four issues without the issues?

7 MR. BRADLEY: Absolutely. The first issue
8 has to do with having to do a double load test.
9 You could call this the load test issue if you
10 want to abbreviate it. The second issue has to
11 do with the extra length that the piles had to
12 be set down in order to hold up the school. The
13 third issue has to do with the fact that MB Kahn
14 had cut the concrete out and made Terratec drill
15 out the swamp instead of concrete.

16 MR. DUCKER You can call that change
17 conditions.

18 MR. BRADLEY: You can call that change
19 conditions. Absolutely. And the fourth
20 condition is the delay in inspection charges
21 they are trying to assert against Terratec.

22 MR. DUCKER: Thank you.

23 MR. BRADLEY: Thank you, sir.

24 MR. HAGOOD: Mr. Chair, may I?

25 MR. DUCKER: Yes. Please.

Deposition of Procurement Review Panel Hearing

1 MR. HAGOOD: Again, I'm Brew Hagood and I
2 represent the Charleston County School District
3 in this matter. One thing I try to do in the
4 narrative and I put it in the notebook which
5 includes to be what I thought to be the most
6 perfect contract of provisions that you have to
7 deal with. Also included, the section the
8 chairman referred to in the beginning, the
9 scope. From the school district's position or
10 perspective the two biggest claims we're dealing
11 with here are really between Kahn, the General
12 Contractor on this project, and the
13 subcontractor, Terratec. The contract that the
14 school district has is very specific and what I
15 did include as one of the exhibits is the
16 general conditions which lay out the claimed
17 dispute provisions. You've got a claim you want
18 to make, you've got to get those within 21 days,
19 you've got to substantiate that claim and then
20 you go through the process and then a decision
21 is made so we're kind of working backwards a
22 little bit.

23 If you look at the index Terratec claims
24 that Ward just described, claim number five is
25 the one for \$473,000; that's at the beginning of

1 his notebook. That's the one he described where
2 Kahn came in and cut a hole into the concrete
3 that they had anticipated that they would use to
4 support the equipment they were going to bring
5 in. You're going to hear testimony that
6 describes the options that were given. That is
7 what we would call a basic means and methods
8 situation. Whenever we turn this project over
9 to Kahn it's their project. They take control
10 of that building. From the time that building
11 is given to them that floor slab is there. The
12 school district nor it's consultants tell them
13 how to go about it. If you look at the
14 subcontract between Kahn and Terratec it clearly
15 said the demolition of concrete is going to be
16 handled by others so Terratec knew that somebody
17 other than them was going to do that. So from a
18 perspective of the school district the school
19 district has nothing at all to do with this
20 issue and I think that's a little bit of a
21 threshold issue you may want to consider whether
22 you want to decide before we go forward because
23 it will affect the amount of testimony you have
24 here today.

25 In addition to that, that claim was not

Deposition of Procurement Review Panel Hearing

1 presented until 2012. The schedule that they
2 gave you of when they finished their work, I
3 think they said the last pile was driven on
4 January 15th, 2012. This claim was not even
5 presented to Kahn until after they gave the
6 change order in March 2012 when they started
7 submitting the claims. That claim never went
8 through any kind of review process. Kahn never
9 forwarded it to us because they knew it wasn't
10 anything between the school district and MB
11 Kahn.

12 The second issue dealing with the
13 additional piling, that's for \$338,580. They
14 tell you that they submitted a bid to Kahn for
15 66 feet. I think most of you have experienced a
16 contract. When the school puts out a project
17 for bid they provide all their information and
18 on bid opening day they get a price. They don't
19 get copies of bids that all the subcontractors
20 have given to the General Contractors bidding on
21 the project and you're going to hear testimony
22 - If they bid 66 foot pile when the documents
23 that you'll hear testimony about indicated that
24 at a minimum it should be a 78 foot pile,
25 there's a misreading that has taken place in the

1 preparation in their bid. That is not an issue
2 that the school district should be responsible
3 for and again, that bid was one that was never
4 presented through the normal process. When they
5 put in the first production pile at 86 feet back
6 in the summer of 2011 they knew. The only
7 change order that ever got presented was the one
8 Ward described which is we gave them a change
9 order to go from 78 feet that was indicated on
10 the geotechnical plans to 86 feet. That's the
11 only one that got presented when the information
12 was put there even though it was at the
13 recommendation of the school district
14 consultants. It was paid. They were paid an
15 additional \$227,000 and some change to handle
16 that change order and that was processed in the
17 normal course of events they had.

18 The other thing that Ward explained is
19 they have been back charged by Kahn. Again that
20 is a situation between the General Contractor
21 and subcontractor. The school district paid
22 Kahn all the money Kahn was owed. You'll hear
23 testimony that while there may have been a
24 suggestion that Kahn should be responsible for
25 some of the additional testing that WBC was

1 going to perform because of the length of time
2 it took to perform that work, the school
3 district never held back that money so if Kahn
4 is holding that money back from Terratec then
5 that again is not between the school district.
6 We have in our package the final change order,
7 final pay application that has a listing of all
8 the change orders that go with it, and you'll
9 see that there is no deduction from Kahn's
10 subcontract.

11 Seems to me what happened is this, they
12 finished doing their work on January 15th, Kahn
13 shortly thereafter sends them this deductive
14 change order for \$93,000. When they do that all
15 of a sudden these additional change orders start
16 showing up on the scene which aren't processed
17 under the normal course of events that are
18 required under contract documents and the first
19 time that the school district sees this argument
20 that they had bid on 66 feet pile is whenever
21 they presented the claim to the dispute and
22 resolution board. So you've got testimony we
23 can put in on that but one thing I put in and
24 highlighted is the subcontract that you have
25 that's in the record between MB Kahn and

1 Terratec, it's got an arbitration clause as to
2 how to hand the disputes. So disputes that are
3 between Terratec and Kahn but don't include the
4 school district should be heard in arbitration.
5 I gave you a copy of the complaint that the
6 filed and what happened is we moved to dismiss
7 the stay until we had this proceeding and they
8 exhausted their administrative remedies. As we
9 read the code provisions your jurisdiction is
10 only to hear to speak between the school
11 district and Terratec. The ones that are
12 between Terratec and Kahn, I don't think you are
13 required to hear them. I don't think it would
14 be proper to hear them. So I think that is kind
15 of a threshold issue we need to decide. Ward
16 and I talked earlier and it certainly would
17 lessen the amount of evidence.

18 The last thing, and again I'm kind of
19 working backwards, dealing with the second pile
20 test, he claims that he was instructed to move
21 where he was going to originally going to do
22 that test. That was by MB Kahn and you'll have
23 pictures that will show you this. They
24 originally submitted a plan to do it but Kahn
25 had one of their trailers. Well Kahn didn't

1 want it to be done there so they sent them back
2 hundreds of feet away from where they originally
3 planned to go and there is not anything that you
4 are going to see that shows the school district
5 directed that or that it's consultants directed
6 that. The plans are also very clear that if the
7 first pile test does not work then under the
8 plans and specifications the subcontractor,
9 General Contractor are responsible for doing one
10 that does work and we only pay for one. We
11 don't pay for the failed one. That's very clear
12 in the contract.

13 That's pretty much all I'll say right now
14 but I do think this threshold issue will have
15 some impact on the amount of testimony you will
16 have.

17 MR. DUCKER: Thank you. Any questions
18 from the panel? I have a question. Am I going
19 to be the only one to ask questions? Terratec
20 has articulated what they believe the damages
21 are and they've given us four issues. On those
22 four issues, and again speaking to the scope of
23 this hearing, of those four issues are you
24 telling us that you believe that all of those
25 issues are between Terratec and MB Kahn?

Deposition of Procurement Review Panel Hearing

1 MR. HAGOOD: I don't believe all of them
2 are.

3 MR. DUCKER: Can you tell me which ones
4 are not?

5 MR. HAGOOD: Clearly change order number
6 five about him saying that they cut out the
7 concrete and it took a lot longer to install it,
8 that's clearly in our view between Kahn and
9 Terratec. It does not involve the school
10 district. We never had a change order submitted
11 for that. My comment on 338, additional 20 feet
12 for which they've already been paid for eight so
13 we're talking about 12 feet, that again is based
14 on a claim they say they have in their
15 subcontract agreement with Kahn that we're not a
16 party to.

17 Now there was a time they presented and
18 we're prepared to stick to that. That's what I
19 pointed out was never presented during the
20 performance of the contract. It wasn't until
21 they requested this dispute review board to come
22 in and look at the first two change orders they
23 had, the change orders two and three, that they
24 came up with this argument that well, We're
25 entitled to not only get paid for the eight feet

Deposition of Procurement Review Panel Hearing

1 that we've processed in accordance with the
2 contract, we're entitled to get paid for another
3 12 feet. We say that's between MB Kahn and
4 Terratec as well. I know their going to
5 disagree with me on that but there is nothing in
6 the document to say - This is what they are
7 arguing, even though the information you are
8 given shows that you should expect to put in a
9 78 foot pile we're only going bid 66 feet and
10 then we're going to charge \$45 a foot for
11 anything above 66. You're not going to find
12 anything in our view that shows you were
13 supposed to put a bid in for less than you
14 anticipated you were going to have to install.
15 Otherwise that puts the district at great risk.
16 We have other bids from other contractors.
17 Kahn's bid, if they had a condition like that
18 would have been thrown out of the box so we
19 think that is between them as well.

20 The first two - They claim they got
21 inaccurate information on where to perform the
22 load test. We think that is really a direction
23 that Kahn gave them and not us. I understand
24 they want to be heard on that and I think that
25 is something for the board to hear.

Deposition of Procurement Review Panel Hearing

1 MR. DUCKER: So there are two out of the
2 four?

3 MR. HAGOOD: Two out of four which are the
4 ones heard by the dispute regulation board.
5 Actually there were three there. The dispute
6 resolution board said they should be paid for
7 the hollow metal pile they put in during the
8 testing. After that decision was issued the
9 school district processed the change and paid
10 them.

11 MR. DUCKER: Thank you. We will take a
12 short recess so we might discuss the scope.

13 MR. BRADLEY: Absolutely. If I may say one
14 thing without trying the patience of the board.
15 I wanted to make sure it's clear because I just
16 got a little confused so I want to make sure
17 what we're all telling you is clear. I believe
18 what Mr. Hagood is telling you, and I'm sure
19 he'll tell me if I got it wrong, is he thinks A
20 should come in front of you, A on my sheet, but
21 he doesn't think anything else should come in
22 front of you. I think that's what he's saying
23 but I'm not sure so I just want to make sure
24 before we break that's what we're talking about;
25 is that right?

Deposition of Procurement Review Panel Hearing

1 MR. HAGOOD: That's correct.

2 MR. BRADLEY: Thank you. I appreciate
3 your patience.

4 MR. DUCKER: Thank you. We'll take a
5 short break, recess and reconvene. Bear with us
6 for about five or 10 minutes.

7 (The hearing went off the record for a brief period
8 of time.)

9 MR. DUCKER: After a short deliberation it
10 is the consensus that today we're going to
11 narrow the scope of this hearing to two of
12 Terratec's claims, A and B. In terms of A,
13 we're seeking information or a decision on
14 whether that was ambiguity in the documents or
15 it was a mistake by the contractor. Is that
16 clear where we're heading here?

17 MR. BRADLEY: I think so.

18 MR. DUCKER: Go ahead.

19 MR. BRADLEY: I'm sorry. I thought you
20 were asking me a question.

21 MR. DUCKER: Well, the question was is
22 that clear as to what we're doing here today and
23 the scope of this hearing?

24 MR. BRADLEY: I think so, if I could
25 restate it to see if I understand it.

Deposition of Procurement Review Panel Hearing

1 MR. DUCKER: Please do.

2 MR. BRADLEY: You'll hear our claims
3 regarding essentially the additional load test
4 engineering that goes into which I have
5 designated as A on the sheet.

6 MR. DUCKER: That's correct.

7 MR. BRADLEY: And the additional pile
8 length that I have designated as B.

9 MR. DUCKER: That's correct.

10 MR. BRADLEY: And you are not going to hear
11 the claims for C regarding the cutting of the
12 concrete and D regarding the back charges?

13 MR. DUCKER: That's correct.

14 MR. BRADLEY: Thank you. I think I need to
15 put on the record now, and I understand your
16 ruling on it and I'm not trying to quibble with
17 it, that I don't agree with it and I do believe
18 you need to hear the testimony on all issues
19 even if it is within scope and I'm required to
20 put that in to preserve this in the event that
21 we have to appeal it so I'm not trying to
22 quibble with your ruling, I'm just saying that
23 we do not agree with it and I think we should be
24 allowed to present all testimony but I
25 understand that you have just ruled that you are

Deposition of Procurement Review Panel Hearing

1 limiting us to presenting testimony to issues A
2 and B and have told us to not present testimony
3 on C and D and we are not allowed to do so.

4 MR. DUCKER: That's correct.

5 MR. BRADLEY: Thank you.

6 MR. DUCKER: Ward, you want to present your
7 first witness?

8 MR. BRADLEY: Absolutely and I might get
9 some direction from the panel; do you want the
10 witness to sit here?

11 MR. DUCKER: Please do, yes.

12 MR. BRADLEY: And would you like me to
13 stand there to ask the questions?

14 MR. DUCKER: Well, you can stand wherever
15 you're comfortable.

16 MR. BRADLEY: Here's why I ask. If I ask
17 my witness questions standing behind him that's
18 a very awkward way to do things.

19 MR. DUCKER: You may -

20 MR. BRADLEY: It makes sense for me to sit
21 up here but I don't want to invade the province
22 of the panel.

23 MR. DUCKER: You can stand wherever you
24 want.

25 MR. BRADLEY: All right. This is good.

Deposition of Procurement Review Panel Hearing

1 We'll call Chris Morrison as our first witness.

2 (Chris Morrison, being duly sworn,
3 testifies as follows:)

4 MR. BRADLEY: Okay, Chris, what do you do
5 for a living?

6 MR. MORRISON: I work for Terratec,
7 Incorporated that currently my mother owns and I
8 am in the process of purchasing. Right now I'm
9 Vice President and pretty soon I'll be Owner
10 slash President.

11 MR. BRADLEY: How long has Terratec been in
12 existence?

13 MR. MORRISON: About 35 years.

14 MR. BRADLEY: How long have you worked for
15 them?

16 MR. MORRISON: Professionally about 15.
17 Pretty much my entire life other than four years
18 in the Marine Corp.

19 MR. BRADLEY: What does Terratec do?

20 MR. MORRISON: We are a foundation and
21 soil stabilization specialist. Smaller size
22 contracting firm. Obviously we install
23 micropiles and we also do residential
24 underpinnings.

25 MR. BRADLEY: How did you get involved with

Deposition of Procurement Review Panel Hearing

1 the job for the school district?

2 MR. MORRISON: We found the bid online and
3 applied to be an approved vendor which Davis and
4 Floyd put us in as an approved vendor for
5 micropiles.

6 MR. BRADLEY: Take a look, if you will, at
7 your exhibit book there on your left, Exhibit
8 Four; can you tell us what that is?

9 MR. MORRISON: The micropile, looks like
10 Davis and Floyd's micropile specification.

11 MR. BRADLEY: No. Look at the other book.
12 Our book is on your right.

13 MR. MORRISON: This is the proposal that we
14 sent to the General Contractors.

15 MR. BRADLEY: Who helped you put that
16 proposal together?

17 MR. MORRISON: As soon as we were an
18 approved bidder I put together a design team
19 because the specifications say that we need to
20 have everything signed and sealed by
21 professional engineers so I put together George
22 Simbus with GS2 and Ken Timmerman with Kyzer and
23 Timmerman together to go after the job.

24 MR. BRADLEY: What was the basis for the
25 bid as far as the length of the micropile?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: 66 feet.

2 MR. BRADLEY: What was the basis for the
3 time you thought the time the job was going to
4 take?

5 MR. MORRISON: Again, 66 feet.

6 MR. BRADLEY: How many days did you think
7 it was going to take to get this job done?

8 MR. MORRISON: 78.

9 MR. BRADLEY: Would those be everyday of
10 the week or just Monday through Friday?

11 MR. MORRISON: Monday through Friday
12 working days.

13 MR. BRADLEY: Why did you guys say 66 feet
14 in this proposal?

15 MR. MORRISON: Because on Davis and Floyd's
16 drawings they actually have a cut section of the
17 micropile and it says negative 66 so we
18 interpreted that as being 66 feet, not only
19 myself but the two professional engineers that I
20 put together.

21 MR. BRADLEY: All right. Take a look at
22 S402 which is Exhibit Two in the book. To the
23 right there, is that what you're talking about?

24 MR. MORRISON: It is.

25 MR. BRADLEY: Can you describe for the

Deposition of Procurement Review Panel Hearing

1 panel what number you're relying on to say 66
2 feet.

3 MR. MORRISON: The very top right cut
4 section of the sheet, it has Exhibit Two right
5 next to it.

6 MR. BRADLEY: What is that supposed to
7 depict to you as a person who puts in
8 micropiles?

9 MR. MORRISON: To me the very top line
10 looks to be ground surface to me and at the very
11 bottom it's negative 66 so that would be 66 feet
12 into the ground.

13 MR. BRADLEY: And what is it depicting
14 right here; what is that a drawing of?

15 MR. MORRISON: A micropile.

16 MR. BRADLEY: Okay. And at the bottom how
17 many feet does it say?

18 MR. MORRISON: 66.

19 MR. BRADLEY: Did you guys look at the
20 specs from Davis and Floyd as well?

21 MR. MORRISON: We did.

22 MR. BRADLEY: And is that mentioned in your
23 bid, too?

24 MR. MORRISON: It is.

25 MR. BRADLEY: What does it say about them?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: I'm sorry?

2 MR. BRADLEY: It says there are 78 feet
3 numbers mentioned in your specification, isn't
4 it, Chris?

5 MR. MORRISON: That's correct.

6 MR. BRADLEY: Why, if you knew about the
7 78 foot did you put the 66 feet down as the
8 basis for your bid?

9 MR. MORRISON: We thought that the bids
10 were supposed to be based off of the 66 feet so
11 that everybody was bidding apples to apples.
12 You know, so that one guy didn't have 66 and
13 another 92 and another 30. To protect from
14 change orders, things of that nature.

15 MR. BRADLEY: So you saw the engineering
16 reports, you saw the drawings and you just
17 relied on the drawings?

18 MR. MORRISON: That's correct.

19 MR. BRADLEY: Okay. Take a look if you
20 would at Exhibit Five; can you tell us what that
21 is?

22 MR. MORRISON: That is Terratec's
23 subcontract with MB Kahn.

24 MR. BRADLEY: And can you find the
25 language down there that talks about the price

Deposition of Procurement Review Panel Hearing

1 for additional feet.

2 MR. MORRISON: Pilings will be per plans
3 and specifications and any additional footage of
4 piles will be put in place at a unit price of
5 \$45 per linear foot.

6 MR. BRADLEY: And when you guys signed this
7 it was based on your 66 feet bid estimate?

8 MR. MORRISON: Correct.

9 MR. BRADLEY: After you signed the contract
10 one of the first things y'all had to do was the
11 load test, right?

12 MR. MORRISON: Yes, sir.

13 MR. BRADLEY: Let's talk about that for a
14 minute; why did you need to do a load test
15 first?

16 MR. MORRISON: In the other plans under the
17 micropiles it's states that a load test will
18 dictate the length of the pile so obviously you
19 have to put sacrificial test piles in the
20 ground, push on them, come up with a mean depth,
21 a true depth of what needs to be put in on that
22 site specific soil.

23 MR. BRADLEY: Who designs the load test to
24 make sure it's going to do what it's supposed to
25 do.

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: We do as a design team.

2 MR. BRADLEY: Do you have to use the
3 engineers to help you; is that part of it?

4 MR. MORRISON: Yes. We rely on the
5 information provided in the bid documents and in
6 this case was provided by Davis and Floyd and
7 S&ME and then Mr. Simbus and Mr. Timmerman and I
8 got together and said, Hey, this is the length
9 of piles we're going to put in the ground, we'll
10 put more than one so we can actually get a graph
11 of where we believe the pile is going to land,
12 how deep it's going to be.

13 MR. BRADLEY: Can you do the test any way
14 you want to or do you have to get permission?

15 MR. MORRISON: You have to get permission.
16 We had to submit a submittal, a load test
17 program to Davis and Floyd. Actually we
18 presented it to MB Kahn and MB Kahn put it up
19 the chain and that was approved.

20 MR. BRADLEY: Take a look at Exhibit Six
21 if you would, please. Is that the approved load
22 test you guys submitted?

23 MR. MORRISON: It is.

24 MR. BRADLEY: Did you designate where you
25 wanted to run that load test?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: We did.

2 MR. BRADLEY: In the back, I think it's
3 probably about three quarters of the way through
4 there's a site; do you have that there?

5 MR. MORRISON: Yes, sir. I'd like to
6 point out that before this we had a
7 preconstruction meeting between myself and John
8 Orvin and George Simbus and the initial plan was
9 to come off where the excess drive is, to put it
10 right there, but they had to put a fence there
11 so this is where it ended up. Initially we
12 started right next to the building so we would
13 have the true information.

14 MR. BRADLEY: Is this the picture you're
15 looking at?

16 MR. MORRISON: Yes, sir.

17 MR. BRADLEY: I just want to make sure
18 everybody sees it. That's part of Exhibit Six.
19 Did you get to do the test where you wanted to
20 do it?

21 MR. MORRISON: No, sir.

22 MR. BRADLEY: Okay. Where is it
23 designated on this picture?

24 MR. MORRISON: It's not.

25 MR. BRADLEY: Can you see it there where it

Deposition of Procurement Review Panel Hearing

1 says pile test area?

2 MR. MORRISON: That's where we had
3 proposed to do it.

4 MR. BRADLEY: Is that what was approved by
5 Davis and Floyd?

6 MR. MORRISON: Yes, sir.

7 MR. BRADLEY: Did you get to do the test
8 there?

9 MR. MORRISON: No.

10 MR. BRADLEY: Why not?

11 MR. MORRISON: We were told that it was in
12 the way of structured traffic, trailers and
13 everything else. They had us move another 150
14 yards away from the building and more towards
15 the Cooper River Bridge.

16 MR. BRADLEY: Is that the best place to do
17 it?

18 MR. MORRISON: No.

19 MR. BRADLEY: Why not?

20 MR. MORRISON: Now we know the soil isn't
21 the same. In general thinking you want to have
22 your test piles as close to your production
23 piles as you can.

24 MR. BRADLEY: So what happened when you
25 ran the load test?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: It did not reach capacity.
2 It failed.

3 MR. BRADLEY: What was wrong with it?

4 MR. MORRISON: The piles didn't hold the
5 load that was specified that they should have.

6 MR. BRADLEY: How did you find out what
7 caused it to fail?

8 MR. MORRISON: After it seems about a month
9 and a half of fighting with everybody and finger
10 pointing Mr. Simbus really thought something was
11 wrong underneath the ground. They had done some
12 CPT's and they did some additional CPT's where
13 the load test was done and those CPT's told us
14 all the soil should be the same. Well, we
15 drilled some SPT's where you actually pull the
16 soil out and what they were calling clay we
17 actually pulled out beach sand, 10 or 12 feet of
18 beach sand. It was Mr. Simbus's idea to run the
19 SPT and at that time we were in very heavy
20 conversations with the design team, very heavy
21 interesting conversations to say the least.

22 MR. BRADLEY: Is an SPT sand test where
23 you actually dig dirt out of the ground?

24 MR. MORRISON: Yes.

25 MR. BRADLEY: Had anyone ever done a test

Deposition of Procurement Review Panel Hearing

1 like that out there?

2 MR. MORRISON: No.

3 MR. BRADLEY: Why do you do an SPT test?

4 MR. MORRISON: So you can actually see the
5 dirt, so you can see what's down there, you can
6 run tests off of it.

7 MR. BRADLEY: When you did the SPT test
8 were the conditions the same that had been
9 represented to you in the geotechnical report?

10 MR. MORRISON: No.

11 MR. BRADLEY: Is that what caused the load
12 test not to hold what it was supposed to hold?

13 MR. MORRISON: Yes.

14 MR. BRADLEY: What did you have to do
15 about it then?

16 MR. MORRISON: We then obviously pointed
17 out the fact that the soil was very much
18 different, call it an anomaly on our side and
19 then we actually did another SPT and pulled the
20 ground up at the alternate test site so that we
21 could make sure that there was not another sand
22 lens or something that was different than what
23 was reported in the bid documents so we knew
24 that our design was correct when we went to do
25 the alternate test site.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: Where did you run the second
2 SPT test?

3 MR. MORRISON: Right next to the building.

4 MR. BRADLEY: Is that where you wanted to
5 do the test to start with?

6 MR. MORRISON: Yes, sir. Close enough.
7 Right next to the building.

8 MR. BRADLEY: Why didn't you just run the
9 CPT test, the cheaper test, that had already
10 been run?

11 MR. MORRISON: Well, we didn't trust the
12 knowledge and then the CPT, to my understanding
13 and I'm probably getting above my pay grade, but
14 you're supposed to correlate the CPT from site
15 specific information. We didn't have that so
16 that's why we ran SPT.

17 MR. BRADLEY: Was it part of your contract
18 to pay for these tests?

19 MR. MORRISON: No.

20 MR. BRADLEY: What were you supposed to
21 rely on to have these piles in place and design?

22 MR. MORRISON: All the information that
23 the school district had paid for for setting up
24 the job, all the bid documents, signed
25 documents.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: When you relied on this
2 information to create these piles what happened
3 to the piles?

4 MR. MORRISON: They failed.

5 MR. BRADLEY: What happened the second
6 time you tested it when you got the new
7 information?

8 MR. MORRISON: They passed.

9 MR. BRADLEY: If you would have had that
10 information that you got from the SPT test
11 before you started and you could run the test
12 where you wanted to run them would they have
13 passed the first time?

14 MR. MORRISON: I'm sorry. Ask that again,
15 please?

16 MR. BRADLEY: Sure. If you had the proper
17 information when the piles were designed and put
18 in place and you could have run the test where
19 you wanted to would it have passed the first
20 time?

21 MR. MORRISON: Yes. Also, if we would
22 have known that there was a sand lense there we
23 wouldn't have put a sand based grout in the
24 hole. Twelve feet of what was supposed to be
25 cooper marle turned out to be sand and I pumped

Deposition of Procurement Review Panel Hearing

1 the very, very thick grout in there. Sand on
2 sand has no adherence whatsoever. If you had
3 put a thin neat grout in there it would have
4 seeped into the voids of the sand and we
5 would've gotten a lot of grip out of that. We
6 could have changed the design if we would have
7 known exactly what type of soil was underneath.

8 MR. BRADLEY: Okay. Let's take a look at
9 what is marked as Exhibit Nine. Have you got it
10 there, Chris?

11 MR. MORRISON: I do.

12 MR. BRADLEY: What is that?

13 MR. MORRISON: This is the change order
14 that we sent to Scott Spigener, MB Kahn, for the
15 load test, the failed load test.

16 MR. BRADLEY: Why do you think you should
17 be paid for that initial load test?

18 MR. MORRISON: I understand that the specs
19 say that it's my issue to pay for a load test
20 but it's y'all's issue, Charleston County's
21 issue to provide me with good information and if
22 the information was correct, absolutely, I'll
23 bite it off and I'll go down the road because we
24 messed up but we did not. We got something that
25 was different than what was in the bid

1 documents. So fair, unfair, unjust, we should
2 get paid for this because the soil was
3 completely different. We were missing half of
4 our cooper marle that was supposed to be our
5 adherence part of the pile.

6 MR. BRADLEY: How much money would that be
7 for that additional load test and change order?

8 MR. MORRISON: We had specked it out at
9 \$65,000 and that was a generous 65,000. We
10 spent a lot more than that trying to get through
11 two load tests and almost two months of good
12 conversations with engineers.

13 MR. BRADLEY: Take a look, if you would,
14 at Exhibit 10, Chris.

15 MR. MORRISON: Yes, sir.

16 MR. BRADLEY: Can you tell the panel what
17 that is?

18 MR. MORRISON: This is change order number
19 three. This also goes with it. This is all the
20 engineering, the extra stuff that we went
21 through where we were to prove a point to show
22 that we were right. Really and truthfully what
23 should have happened is, load test failed,
24 everybody let's get together and figure out what
25 went wrong and that's not even close. Load test

Deposition of Procurement Review Panel Hearing

1 failed and the next day I went into a meeting
2 and everybody in that meeting, just a lot of
3 posturing, a lot of finger pointing, not
4 professional of trying to figure out what went
5 wrong. We had a month and a half of us driving
6 back and forth and having meetings and this is
7 all the additional costs from all the additional
8 engineering.

9 MR. BRADLEY: Does that include the
10 additional tests you guys had to run to figure
11 out exactly what was underground?

12 MR. MORRISON: Yes. And it includes the
13 STP test at both load sites.

14 MR. BRADLEY: How much does that change
15 order for, Chris?

16 MR. MORRISON: \$46,143.27.

17 MR. BRADLEY: All right. Take a look if
18 you would at Exhibit Eight. Can you explain
19 what that is to the panel?

20 MR. MORRISON: This is an email slash memo
21 that I sent to Scott Spigener, a notification of
22 substantial delay.

23 MR. BRADLEY: Do you see down there where
24 it says We are in the process of gathering
25 information to assist the design team?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: Yes.

2 MR. BRADLEY: Why were you gathering
3 information now after all this had started, when
4 all this information was supposed to come before
5 you even bid?

6 MR. MORRISON: I'm sorry. Ask the
7 question again, please.

8 MR. BRADLEY: Sure. Your letter says
9 you're gathering information in June of 2011.

10 MR. MORRISON: Mm-hmm.

11 MR. BRADLEY: Why are you gathering
12 information after you're getting started instead
13 of relying on the information that you had to
14 bid?

15 MR. MORRISON: Well, because we had hit a
16 wall. We had a problem and we were trying to
17 resolve that problem and the only way to do that
18 was to get new information, better information.

19 MR. BRADLEY: Take a look, if you would at
20 Exhibit 11 in that book. Can you tell us what
21 that is?

22 MR. MORRISON: This is a letter from Tim
23 Cullum but it has no date on it.

24 MR. BRADLEY: Do you know about when that
25 was sent?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: I can't remember. I wrote
2 it down the other day. It was right at that
3 time when - Right towards the end of our
4 interesting conversation with the design team.

5 MR. BRADLEY: And who is Tim Cullum?

6 MR. MORRISON: At the time was the main man
7 at MB Kahn.

8 MR. BRADLEY: What's the purpose of this
9 letter; what is it talking about?

10 MR. MORRISON: Wanted to verify what the
11 fight was about. Where is the marle and also to
12 try to stop the posturing between the two teams.
13 I'm certainly not sitting here saying I'm a
14 saint, that I didn't do anything to possibly
15 promote some of that but he had to jump in to
16 try to stop everybody and try to get everybody
17 on the same page so everybody could get focused
18 and get the job done.

19 MR. BRADLEY: And is this documenting that
20 the conditions you found on the site were
21 actually different than what was represented to
22 you?

23 MR. MORRISON: Yes, sir.

24 MR. BRADLEY: I want to talk now about
25 we've designated as topic B which is the additional

1 length of the micropiles; what was the length that
2 you bid was based on?

3 MR. MORRISON: 66 feet.

4 MR. BRADLEY: Were you up front with that;
5 was it in your letter?

6 MR. MORRISON: It was. It was in my
7 initial proposal to Kahn.

8 MR. BRADLEY: Why does a micropile bid
9 have to designate the length of the piles?

10 MR. MORRISON: If you were to tell me it
11 needed to be at negative 78 feet the grades can
12 change all through the building for 627 piles so
13 now somebody is out there telling me that this
14 ground elevation is here so you need to be this
15 many feet down to be there. That's not how it
16 goes. When putting in piles you say I'm going
17 to put in an 80 foot pile, 110, that way I walk
18 up to site A, site B, site 627 and I stick in an
19 86 foot pile.

20 MR. BRADLEY: Why is it important that you
21 cost out a bid based on how long these piles
22 were going to have to be?

23 MR. MORRISON: For every foot you go down
24 it costs a lot of money. More drilling, more
25 labor, more material, more concrete, more

Deposition of Procurement Review Panel Hearing

1 gravel.

2 MR. BRADLEY: Is there any way you could
3 ever bid a micropile job and not include what
4 the depth was in your cost?

5 MR. MORRISON: No.

6 MR. BRADLEY: Why is that?

7 MR. MORRISON: Because you lose too much
8 money. If we thought it was going to be a 40
9 foot pile and it turned out to be a 100 foot
10 pile we'd lose money.

11 MR. BRADLEY: How much does it cost per
12 foot on this job; do you know on this job?

13 MR. MORRISON: \$45 per foot per pile.

14 MR. BRADLEY: How deep are the piles under
15 the school?

16 MR. MORRISON: 86 feet.

17 MR. BRADLEY: That's 20 feet longer than
18 what you bid?

19 MR. MORRISON: That's correct.

20 MR. BRADLEY: Why are they 20 feet longer
21 than what you bid?

22 MR. MORRISON: Because the marle was not as
23 strong as what we were told it was.

24 MR. BRADLEY: Have you been paid for eight
25 feet of that extra distance?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: I have.

2 MR. BRADLEY: So what are you seeking now?

3 MR. MORRISON: The extra 12 feet.

4 MR. BRADLEY: Take a look at Exhibit 14.

5 What is this, Chris?

6 MR. MORRISON: This is change order request
7 number 1B to Scott. This is for the extra 12
8 feet at \$45 a foot.

9 MR. BRADLEY: Why did you submit this?

10 MR. MORRISON: Because it cost more to do
11 it and we think that we're owed this.

12 MR. BRADLEY: Why did you submit this in
13 May instead of submitting it earlier?

14 MR. MORRISON: During this process of
15 fighting with design teams and trying to make
16 things work and going here and there and we're a
17 very small company; I've got myself and my
18 mother and I've got a bunch of workers so it
19 gets really hard to keep up with everything. I
20 put my faith in MB Kahn; I've done work with
21 them for many years and they came to me and
22 said, Hey look you're not going to get paid from
23 66 on, you need to put in for the eight feet and
24 put it in and get the money and we'll fight
25 about it at the end. Trusting them I did. I

Deposition of Procurement Review Panel Hearing

1 understand now that wasn't correct. I didn't do
2 my paperwork and I'm very apologetic for that.
3 But in my mind or what I'm thinking while I'm
4 sitting here is the school district did get the
5 benefit of that extra footage and it's very
6 clear that we based off of 66 feet and that's
7 why I'm here.

8 MR. BRADLEY: And what did MB Kahn tell
9 you about submitting for the extra feet?

10 MR. MORRISON: They told us that we were
11 not going to get paid. At that point we needed
12 the money to move forward. In the spirit of
13 getting things to move forward we said
14 absolutely, we'll bicker about this later. If
15 you've got my back, I've got your back.

16 MR. BRADLEY: What did they tell you about
17 the additional 12 feet; what did they tell you
18 to do?

19 MR. MORRISON: Wain until the end of the
20 job.

21 MR. BRADLEY: Is that what you did?

22 MR. MORRISON: That is exactly what I did.

23 MR. BRADLEY: Can you take a look at the
24 district's exhibits, Exhibit Seven? Whenever
25 you're there, Chris.

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: I'm there.

2 MR. BRADLEY: What is this?

3 MR. MORRISON: Looks to be a AIA document
4 that Scott Spigener signed, Robert Corbin,
5 Rhett, Reidenbach.

6 MR. BRADLEY: Is this the initial change
7 order for the eight feet you got?

8 MR. MORRISON: I believe it is.

9 MR. BRADLEY: Take a look at four pages in
10 and I think you'll see an email from Robert
11 Corbin. Are you there, Chris?

12 MR. MORRISON: I am.

13 MR. BRADLEY: Now, who was Robert Corbin?

14 MR. MORRISON: Robert Corbin is, I believe
15 one of the main men at Heery.

16 MR. BRADLEY: What was Heery doing?

17 MR. MORRISON: They were the construction
18 manager over MB Kahn.

19 MR. BRADLEY: And who is William Lewis?

20 MR. MORRISON: William Lewis is with the
21 school district.

22 MR. BRADLEY: What's important about this
23 email and what you're saying?

24 MR. MORRISON: When this email was sent the
25 biggest paragraph under Auger Cast Piles he says

Deposition of Procurement Review Panel Hearing

1 that this - The last sentence, this additional
2 length of piles is based on the increase in
3 length from 78 feet (not 66 feet). Right then
4 and there the district knew, Heery knew, 66
5 feet; why would they have put that in there.
6 They didn't think it was 66 or any resemble of
7 that he would have just said in length from 78
8 feet.

9 MR. BRADLEY: Where would that 66 number
10 come from?

11 MR. MORRISON: There is actually a section
12 in the drawings that we looked at earlier.

13 MR. BRADLEY: Was it also specified in your
14 subcontract bid?

15 MR. MORRISON: Not in the subcontract. It
16 was in my bid to Kahn though.

17 MR. BRADLEY: Okay. Take a look above
18 that where he's computing the cost for hollow
19 bore piles; do you see that?

20 MR. MORRISON: I do.

21 MR. BRADLEY: And it says it will be three
22 million dollars.

23 MR. MORRISON: Yes.

24 MR. BRADLEY: Why was that in there; can
25 you explain that?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: I don't know why he put that
2 in there but the price looks just about right.
3 I believe I know what you're asking. WPC had
4 jumped up and down saying that our piles would
5 never work. They would never work, they would
6 never work. Glad to say that we proved that
7 wrong. But they made us put in hollow bore
8 micropiles which is much more expensive. Maybe
9 not as labor intensive but he's giving Bill
10 Lewis a comparison, Hey this is what you could
11 have paid if you we would have done the hollow
12 bore and also right below that he shows that the
13 contract should have been two point five nine
14 two million dollars instead of the two point
15 two.

16 MR. BRADLEY: Are the auger cast piles the
17 piles that y'all put under the school?

18 MR. MORRISON: Yes, sir. They are.

19 MR. BRADLEY: He's got that computed for
20 almost two point six million dollars, right?

21 MR. MORRISON: That's correct.

22 MR. BRADLEY: Two point five nine two
23 million?

24 MR. MORRISON: Mm-hmm.

25 MR. BRADLEY: When you initially bid based

Deposition of Procurement Review Panel Hearing

1 on 66 feet what was the price you were going to
2 charge?

3 MR. MORRISON: One point nine million.

4 MR. BRADLEY: Was it almost two?

5 MR. MORRISON: Right at two million
6 dollars.

7 MR. BRADLEY: Okay. And this change order
8 for the eight feet got you about \$227,000,
9 right?

10 MR. MORRISON: That's correct.

11 MR. BRADLEY: So is what you're asking the
12 difference in the length as reported by Mr.
13 Corbin in September?

14 MR. MORRISON: I think it's very close.

15 MR. BRADLEY: If you added up all those
16 numbers it's actually cheaper than what Mr.
17 Corbin has predicted in his email.

18 MR. MORRISON: Right.

19 MR. BRADLEY: I understand the board has
20 indicated we are not to talk about the cutting
21 of the concrete. I would offer that testimony
22 if I was allowed to do so through this witness.
23 As to Item D, the back charges and Item C, which
24 is the cutting of the concrete, but I understand
25 I have been instructed not to do so I won't have

Deposition of Procurement Review Panel Hearing

1 any questions on that; is that correct?

2 MR. DUCKER: That's correct.

3 MR. BRADLEY: Okay. Chris, when you look
4 at this email and you see the two point five
5 nine two number and the 66 feet, what does that
6 tell you when you're reviewing this?

7 MR. MORRISON: That is the number that I
8 should have been paid.

9 MR. BRADLEY: Because that is actually
10 what is underneath the school, right?

11 MR. MORRISON: That is exactly what is
12 underneath the school.

13 MR. BRADLEY: And actually your bid was
14 for \$45 a foot which is three dollars less than
15 they had it estimated right here.

16 MR. MORRISON: Right.

17 MR. BRADLEY: And WPC wanted to put hollow
18 cast bars in?

19 MR. MORRISON: Hollow bar micropiles.

20 MR. BRADLEY: And that would have cost an
21 additional \$400,000 to the school district; is
22 that right?

23 MR. MORRISON: Yes, sir.

24 MR. BRADLEY: So by seeing that your piles
25 would work and staying the course and doing

Deposition of Procurement Review Panel Hearing

1 additional testing you actually saved the school
2 district over \$400,000?

3 MR. MORRISON: That's the way we're
4 thinking.

5 MR. BRADLEY: Is there anything else you
6 think you need to add to your testimony, Chris?

7 MR. MORRISON: No, sir.

8 MR. BRADLEY: Thank you very much.

9 MR. HAGOOD: First of all your bid - Can
10 you go to tab number five in our notebook?

11 MR. MORRISON: I'm there.

12 MR. HAGOOD: The only reason I'm using this
13 one as opposed to the pages you had is it's
14 bigger and may be a little easier for the panel
15 to read. We have on tab number five the
16 micropile notes; do you agree that's part of the
17 contract?

18 MR. MORRISON: It is.

19 MR. HAGOOD: And there's no question that
20 under your subcontract with Kahn you were
21 responsible for designing the micropiles,
22 correct?

23 MR. MORRISON: That's correct.

24 MR. HAGOOD: There was no micropile design
25 in the information that was provided about the

1 site?

2 MR. MORRISON: We were given special
3 instructions of what the micropiles had to be,
4 what diameters and all that.

5 MR. HAGOOD: All right. When I use the
6 term form of specification you know what I'm
7 talking about, correct?

8 MR. MORRISON: Yes.

9 MR. HAGOOD: The pile you were designing
10 was supposed to use a design that could meet 200
11 kips?

12 MR. MORRISON: That's right.

13 MR. HAGOOD: And I'll let other people
14 explain what 200 kips means but you were to
15 produce, design and produce, a pile that would
16 form that?

17 MR. MORRISON: Yes, sir.

18 MR. HAGOOD: If you look at the micropile
19 notes on number one, kind of the middle of the
20 page here, it says you can design it in
21 accordance with the specifications and then
22 number two is where it was put forth that you
23 were required to do a test pile, correct?

24 MR. MORRISON: Correct.

25 MR. HAGOOD: Okay. And then it told you

Deposition of Procurement Review Panel Hearing

1 how you were supposed to do the test pile and
2 what kind of performance it was supposed to
3 meet, correct?

4 MR. MORRISON: That's correct.

5 MR. HAGOOD: Now, if I understand your
6 testimony, if you go to page S402, this is the
7 cross section that you referenced, correct?

8 MR. MORRISON: Correct.

9 MR. HAGOOD: And on the right hand side,
10 the foundation notes, New deeps foundations
11 shall be the drilled and grouted variety of
12 micropiles designed by the contractor and
13 approved by the engineer of record, correct?

14 MR. MORRISON: Yes.

15 MR. HAGOOD: And then number two says new
16 deep foundations shall have a minimum ultimate
17 load capacity of 200 kips, correct?

18 MR. MORRISON: Correct.

19 MR. HAGOOD: And then it has to be designed
20 by an engineer and stamped. Now, what you
21 testified, I believe and you correct me if I'm
22 wrong, is that if you look at the cross section
23 over here where it says pile tip EL minus 66,
24 you took that to mean below ground surface,
25 correct?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: I did.

2 MR. HAGOOD: When you had elevation does
3 that denote anything to you as to what you're
4 supposed to be referencing when it says minus
5 elevation 66 as opposed to below ground surface?

6 MR. MORRISON: Everything else we had
7 read, we assumed that this was 66 feet from
8 below ground surface.

9 MR. HAGOOD: Okay.

10 MR. MORRISON: We used the soil -

11 MR. HAGOOD: And when you were putting your
12 bid together you never asked whether the minus
13 66 was below ground surface or elevation?

14 MR. MORRISON: No.

15 MR. HAGOOD: When you're under a typical
16 bid process and you have questions or you see
17 something that is confusing to you you can send
18 questions through to the engineer and they can
19 answer?

20 MR. MORRISON: That is correct.

21 MR. HAGOOD: But we can agree that didn't
22 happen here?

23 MR. MORRISON: Not with me.

24 MR. HAGOOD: Did it happen in regard to
25 anyone else on your team?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: I don't know. Not with my
2 team.

3 MR. HAGOOD: All right. They asked you
4 about the original approved drawings in the pile
5 test; do you recall that?

6 MR. MORRISON: I do.

7 MR. HAGOOD: And yours, I think you
8 referenced Exhibit Six. Exhibit Six was the
9 resubmit, wasn't it? I'm sorry. The small
10 binder, Exhibit Six. You had a previous
11 submittal of that, did you not, that was
12 rejected; do you recall?

13 MR. MORRISON: I don't think it was
14 rejected but there was a lot of submittals going
15 on.

16 MR. HAGOOD: I want you to look at this.
17 We'll pass these out. If you look at CCSD
18 Exhibit 23, doesn't this appear to be your
19 initial submittal for the test pile program?

20 MR. MORRISON: I believe it is.

21 MR. HAGOOD: And that was on March 11th when
22 you originally sent it in?

23 MR. MORRISON: Yes, sir.

24 MR. HAGOOD: And then, you submit
25 something, the engineers review it and if they

Deposition of Procurement Review Panel Hearing

1 have comments they make the comments and ask you
2 to resubmit; is that right?

3 MR. MORRISON: That's correct.

4 MR. HAGOOD: So if you look at the stamp on
5 the second page of CCSD Exhibit 23 it shows that
6 it was rejected and they ask you to revise and
7 resubmit, correct?

8 MR. MORRISON: Yes, sir.

9 MR. HAGOOD: Okay. And then the Exhibit
10 Six that Terratec uses that we looked at, that
11 was your resubmittal?

12 MR. MORRISON: Yes.

13 MR. HAGOOD: Now if you go over to the
14 fourth page of this document you see where there
15 was a statement that was made, cooper marl is
16 understood to be present at a depth of roughly
17 43 feet bgs; what does bgs mean to you?

18 MR. MORRISON: Below ground surface.

19 MR. HAGOOD: All right. And the comment
20 that was made in response to that was that the
21 elevation was given as EL dash 43 feet, correct?

22 MR. MORRISON: Correct.

23 MR. HAGOOD: Or roughly 55 feet below
24 ground surface.

25 MR. MORRISON: Correct.

Deposition of Procurement Review Panel Hearing

1 MR. HAGOOD: Now, did you not understand
2 that when they're telling you this that the
3 elevation distance and the below ground surface
4 distance was different?

5 MR. MORRISON: I didn't.

6 MR. HAGOOD: And the drawing you were
7 looking at, it showed pile tip EL minus 66,
8 right?

9 MR. MORRISON: Correct.

10 MR. HAGOOD: So did you not understand
11 that you would need to add 12 feet to that?

12 MR. MORRISON: Well, at this point we were
13 already there. We already had the contract.

14 MR. HAGOOD: But had you asked the
15 question, if you were confused about that, you
16 would have known that the elevation shown at 66
17 would be an additional 12 feet below ground
18 surface, correct?

19 MR. MORRISON: Correct.

20 MR. HAGOOD: Now the subcontract that you
21 - Let's talk about the bid first. You talked
22 about the bid documents and I'm going back to
23 the small notebook now, Exhibit Number Five.
24 This is actually your contract, correct?

25 MR. MORRISON: It is. With MB Kahn.

Deposition of Procurement Review Panel Hearing

1 MR. HAGOOD: You don't say in here that you
2 subtracted for 66 feet, did you?

3 MR. MORRISON: No.

4 MR. HAGOOD: But it was put in that you're
5 going to provide what is necessary to do the
6 micropile scope of work, plans and specs as
7 defined by the contract documents and then the
8 concrete for demolition, that was going to be by
9 others so you didn't have to deal with that,
10 right?

11 MR. MORRISON: Right.

12 MR. HAGOOD: And then when you say pile
13 length will be per plans and specification and
14 any additional footage of piles will be put in
15 place at a unit price of \$45 per linear foot;
16 you didn't say over and above 66 feet, did you?

17 MR. MORRISON: They did not.

18 MR. HAGOOD: Okay. Now, when you put in
19 your bid, Exhibit Four in the small notebook,
20 can we agree that this bid document is a
21 document that goes to the General Contractor and
22 doesn't go to the School District and it's
23 employees?

24 MR. MORRISON: I do agree with that.

25 MR. HAGOOD: I assume this is the same bid

Deposition of Procurement Review Panel Hearing

1 you gave to other General Contractors as well?

2 MR. MORRISON: That's correct.

3 MR. HAGOOD: In this document that didn't
4 go to the School District you had interpreted
5 that the geotechnical exploration details
6 anticipate that to reach the designed standard
7 of 200 kips that we talked about was going to
8 range from a depth of 70 to 115 feet with a mean
9 anticipated installation depth of 78 feet,
10 correct?

11 MR. MORRISON: That is correct.

12 MR. HAGOOD: So you knew that the
13 geotechnical report was telling you 78 feet and
14 then you say, However, the project
15 specifications and drawings dictate that our
16 proposal include a bid for the installation of
17 the micropiles to depths of 66 feet below ground
18 surface. If you were interpreting the S&ME
19 reports it said it was going to take 78 feet,
20 why would you bid something that was 12 feet
21 shorter than what you were anticipating it was
22 going to be?

23 MR. MORRISON: Back to the drawing, S402.

24 MR. HAGOOD: So S402 is pretty much your
25 case on this issue?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: Yes.

2 MR. HAGOOD: And you interpreted the pile
3 tip elevation minus 66 feet to be below ground
4 surface?

5 MR. MORRISON: Not only myself but my
6 design team as well.

7 MR. HAGOOD: Okay. Let's talk about the
8 location of the pile test. You said you
9 originally were going to put it closer to the
10 building, right next to the building?

11 MR. MORRISON: Yes, sir.

12 MR. HAGOOD: And then Kahn told you it was
13 going to be in the way if you did it in that
14 location?

15 MR. MORRISON: That's right.

16 MR. HAGOOD: So then you were going to
17 move it to where Kahn had one of his trailers?

18 MR. MORRISON: Well, between Shamrock
19 Thompson front door, between the trailer and
20 another trailer.

21 MR. HAGOOD: And Shamrock Thompson told
22 you you couldn't put it there?

23 MR. MORRISON: That's correct.

24 MR. HAGOOD: Shamrock Thompson was an MB
25 Kahn employee, correct?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: Correct.

2 MR. HAGOOD: Nobody from the design team
3 told you to move it, did they?

4 MR. MORRISON: They all agreed to it.
5 Everybody said, Hey, that's where it's going.
6 I'm sorry, Shamrock Thompson told me where to
7 move it Davis and Floyd, whoever was in the
8 office trailer at that point had no qualms with
9 it.

10 MR. HAGOOD: But they didn't tell you to
11 move it, did they; Shamrock Thompson told you?

12 MR. MORRISON: Yes.

13 MR. HAGOOD: Now, you performed it in that
14 location and if I understand your argument you
15 think it's solely because of differing ground
16 conditions at that location that you ended up
17 doing the pile test is the reason for the
18 failure of the pile test?

19 MR. MORRISON: Say that again?

20 MR. HAGOOD: As I understand your position
21 aren't you contending that the only reason that
22 the first pile load test failed is because you
23 had differing conditions of the soil where you
24 performed that test as opposed to where you
25 wanted to perform it originally?

Deposition of Procurement Review Panel Hearing

1 MR. MORRISON: That's correct.

2 MR. HAGOOD: And after that test failed
3 then you were able to perform the second test at
4 a location near the building?

5 MR. MORRISON: That's correct.

6 MR. HAGOOD: And when you performed it at
7 that location the soil appeared to be similar or
8 almost the same as what was presented in the
9 S&ME Soil Report?

10 MR. MORRISON: That's correct.

11 MR. HAGOOD: Now, if I'm following your
12 testimony correct you knew that the change order
13 you submitted that got approved for the
14 \$227,000, that was compensating you from 78 feet
15 to 86 feet?

16 MR. MORRISON: That's right.

17 MR. HAGOOD: And you didn't submit through
18 the change order process at that time a request
19 for this 12 feet that you're now asking for?

20 MR. MORRISON: I did not.

21 MR. HAGOOD: And that really was never
22 made until you were off the job several months,
23 correct?

24 MR. MORRISON: About a month.

25 MR. HAGOOD: You did your last pile, I

Deposition of Procurement Review Panel Hearing

1 think, on January 15th?

2 MR. MORRISON: We were still on the job
3 until February something. Clean up, moving
4 things but yes, the last pile went in January
5 15th.

6 MR. HAGOOD: Now, if you look at Exhibit
7 Six in the larger notebook, when you raised the
8 issue about the differing site conditions at the
9 site of the first load test some additional
10 testing was performed by S&ME, correct?

11 MR. MORRISON: Yes, sir.

12 MR. HAGOOD: And this document dated June
13 17th that is marked as CCSD Exhibit Six, as I
14 understood your testimony you say they did this
15 CPT test as opposed to the SPT test; is that
16 right?

17 MR. MORRISON: That's right.

18 MR. HAGOOD: And the CPT test they had
19 performed was clearly identified that was the
20 testing they were using originally, correct?

21 MR. MORRISON: Correct.

22 MR. HAGOOD: And if you look over a couple
23 pages where it's got a test location plan --

24 MR. MORRISON: Page three?

25 MR. HAGOOD: Yes. Figure One, the color

Deposition of Procurement Review Panel Hearing

1 photo. Didn't they conduct additional testing
2 in other locations including where you had done
3 your load test?

4 MR. MORRISON: That's correct.

5 MR. HAGOOD: And as I understand your
6 testimony you disagree with their conclusion as
7 to whether there was different conditions at the
8 first load test site.

9 MR. MORRISON: I do.

10 MR. HAGOOD: Now if you look at CCSD
11 Exhibit Eight you'll notice that we have page
12 numbers added to the exhibit stickers, CCSD
13 Exhibit Eight Page One, the change order request
14 you submitted, CCSD Exhibit Eight Page Four,
15 even though that change order request that you
16 signed is dated September 11th it wasn't sent to
17 Kahn until March of 2012, was it?

18 MR. MORRISON: I don't see September 11th.

19 MR. HAGOOD: You're looking at Change Order
20 Request Number Two?

21 MR. MORRISON: This says September 1.

22 MR. HAGOOD: I'm sorry. September 1. You
23 dated it September 1 but Kahn's receive stamp
24 indicates they received it March 12.

25 MR. MORRISON: Okay.

Deposition of Procurement Review Panel Hearing

1 MR. HAGOOD: You didn't submit this change
2 order request in September of 2011, did you?

3 MR. MORRISON: I don't think I can honestly
4 answer that. I don't remember putting this in.

5 MR. HAGOOD: I'm just trying to understand.
6 Are you contending that Change Order Request
7 Number Two was submitted to Kahn in 2011 in
8 September or in March 2012?

9 MR. MORRISON: I do not know. I can't
10 remember honestly.

11 MR. HAGOOD: Okay. If you go to page 82
12 of Exhibit Eight doesn't this show the original
13 planned test pile location and where it actually
14 took place?

15 MR. MORRISON: It does.

16 MR. HAGOOD: Okay. Mr. Shamrock is the one
17 who chose to move it from the first location?

18 MR. MORRISON: He is.

19 MR. HAGOOD: If you go still within
20 Exhibit Eight to page 17, page 17 of CCSD
21 Exhibit Eight, isn't that the letter dated May
22 7th, 2012, that you submitted to MB Khan?

23 MR. MORRISON: It is.

24 MR. HAGOOD: So that would have been
25 almost five months after you finished driving the

Deposition of Procurement Review Panel Hearing

1 last pile?

2 MR. MORRISON: It is.

3 MR. HAGOOD: And then what you attached,
4 all these exhibits, you've got the notice
5 letter, you've got the \$65,000 that you're
6 asking for. As I understand it you're saying
7 you had a total in house cost associated with
8 the test of \$43,000 on page 25 of Exhibit A?

9 MR. MORRISON: Ask me the question again

10 MR. HAGOOD: If I'm reading this document
11 right the in house cost that you were tracking
12 according to these pages were \$43,000?

13 MR. MORRISON: That's correct.

14 MR. HAGOOD: Then you attached your
15 insurance, that was a full year's policy that
16 was going to be paid for anyway, correct?

17 MR. MORRISON: Correct.

18 MR. HAGOOD: It wasn't a special policy
19 just for these changes?

20 MR. MORRISON: No.

21 MR. HAGOOD: Then you had some other things
22 you attached including payments to, page 36,
23 GS2?

24 MR. MORRISON: I'm there.

25 MR. HAGOOD: Then you also had Kyzer and

Deposition of Procurement Review Panel Hearing

1 Timmerman payments that had been made beginning
2 on page 42 or at least time sheets.

3 MR. MORRISON: Yep.

4 MR. HAGOOD: And can we agree that prior to
5 you requesting a dispute resolution board
6 hearing that there had been no submission to the
7 School District for this additional three
8 hundred and thirty some odd thousand dollars?

9 MR. MORRISON: That is correct.

10 MR. HAGOOD: So as I understand your
11 testimony you're saying that you were told by
12 Kahn that you weren't going to get it and wait
13 until the end of the job so you waited until the
14 end of the job?

15 MR. MORRISON: That is correct.

16 MR. HAGOOD: All right. I think that is
17 all I have.

18 MR. BRADLEY: Chris, on the extra footage,
19 had you guys been discussing it with people from
20 the School District when it was done and as you
21 were putting it in place; was the School
22 District aware that you had those if you look at
23 Exhibit Seven of their own documents?

24 MR. MORRISON: With that document I believe
25 that they were.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: So where would that 66 foot
2 number have come from?

3 MR. MORRISON: Not from me.

4 MR. BRADLEY: And the actual cost of what
5 was put in at \$45 a foot is actually less than
6 what is in their Exhibit Seven which is about
7 two point six million dollars?

8 MR. MORRISON: That is correct.

9 MR. BRADLEY: Thank you. That's all.

10 MR. DUCKER: Any questions?

11 MR. STEHMEYER: I think I heard you testify
12 that when you were in discussions about moving
13 the test pile, the first test pile location, an
14 MB Kahn employee is the one who said you can't
15 have it where you originally planned and you
16 discussed it and I believe I heard you say that
17 a Davis and Floyd employee in the trailer either
18 concurred with that or did not object to it; can
19 you discuss that a little bit more?

20 MR. MORRISON: We started very close to
21 the access road on that map. It wasn't going to
22 work because that had to be staging area and
23 then the fence came through to block us off for
24 the existing school so we all agreed that
25 wouldn't be a good place because it would cut

1 the road in half so we moved it over. We put in
2 on the plans of submission right in what I call
3 the front yard of the job trailer. He had a
4 little box set up right in front of his job
5 trailer and we were going to put it right there
6 and then he decided that wasn't going to work
7 and we talked about it and decided we were going
8 to move it to the other side out of the way and
9 nobody objected to it. Not Davis and Floyd,
10 S&ME, WPC, they didn't tell me to put it there.
11 Shamrock Thompson is the one that told me to put
12 the test site there but everybody knew about it
13 and nobody objected. I don't think that anybody
14 agreed or said, Oh, absolutely, that's a great
15 spot. Nobody said that.

16 MR. STEHMEYER: Do you have any
17 documentation of that meeting to say who was it
18 that was at the meeting?

19 MR. MORRISON: I don't.

20 MR. STEHMEYER: Do you remember who was at
21 the meeting?

22 MR. MORRISON: Just the typical guys were
23 there, S&ME, John with Davis and Floyd, I don't
24 know if Rhett was there at the time, Kevin Kelly
25 was there with Heery, of course Shamrock

Deposition of Procurement Review Panel Hearing

1 Thompson, myself.

2 MR. DUCKER: Any more questions?

3 MR. BRADLEY: None for us. We are ready
4 to proceed.

5 MR. DUCKER: Okay. This may be a good
6 time to take a break. 15 minutes.

7 (The hearing went off the record for a brief period
8 of time.)

9 (George Simbus, being duly sworn,
10 testified as follows:)

11 MR. BRADLEY: George, can you please
12 introduce yourself?

13 MR. SIMBUS: My name is George Simbus. I
14 am present and PE for GS2 Engineering. I've
15 been working with GS2 since 1998.

16 MR. BRADLEY: George, how did you get
17 involved in this project for the school
18 district?

19 MR. SIMBUS: Chris went to the job that it
20 was bidding and he called me up and said, Hey, I
21 got a job I'd like you to take a look at and I
22 went over and looked at it.

23 MR. BRADLEY: Was that about in early
24 2011?

25 MR. SIMBUS: I believe so.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: Were you involved in drawing
2 up the letter to Khan?

3 MR. SIMBUS: Yes. We all did. It was a
4 design slash build project.

5 MR. BRADLEY: Okay. Take a look at our
6 Exhibit Four in that small notebook.

7 MR. SIMBUS: Yes, sir.

8 MR. BRADLEY: What is that?

9 MR. SIMBUS: That is Terratec's proposal do
10 the work for the micropile construction for
11 Rivers Education Center.

12 MR. BRADLEY: All right. And why was this
13 proposal based on 66 feet?

14 MR. SIMBUS: The information provided
15 indicated that it was 66 feet. That was the
16 lowest number for the bid.

17 MR. BRADLEY: Where did you get that
18 information from?

19 MR. SIMBUS: That was from S402 on the
20 drawings.

21 MR. BRADLEY: Okay. Take a look at
22 Exhibit Two; is that what you're talking about
23 S402?

24 MR. SIMBUS: That's it.

25 MR. BRADLEY: And what is it about that

Deposition of Procurement Review Panel Hearing

1 drawing that got you the 66 feet?

2 MR. SIMBUS: The negative 66 on the bottom
3 of the page. The micropile diagram at the top
4 right hand corner indicated negative 66.

5 MR. BRADLEY: As an engineer, when you see
6 a drawing like that what does that indicate to
7 you?

8 MR. SIMBUS: Well, EL means elevation, I
9 do know that but what was unclear was whether
10 that was the mean sea elevation which is
11 typically noted, to my recollection, by MSL. EL
12 could be relative elevation which means there is
13 a relative data that is established for the site
14 which is typically ground surface.

15 MR. BRADLEY: So what is the proper
16 abbreviation for mean sea level, below sea
17 level?

18 MR. SIMBUS: MSL.

19 MR. BRADLEY: Does it say below sea level
20 anywhere on that?

21 MR. SIMBUS: No, sir.

22 MR. BRADLEY: That's your understanding of
23 what's being told now, that this is supposed to
24 mean 66 feet below sea level?

25 MR. SIMBUS: That's what I understand.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: Actually, what this drawing
2 should mean is the pile is 78 feet long?

3 MR. SIMBUS: 78 feet long, I guess, when
4 you look at mean sea level. Yes.

5 MR. BRADLEY: But actually the numbers on
6 here are 66 feet?

7 MR. SIMBUS: That's correct.

8 MR. BRADLEY: And the EL doesn't mean sea
9 level?

10 MR. SIMBUS: I don't know what it means
11 exactly relatively speaking except what has been
12 clarified lately.

13 MR. BRADLEY: And the top of that drawing,
14 what's that line represent if you look at it as
15 an engineer?

16 MR. SIMBUS: That would be ground surface.

17 MR. BRADLEY: So when you look at this
18 drawing it shows the top of the drawing is
19 ground surface and the bottom of it is 66 feet.

20 MR. SIMBUS: Yes, sir.

21 MR. BRADLEY: So when you look at that as
22 an engineer does that mean the ground surface is
23 the zero and 66 feet is the bottom?

24 MR. SIMBUS: Typically that is the way we
25 do it. The geotechnical work as well.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: So is that where the number
2 came from for the proposal?

3 MR. SIMBUS: Yes, sir. We knew there was
4 66 feet from this drawing.

5 MR. BRADLEY: All right. Going back to
6 your proposal, how many tests were you agreeing
7 to do as part of this proposal?

8 MR. SIMBUS: There were four tests instead
9 of two that were proposed.

10 MR. BRADLEY: When you say four do you
11 mean four piles at one time?

12 MR. SIMBUS: Yes.

13 MR. BRADLEY: So we're talking about the
14 same thing, right; I'm talking about one test?

15 MR. SIMBUS: Right.

16 MR. BRADLEY: So how many tests were you
17 planning to do?

18 MR. SIMBUS: One test.

19 MR. BRADLEY: And how many piles were you
20 going to use to do that test?

21 MR. SIMBUS: Four.

22 MR. BRADLEY: All right. How many piles
23 were required to do that test?

24 MR. SIMBUS: Two.

25 MR. BRADLEY: What's the difference

Deposition of Procurement Review Panel Hearing

1 between the two that are required and the four
2 you proposed?

3 MR. SIMBUS: Well, we covered the spectrum
4 from 66 feet below ground surface to 88 feet
5 below ground surface and what we were going to
6 do was try to figure out if the pile could be
7 reduced to save the school money if it could be
8 shorter. That was the intent. We were given 78
9 feet by the geotechnical report. We proposed to
10 do a test at 80 feet and that was one of the
11 piles that was actually installed for the test
12 purpose so we proposed four in order to identify
13 the proper depth.

14 MR. BRADLEY: Did you think the four would
15 do better than the two that was required.

16 MR. SIMBUS: Yes.

17 MR. BRADLEY: Okay. Take a look if you
18 will at the subcontract which is Exhibit Five.
19 What does it report in that document that
20 Terratec was agreeing to do as far as how deep
21 these piles were going to be?

22 MR. SIMBUS: There was a unit price of \$45
23 per foot for anything deeper than 66 feet.

24 MR. BRADLEY: Why is the 66 number in your
25 proposal but not here?

Deposition of Procurement Review Panel Hearing

1 MR. SIMBUS: I'm not sure.

2 MR. BRADLEY: Did you actually draw this
3 document up yourself?

4 MR. SIMBUS: No.

5 MR. BRADLEY: Who did?

6 MR. SIMBUS: As far as I know MB Kahn did.

7 MR. BRADLEY: So after you had the
8 agreement to go forward what was the next thing
9 to happen from Terratec's perspective?

10 MR. SIMBUS: As far as the load test goes?

11 MR. BRADLEY: Isn't that what had to
12 happen next, you had to plan a load test?

13 MR. SIMBUS: We had to put together a
14 submittal saying this is what we plan to do,
15 this is how we'll do it, these are the steps
16 we're going to take to get the work done, then
17 we're going to test it and provide you with the
18 results.

19 MR. BRADLEY: After you planned this load
20 test and submitted these things for the load
21 test was the contract already signed?

22 MR. SIMBUS: Yes, sir.

23 MR. BRADLEY: And the bid had already gone
24 out at the time?

25 MR. SIMBUS: As far as I know. Yes.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: Take a look at Exhibit Six
2 if you would; is that the load test you
3 submitted that was approved?

4 MR. SIMBUS: That's the approved version.
5 Yes.

6 MR. BRADLEY: What was the purpose of doing
7 this load test?

8 MR. SIMBUS: To identify the strength
9 capacity of the piles and their strength gain
10 capabilities. In other words put a graph
11 together to show what the tendencies are for
12 strength gain.

13 MR. BRADLEY: Did you lay out the details
14 of exactly how this test was going to take
15 place?

16 MR. SIMBUS: Yes, sir.

17 MR. BRADLEY: Was it approved?

18 MR. SIMBUS: It was.

19 MR. BRADLEY: What did you say about the
20 test area?

21 MR. SIMBUS: The group decided in a meeting
22 that the test would be done right next to the
23 job trailer and that is indicated on the drawing
24 and that was part of the submittal process.

25 MR. BRADLEY: Why did you want to put the

Deposition of Procurement Review Panel Hearing

1 test there?

2 MR. SIMBUS: I think that is where
3 everybody mutually agreed it should go.

4 MR. BRADLEY: Did it go there after it was
5 agreed upon?

6 MR. SIMBUS: No, sir.

7 MR. BRADLEY: Where did it go?

8 MR. SIMBUS: Probably about 200 feet
9 further away from the building.

10 MR. BRADLEY: When the test took place was
11 Davis and Floyd there, did they have a
12 representative there?

13 MR. SIMBUS: No. Not during the test
14 itself.

15 MR. BRADLEY: Did they know where the test
16 was going to be?

17 MR. SIMBUS: Yes.

18 MR. BRADLEY: What about S&ME, did they
19 know where the test was going to be as well?

20 MR. SIMBUS: I would assume so.

21 MR. BRADLEY: Were they involved in
22 permitting this test?

23 MR. SIMBUS: I think everybody had
24 knowledge of where it was going to go. There
25 was time between when this was approved and the

1 mobilization actually started.

2 MR. BRADLEY: Why is it important to have
3 the test near the production piles?

4 MR. SIMBUS: Similar conditions.

5 MR. BRADLEY: What happened when you put
6 the first load test in place?

7 MR. SIMBUS: Well we went out and tested
8 per the proposal that was approved testing the
9 pile's compression first then we tested the
10 pile's intention and they didn't hold the
11 200,000 pounds.

12 MR. BRADLEY: What did you do when you
13 found out they wouldn't hold the 200,000 pounds?

14 MR. SIMBUS: We reviewed all of our design
15 requirements and details and did a qualitative
16 analysis in our report and tried to figure out
17 what the problem was. Obviously, we had
18 information that said it should work at 78 feet
19 or whatnot and it didn't work at 78 feet. We
20 went through and said there had to be something
21 wrong with the pile soil interaction. Typically
22 that's because the soil doesn't necessarily meet
23 what's intended.

24 MR. BRADLEY: The load test, who designed
25 it?

Deposition of Procurement Review Panel Hearing

1 MR. SIMBUS: We put it together.

2 MR. BRADLEY: Was it you?

3 MR. SIMBUS: Ken Timmerman and myself did.

4 MR. BRADLEY: What information do you have
5 to have to design a load test?

6 MR. SIMBUS: They type of pile, the soil
7 that you're going to extend the pile into and -

8 MR. BRADLEY: And how much weight it has to
9 hold?

10 MR. SIMBUS: Absolutely.

11 MR. BRADLEY: Where did you get the
12 information on the soil you were putting the
13 piles in?

14 MR. SIMBUS: From the geotechnical report.

15 MR. BRADLEY: Was that y'all's job to do a
16 geotechnical report?

17 MR. SIMBUS: No.

18 MR. BRADLEY: Was the information that you
19 were given accurate?

20 MR. SIMBUS: No.

21 MR. BRADLEY: What was wrong with it?

22 MR. SIMBUS: Well, there's two pieces that
23 were, I guess, not accurate about it. There's
24 an exhibit in here, a graph.

25 MR. BRADLEY: You're maybe talking about

1 seven or eight?

2 MR. SIMBUS: Yes, seven. Seven is fine.

3 At the first load test site there was a
4 discrepancy between the presence of marl, the
5 type of marl and what was actually encountered
6 in the ground. Most obvious was the presence of
7 about an eight foot sand lens that wasn't
8 anticipated in the design and the presence of
9 different type of marl; it could be part of the
10 cooper family but it was not explained to us
11 that the geotech was denoting and in our
12 conversations with the group. They were looking
13 for an olive green, good drab olive green cooper
14 marl, which if you've ever done any work in
15 Charleston you've seen this. It's unmistakable
16 an olive drab color. That material did not show
17 up in that first test location until 72 feet.
18 The marl like material at 58 feet where it was
19 reported to be around 56. There was an eight
20 foot sand lens below that that got you to 68
21 feet and then you had four feet of a tan marl
22 which is the not the same as the green marl.
23 Now if it had the same properties of the dark
24 green mark we weren't sure at the time because
25 we didn't do the geotechnical study but we had

1 to figure out why the piles didn't work and what
2 that told us was that the shortest pile which
3 was 66 feet didn't even bear into the marl. The
4 other piles that came subsequent to that were in
5 five foot segments, one at 75 and 80, were only
6 embedded in the marl a very limited length
7 versus what was proposed. 23 feet is what the
8 geotechnical documents said that we needed and
9 we didn't come close to getting that the first
10 time.

11 MR. BRADLEY: How did you figure out this
12 information on Exhibit Seven about where the
13 sand was, where the clay was and where the
14 cooper marl was?

15 MR. SIMBUS: We did a continuous sampling SPT 4
16 which actually allows us to pull samples
17 continuously as you drill down and literally you
18 were able to pull soil samples in a complete
19 column from the ground surface down so this is a
20 depiction of what we found.

21 MR. BRADLEY: Are each of these charts
22 here in Exhibit Seven from the two separate
23 tests you guys did?

24 MR. SIMBUS: Yes. The one on the left hand
25 side was the first load test location. The one

Deposition of Procurement Review Panel Hearing

1 on the right hand side was the second load test
2 location which was closest to the building.

3 MR. BRADLEY: Had anyone run those tests
4 on that site before you did?

5 MR. SIMBUS: Not to my knowledge.

6 MR. BRADLEY: Did anybody provide any
7 information from any of those kinds of tests to
8 you?

9 MR. SIMBUS: Not to my knowledge.

10 MR. BRADLEY: What kind of information did
11 you get when you were designing this test?

12 MR. SIMBUS: We were provided CPT data
13 which is basically - I don't know if I need to
14 explain that.

15 MR. BRADLEY: What is a CPT?

16 MR. SIMBUS: Very rudimentary. It's a
17 direct push where they actually push a cone into
18 the soil matrix so correlated information gives
19 you electronic read-outs of what the soil should
20 be or what they are recorded to be
21 electronically. We don't actually get a sample.
22 You don't know the color and you're not 100
23 percent sure of the soil type but you have the
24 correlated value to what soil types are there.

25 MR. BRADLEY: Had that electrical test been

1 correlated to a test like you do on site?

2 MR. SIMBUS: Not on site. No.

3 MR. BRADLEY: Is that how it's supposed to
4 work?

5 MR. SIMBUS: Yes.

6 MR. BRADLEY: So which is more accurate,
7 the test you do or the CPT test that has been
8 done?

9 MR. SIMBUS: In this case, our test does.

10 MR. BRADLEY: So what did you find out
11 when you finished the test?

12 MR. SIMBUS: That the CPT data was not
13 accurate.

14 MR. BRADLEY: Is that what the problem was
15 with the load test?

16 MR. SIMBUS: That's a big part of it. Yes.

17 MR. BRADLEY: What were some of the other
18 problems with it?

19 MR. SIMBUS: Well, at the second load test
20 site, there's a visual graph that shows strength
21 data and I can't remember what exhibit it is.

22 MR. BRADLEY: I think it's Exhibit 13.

23 MR. SIMBUS: Okay. This is an excerpt
24 from addendum that S&ME provided for the report.
25 There are three lines that are added to this

1 diagram. The first one which is blue is results
2 from the first load test, compression portion
3 only. The second two are from the second load
4 test area and what this depicts is literally the
5 strength gain of the pile, the capacity carrying
6 capability of the pile with depth of embedment.
7 What is important is the slope. The steeper the
8 slope the slower the strength gain. So at the
9 second load test site you had a slower strength
10 gain with embedment which means basically in
11 plain terms longer piles to meet the same
12 capacity. That was the issue with the second
13 load test which meant the piles had to be longer
14 but we all know that because that's what passed
15 with the test.

16 MR. BRADLEY: This original graph from
17 S&ME, the one that is in black and white that
18 you've done the color on, is that what you had
19 to rely on when you got started?

20 MR. SIMBUS: Which one?

21 MR. BRADLEY: The black and white one that
22 you put the color on.

23 MR. SIMBUS: Yes. From what I understand
24 this is all based on historical data from the
25 area, from Charleston. Generally, this is what

1 you can expect from the cooper marl from
2 Charleston. It's not site specific per se that
3 the information is correlated from available
4 information in the area.

5 MR. BRADLEY: When you added these color
6 lines that are steeper on here, where did you
7 get that information?

8 MR. SIMBUS: This is directly from the
9 results of the load test. We had piles at
10 variable depths that gave us strength carrying
11 capacity at that depth and this is a physical
12 representation of the ability to gain strength.

13 MR. BRADLEY: So is what your real results
14 based upon their projected results show that the
15 actual dirt you're going into doesn't hold as
16 much weight as they said it was going to?

17 MR. SIMBUS: Correct. At that depth.

18 MR. BRADLEY: Because the slope is steeper
19 it gets less weight per foot that you go down?

20 MR. SIMBUS: That's correct.

21 MR. BRADLEY: How did you figure out to put
22 the red, green and blue lines on there.

23 MR. SIMBUS: It's the results of the load
24 tests which control.

25 MR. BRADLEY: Did you rely on this

Deposition of Procurement Review Panel Hearing

1 originally when you designed the test?

2 MR. SIMBUS: This graph, yes.

3 MR. BRADLEY: And what you found was the
4 graph they gave you was incorrect, right?

5 MR. SIMBUS: Right.

6 MR. BRADLEY: But your load test fixed it?

7 MR. SIMBUS: It gave us the right answers.

8 MR. BRADLEY: Okay. Take a look, if you
9 will at Exhibit Nine. Can you tell us what this
10 is?

11 MR. SIMBUS: It says change order request.

12 MR. BRADLEY: Is this for the additional
13 load test?

14 MR. SIMBUS: I believe this is for the
15 first load test. Yeah.

16 MR. BRADLEY: Why should Terratec be paid
17 for this load test when it's Terratec's job to
18 come up with a load test?

19 MR. SIMBUS: The original load test was
20 obviously different significantly soil wise and
21 the piles weren't able to carry 200,000 pounds.
22 But the data we did get from it does give a
23 strength gain curve, and I don't know if I'm
24 addressing your question 100 percent but the
25 bottom line is the conditions that were there at

Deposition of Procurement Review Panel Hearing

1 the first load test site weren't what were
2 reflected in the bid documents.

3 MR. BRADLEY: Take a look at Exhibit 10,
4 change order three; what is requested here?

5 MR. SIMBUS: This is the additional charges
6 for all of the drilling and sampling that went
7 into coming up with the answers to why it didn't
8 work at the first location and all of the back
9 and forth, which I think Chris alluded to, all
10 the back and forth submittal process in the
11 second load test. We submitted our data and
12 information and got kicked back a lot of times.
13 It was a lot of back and forth.

14 MR. BRADLEY: Was Terratec supposed to be
15 getting actual geotechnical information for this
16 job?

17 MR. SIMBUS: No.

18 MR. BRADLEY: Was Terratec paid to do any
19 geotechnical reports or tests?

20 MR. SIMBUS: No.

21 MR. BRADLEY: Why did Terratec have to do
22 all these tests?

23 MR. SIMBUS: Because the information wasn't
24 accurate at the first spot.

25 MR. BRADLEY: So is that why all these

1 charges are necessary in Change Order Number
2 Three?

3 MR. SIMBUS: Yes. In order to design
4 something you have to have proper information to
5 do the design.

6 MR. BRADLEY: Take a look at what is
7 marked as Exhibit 21; can you explain to the
8 panel what that is and why it's important in
9 their consideration?

10 MR. SIMBUS: Early on the argument was the
11 presence of the sand lens is not typical for
12 cooper marl. Normally when you establish the
13 depth of the cooper marl it's fairly consistent
14 with soil types, it's fairly consistent geology.
15 In some regards this is a testimony that these
16 sand lenses are not expected. This is the
17 Daniel Island Extension Tunnel for the Waste
18 Water Treatment Facility where they actually had
19 a lot of re-design because they found sand lens
20 that was not anticipated. It's documented in
21 here. It also documents that cooper marl does
22 have a lot of variable strength across the
23 peninsula and in my mind that is what is
24 represented by the upper and lower bounds but it
25 does not give you site specific information.

Deposition of Procurement Review Panel Hearing

1 You have to do actual testing to find out what
2 the soils are doing at your site and you should
3 be doing that. These are two items that were
4 printed here that was a lot of surprise to a lot
5 of the local geotechnical community that a 30 to
6 40 foot sand lens existed in the cooper marl at
7 the depth they were doing this project. In my
8 mind it would be considered an anomaly on a site
9 especially when you have established the top fo
10 the cooper marl you're expecting it to be fairly
11 consistent all the way down.

12 MR. BRADLEY: When was this report out,
13 George?

14 MR. SIMBUS: It says 2009.

15 MR. BRADLEY: And was this report and the
16 anomalies these people found as far as the
17 strength and composition of the cooper marl
18 consistent with what you found when you did your
19 testing on this site?

20 MR. SIMBUS: On the first load test
21 location - I mean, obviously they had to
22 redesign their tunnel because of the presence of
23 this. Is it consistent? I don't know. I can't
24 say.

25 MR. BRADLEY: Is it a similar situation

Deposition of Procurement Review Panel Hearing

1 where you're finding unanticipated deposits in
2 the cooper marl?

3 MR. SIMBUS: Yes. Absolutely.

4 MR. BRADLEY: Which had been discovered
5 four years the engineering work was done on this
6 site?

7 MR. SIMBUS: Yes. I wouldn't say you can
8 draw complete parallels other than the sand lens
9 when it was encountered, it's not anticipated so
10 it's considered an unforeseen condition in this
11 projects.

12 MR. BRADLEY: Take a look at Exhibit 12,
13 if you would. Can you tell us what this is and
14 why it's important in the panel's consideration?

15 MR. SIMBUS: That's a response to the DRB
16 Conclusion Summary. I believe there was some
17 information that was overlooked in the DRB, some
18 information we weren't necessarily able to talk
19 about and I think this answers some of the
20 questions that were proposed in that DRB that
21 was not done in this manner where you could
22 actually ask questions and answer them.

23 MR. BRADLEY: Right. We've talked about
24 the load test and I want to move on to the
25 additional lengths of the piles and how that

Deposition of Procurement Review Panel Hearing

1 affected the job. We talked about where you got
2 the 66 feet from; how long were the piles that
3 are underneath the school?

4 MR. SIMBUS: 86 feet.

5 MR. BRADLEY: And are they doing what they
6 are supposed to do?

7 MR. SIMBUS: Yes.

8 MR. BRADLEY: Did they have to be 86 feet
9 to do that?

10 MR. SIMBUS: Yes.

11 MR. BRADLEY: And has Terratec been paid
12 for the extra 20 feet?

13 MR. SIMBUS: Not to my knowledge.

14 MR. BRADLEY: How much has Terratec been
15 paid for?

16 MR. SIMBUS: Eight feet.

17 MR. BRADLEY: Why just eight instead of
18 the full 20?

19 MR. SIMBUS: My understanding is the issue
20 was raised at the time of the load test and that
21 pretty much what Chris said, it was discussed
22 that they would hold off on discussing that
23 until the end. That was the understanding that
24 I got.

25 MR. BRADLEY: Take a look, if you will, the

Deposition of Procurement Review Panel Hearing

1 School District's Exhibit Seven. Flip to that
2 email from Robert Corbin to William Lewis. Are
3 you there now, George?

4 MR. SIMBUS: Yes.

5 MR. BRADLEY: Do you see where there's an
6 estimate for almost three million dollars for
7 hollow bore piles?

8 MR. SIMBUS: Yep.

9 MR. BRADLEY: Why was that done at the time?
10 What was going on with hollow bores?

11 MR. SIMBUS: My only knowledge of the hollow
12 bars is there was a huge discussion about the type
13 of pile that Terratec was proposing, that that
14 type of pile would not work in Charleston. I
15 think that is in meeting minutes somewhere, that
16 it would never work in Charleston, that it had
17 been tried 30 years before, that they need to
18 change to a hollow bore because hollow bore is
19 what needs to be put in at this site. I think
20 somebody put in a statement to the fact that that
21 was what the geotechnical report was based around.

22 MR. BRADLEY: How much more would a hollow
23 bore piling system have cost the district?

24 MR. SIMBUS: It would cost three million
25 bucks. According to this math, \$423,000 more.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: And did you guys stick to your
2 guns about your auger cast piles?

3 MR. SIMBUS: Yes.

4 MR. BRADLEY: Did they work?

5 MR. SIMBUS: They did.

6 MR. BRADLEY: So what's the result of you
7 guys insisting on using the original piles?

8 MR. SIMBUS: They were cheaper. They were
9 less expensive.

10 MR. BRADLEY: Now you see where it estimates
11 the auger cast piles at two million almost six
12 hundred thousand dollars?

13 MR. SIMBUS: Yep.

14 MR. BRADLEY: How much has Terratec actually
15 been paid for putting in those auger cast piles?

16 MR. SIMBUS: I heard two point two seven
17 million dollars, somewhere in that ballpark.

18 MR. BRADLEY: What's the difference in this
19 estimate and what's been approved so far for
20 Terratec?

21 MR. SIMBUS: Probably about \$350,000.

22 MR. BRADLEY: Is that the extra 12 feet that
23 Terratec is owed?

24 MR. SIMBUS: From what I understand, yes.

25 MR. BRADLEY: Look at the last sentence on

Deposition of Procurement Review Panel Hearing

1 sort of the biggest paragraph on that email; do
2 you see where it says the additional length of
3 pile is based on the increase in length from 78
4 feet (not 66 feet)?

5 MR. SIMBUS: I do.

6 MR. BRADLEY: Where would that 66 foot
7 number have come from?

8 MR. SIMBUS: The documents and probably
9 conversations with MB Kahn.

10 MR. BRADLEY: So at the very top where you
11 were talking to Corbin and he knew you were
12 looking for 66 feet -

13 MR. HAGOOD: I'm going to object.
14 He hasn't said he talked to Mr Floyd
15 about anything.

16 MR. BRADLEY: I'll rephrase. That's fine.
17 This email in September 2011 mentions this 66
18 feet, right?

19 MR. SIMBUS: Yes, sir.

20 MR. BRADLEY: In September of 2011 were you
21 discussing the 66 feet, that it was a problem?

22 MR. SIMBUS: I do remember conversations with
23 Terratec and myself and Ken that 66 feet was the
24 base bid.

25 MR. BRADLEY: I would present additional

Deposition of Procurement Review Panel Hearing

1 testimony from this witness concerning Item D
2 which is the back charges and Item C which is the
3 working conditions but I understand from the board
4 that I have been forbidden to do so, so that's all
5 the questions I have.

6 MR. HAGOOD: You said you've been with GS2
7 since 1998?

8 MR. SIMBUS: Yes, sir.

9 MR. HAGOOD: How much have you worked with
10 GS2 on the Charleston peninsula?

11 MR. SIMBUS: We started an office here in
12 2000.

13 MR. HAGOOD: And have you designed
14 micropiles for the peninsula, auger cast
15 micropiles prior, to this particular job?

16 MR. SIMBUS: Have I designed auger cast piles
17 on the peninsula? Yes. I've designed auger cast
18 piles. Not necessarily on the peninsula.

19 MR. HAGOOD: But you've designed auger cast
20 piles before?

21 MR. SIMBUS: On a regular basis.

22 MR. HAGOOD: As I understand what happened
23 here, the location that was approved and the
24 submittal that was made for the area you talked
25 about earlier next to the trailer, I think Exhibit

Deposition of Procurement Review Panel Hearing

1 Six in the little notebook. This was the
2 submittal, right?

3 MR. SIMBUS: Yes.

4 MR. HAGOOD: And the location that was
5 approved for that submittal was one that was next
6 to the trailer, right?

7 MR. SIMBUS: That's correct.

8 MR. HAGOOD: There never was resubmittal
9 submitted for approval for the other location that
10 the test was actually performed at, was it?

11 MR. SIMBUS: Not to my knowledge.

12 MR. HAGOOD: And as I understand your
13 testimony you say that the soil conditions in the
14 first test pile location differed from what was in
15 the report?

16 MR. SIMBUS: Yes, sir.

17 MR. HAGOOD: S&ME, in their tests that they
18 performed, the CBT, they didn't reference anything
19 about the location of the load test, did they?

20 MR. SIMBUS: Yes. They did.

21 MR. HAGOOD: Where did they take their tests?

22 MR. SIMBUS: They did tests next to the first
23 load test location and test at the second.

24 MR. HAGOOD: Prior to you conducting your test
25 at the first load test location S&ME had not made

Deposition of Procurement Review Panel Hearing

1 any representations about conditions of specific
2 locations, had they?

3 MR. SIMBUS: No.

4 MR. HAGOOD: The testing they did was after
5 there was a failure to do all those things, an
6 issue about different conditions, correct?

7 MR. SIMBUS: Correct.

8 MR. HAGOOD: So S&ME didn't make any
9 representations at all as to what you might find
10 at that location that Kahn directed Terratec for
11 the first load test?

12 MR. SIMBUS: They said it was inclusive of
13 the site but did they say specifically, they
14 didn't single that area out

15 MR. HAGOOD: Okay. Whenever you moved and
16 did the second load test it was very similar to
17 what was in the S&ME report, correct?

18 MR. SIMBUS: It was more similar than the
19 first spot, that's for sure.

20 MR. HAGOOD: But you still had to do the
21 load test and see the piles that you designed how
22 deep it had to go, correct?

23 MR. SIMBUS: Correct.

24 MR. HAGOOD: Now, CCSD Exhibit 23, I'll just
25 go over this briefly, but as I understand it you

Deposition of Procurement Review Panel Hearing

1 were involved in developing the load test plan and
2 this submittal that was being made originally on
3 March 11th, 2011, correct?

4 MR. SIMBUS: Yes, sir.

5 MR. HAGOOD: Now, when you go over to the
6 fourth page, would you have been involved when the
7 term below ground surface was being used initially
8 stating that the marl was understood to be present
9 at a depth of roughly 43 feet below ground
10 surface?

11 MR. SIMBUS: (Inaudible.)

12 MR. HAGOOD: Okay. So when the submittal was
13 marked up, notations were made, were you involved
14 in the provisions made?

15 MR. SIMBUS: Yes, sir.

16 MR. HAGOOD: So the comment was made,
17 elevation is given as EL minus 43, 43 feet or
18 roughly 55 feet below ground surface, see
19 geotechnical report, you understood that the
20 reading of report from Davis and Floyd was that
21 the marl was beginning at 55 feet rather than 43
22 feet, right?

23 MR. SIMBUS: Yes. I understand that note.
24 I read it.

25 MR. HAGOOD: And if you look at Exhibit Six

1 which was the approved load test report you made
2 a correction in the last paragraph on page two of
3 Exhibit Six, instead of roughly 43 feet below
4 ground surface to 55 feet below ground surface?

5 MR. SIMBUS: That's correct.

6 MR. HAGOOD: And I think you said so I want
7 to make sure I understand, the embedment that was
8 being sought in the marl was 23 feet so to if you
9 start at 55 feet below ground surface and go 23
10 feet you get 78 feet which you originally
11 anticipated.

12 MR. SIMBUS: That's why there was an 80 foot
13 pile proposed for the test pile. That's just
14 transferring information. It was actually
15 supposed to penetrate 25 feet in the marl if it
16 was where it was supposed to be.

17 MR. HAGOOD: What you did was, as you
18 explained earlier, since there were two test piles
19 you did 66, 70, 75 and 80, correct?

20 MR. SIMBUS: Yes, sir.

21 MR. HAGOOD: Now, when you did your second
22 test pile location it performed more consistently
23 with what was in the geotechnical report, correct?

24 MR. SIMBUS: Yes, sir. The piles had to be
25 longer but it did perform more in accordance with

Deposition of Procurement Review Panel Hearing

1 what was in there.

2 MR. HAGOOD: And of course, how long a pile
3 you may need may also depend on what type of pile
4 you're designing for that location, right?

5 MR. SIMBUS: It's a combination of what type
6 of pile and the soil strength and their
7 interaction.

8 MR. HAGOOD: Okay. Now, were you involved
9 - you said you were involved in the preparation
10 of the bid?

11 MR. SIMBUS: We all discussed it. We all
12 looked at it and helped him derive a plan.

13 MR. HAGOOD: So Exhibit Four, Terratec's
14 Exhibit Number Four, that's a document that you
15 would have had input into?

16 MR. SIMBUS: Yes.

17 MR. HAGOOD: And so you understood that
18 looking at the charts that S&ME had in their
19 reports they were anticipating that you would have
20 to go 78 feet to reach 200 kips.

21 MR. SIMBUS: I think that was what was
22 represented.

23 MR. HAGOOD: Right. And one thing that you
24 talked about, if you go over to a chart, Exhibit
25 Number 13 that you were asked about - Just so the

Deposition of Procurement Review Panel Hearing

1 record is clear, Exhibit Number 13 you started off
2 with a document from the S&ME report but the
3 colored lines on here were added by you as opposed
4 to S&ME, correct?

5 MR. SIMBUS: Correct.

6 MR. HAGOOD: The cloud part and the
7 additional colors were added by you?

8 MR. SIMBUS: That's correct.

9 MR. HAGOOD: Can we agree that the bid
10 documents that Terratec sent in Exhibit Four were
11 sent to the General Contractor and not to the
12 other boards?

13 MR. SIMBUS: To the best of my knowledge.

14 MR. HAGOOD: And Kahn drafted the
15 subcontract as Exhibit Five they make reference to
16 the additional \$45 per linear foot. There is no
17 reference based on 66 feet piles, is there?

18 MR. SIMBUS: I believe the proposal was for
19 one point nine. It says here one point nine nine
20 two for 66 foot piles, 627 times and there was a
21 illusion in the proposal for \$45 per additional
22 foot so the way my understanding was, MB Kahn
23 represented to them they had to state their pile
24 contract for submittal and acceptance by the
25 school district. So I don't know how you

Deposition of Procurement Review Panel Hearing

1 distinguish separately by the two.

2 MR. HAGOOD: You don't know what's submitted
3 by the contractor - You've bid on these before,
4 haven't you?

5 MR. SIMBUS: Not as a contractor.

6 MR. HAGOOD: I didn't ask you if you bid on
7 them as a contractor; I asked if you ever bid on
8 these before.

9 MR. SIMBUS: Oh. Normally not.

10 MR. HAGOOD: But don't you understand the
11 process that the owner gets bids in a dollar
12 amount from various contractors and it goes
13 through a selection process as to which one they
14 are going to go with?

15 MR. SIMBUS: Mm-hmm.

16 MR. HAGOOD: And you're not aware of any
17 qualification with Kahn's bid that said we're only
18 including in this price 66 feet of pile even
19 though S&ME's report indicates it needs 78 feet?

20 MR. SIMBUS: The only qualification I'm
21 aware of is they selected Terratec and stated as
22 such in the submittal to the School Board.

23 MR. HAGOOD: Looking at Exhibit Seven, did
24 you prepare this?

25 MR. SIMBUS: Yes.

Deposition of Procurement Review Panel Hearing

1 MR. HAGOOD: And what that was supposed to
2 show is the location of the marl you say near
3 building; is that where the second load test was
4 performed?

5 MR. SIMBUS: Yes.

6 MR. HAGOOD: Okay. So you're comparing
7 right next to the building where you did the
8 second test when it passed to where you did the
9 first test and it didn't pass?

10 MR. SIMBUS: Yes, sir.

11 MR. HAGOOD: Okay. And I'm still trying to
12 understand, Exhibit Number 21, are you simply
13 saying that's an indication that on Daniel Island
14 where they were digging for a water tunnel they
15 found a sand lens there?

16 MR. SIMBUS: It's unexpected, unforeseen and
17 these are the words that are used. The
18 geotechnical community was extremely surprised.
19 As somebody who practices in Charleston, I know
20 when I identify the level of cooper marl it's not
21 typical for me to find sand below that. It's
22 atypical.

23 MR. HAGOOD: You're not saying that was what
24 was at the first load test?

25 MR. SIMBUS: No.

Deposition of Procurement Review Panel Hearing

1 MR. HAGOOD: You're just saying it's
2 atypical.

3 MR. SIMBUS: Yes. The conversation was this
4 was an anomaly at the first test load location.

5 MR. HAGOOD: Now you testified about - In CCSD's
6 Exhibit Seven, this was the change order for the
7 extra eight feet. You were asked about this email
8 from Mr. Corbin; you; didn't have any conversation
9 with Mr. Corbin in September 2011, did you ?

10 MR. SIMBUS: No, sir.

11 MR. HAGOOD: So you were really just
12 speculating as to where that 66 feet might have
13 come from?

14 MR. SIMBUS: That's correct.

15 MR. HAGOOD: There was no discussion that
16 you were a participant in about a potential change
17 order request in 2011 for a difference between 66
18 feet and 78 feet?

19 MR. SIMBUS: No, sir. I was not.

20 MR. HAGOOD: Now once the decision was made
21 from the first load test site that was further
22 away than had been proposed couldn't you have
23 performed some kind of soil test before you did
24 the work to see if conditions were going to be the
25 same as what was represented to be at locations

Deposition of Procurement Review Panel Hearing

1 next to the building?

2 MR. SIMBUS: I'm not following you.

3 MR. HAGOOD: You said that the first
4 submittal that was made had a location that was
5 approved next to the trailer, correct, then a
6 decision was made by MB Kahn that they wanted you
7 to go further away, right?

8 MR. SIMBUS: Yes.

9 MR. HAGOOD: Once that was the selected
10 location couldn't you have if you would have
11 wanted to make sure there was no difference
12 between what S&ME represented next to the
13 building, couldn't you have done a fairly
14 inexpensive soil test at that point before you did
15 your test pile to see if there might be some
16 differing condition there?

17 MR. SIMBUS: Yes. I would have had to
18 charge them more because that wasn't in my scope.

19 MR. HAGOOD: And eventually once that
20 location failed and you did the STP test at the
21 first location as well as the proposed second
22 location before you did it, correct?

23 MR. SIMBUS: That's correct.

24 MR. HAGOOD: I think that's all I have. Thank
25 you.

Deposition of Procurement Review Panel Hearing

1 MR. EDWARDS: No more questions for this
2 witness.

3 MR. DUCKER: Any questions from the panel?

4 MR. MCKINNEY: Mr. Simbus, I was trying to
5 understand, you mentioned elevation was on the
6 down point at some point on the project, typically
7 the ground surface; with all the specificity that
8 goes into building these documents was there a
9 thought that the length of the pile was covered by
10 this contingency of the additional \$45 per linear
11 foot and that the lump sum amount wasn't binding
12 for Terratec therefore you had this sort of
13 additional layer of financial insulation, if you
14 will, as a result of that contingency?

15 MR. SIMBUS: Okay. That was a long question.

16 MR. MCKINNEY: Let me shorten it up for you.
17 If you say I'm going to throw a lump sum but the
18 lump sum may not represent the actual cost and I
19 understand the cost is function of how long the
20 piles are. It seems difficult to me that knowing
21 that this elevation was an ambiguous data point by
22 your testimony it seems difficult that a small
23 business can carry the risk that was represented
24 by the additional pile and was there a thought
25 amongst the team that risk was mitigated by this

1 contingency of \$45 per extra foot.

2 MR. SIMBUS: Well, there's a couple of
3 things. I guess if you look at their Exhibit
4 Number 22 you have the boring log on the left,
5 pile graph in the middle and a diagram that is
6 S402 on the right. The first two, there's no
7 question that was below the ground surface. The
8 third one, it doesn't reference MSL. They are all
9 similar documents but the third one doesn't say
10 mean sea elevation is plus 12. We found that out
11 afterwards but am I tracking down where you're?

12 MR. MCKINNEY: Well you testified that that
13 the elevation should be based on the down point on
14 the project site and you guys are coming up how
15 much is it going to cost us to drill these things,
16 and it seems that you're saying we didn't know how
17 long they should have been because this metric
18 wasn't found but we didn't ask the question to
19 clarify and that's what is very hard in my mind to
20 reconcile. Given the level of this team and
21 you're saying elevation is an ambiguous number yet
22 we're coming up with a multi-million dollar bid?

23 MR. SIMBUS: I think the reality of it is on
24 the other side of the situation they specify that
25 a load test be done to find out exactly what the

1 length is. If the piles ended up five feet shorter
2 -- I don't know if I'm answering your question
3 properly.

4 MR. MCKINNEY: Well, we also said that type
5 of pile, design of pile, impacts the load bearing
6 capabilities, the function of the design, and so
7 Terratec's responsibility was to design a pile to
8 hold a certain amount of load.

9 MR. SIMBUS: Right. But it wasn't specified
10 on the length. That's the problem. That's why
11 the load test was required, to establish the
12 length. It could have been longer, it could have
13 been shorter. What was ambiguous in my mind, and
14 I'm sure Ken can testify and Chris can as well, is
15 that you have all these documents that put all
16 this data on elevation at the ground surface on
17 the bid document. I don't know if I'm answering
18 your question.

19 MR. MCKINNEY: Well, it seems like there is
20 no more important data point in Terratec's bid
21 preparation process than defining how long these
22 things have to be. That seems to be the most
23 important thing in determining underlying costs
24 in preparation for the bid. You testified that
25 data point was undefined, that elevation could be

1 some data point that you just arbitrarily find on
2 the project and the elevation of the slab varied
3 from three to six feet. It's perplexing how that
4 ambiguity sort of blows up not presenting a hard
5 number.

6 MR. SIMBUS: Yes. It was defined in the
7 geotechnical document. They listed at zero at
8 ground surface so that was the assumption because
9 the other drawing did not identify mean sea level.

10 MR. MCKINNEY: But you testified that
11 elevation could be an arbitrary point that the
12 engineers could decide. It sounds like you didn't
13 know how long they were going to be, that
14 elevation is an undefined term given that it could
15 be some arbitrary data point.

16 MR. SIMBUS: I thought that we established
17 zero and went to 66 feet but in no shape expecting
18 it to go to 78 feet. I think all that was put out
19 in the proposal pretty clearly to the contractors.

20 MR. STEHMEYER: I have two questions for you.
21 If you refer to CCSD Exhibit 22, the second page
22 that you were talking about. Where do you show
23 where it shows the top of the marl?

24 MR. SIMBUS: The only one I see is on the
25 right hand side.

Deposition of Procurement Review Panel Hearing

1 MR. STEHMEYER: On the left hand side is
2 there not a graph of the soil report?

3 MR. SIMBUS: It doesn't distinguish cooper
4 marl. It just says clay.

5 MR. STEHMEYER: What I'm looking at says
6 cooper marl 57 feet below the ground surface;
7 that's what I'm seeing, right?

8 MR. SIMBUS: Yes, sir.

9 MR. STEHMEYER: Then why did you put in your
10 first test pile proposal that you assumed the top
11 of the marl was at 43 feet?

12 MR. SIMBUS: Well, the ambiguity wasn't
13 cleared up at that time.

14 MR. STEHMEYER: The second question, I'll
15 skip the second question for now.

16 MR. DUCKER: Any more questions?

17 MR. BREWER: Are you aware of when the second
18 test location was conducted relative to the
19 first, how quickly after the first one failed?

20 MR. SIMBUS: I believe the first one failed
21 in late June and the second one wasn't started
22 until August.

23 MR. BREWER: You may or may not know this,
24 this may be question for Chris, but was there ever
25 a request for additional geotechnical, SPT, CPT,

Deposition of Procurement Review Panel Hearing

1 from the school district from MB Kahn?

2 MR. SIMBUS: I know that S&ME did some more
3 CPTs.

4 MR. BREWER: I'm trying to understand at
5 what point you guys made a decision to do SPT
6 testing or was a request made via the school
7 district or MB Kahn to provide additional testing
8 to you?

9 MR. SIMBUS: I'm not aware of that. You may
10 need to ask that question to Chris.

11 MR. BREWER: I only have one more question.
12 Exhibit Seven, the email from Mr. Corbin; are you
13 familiar with how the estimate was produced?

14 MR. SIMBUS: Somewhat.

15 MR. BREWER: Was that produced by your team
16 or by the Heery team?

17 MR. SIMBUS: I have no knowledge of that

18 MR. BREWER: So your team was on the ball
19 with him producing the estimates of the dollar
20 amounts. I have one more question. Was the large
21 strata of sand actually encountered or how often
22 was it encountered when it's in the actual
23 foundation?

24 MR. SIMBUS: We're not aware.

25 MR. BREWER: All right.

Deposition of Procurement Review Panel Hearing

1 MR. STEHMEYER: If I can get back to my second
2 question. Back to the geotechnical report, I
3 believe I heard you say the reference point on the
4 geotechnical report was not ambiguous at all.

5 MR. SIMBUS: Right.

6 MR. STEHMEYER: If I could refer you to CCSD
7 Exhibit Five, S402. If I'm not mistaken this is
8 where you could not determine or were having
9 trouble determining what that elevation reference
10 was. That could be a number of things, mean sea
11 level, ground surface, whatever. But you do
12 recognize that the pile tip elevation is minus 66,
13 correct?

14 MR. SIMBUS: That's correct.

15 MR. STEHMEYER: What is the bottom of the
16 pile tip elevation designated as?

17 MR. SIMBUS: I don't see it on that drawing.

18 MR. STEHMEYER: So the bottom of the pile
19 cap is a reference point?

20 MR. SIMBUS: Could be. Yes, sir.

21 MR. STEHMEYER: Okay. Thank you very much.

22 MR. EDWARDS: I'd like to clarify very
23 quickly, if I may.

24 MR. DUCKER: Sure.

25 MR. EDWARDS: George, why did y'all put the

Deposition of Procurement Review Panel Hearing

1 66 foot rotation in the bid documents to start
2 with?

3 MR. SIMBUS: Typically when you bid you bid
4 apples to apples. That's what my understanding
5 is.

6 MR. EDWARDS: Is that what you put in your
7 paper from the beginning?

8 MR. SIMBUS: That was in the proposal from
9 the beginning.

10 MR. EDWARDS: I'd like you to take a look,
11 I'm showing you, I think, the job site minutes
12 from June 22, 2011 and I apologize I don't have
13 another copy for the panel. I'm going to refresh
14 his recollection. George, can you look at that
15 and see if it reminds you what happened as far as
16 doing the additional tests, what Terratec was
17 wired to do to get that information when I it was
18 discussed on the job site?

19 MR. SIMBUS: There is several things that
20 were discussed. The difference in the elevation
21 marl and the presence of the sand was acknowledged
22 by everybody. Some were saying it shouldn't
23 impact the load bearing capacity, some were saying
24 it would. I'm just going to go through top to
25 bottom.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: What do the notes say about
2 who was going to pay for the additional tests?

3 MR. SIMBUS: That was basically put back on
4 Terratec.

5 MR. BRADLEY: Was that part of Terratec's
6 contract?

7 MR. SIMBUS: No.

8 MR. BRADLEY: What did the tests show?

9 MR. SIMBUS: That the information was
10 incorrect.

11 MR. BRADLEY: We would like to put that in
12 evidence but I only have one copy. We can make a
13 copy during the break.

14 MR. DUCKER: Anything else? Do you have
15 another witness?

16 MR. BRADLEY: The next witness is Ken
17 Timmerman.

18 (Ken Timmerman, being duly sworn,
19 testified as follows:)

20 MR. BRADLEY: All right, Ken, can you
21 introduce yourself to these people?

22 MR. TIMMERMAN: Yes, sir. My name is Ken
23 Timmerman and I'm the owner of Kyzer and Timmerman
24 Structural Engineers out of Columbia, South
25 Carolina and we also have an office in Myrtle

1 Beach that my partner runs.

2 MR. BRADLEY: How long have you been a
3 structural engineer?

4 MR. TIMMERMAN: I've been registered since
5 86 and I've been with the firm since 84.

6 MR. BRADLEY: Are you licensed with the
7 State of South Carolina?

8 MR. TIMMERMAN: Yes.

9 MR. BRADLEY: How did you get involved in
10 this project.

11 MR. TIMMERMAN: I got involved because Chris
12 needed a structural engineer to wade through the
13 equations to come up with the bar and the strength
14 of grout to provide the submittals he was going to
15 be required to have in order to retain the
16 project.

17 MR. BRADLEY: How did you come up with the
18 depth that you were going to bid the piles to be
19 at?

20 MR. TIMMERMAN: It basically came off of, I
21 think it's 402, on the right hand side there's a
22 cross section through the pile and some are sort
23 of cross sections in our structural drawings as
24 well and that would be the place we would go to to
25 find such information.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: If you take a look at the
2 smaller notebook, our Exhibit Two. Why do you
3 rely on that; there's been talk about other data;
4 why was that the number you used to set the bid
5 up?

6 MR. TIMMERMAN: In our experience over the
7 years we will typically handle anything that is
8 below grade of a deep foundation type, and gosh I
9 hate to say it, but it's always measured from
10 ground surface because the ground surface from a
11 site will change. It may be two or three feet
12 either way going across the site so we know right
13 there at that particular pile that's how far we
14 are supposed to go down. And that provides the
15 subcontractor a pile length provided we put the
16 pile length or the elevation or anything in here
17 that would give him that. What we typically do is
18 we draw that cross section, show the bottom, show
19 the pertinent information pertaining to the
20 structure and then we will not put anything in
21 there in regards to length. Most of the time we
22 refer straight to the geotechnical reports. But
23 we will on occasion have given them a pile length
24 because that gives everyone a basis for which to
25 place their bid.

1 MR. BRADLEY: Why did you guys use that 66
2 number in computing the bid?

3 MR. TIMMERMAN: Because that EL dimension is
4 minus 66 which would be related to below grade
5 surface.

6 MR. BRADLEY: Right. Take a look at Exhibit
7 Four which I think is the bid. Is it disclosed in
8 that bid that you're taking the 66 number as the
9 basis for the bid?

10 MR. TIMMERMAN: Yes, sir. In the second
11 paragraph, about the second or third line.

12 MR. BRADLEY: That sentence comes from the
13 drawing that you were pulling the number from?

14 MR. TIMMERMAN: That would come from that
15 402. Yes.

16 MR. BRADLEY: And this also requires an
17 additional \$45 a foot beyond 66 feet, right?

18 MR. TIMMERMAN: I remember that. Yes. It's
19 in here.

20 MR. BRADLEY: Is that the basis of the bid
21 that was submitted to Kahn?

22 MR. TIMMERMAN: That's my understanding. Yes.

23 MR. BRADLEY: Was Terratec very up front
24 from the beginning about the footage that the bid
25 was relying on?

Deposition of Procurement Review Panel Hearing

1 MR. TIMMERMAN: Yes, sir. We discussed it
2 in my office as I recall.

3 MR. BRADLEY: And it's disclosed here in
4 writing as part of the bid?

5 MR. TIMMERMAN: Yes, sir. That's why it was
6 chosen to have not only a 66 foot pile but went
7 past the 78 foot and went straight on to 80
8 because of that ambiguity in the drawings or what
9 we perceived as ambiguity in the drawings. That
10 way we had both bases covered whether it was a 66
11 footer or a 78 footer we had it covered with the
12 80.

13 MR. BRADLEY: So you picked a number you
14 thought was fair off the drawings and you based
15 your bid on that and told the people that's what
16 you were bidding it on?

17 MR. TIMMERMAN: Yes, sir.

18 MR. BRADLEY: And you also said if it's
19 longer than this it will be \$45 a foot?

20 MR. TIMMERMAN: Yes, sir.

21 MR. BRADLEY: Was that the protection
22 Terratec was building in case they ended up being
23 100 feet long?

24 MR. TIMMERMAN: Normally you will find that
25 all foundation subcontractors, all the one I am

Deposition of Procurement Review Panel Hearing

1 associated with, put a provision in there that if a
2 pile should go longer. Sometimes we as a design team
3 will also put a deduct in there in case the pile is
4 shorter that way we're protecting our owner as well.

5 MR. BRADLEY: How long did the piles
6 eventually have to be?

7 MR. TIMMERMAN: As I recall, they ended up
8 being 20 feet longer than 66 which is 86 feet.

9 MR. BRADLEY: Why did They end up being the
10 86 feet?

11 MR. TIMMERMAN: Due to what I believe to be
12 an anomaly at the first load site at which our 80
13 foot pile did not come up. We did not get to 200
14 like we were looking for.

15 MR. BRADLEY: After the doing all the tests
16 what was the distance the piles were designed to
17 be?

18 MR. TIMMERMAN: Into the second test it was
19 determined through Chris's geotechnical engineer
20 those had to be down 86 feet.

21 MR. BRADLEY: Is that what is under the
22 school now?

23 MR. TIMMERMAN: Yes, sir.

24 MR. BRADLEY: As far as you know is it
25 holding the school up?

Deposition of Procurement Review Panel Hearing

1 MR. TIMMERMAN: Yes, sir.

2 MR. BRADLEY: Has Terratec been paid for the
3 extra 12 feet?

4 MR. TIMMERMAN: It's my understanding they
5 have not.

6 MR. BRADLEY: Terratec was paid for eight
7 feet but not the remaining eight feet?

8 MR. TIMMERMAN: That is my understanding.

9 MR. BRADLEY: Why didn't Terratec ask for the
10 entire 20 feet at once; why did it ask for eight
11 feet and then 12 feet later?

12 MR. TIMMERMAN: Again, I'm the structural
13 engineer. I was not deeply involved in that like
14 Chris was. He was down there everyday and I was
15 not but it was my understanding that because of
16 what was going on attitude wise at the site, a lot
17 of posturing between the geotechnical guy,
18 structural engineers, the design team members who,
19 as I recall Scott Spigener with MB Kahn had
20 indicated to Chris because Chris had indicated,
21 Look I need the money, this is expensive to
22 install the piles and I need cash flow so I can go
23 these extra lengths. Scott indicated to him, it's
24 my understanding, Look, you ask for the eight feet
25 and that will be undisputed. If you ask for the

Deposition of Procurement Review Panel Hearing

1 whole 20 it's going to hold up you getting paid
2 for eight most likely.

3 MR. BRADLEY: So what was the agreement for
4 the remaining 12; what was going to happen?

5 MR. TIMMERMAN: They were going to worry
6 about that when they finished the job or they were
7 close to the end of the project.

8 MR. BRADLEY: Take a look at Exhibit 14 in
9 the small book. Can you tell us what that is?

10 MR. TIMMERMAN: Change order request number
11 number 1B.

12 MR. BRADLEY: Is that for the additional
13 footage?

14 MR. TIMMERMAN: Yes.

15 MR. BRADLEY: How much money did it cost?

16 MR. TIMMERMAN: I think it was 227,000, if I
17 recall.

18 MR. BRADLEY: That's for the first change
19 but I'm talking about this one that was later.
20 Take a look at it before you answer.

21 MR. TIMMERMAN: I'm sorry. Please repeat the
22 question.

23 MR. BRADLEY: Sure. How much money is this
24 change order requesting?

25 MR. TIMMERMAN: I see here on the first page

Deposition of Procurement Review Panel Hearing

1 \$227,610.

2 MR. BRADLEY: Take a look at the second page
3 where it's referencing how much you should adjust;
4 I think I misled you.

5 MR. TIMMERMAN: Yeah. That was the 20 extra
6 feet which was an additional 12 feet, 338,508.

7 MR. BRADLEY: And that was based on the
8 difference between the 66 and the 86 minus the
9 eight feet that had already been awarded?

10 MR. TIMMERMAN: Yes, sir.

11 MR. BRADLEY: I would present testimony
12 regarding the change in working conditions and the
13 delay but I've been told not to go into that; is
14 that correct?

15 MR. DUCKER: Correct.

16 MR. BRADLEY: Those are all the questions I
17 have.

18 MR. HAGOOD: I'll be brief. If there was any
19 confusion as to what the - There is a process to
20 ask for clarification, is it not?

21 MR. TIMMERMAN: Yes, sir.

22 MR. HAGOOD: And to your knowledge no such
23 request for clarification was posed and request
24 that the answer be given prior to submitting the
25 bid?

Deposition of Procurement Review Panel Hearing

1 MR. TIMMERMAN: In regards to the elevation?

2 MR. HAGOOD: Right.

3 MR. TIMMERMAN: Not that I'm aware.

4 MR. HAGOOD: And the meeting you're
5 referring to with Kahn, I want to make sure I
6 know what you specifically know about rather
7 than what you've been told. You weren't
8 involved in the discussions with Kahn about
9 submitting for the 277,000 and waiting until
10 after the job to ask for the 338?

11 MR. TIMMERMAN: As I recall we had a
12 meeting -

13 MR. HAGOOD: Who was present?

14 MR. TIMMERMAN: I think Mr. Simbus, Chris
15 and myself and it came up in conversation then.
16 I remember Scott sitting at the table and he
17 said you can submit the eight but if you submit
18 20 it's going to hold up everything.

19 Mr. HAGOOD: All right. And looking at
20 Exhibit 14 in the small book, the work that is
21 being done is being done in the summer and fall
22 and ends in December and January of 2012,
23 correct?

24 MR. TIMMERMAN: I believe that to be
25 correct but I was not on site.

Deposition of Procurement Review Panel Hearing

1 MR. HAGOOD: The change order 1B that you
2 were just asked about, that was not submitted
3 until May 17th, 2012; is that correct?

4 MR. TIMMERMAN: That's the date on here.

5 MR. HAGOOD: And the bid, and you may or
6 may not know this, this was not a unit price
7 contract that was entered into for installation
8 of piles, was it?

9 MR. TIMMERMAN: Please clarify your
10 statement.

11 MR. HAGOOD: The bid that was submitted by
12 Kahn, to your knowledge, did it have any unit
13 prices dealing with piles?

14 MR. TIMMERMAN: I've never seen MB Kahn's
15 bid so I don't know.

16 MR. HAGOOD: Wouldn't you anticipate that
17 it was a fixed price contract that was
18 submitted?

19 MR. TIMMERMAN: I have no idea.

20 MR. HAGOOD: Okay. The bid document that I
21 think you said you were involved with, Exhibit
22 Number Four in the small book, this document was
23 provided to however many General Contractors
24 Terratec submitted it's price to?

25 MR. TIMMERMAN: That's what it says. Yes,

Deposition of Procurement Review Panel Hearing

1 sir.

2 MR. HAGOOD: The owner and it's consultants
3 don't get copies of the subcontractor bids
4 whenever their bids are submitted?

5 MR. TIMMERMAN: I don't see why they would.

6 MR. HAGOOD: The bid document that was
7 submitted to General Contractors, you have no
8 indication that this document was provided to
9 the school district or it's consultants?

10 MR. TIMMERMAN: No, sir.

11 MR. HAGOOD: And do you have any
12 indication that the subcontract, Exhibit Five,
13 that was submitted to the school district?

14 MR. TIMMERMAN: I do not know.

15 MR. HAGOOD: And the unit price of \$45 per
16 linear foot, there's no specific reference made
17 in the actual subcontract between Kahn and
18 Terratec that the additional price begins at 66
19 feet; if you look at the description on the
20 first page?

21 MR. TIMMERMAN: That is correct.

22 Mr. HAGOOD: I think that's all I have.

23 MR. DUCKER: Any additional questions?

24 MR. HAGOOD: Oh, I'm sorry. There was one
25 question I needed to ask. Looking at S402 on

Deposition of Procurement Review Panel Hearing

1 the left hand side at the top it says bottom of
2 pile cap elevation varies?

3 MR. TIMMERMAN: Yes, sir. They do.

4 MR. HAGOOD: This cooper marl number that
5 was elevation minus 43, isn't that the number
6 that was used originally in Exhibit 23?

7 MR. TIMMERMAN: That's down here?

8 MR. HAGOOD: I think it's in the front of
9 the book. Okay. This is the original submittal.
10 Were you involved in the preparation of the
11 submittal?

12 MR. TIMMERMAN: Yes, sir. I was. There's
13 my calculations there toward the end of it.

14 MR. HAGOOD: Okay. And if you go to page
15 four of Exhibit 23 this is where it has the
16 cloud.

17 MR. TIMMERMAN: Yes, sir.

18 MR. HAGOOD: It says The designation of
19 these depths will allow for the project design
20 team to establish a best fit line detailing the
21 available axial and tensile capacities developed
22 by the eight inch piles versus their embedment
23 in the cooper marl, as the marl is understood to
24 be present at a depth of roughly 43 feet below
25 ground surface. Isn't that where this number

1 came from, from S402?

2 MR. TIMMERMAN: Well, you'll notice in
3 Exhibit 23 on the sheet here it says marl, my
4 understanding is there are several types of marl
5 so what kind of marl this is I can't tell you.
6 I can only assume it to be cooper marl.

7 MR. BRADLEY: Okay. Thank you.

8 MR. DUCKER: Any questions?

9 MR. BRADLEY: I have just one brief
10 question. Ken, this Exhibit 23, was this
11 produced after all the bids had gone out and the
12 contract was awarded?

13 MR. TIMMERMAN: Yes, sir.

14 MR. BRADLEY: Thank you.

15 MR. STEHMEYER: On CCSD Exhibit Five, in
16 the cross section, you acknowledge that the
17 bottom of the pile cap elevation varies but when
18 you were looking at this to come up with your
19 proposal for length did you ever try to
20 reconcile what the elevation of the pile cap
21 was?

22 MR. TIMMERMAN: Well, the elevation of the
23 pile cap varied throughout the job. In fact
24 some of the bottom of the pile caps are very
25 close to grade level which is unusual because

1 you normally wouldn't find a pile cap siting on
2 top of the ground but in this case because of
3 the crawl space being as tall as it was there
4 were certain pile caps on the job that were
5 right on the ground or maybe six inches down.
6 You would have that bottom of cap to be at
7 varying elevations.

8 MR. STEHMEYER: Are the elevations of the
9 bottom of the pile cap shown in any of the
10 documents?

11 MR. TIMMERMAN: Sure.

12 MR. STEHMEYER: Which ones are they
13 referenced in?

14 MR. TIMMERMAN: I think they are measured
15 from below ground.

16 MR. DUCKER: Any other questions.

17 MR. BRADLEY: Just to let everyone know,
18 that's our case.

19 (Hearing went off the record for a period of time.)

20 MR. DUCKER: All right. Mr. Hagood?

21 MR. HAGOOD: Our first witness will be Mr.
22 Camp with S&ME.

23 (Mr. Camp, being duly sworn
24 testified as follows:)

25 MR. HAGOOD: Mr. Camp, we're going to go

1 through a presentation. I have a couple of
2 questions and then we'll go through it. With
3 whom are you employed?

4 MR. CAMP: S&ME.

5 MR. HAGOOD: And how long have you been
6 employed there?

7 MR. CAMP: Since 1988.

8 MR. HAGOOD: In regard to work by S&ME on
9 the Rivers Project can we just get a brief
10 overview of the company's involvement and your
11 specific involvement?

12 MR. CAMP: We started working on Rivers in
13 2009. It was a design phase for the retrofit
14 program and late 2009 we did a subservice
15 exploration and the purpose of that exploration
16 was to characterize the site so the building
17 response during an earthquake could be
18 evaluated. Our role was specifically to
19 evaluate the hazards. That was done in 2009 and
20 I was a senior engineer on that and then our
21 next involvement was after the first load test.

22 MR. HAGOOD: And what licenses do you have
23 in the state of South Carolina?

24 MR. CAMP: I'm a registered professional
25 engineer in South Carolina.

1 MR. HAGOOD: And can you just briefly
2 describe the Rivers Project, what was there and
3 what you were working on?

4 MR. CAMP: It was an old school that they
5 built in the 30's. It is thought to be built on
6 some shorter piles. We did penetration testing
7 around the perimeter of the building and
8 concluded there was a liquefaction hazard, that
9 a lot of the sands in the surface were
10 liquefiable. Some sort of mediation would be
11 necessary to protect the structure. Several
12 options were discussed and ultimately the
13 recommendation was to underpin the building
14 using micropiles and in our report provided an
15 estimate of how micropiles would perform and
16 micropiles are a performance spec type item,
17 lots of different ways to build them.

18 MR. HAGOOD: Would you look in the little
19 notebook a Exhibit 13. The report that S&ME
20 prepared, what type of testing and where was the
21 testing done regarding soil and strengths?

22 MR. CAMP: The type of testing was
23 penetration testing.

24 MR. HAGOOD: The penetration testing, can
25 you give us just an overview of how that was

1 performed and then we'll look at the slide?

2 MR. CAMP: That is an instrumental device
3 that is pushed into the soil and is measuring
4 those three parameters that are shown there.
5 One is the tip stress that is how much force is
6 acting on the tip as you push it in the soil.
7 The little white band is measuring how much
8 water pressure is being generated due to the
9 penetration of the instrument into the soil and
10 then the FS is measuring the friction that is
11 acting on that sleeve that is on behind the tip.
12 If you think about it this is actually a little
13 miniature pile test that we are performing
14 continuously at the site. It's a way of
15 measuring behavior. Not measuring soil type but
16 soil behavior. This tool has been around for
17 decades now but I would say in the last 20 years
18 it's use has grown tremendously.

19 MR. HAGOOD: For the benefit of the panel
20 this is CCSD Exhibit Number 14 but I thought we
21 could have it up as well.

22 (The hearing went off the record for a brief period of
23 time.)

24 MR. HAGOOD: Can you explain this
25 particular overview of the site?

1 MR. CAMP: Okay. The three yellow dots,
2 labeled one, two and three where the three
3 design phase penetration tests were done. They
4 were done in 2009 and I'll note that when our
5 exploration is done it's very early in the
6 process, there's no survey done so we don't know
7 what the elevation is so all the information
8 we've noticed on the report is referenced to
9 depth under the ground's surface. That's very
10 common. One, two and three were locations of
11 our original design phase explorations. There
12 is a green label there, approved load test
13 location one. Do you want me to go into this
14 now?

15 MR. HAGOOD: Might as well.

16 MR. CAMP: So the green square is approved
17 load test location but it wasn't performed there
18 because it was directed to be done someplace
19 else by MR Kahn. That was the red square. It's
20 like 320 feet away from the closest data we had
21 during the design phase. Then the load test
22 that was actually performed and then accepted is
23 another green square and that's load test
24 location two. The three blue circles are
25 locations of where we collected additional CBT

Deposition of Procurement Review Panel Hearing

1 after the performance of the first load test.

2 MR. HAGOOD: So the ones in blue, it's like
3 you took two readings where the first load test
4 was performed?

5 MR. CAMP: Yes.

6 MR. HAGOOD: And then there was additional
7 reading at the proposed load test number two?

8 MR. CAMP: Yes.

9 MR. HAGOOD: Did you issue you a report
10 describing what all you had done?

11 MR. CAMP: We did.

12 MR. HAGOOD: If you look at CCSD Exhibit
13 Number Six. Is this the report you did after
14 the first load test had failed?

15 MR. CAMP: Yes.

16 MR. HAGOOD: But prior to the second load
17 test being performed?

18 MR. CAMP: Correct.

19 MR. HAGOOD: Just give an overview, why did
20 you do that, number one, and who paid you to do
21 it?

22 MR. CAMP: Ultimately the school district.
23 We were working for Davis and Floyd.

24 MR. HAGOOD: So S&ME was a subconsultant of
25 Davis and Floyd?

Deposition of Procurement Review Panel Hearing

1 MR. CAMP: Yes.

2 MR. HAGOOD: So why was this additional
3 testing done?

4 MR. CAMP: The first load test none of the
5 piles were able to support the 200,000 pounds
6 required so there were questions about what was
7 wrong with the test.

8 MR. HAGOOD: Did you perform any opinions
9 about the characteristics of the soil located
10 where the load test location number one was as
11 opposed to where the previous penetration test
12 had been performed?

13 MR. CAMP: Yes. Conditions at load test
14 number one - I'm going to do load test number
15 two first. Load test number two, the conditions
16 at that location were essentially the identical
17 to conditions indicated at one, two, three. I
18 don't remember exactly what the variation was
19 between the top of the marl but between one, two
20 and three, I believe, there was within a three
21 or four foot difference in the top of marl
22 elevation and load test two was in the middle of
23 those things. Comparing all of those zonings
24 to load test site number one there was a marked
25 difference in the top of the marl and I don't

Deposition of Procurement Review Panel Hearing

1 remember exactly what it was but I think it was
2 about an eight foot difference with it being
3 deeper at the site of the load test one. Above
4 the marl there was a pretty dense sand layer and
5 then some clay but the difference was the
6 presence of the dense sand layer and the deeper
7 depth of the top of the marl.

8 MR. HAGOOD: Can you summarize?

9 MR. CAMP: Once you're in the bearing
10 strata at the school, that was the same material
11 either at the first load test site or the second
12 load test site, I don't think there's any
13 discrepancy in the materials. The first test
14 site at the time of the load test just had not
15 been explored and it complicated the
16 interpretation of results but even with the
17 additional data the results just didn't make
18 sense. There was no increase in the capacity of
19 depth.

20 MR. HAGOOD: Exhibit Number Six in the
21 CCSD notebook, your report on June 17th, 2011, as
22 to the contention that the failure of the load
23 test at location one was attributable to a
24 difference in the characteristics of the soil in
25 that location; did you reach any opinions that

1 you formed as to whether you found that to be
2 the case or not?

3 MR. CAMP: I think the opinion we expressed
4 in here are there is certainly a difference in
5 characteristics from site one and what was at
6 the building but that alone cannot explain the
7 problems with the first test pile program.

8 MR. HAGOOD: You mentioned earlier that
9 you are on site initially before plans are
10 drawn; what is your frequency in coming to the
11 site once the project is out and the school
12 district has a contract with Kahn?

13 MR. CAMP: Our involvement was very
14 limited. We only attended when there was a
15 problem and after the first load test program
16 performed so poorly that we attended a few
17 meetings after that in advance of setting up the
18 second load test.

19 MR. HAGOOD: But as far as observing the
20 load test, was that something you actually
21 performed?

22 MR. CAMP: No.

23 MR. HAGOOD: That was someone else?

24 MR. CAMP: Yes.

25 MR. HAGOOD: Okay. I think those are all

1 the questions I have.

2 MR. BRADLEY: Thank you very much. Mr.
3 Camp, from what you said I assume you agree that
4 Terratec's criticism of the test site was
5 accurate, the first test site?

6 MR. CAMP: No.

7 MR. BRADLEY: So Terratec was wrong in
8 saying the first test site didn't accurately
9 reflect the values underneath the building?

10 MR. CAMP: The cooper marl was the same at
11 the first test site as it was at the second test
12 site. It was deeper. I agree with that but
13 nothing --

14 MR. BRADLEY: Let's break it down then.
15 You'd agree at the first test site there was an
16 eight foot sand lense?

17 MR. CAMP: I wouldn't agree that it's eight
18 feet. No.

19 MR. BRADLEY: How many feet?

20 MR. CAMP: If we go back to the CPT sign
21 we know it's probably, I don't remember, two or
22 three feet, maybe.

23 MR. BRADLEY: Were you there when they
24 actually pulled the sand up and measured
25 it?

Deposition of Procurement Review Panel Hearing

1 MR. CAMP: No. I did not see their
2 samples.

3 MR. BRADLEY: Okay. You weren't there to
4 criticize their test to see if it was done right
5 or wrong?

6 MR. CAMP: No.

7 MR. BRADLEY: WPC was there to watch it,
8 right?

9 MR. CAMP: I don't know if they were there
10 or not.

11 MR. BRADLEY: Okay. You know they detected
12 an eight foot sand lense within the marl; you've
13 seen that, you've seen their drilling logs?

14 MR. CAMP: Whose?

15 MR. BRADLEY: Terratec's. When they went
16 out and did the test to see what was wrong with
17 the first test.

18 MR. CAMP: I saw the exhibit in the report
19 here.

20 MR. BRADLEY: You never looked at their
21 drilling logs?

22 MR. CAMP: I don't know that I ever
23 looked at the drilling logs.

24 MR. BRADLEY: You came in here to render
25 opinions as to what's on the ground and you never

Deposition of Procurement Review Panel Hearing

1 looked at the drilling logs from the SPT test?

2 MR. CAMP: I haven't been provided that
3 data.

4 MR. BRADLEY: So you have no basis to
5 criticize it?

6 MR. CAMP: I didn't criticize. I just said
7 I didn't agree with their criticism of our data.

8 MR. BRADLEY: You did a CPT test in the
9 same place?

10 MR. CAMP: Yes.

11 MR. BRADLEY: Which did not detect a sand
12 lense?

13 MR. CAMP: It detected sand.

14 MR. BRADLEY: Did it detect the sand lense
15 that Terratec found?

16 MR. CAMP: I don't know.

17 MR. BRADLEY: Where is the correlation
18 data for your CPT test?

19 MR. CAMP: I don't know what you mean by
20 correlation data?

21 MR. BRADLEY: Don't you agree that a CPT
22 test has to be correlated to an actual inside
23 test, a SPT test?

24 MR. CAMP: Absolutely not.

25 MR. BRADLEY: You had no data on the

Deposition of Procurement Review Panel Hearing

1 engineering properties of the soil?

2 MR. CAMP: We had no lab data. Correct.

3 MR. BRADLEY: You had no data on the site
4 for the engineering properties of the soil,
5 right?

6 MR. CAMP: I had CPT data for the
7 properties of the soil. I wasn't designing the
8 micropiles.

9 MR. BRADLEY: But the guys who were
10 designing the micropiles were relying on your
11 report, right?

12 MR. CAMP: They submitted a bid based on
13 our reports.

14 MR. BRADLEY: And your reports had no
15 engineering data in them?

16 MR. CAMP: They had cone penetration test
17 data in them which is relevant for engineering
18 use.

19 MR. BRADLEY: Did they have the
20 engineering data as provided by the standard?

21 MR. CAMP: I would argue that they had more
22 engineering data than they would have with a
23 soil test with a standard penetration test.
24 They had more data than you would have with an
25 SPT soil data.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: So you don't have any basis
2 to criticize what Terratec found when they did
3 the SPT test and found the eight foot sand lense
4 other than your CPT data?

5 MR. CAMP: No.

6 MR. BRADLEY: And an eight foot sand lense
7 would certainly explain a lot of the problems
8 with the first load test?

9 MR. CAMP: No. I would not agree with
10 that.

11 MR. BRADLEY: Isn't sand significant
12 different than clay?

13 MR. CAMP: It is.

14 MR. BRADLEY: It's tremendously different
15 for holding loads.

16 MR. CAMP: Compared to what?

17 MR. BRADLEY: To clay. Sand doesn't hold
18 the loads the same way as clay does.

19 MR. CAMP: It can be a lot stronger or it
20 can be weaker.

21 MR. BRADLEY: But to design a pile you
22 have to know whether it's clay or sand so you
23 know what kind of grout to put in it, right?

24 MR. CAMP: I don't know that it has that
25 much impact.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: You don't know the kind of
2 grout designed is based on the materials you're
3 going through?

4 MR. CAMP: Yes.

5 MR. BRADLEY: If it's sand you want a much
6 thinner grout to penetrate the sand, right?

7 MR. CAMP: Are you talking about the sand
8 at this site?

9 MR. BRADLEY: I'm assuming you know how to
10 design piles, right?

11 MR. CAMP: Yes.

12 MR. BRADLEY: And when you design piles
13 don't you have to know what material you are
14 going into?

15 MR. CAMP: What type of pile are we
16 talking about?

17 MR. BRADLEY: A micropile. An auger cast
18 micropile.

19 MR. CAMP: I have not designed an auger
20 cast micropile. In my experience with auger
21 cast piles I've never made a distinction whether
22 it's in sand or clay for the type of grout that
23 is used.

24 MR. BRADLEY: So you've never even
25 designed the type of piles that were used here?

Deposition of Procurement Review Panel Hearing

1 MR. CAMP: No. It's a specialty
2 foundation that is usually designed by the
3 contractor.

4 MR. BRADLEY: And you've criticized the
5 design that Terratec put forward but you haven't
6 done it yourself?

7 MR. CAMP: I didn't criticize their design.

8 MR. BRADLEY: I thought you said the reason
9 for the failed test was the designed method and
10 installation method for the contract?

11 MR. CAMP: I don't believe I said that.

12 MR. BRADLEY: Take a look at your report,
13 Exhibit 14, CCSD 47. Did you write this up?

14 MR. CAMP: Not this part.

15 MR. BRADLEY: Do you see where it says
16 deficiency resulted from contractor's design
17 installation methods?

18 MR. CAMP: Yes.

19 MR. BRADLEY: You're not qualified to
20 criticize the design because you don't even know
21 how to do it?

22 MR. CAMP: I've not designed an auger cast
23 micropile.

24 MR. BRADLEY: And you weren't there to see
25 it installed so you can't criticize the installation

1 method?

2 MR. CAMP: No.

3 MR. BRADLEY: Did they put it in wrong?

4 MR. CAMP: I wasn't there. I don't know.

5 MR. BRADLEY: Do you disavow what is
6 written in this document?

7 MR. CAMP: Those aren't my words. I'm not
8 going to disavow them.

9 MR. BRADLEY: Meaning, are they correct?

10 MR. CAMP: I thought we just concluded that
11 I'm not qualified to answer.

12 MR. BRADLEY: Okay. One of the things we
13 talked about earlier is the second load test
14 that was done closer to the building. I think
15 you said that when you ran the results of that
16 test the results showed the marl would not hold
17 what you predicted it to hold; is that correct?

18 MR. CAMP: I don't know what you're
19 asking me.

20 MR. BRADLEY: Take a look at Exhibit 14
21 which you talked about where it says second load
22 test program. You can see there that the line
23 from the actual test shows the soil from the
24 actual test is a lot weaker than you said it
25 would be, correct?

Deposition of Procurement Review Panel Hearing

1 MR. CAMP: If you're looking at the auger
2 test piles.

3 MR. BRADLEY: Well those were the kind of
4 piles put in at the site.

5 MR. CAMP: There were also two hollow
6 piles.

7 MR. BRADLEY: But nobody used hollow bore
8 piles, right? There are no hollow bore piles
9 under the school?

10 MR. CAMP: Right.

11 MR. BRADLEY: Because they cost a lot more
12 than the auger cast piles, right?

13 MR. CAMP: But the actual auger cast piles
14 showed a lot less strength than you had
15 predicted?

16 MR. BRADLEY: It shows they didn't have as
17 good of performance as other micropiles. When
18 they did the second load test what they found is
19 that the actual performance of the micropiles
20 was not as strong as what you had predicted?

21 MR. CAMP: Their performance was not as
22 good as we predicted.

23 MR. BRADLEY: And Terratec is who figured
24 that out, that these piles won't hold what S&ME
25 says they will hold?

Deposition of Procurement Review Panel Hearing

1 MR. CAMP: Correct.

2 MR. BRADLEY: And you agree that Terratec's
3 results from their load test and from their STP
4 test were used to build this building, right?

5 MR. CAMP: These piles are under the
6 building. Yes.

7 MR. BRADLEY: And they are holding up the
8 building like they are supposed to?

9 MR. CAMP: Yes.

10 MR. BRADLEY: All right. If you just give
11 me a minute I may be finished. That's all the
12 questions.

13 MR. HAGOOD: Just a couple of brief
14 questions. When you did your soil report did
15 you take into account this specific type pile?

16 MR. CAMP: We took into account it was a
17 micropile foundation and the characteristics of
18 the soil but not a specific micropile.

19 MR. HAGOOD: All right. That's all I
20 have.

21 MR. DUCKER: Any questions from the panel?
22 None?

23 MR. HAGOOD: The next witness will be John
24 Orvin.

25 (John Orvin, being duly sworn,

Deposition of Procurement Review Panel Hearing

1 testified as follows:)

2 MR. HAGOOD: Mr. Orvin, by whom are you
3 employed?

4 MR. ORVIN: I'm employed by Davis and
5 Floyd.

6 MR. HAGOOD: And what licenses do you hold?

7 MR. ORVIN: A registered professional
8 engineer in the state of South Carolina.

9 MR. HAGOOD: And is there any particular
10 type of engineering that you are primarily
11 engaged in?

12 MR. ORVIN: Structural.

13 MR. HAGOOD: On the Rivers Retrofit
14 Project, can you give an overview of that?

15 MR. ORVIN: Yes, sir. I'm the structural
16 engineer of record for the seismic retrofit for
17 the building. The project is a lot more than
18 micropiles. It was strengthening the building
19 for seismic loads. It involved shotcrete
20 applied to the walls to reinforce them, pile caps
21 under these areas and installation of new
22 concrete sheer walls where needed on the inside
23 and the foundation for those were micropiles.

24 MR. HAGOOD: And if we looked at Exhibit
25 Number Five, drawings that we have been discussing

Deposition of Procurement Review Panel Hearing

1 today, are you the engineer that stamped the drawings?

2 MR. ORVIN: I am.

3 MR. HAGOOD: And the micropile notes that
4 were made on S000, did you participate in the
5 drafting of these documents?

6 MR. ORVIN: Yes. I did.

7 MR. HAGOOD: Fairly briefly, and I think I
8 can refer you to a document, if you look at CCSD
9 Exhibit Number Eight at page 10; the letter
10 dated September 12th, 2001 to Mr. Kelly, tell the
11 panel what led to your preparation of this
12 letter.

13 MR. ORVIN: I was asked by the school
14 district to write what is called white paper, a
15 document that is easy to understand to people
16 who are not engineers, to kind of walk through
17 the drawings and specifications of how the
18 contractor who is doing the micropile work
19 should have gone about doing his bid and
20 designing the micropiles. This was after the
21 failure of the first load test and with all the
22 posturing that was going on between Terratec and
23 MB Kahn and with everybody trying to position
24 themselves, it was just trying to explain what
25 the intent of the contract documents were. It

Deposition of Procurement Review Panel Hearing

1 tells the contractor he needs to install two
2 test piles and use a reaction pile in order to
3 do that load test. Says it has to be evaluated
4 by the contractor and by the geotechnical
5 engineer. It also tells him he is supposed to
6 perform a tinsel test pile in accordance with
7 the standards. This document just gives those
8 requirements.

9 MR. HAGOOD: Then you get to a discussion
10 with a structural drawing, S100, Exhibit Number
11 Five; does that lay out the overall foundation
12 plan?

13 MR. ORVIN: It does.

14 MR. HAGOOD: Then you talk about the S402
15 in Section C there; is that where you would
16 provide the contractor with the standard in
17 which they are to design piles?

18 MR. ORVIN: Yes. It gives the elevation,
19 the elevation is minus 66. That is the actual
20 elevation from data; it's not below ground
21 surface. The drawing indicates that pile cap
22 elevation varies. There is nowhere on that
23 document that would lead you to think he would
24 only need a 66 foot pile. On S100 there is an
25 elevation that is given on the bottom of the

1 slab, elevation I believe of 14-something
2 another. It's on the drawing. If you look at
3 the plans in their entirety and look at the
4 geotechnical report it should be no problem that
5 you should be able to determine that you should
6 be needed a 78 foot pile. It's the contractor's
7 responsibility to design that pile to perform.

8 MR. HAGOOD: Just so we're clear,
9 when a General Contractor is given a set of
10 documents to build, get bids from
11 subcontractors, we've all kind of focused on
12 these structural drawings here, kind of just
13 give an overview of all the different type of
14 drawings that are going to be dealt with.

15 MR. ORVIN: Oh, yeah. There's civil
16 drawings, civil site drawings that give the
17 elevation of the site, utilities, there's a full
18 set of architectural drawings, a full set of
19 structural drawings, a full set of mechanical
20 drawings and electrical drawings.

21 MR. HAGOOD: All right. Whenever a set of
22 plans are put up for bid is there a process
23 where a contractor or subcontractor, if they
24 have questions about the drawings where they can
25 request more information?

1 MR. ORVIN: Yes.

2 MR. HAGOOD: With regard to S402 was there
3 any request for clarification what the data was
4 where it said pile tip elevation minus 66?

5 MR. ORVIN: No, sir. There was no request
6 for clarification.

7 MR. HAGOOD: All right. Did you or anyone
8 to your knowledge on behalf of the design team
9 make any recommendations as to where the load
10 test should be designed there or as to what kind
11 of characteristics of the soil was going to be
12 there?

13 MR. ORVIN: No.

14 MR. HAGOOD: Okay. Once that test was
15 being performed what role did you play as far as
16 your role of structural engineer?

17 MR. ORVIN: Just trying to find out what
18 happened, why they couldn't meet the
19 requirements of the documents.

20 MR. HAGOOD: In your letter from September
21 12, 2000 what were you able to determine in your
22 opinion as to why the four test piles failed to
23 achieve the specified ultimate load of 200 kips?

24
25 MR. ORVIN: Based on the reports we got

Deposition of Procurement Review Panel Hearing

1 from the specialty inspector on the site that we
2 can see two of their test results. We found all
3 these different items they failed to follow. It
4 also seemed like the integrity of some of the
5 piles construction of some of th piles was bad.
6 They were different grout volumes, there were
7 less than theoretical grout volumes. There was
8 less grout than there should have been in the
9 piles. To me it seemed like the procedure and
10 they way the piles were installed based on the
11 inspection reports we've seen from the special
12 inspector, it seemed like the reason for some of
13 the failure is the way they installed the piles
14 and the methods they used.

15 MR. DUCKER: Can I ask where is that
16 letter?

17 MR. HAGOOD: The letter I'm talking about
18 is CCSD number eight page 14. All right. That's
19 all the questions I have. Thank you.

20 MR. BRADLEY: Mr. Orvin, I believe you said
21 one of the things to be relied on in designing
22 these piles was engineering judgement, is that
23 right?

24 MR. ORVIN: Yes.

25 MR. BRADLEY: You have no basis to question

Deposition of Procurement Review Panel Hearing

1 the engineering judgement that went into
2 designing these piles, do you?

3 MR. ORVIN: Well, I do when you go out and
4 conduct a load test at a place you don't have a
5 (Inaudible) for.

6 MR. BRADLEY: And under the contract
7 documents where is that data supposed to come
8 from?

9 MR. ORVIN: Like I said you use the data
10 provided but the data was not provided out at
11 the first load test site, it was provided at the
12 school where the piles were to be installed.

13 MR. BRADLEY: And you were involved in the
14 decision to move the test?

15 MR. ORVIN: I didn't move the test. No.

16 MR. BRADLEY: So you opposed the decision
17 to move the test?

18 MR. ORVIN: I didn't. I wasn't even aware
19 of it.

20 MR. BRADLEY: Have you ever addressed that
21 with Kahn, Hey why did you guys move the test?

22 MR. ORVIN: No.

23 MR. BRADLEY: And you questioned them on
24 the data provided under the contract, right?

25 MR. ORVIN: Yes.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: So they were supposed to go
2 out and get their own data under your opinion?

3 MR. ORVIN: Yes. If they were going to go
4 out and move the location then they should have
5 gotten more data.

6 MR. BRADLEY: And they did because they got
7 the two STP tests, right?

8 MR. ORVIN: Yes. But they did it after the
9 load test.

10 MR. BRADLEY: So they should have gotten
11 paid for that if they have to go get their own
12 data. That's not part of the contract.

13 MR. ORVIN: They are supposed to design the
14 pile. If their load test failed they need to
15 find another load test that passes.

16 MR. BRADLEY: Your testimony is Terratec
17 was responsible for locating the geotechnical
18 data on the site?

19 MR. ORVIN: If they were going to move the
20 load test to a location that was not explored it
21 is upon them, in my opinion as an engineer, to
22 get data for them to use to do their design.

23 MR. BRADLEY: They did get data after the
24 test failed, right?

25 MR. ORVIN: Yes.

1 MR. BRADLEY: And they relied on the data
2 that was supplied to them through your
3 engineering partners, S&ME, right?

4 MR. ORVIN: I thought you said they went
5 and got their own data.

6 MR. BRADLEY: This is the question. Who is
7 responsible under the contract for getting the
8 data on the soil conditions?

9 MR. ORVIN: The data that was supplied was
10 for the school building.

11 MR. BRADLEY: Who is responsible -

12 MR. ORVIN: I do not believe the contract
13 states that if somebody has to get more data
14 then we have to pay for it. I don't think it
15 says that.

16 MR. BRADLEY: Do you know who is supposed
17 to supply the data?

18 MR. ORVIN: The school district supplied
19 data that was at the site near the school.

20 MR. BRADLEY: And that was the data that
21 Terratec was supposed to rely on, correct?

22 MR. ORVIN: Yes.

23 MR. BRADLEY: And Terratec did rely on that
24 data, right?

25 MR. ORVIN: I guess.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: After the test didn't work
2 with that data Terratec went out and got it's
3 own data, right?

4 MR. ORVIN: Yes.

5 MR. BRADLEY: So Terratec ought to get
6 paid for fixing the data, right?

7 MR. ORVIN: I think that's something for
8 this panel to determine. That's not my call.

9 MR. DUCKER: We'll decide that.

10 MR. BRADLEY: One thing is for sure the
11 proper data wasn't there for them to do their
12 job when they got there to do it?

13 MR. ORVIN: That's not for me to judge.

14 MR. BRADLEY: Okay. Were you in charge of
15 these drawings you talked about with the white
16 paper?

17 MR. ORVIN: Yes.

18 MR. BRADLEY: Did you draw S402?

19 MR. ORVIN: I didn't draw it personally.
20 No.

21 MR. BRADLEY: You'd agree it says the pile
22 tip is 66 feet?

23 MR. ORVIN: It says the pile tip elevation
24 is minus 66.

25 MR. BRADLEY: How many drawings are there?

Deposition of Procurement Review Panel Hearing

1 MR. ORVIN: Lots of drawings.

2 MR. BRADLEY: 100 pages. On one page out
3 of this whole thing it gives that elevation
4 number?

5 MR. ORVIN: It gives data on that one page.

6 MR. BRADLEY: But on the page where you
7 specify the length you don't say anything about
8 that?

9 MR. ORVIN: I didn't specify the length.
10 We specified the pile tip.

11 MR. BRADLEY: Your testimony is because one
12 drawing out of the whole stack it lists the
13 elevation of the site these people should have
14 known that a 66 pile tip was below mean sea
15 level?

16 MR. ORVIN: I believe the information was
17 there on the plans if they would have looked at
18 them in their entirety.

19 MR. BRADLEY: But you know they didn't
20 because they submitted their bid at 66 feet as
21 it is on S402.

22 MR. ORVIN: We know that now.

23 MR. BRADLEY: Would you agree with me that
24 a good engineer puts the important information
25 on the documents?

1 MR. ORVIN: Are you trying to judge my
2 technique?

3 MR. BRADLEY: No, sir. I'm just asking if
4 a good engineer puts relevant information in the
5 documents.

6 MR. ORVIN: Of course they do.

7 MR. BRADLEY: And you'd agree that S402
8 doesn't say anything about mean sea level or
9 NAVD?

10 MR. ORVIN: It doesn't but it does say it's
11 an elevation. It's not below the ground.

12 MR. BRADLEY: And you would agree they
13 relied on your documents to put their bid
14 together?

15 MR. ORVIN: Apparently that was the only
16 drawing they relied on.

17 MR. BRADLEY: Is there any other drawings
18 of the depths of the micropiles in the drawings?

19 MR. ORVIN: No. But there's other drawings
20 that referred to the elevation of the pile caps
21 and so on.

22 MR. BRADLEY: When Terratec is doing a bid
23 in order to bid on a micropile job you have to know
24 the length the micropile is going to be, don't you?

25 MR. ORVIN: Yes.

Deposition of Procurement Review Panel Hearing

1 MR. BRADLEY: There is no way anybody could
2 bid a micropile job without knowing the length,
3 correct?

4 MR. ORVIN: Correct. This is a performance
5 specification so they are the ones that need to
6 determine what length these need to be based on
7 the type of pile installed.

8 MR. BRADLEY: But there's no way they can
9 determine the length of the pile until they can
10 test, right?

11 MR. ORVIN: They need to use their
12 experience from that type of pile and soil the
13 data they have.

14 MR. BRADLEY: The information provided to
15 them?

16 MR. ORVIN: Yes.

17 MR. BRADLEY: Which is what they did and
18 they based it on 66 feet.

19 MR. ORVIN: There was nothing telling them
20 to base it on 66 feet. It's performance
21 specification.

22 MR. BRADLEY: I may be finished. Just give
23 me a minute. No more questions. Thank you.

24 MR. MCKINNEY: Mr. Chair, can we take a
25 very short break?

Deposition of Procurement Review Panel Hearing

1 (The hearing went off the record for a brief period of
2 time.)

3 MR. DUCKER: Another witness?

4 MR. HAGOOD: William Wright.

5 MR. DUCKER: Before we do this does the
6 panel have any questions for the previous
7 witness since we broke? I have one question if
8 you don't mind.

9 MR. ORVIN: Yes, sir.

10 MR. DUCKER: There seems to be some
11 discussion about the test site. Is it the usual
12 procedure that if a contractor says I'm not
13 going to use the test site that is specified,
14 I'm going to use another test site, is it
15 standard operating procedure for that contractor
16 to present the contractor with the site, all the
17 data to go with that site before they start the
18 test?

19 MR. ORVIN: The answer is kind of a yes.
20 If they want to do something different they
21 would go out and do their own borings.

22 MR. DUCKER: Does that not have to be
23 approved before they start the test?

24 MR. ORVIN: Normally it is agreed to.

25 MR. DUCKER: That was my question. Thank

Deposition of Procurement Review Panel Hearing

1 you. Any other questions? All right. Thank
2 you.

3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

Deposition of Procurement Review Panel Hearing

1 STATE OF SOUTH CAROLINA)

2 : C-E-R-T-I-F-I-C-A-T-E

3 COUNTY OF BERKELEY)

4
5 I, Molly C. Newton, Court Reporter and Notary Public,
6 certify that I did have the above mentioned parties to
7 appear before me, on Tuesday, March 11th, 2014, at 9:00
8 o'clock, a.m. at the Charleston County School District,
9 75 Calhoun Street, Charleston, South Carolina; that the
10 witnesses was sworn and cautioned to tell the truth, the
11 pages constitute a true and accurate transcript of the
12 testimony given at that time and place.

13 I further certify that I am not of counsel or kin to
14 any of the parties to this cause of action, nor am I
15 interested in any manner in its outcome.

16 IN WITNESS WHEREOF, I have hereunto set my hand and
17 seal this 12th day of May, 2014.

18
19
20
21 _____
Notary Public for South Carolina

22 My Commission Expires: March 4, 2019
23
24
25

440 CODE VOLUMES
ROA000245

TERRATEC, INC.
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
803-791-8888 - OFFICE
803-791-1050 - FAX

TERRATEC, INC.
LICENSE # 13819 - Active

MICROPILE/CONTRACT
Rivers Education Center Seismic Retrofit
and Fire Pump Building
Charleston County School District
Charleston, South Carolina

To: Bidding Contractors

As requested, our design and installation team has reviewed the project specifications and drawings, dated January 3, 2011, and visited the site on two different occasions to inspect the on-site existing structure's conditions. Based upon our review of the available bid documents, and our review of the project, we understand that the existing structure was built in the 1930s, and it has been abandoned and is no longer in use. Furthermore, we understand that the project is to include the renovation and seismic up-fit of the existing structure, which requires the installation of hundreds of micropile supports. Our inspections further revealed that the first floor of the structure is suspended approximately 3 to 6 feet above the ground surface in most portions of the building, and that the existing floor system will need to be demolished in order for our personnel to gain access and install the subject micropiles. From our review of the project documents we understand that other existing construction (i.e. floor beams, existing piles and pile caps, concrete sidewalks, existing infrastructure, etc.) will need to be identified and removed in order for the construction of the micropiles to be completed.

We understand that the geotechnical exploration details anticipate pile capacities to reach the design standards (200 kips axial compression and tension) with the installation of 8 inch diameter micropiles to depths ranging from 70 feet to 115 feet, with a mean anticipated installation depth of 78 feet. However, the project specifications and drawings dictate that our proposal include a bid for the installation of the micropiles to depths of 66 feet below ground surface. Our design team explored all possible installation methods, including the Titan hollow core system allowed for in the addendum, and determined that the best method for installation of the micropiles would require the use of drilling equipment to create an adequate borehole to achieve the required 8 inch diameter micropile specified by project documents. The use of other installation methods are not anticipated to achieve the required diameter due to borehole cave from the relaxation of the overconsolidated Cooper Marl. This condition could hinder the establishment of a competent pile, resulting in performance penalties. Detailed installation methods will be made available for review in the event that the contract is awarded to Terratec, Inc.

Based upon our understanding summarized above, and in subsequent sections of this proposal, Terratec, Inc. proposes to provide the following base line micropile installation services;

- * Furnish labor, supervision, equipment, engineering and material for the design and installation of (4) Four, 8" diameter micropiles for load testing. The test micropiles will be installed to depths matching the planned production micropiles (i.e. 66 feet, 23 feet into the Cooper Marl strata), and they will be load tested for compression and tension in general accordance with the specified ASTM standards.
- * Furnish labor, supervision, equipment, engineering and material for the design and installation of (627) Six hundred Twenty Seven, 8" diameter micropiles 23 feet into the Cooper Marl strata, which is anticipated to be 43 feet below grade as specified in the design documents indicated above. As stated above, the geotechnical exploration recommendations detail the potential for the need to extend the micropiles further into the Cooper Marl, however, the project specifications require that the piles be extended to depths of 66 feet. Therefore, our base bid only considers the installation of 66 foot micropiles. An additional \$45.00 will be charged per foot - per pile for any piling installed beyond the estimated depth to refusal. Our work will require that we remove all cuttings from the pile cap excavations, as the work proceeds, to an on-site designated staging area(s) for removal from the site by others.
- * The micropile installation will take 78 production days, which will accommodate the timeline established in the critical path requirements established in the bid documents. This schedule does not include the 28 days for the curing period of the test piles. Also, this does not include any unforeseen delays outside the control of Terratec. (inclimate weather, field conditions requiring redesign from project Engineer/ Architect, delay due to other subcontractors.) Additionally, it is important to note that in order for our work to flow on a continued basis there will be other subcontractors required for other important aspects of this project. These include floor slab shoring and removal, pile cap excavation (dewatering) along with others subs working on electrical, mechanical and wall construction. Terratec will work along with these subcontractors per direction from the General contractor. General Contractor shall provide Terratec access to the building and workplace for extended hours as needed.

Exceptions: Terratec, Inc. will not be responsible for any tile, carpet, concrete, floor systems, doors, paneling, appliance, air conditioners, outside plantings, etc. that are to be removed, protected and/or replaced. Additionally, we will not be responsible to remove any existing pile caps, utilities, obstructions, trees or tree roots that need to be moved that are in the location of the piles.

Special Consideration: For this project, Terratec has established a design team comprised of South Carolina registered Structural and Geotechnical engineers, and Licensed Well Drillers that will be made available to assist the contractor with other aspects of this project at an additional cost. Terratec has enjoyed a 10 year continued relationship with these registered engineers and offer them as needed in the event their services are required to overcome an obstacle or time constraint.

Payment: Terratec Inc will require a 15% mobilization fee to start the project and a work completed draw will be required at the end of each month.

Complete in accordance with above specifications, for the sum of \$1,992,835.32

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. At the time of substantial completion, Terratec will invoice for 95% of the contract amount. Any alteration or deviation from above specifications involving extra costs will be executed only upon written order, and will become an extra charge over and above the estimate. Owner to provide builder's risk and other necessary insurance. Our workers are fully covered by Worker's Compensation Insurance. Interest on delinquent amounts due will be charged at a rate of 18% per annum. If the delinquent amount is referred to an attorney for collection, Terratec will invoice for all costs of collection including reasonable attorney fees and court costs.

Signature _____ Date _____

Acceptance of Proposal - The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as provided above.

Proposal submitted by Chris Morrison, Vice President



SUBCONTRACT

M. B. Kahn Construction Co., Inc.

P O BOX 1179, COLUMBIA, SC, 29202-1179

PHONE 803-736-2950 — FAX 803-699-6413

NOTICE REQUIRED BY SECTION 15-48-10 OF THE SOUTH CAROLINA CODE OF LAWS, 1976, AS AMENDED, IS HEREBY GIVEN THAT THE FOLLOWING AGREEMENT MAY BE SUBJECT TO ARBITRATION, DEPENDING ON THE REQUIREMENTS OF THE PRIME CONTRACT.

TO: TERRATEC INC
1350 METHODIST PARK
W COLUMBIA, SC 29170

PHONE NUMBER: (803) 791-8588
FAX NUMBER: (803) 791-1050

CONTACT: CHRIS MORRISON
CONTACT EMAIL: morrison.chris@hotmail.com

PROJECT: RIVERS EDUCATION CENTER
MBK JOB NUMBER: 2229
PROJECT ADDRESS: 1002 KING STREET
CHARLESTON, SC 29403
SUPERINTENDENT: SHAMROCK THOMPSON
JOBSITE PHONE:

JOBSITE FAX:

THIS AGREEMENT made 02/28/2011, by and between TERRATEC INC, hereinafter called the Subcontractor and M. B. Kahn Construction Co., Inc., hereinafter called the Contractor, WITNESSETH, that the Subcontractor and Contractor for the consideration hereinafter named agree as follows:

ARTICLE I. The Subcontractor agrees to furnish all material and perform all work as described in Article II hereof for

RIVERS EDUCATION CENTER
1002 KING STREET
CHARLESTON, SC 29403
(Location)

CHARLESTON COUNTY SCHOOL DISTRICT
3999 BRIDGE VIEW DRIVE
N CHARLESTON, SC 29405
(Owner)

in accordance with this Subcontract, the Agreement between the Owner and Contractor, and in accordance with the General Conditions of the Contract, Supplementary General Conditions, the Drawings and Specifications and Addenda prepared by:

DAVIS & FLOYD INC
P O BOX 61599
CHARLESTON, SC 29415
(Architect)

hereinafter called the Architect/Engineer or Owner's authorized agent, all of which documents, signed by the parties thereto or identified by the Architect/Engineer or Owner's authorized agent, form a part of a contract between the Contractor and the Owner dated, hereby become a part of this Subcontract, and herein referred to as the Contract Documents; provided, however, that where any provision of the Contract Documents between the Owner and the Contractor is inconsistent with any provision of this Subcontract, the provision imposing the greater obligations on the Subcontractor and providing the greater protection, rights, and/or remedies to the Contractor and/or the Owner shall take precedence.

ARTICLE II. The Subcontractor and the Contractor agree that the materials and equipment to be furnished and work to be done by the Subcontractor are as shown below and for the Subcontract Amount shown:

CODE	DESCRIPTION	SUBCONTRACT AMOUNT
2355	Micropiles (Section 2369 & other applicable or referenced sections) Provide all labor and supervision, coordination, materials, tools, equipment, loading and unloading, hoisting, hauling, taxes, insurances, licenses, permit fees, inspections, tests, certifications, warranties, guarantees, training, design, and any other appurtenances needed to accomplish the Micropile scope of work per plans and specifications as defined by the contract documents enumerated in Exhibit "A" inclusive of Addendum 1 and Clarifications 1 and 2. Shoring and concrete floor demolition required for Micropiles will be accomplished by others. This subcontractor will participate in jobsite meetings and schedule update meetings as deemed necessary by M.B. Kahn Construction Co., Inc. Time is of the essence on this project and the work in this subcontract will be performed on a mutually agreed upon schedule. The pile length will be per plans and specifications and any additional footage of piles will be put in place at a unit price of \$45.00 per linear foot. At completion of the test pile program the first draw will be \$200,000.	\$1,992,835.00
		\$1,992,835.00

11/08/SC

1 of 7



ROA000249

SUBCONTRACTOR SHALL COMPLY WITH: Attachment A - Safety Requirements, Attachment B - Alcohol and Substance Abuse Program, Attachment C - NPDES General Permit, Attachment D - Illegal Immigration Reform
ACCEPTANCE OF THIS SUBCONTRACT IS CONTINGENT UPON THE SUBCONTRACTOR'S FURNISHING A PAYMENT AND PERFORMANCE BOND IN ACCORDANCE WITH ARTICLE V. BOND REQUIRED: ☒ YES ☐ NO

This Subcontract is intended to cover all of the Contractor's responsibility to the Owner for the above listed work whether specifically set forth in the above referenced plans and specifications or not. The above work includes all work customarily performed by this trade.

ARTICLE III. The Subcontractor agrees to accomplish the work of his trade in the time allotted in the Progress Schedule and shall collaborate with the Contractor in developing a schedule suitable to the overall job schedule and to maintain job progress.

TIME IS OF THE ESSENCE UNDER THIS SUBCONTRACT. No extension of time of this Subcontract will be recognized without the written consent of the Contractor. Extensions of time will be granted only where specifically authorized by this Subcontract or other Contract Documents. The Subcontractor shall be responsible to the Contractor for all delays caused by or attributable to the Subcontractor and those parties for whom the Subcontractor is responsible, and the Subcontractor shall indemnify and hold the Contractor harmless from all damages caused by such delays.

ARTICLE IV. The Contractor agrees to pay, as provided herein below, the Subcontractor for the performance of this work, the sum shown in Article II, subject to additions and deductions for changes as may be agreed upon in writing, and to make payments on account thereof based on estimates and certificates of the Architect/Engineer/Owner.

Partial payments shall be paid by the Contractor to the Subcontractor as the work progresses, based upon estimates and certificates of the Architect. Monthly billings shall be submitted no later than the 25th of the month, to Contractor's COLUMBIA, SC office and shall be paid following receipt of partial payment from the Owner, ten (10%) to be retained. Final payment shall be made within thirty (30) days after the completion of the work included in this Subcontract and upon written acceptance of the Architect/Engineer/Owner and full payment therefore by the Owner.

The Subcontractor shall pay for all materials and labor used in, or in connection with the performance of the Subcontract. Before issuance of any partial payment or the final payment the Subcontractor shall submit lien waivers together with such evidence satisfactory to the Contractor that all payrolls, material bills, and all known indebtedness connected with the Subcontractor's work have been satisfied. The Subcontractor agrees to indemnify and hold harmless the Contractor, the Owner, any party providing financing to the Project, and these entities' heirs, successors and assigns from any claims involving the Subcontractor's failure or alleged failure to pay its subcontractors, suppliers, laborers, or materialmen. The Subcontractor shall not allow mechanic's or materialmen's liens to be filed against the Project or the property on which the Project is located unless the Contractor is in breach of its payment obligations under this Subcontract. The Subcontractor agrees that any liens filed in violation of this provision shall be promptly bonded off by the Subcontractor at the Subcontractor's expense. These obligations shall survive the completion or abandonment of the Project or the termination of this Subcontract.

Any warranties, as-built drawings and other documents required by the Contract Documents shall be submitted by the Subcontractor prior to final payment. The Subcontractor shall also comply with and be subject to all other conditions precedent to payment established by the Contract Documents.

ARTICLE V. The Subcontractor, if required, shall furnish a performance bond and a payment bond on the Contractor's bond forms, dated as of the date of this Subcontract, each in the penal sum of 100% of the Subcontract Amount, with a good and sufficient surety acceptable to the Contractor and having a Best rating of A- or better. In the event that this Subcontract is signed without bonds being furnished by the Subcontractor, such signing shall not constitute a waiver of the Subcontractor's obligation to furnish the required bonds. The Contractor may demand performance and payment bonds at any time before final payment is made to the Subcontractor and failure by the Subcontractor to furnish such bonds, within five (5) days after demand, shall constitute a default hereunder.

ARTICLE VI. Temporary Site Facilities - Job Conditions

(Here insert any requirements and terms concerning temporary site facilities, i.e., storage, sheds, water, heat, light, power, toilets, hoists, elevators, scaffolding, cold weather protection, ventilating pumps, watchman service, etc.)

ARTICLE VII. Insurance

1. Prior to starting work the insurance required to be furnished by the Subcontractor shall be obtained by the Subcontractor, at the Subcontractor's cost and expense, from a responsible company or companies to provide proper and adequate coverage not less than the limits provided herein below, or in such limits as may be specified in the Contract Documents and/or required by Law, whichever is greater.

2. The type of insurance and minimum limits of coverage required of the Subcontractor and described below are minimum requirements and do not establish limits to the Subcontractor's liability. Any deficiency in the coverage or policy limits of the Subcontractor will be the sole responsibility of the Subcontractor.

3. Required Coverages: The Subcontractor shall maintain the required coverages at all times during the progress of the work with insurers licensed to do business in the state where the work is being performed and with a Best rating of A- VII or better. The Subcontractor, by its legal name on the Subcontract, shall be the named insured on each policy of insurance.

- (A) Worker's Compensation and Employer's Liability in accordance with the laws of all states exercising jurisdiction over the Subcontractor's employees, including the state in which the work is being performed.
Employer's Liability Limit - Not less than \$500,000/\$500,000/\$500,000

Subcontractor shall not utilize occupational accident or health insurance policies, or the equivalent, in lieu of mandatory Workers' Compensation Insurance, or otherwise attempt to opt out of the statutory Workers' Compensation system.

- (B) Commercial General Liability (CGL) written on ISO occurrence form CG 00 01 or its equivalent, providing coverage for Premises and Operations, Products-Completed Operations, Independent Contractors, Personal and Advertising Injury, Blanket Contractual Liability, and Broad Form Property Damage (including coverage for Explosion, Collapse, and Underground Hazards). The General Aggregate Limit shall apply separately to each project or the policy may be endorsed to apply a separate aggregate limit to this Project. The Contractor, the Owner, and any other party the Contractor is required in its contract with the Owner to name as additional insured, shall be included as additional insured under ISO endorsements CG 20 10 (ongoing operations) and CG 20 37 (completed operations). These insurance coverages shall apply on a primary and non-contributory basis before any other insurance available to the additional insureds. The Subcontractor's General Liability policy shall contain a Cross Liability or Severability of Interest clause. The Subcontractor shall maintain CGL coverage for itself and the additional insureds for the duration of the Project and maintain Completed Operations coverage for itself and the additional insureds for at least three (3) years after final acceptance of the Subcontractor's work.

General Aggregate - Not less than \$2,000,000 per project
 Products-Completed Operations Aggregate - Not less than \$2,000,000
 Personal and Advertising Injury - Not less than \$1,000,000
 Each Occurrence - Not less than \$1,000,000

- (C) Business Automobile Liability, including liability arising out of any owned, leased, non-owned or hired automobile with limits of liability of not less than \$1,000,000.
- (D) Umbrella Excess Liability in excess of the Employer's Liability, Commercial General Liability, and Business Automobile Liability with limits of at least \$1,000,000. All additional insureds on the CGL policy shall be included as additional insureds on the Umbrella policy. This coverage shall apply before any other insurance available to the additional insureds.
4. Waiver of Subrogation: The Subcontractor hereby waives all right of recovery against the Contractor, the Owner, and their respective officers, directors, employees, agents, and representatives, with respect to claims covered by insurance obtained pursuant to these insurance requirements. The Subcontractor agrees to cause its Worker's Compensation, General Liability and Automobile Liability insurers to waive their rights of subrogation against the Contractor, the Owner, and their respective officers, directors, employees, agents, and representatives.
5. Notice of Cancellation: The Subcontractor shall have all insurance policies endorsed to provide the Contractor with thirty (30) days' prior written notice in the event of cancellation, non-renewal or a reduction in the required coverage or limits.
6. Certificate of Insurance: Prior to the start of construction, the Subcontractor shall furnish a Certificate of Insurance on an Accord form to the Contractor, evidencing that the coverage, coverage extensions, policy endorsements and waivers of subrogation required under this Subcontract are maintained in force. No payments will be made to the Subcontractor under this Subcontract unless an acceptable Certificate of Insurance is on file with the Contractor. The current Best rating for each insurance company shall appear on the Certificate of Insurance. The words "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the Company, its agents or representatives" shall be deleted from the "Cancellation" provision or a copy of the required cancellation clause endorsed on each policy of insurance must be attached to the Certificate of Insurance. The Certificate of Insurance must specifically identify the Contractor's project in the "Description", and must bear the signature of an authorized representative of each insurer. Should the Subcontractor submit any portion of this work, the same insurance requirements shall apply to such third party as provided herein. Failure of the Contractor to request a Certificate of Insurance or other evidence of full compliance with these insurance requirements or failure of the Contractor to identify a deficiency from evidence that is provided shall not be construed as a waiver of the Subcontractor's obligation to maintain such insurance.
7. Theft Loss: The Contractor shall not be responsible to the Subcontractor for any loss arising out of theft.
8. Builder's Risk Coverage: Should the Owner or the Contractor provide Builder's Risk coverage, the Subcontractor shall be responsible for the payment of any deductible as follows:
- (A) Should the loss be due to a negligent act or omission of the Subcontractor, the Subcontractor shall be responsible for payment of the entire deductible.
- (B) Should the loss be due to a cause other than a negligent act or omission of the Subcontractor, the Subcontractor shall be responsible for a pro-rata portion of the deductible, calculated based on the proportion the loss sustained by the Subcontractor bears to the total of all claims being made under the Builder's Risk policy for that occurrence.

ARTICLE VIII. In addition to the foregoing provisions,

THE SUBCONTRACTOR SHALL:

1. Be bound to the Contractor by the terms of the Contract Documents and this Subcontract, and assume toward the Contractor all of the obligations and responsibilities that the Contractor, by those documents, assumes toward the Owner, as applicable to this Subcontract.
2. Not discriminate against any employee or applicant for employment because of race, sex, creed, color, or national origin.
3. Submit to the Contractor applications for payment on forms provided by the Contractor at such times as stipulated in Article IV so as to enable the Contractor to apply for payment. If payments are made on valuations of work done, the Subcontractor shall, before the first application, submit to the Contractor a schedule of values of the various parts of the work, aggregating the total sum of this Subcontract, made out in such detail as the Subcontractor and the Contractor may agree upon, or as required by the Owner, and, if required, supported by such evidence as to its correctness as the Contractor may direct. This schedule, when approved

311/08/SC

3 of 7

by the Contractor, shall be used as a basis for Certificates for Payment unless it is found to be in error. In applying for payment, the Subcontractor shall submit a statement based upon this schedule.

If payments are made on account of materials not incorporated in the work but delivered and suitably stored at the site, or at some other location agreed upon in writing, and if acceptable to the Owner, such payments shall be in accordance with the terms and conditions of the Contract Documents. A copy of invoices for material stored may be required before payment will be made.

4. Make all claims for extras, for extensions of time and for damage for delays or otherwise (to the extent permitted) within forty-eight (48) hours after the cause thereof or such other time as may be required by the Contract Documents. The Subcontractor's failure to comply with this notice requirement shall constitute a waiver of any claims, rights or other remedy otherwise available to the Subcontractor.

5. Be responsible for the care and protection of this work until the final inspection and acceptance by the Architect and/or Owner. The Subcontractor shall take necessary precaution to properly protect the finished work of other trades.

6. Keep the building and premises clean at all times of debris arising out of the operation of this Subcontract. The Subcontractor shall keep the construction area, including storage areas used by him, at all times free from his rubbish, waste material and debris, and prior to completion of work shall remove from the site any such rubbish, waste materials, and debris, as well as any tools, scaffolding, equipment and materials used by him and not incorporated into the completed work, leaving his work "broom clean" and free and clear of all obstructions and hindrance. In the event of the Subcontractor's failure to so remove such rubbish, waste materials, etc., after twenty-four (24) hours notice the Contractor shall have the right to remove same and charge the cost thereof against moneys due or to become due the Subcontractor. The Subcontractor shall not be held responsible for unclean conditions caused by other contractors or subcontractors, unless otherwise required by the Contract Documents.

7. Comply with all statutory and/or contractual safety requirements applying to his work and/or initiated by the Contractor.

8. Assume responsibility for and shall verify all measurements, lines, grades, dimensions, layouts, colors, qualities, etc., insofar as same are pertinent to the work to be performed by him hereunder. If the Contractor shall furnish any basic reference lines and bench marks to the Subcontractor, such basic reference lines and bench marks must be used by the Subcontractor and the finished work shall agree therewith.

9. Not assign this Subcontract or any amounts due or to become due thereunder without the written consent of the Contractor, nor subcontract the whole of this Subcontract without the written consent of the Contractor, nor further subcontract portions of this Subcontract without written consent of the Contractor.

10. Guarantee his work against all defects of materials and/or workmanship as called for in the Contract Documents, including the plans, specifications and addenda, or if no guarantee is called for, then for a period of one (1) year from the date of final acceptance of the Subcontractor's work by the Owner.

11. Man the job and keep the job adequately supplied with materials and equipment at all times to the complete satisfaction of the Contractor. In that regard the Subcontractor shall furnish sufficient labor and supervisory forces, construction plant, and suitable materials and equipment and shall work such hours as directed by the Contractor, including night shifts, overtime, Saturdays, Sundays, and Holidays as may be necessary to insure prosecution and completion of the work in a skillful and expeditious manner within the time limitations of the Contract Documents, as modified by work directives of the Contractor. The Contractor, from time to time, may request the Subcontractor to provide additional men or increase the supply of materials at the job, and in either event the Subcontractor agrees to comply with any such request within twenty-four (24) hours thereafter or with respect to materials, as soon thereafter as is possible, and the Subcontractor's failure to comply shall constitute a default. In the event the Contractor deems an employee of the Subcontractor incompetent, careless, insubordinate, or otherwise objectionable, the Subcontractor shall remove such employee from the Project. Should the Subcontractor at any time fail to supply a sufficient number of skilled workmen or equipment, or a sufficient quantity of materials of proper quality or fail in any respect to prosecute the work covered by this Subcontract, with promptness and diligence, or fail in the performance of any of the agreements contained in this Subcontract, or should any workmen performing work covered by this Subcontract engage in a strike or other work stoppage, or cease to work due to picketing or other such activity, the Contractor may in any of such events at its option, after twenty-four (24) hours written notice to the Subcontractor, and without prejudice to any other remedy it may have, provide any such labor, equipment, and materials, and deduct the cost thereof from any money then due or thereafter to become due the Subcontractor, or in any of such events, the Contractor may, at its option, and without prejudice to any other remedy it may have, terminate the employment of the Subcontractor for the work under this Subcontract, and shall have the right to enter upon the premises and take possession, for the purpose of completing the work hereunder, of all the materials, tools, and equipment thereon, and to finish the work and provide the materials therefor, either with its own employees or other subcontractors. In case of such discontinuance of the employment by the Contractor, the Subcontractor shall not be entitled to receive any further payments under this Subcontract or otherwise, but shall nevertheless remain liable for any damages which the Contractor incurs. If the expenses incurred by the Contractor in completing the work exceed the unpaid balance, the Subcontractor shall pay the difference to the Contractor along with any other damages incurred by the Contractor as a result of the Subcontractor's default. The Contractor shall have a lien upon all materials, tools, equipment, and appliances taken possession of to secure the payment thereof. The Subcontractor shall be liable to the Contractor for all costs and damages incurred by the Contractor due to the failure of performance by the Subcontractor, the failure of the Subcontractor to keep the progress of its work up to that of the Contractor or other trades, the failure to execute its work as directed by the Contractor, or the failure to perform any of the agreements contained in this Subcontract.

12. Furnish periodic progress reports of the work as mutually agreed including the progress of materials or equipment under this Subcontract that may be in the course of preparation or manufacture.

13. Make any and all changes or deviations from the original plans and specifications without nullifying this Subcontract when specifically ordered to do so in writing by the Contractor. Prior to the commencement of this revised work, the Subcontractor shall submit promptly to the Contractor written copies of the cost or credit proposal for such revised work in a manner consistent with the Contract Documents.

14. Cooperate with the Contractor and other subcontractors whose work might interfere with the Subcontractor's work and to participate in the preparation of coordinated drawings in areas of congestion as required by the Contract Documents, specifically noting and advising the Contractor of any such interference. Before proceeding with the work under this Subcontract, the Subcontractor agrees to accurately check all previous and surrounding work done by other trades insofar as same affects the work subcontracted hereunder and to determine the correctness of same. The Subcontractor's failure to detect or report discrepancies, before proceeding with his own work, will relieve the Contractor of any and all claims by the Subcontractor to recover cost, expense or damage resulting therefrom. Such cost, expense or damage shall be the sole responsibility of the Subcontractor.

411/08/SC

4 of 7

15. Cooperate with the Contractor in scheduling his work so as not to conflict or interfere with the work of others.
16. Promptly submit shop drawings, submittals, and samples, as required in order to carry on said work efficiently and at the speed that will not cause delay in the progress of the Contractor's work or other branches of the work carried on by other subcontractors.
17. In the event the Subcontractor sustains damage or loss through any delay, default, act or omission of any other subcontractor and/or other contractors, their servants, agents or employees, the Subcontractor understands and agrees that the Contractor shall not be liable therefore inasmuch as the Contractor does not assume any responsibility for actions or omissions of other subcontractors and/or contractors; but nothing herein contained shall be construed to limit the Subcontractor from pursuing his legal remedies against any such offending party. In that regard, the Subcontractor shall have no claim against the Contractor for such damage, but shall have the right to recover such damage from the offending party under the provision similar to this provision which has been or will be inserted in contracts with other subcontractors of the Contractor. If the Subcontractor binds or delays or damages the work of any other subcontractor and/or other contractor, the Subcontractor agrees to be directly responsible to such others for any damages they may suffer as a result of the manner in which the Subcontractor executes the work.
18. Comply with all Federal, State, and local laws and ordinances applying to the building or structure and to comply with and give adequate notices relating to the work to proper authorities and to secure and pay for all necessary licenses or permits to carry on the work as described in the Contract Documents as applicable to this Subcontract.
19. Comply with Federal, State, and local tax laws, Social Security laws, and Unemployment Compensation laws, and any other laws insofar as applicable to the performance of this Subcontract.
20. Be responsible for all cutting, removal, patching, and clearing, openings, channels, chases, flues, sleeves, inserts, hangers, guards, rails, night lights, barricades, pumping, temporary heat, water, electricity, hoists, scaffolds, runways, and clean up which may be necessary in performance of the work hereunder.
21. Agree that all work shall be done subject to the final approval of the Architect and/or Owner's authorized agent, and the Owner's and/or Architect's decision in matters relating to artistic effect shall be final, if within the terms of the Contract Documents.
22. To the fullest extent permitted by law, indemnify and hold harmless the Contractor, the Owner, the Project Architect, the Architect's consultants, any and all other parties the Contractor is required to indemnify and hold harmless under the Contract Documents, and all of these entities' officers, directors, shareholders, employees, agents, affiliates, heirs, successors and assigns (referred to individually as an "Indemnified Party"), from and against any and all claims, damages, injuries, losses and expenses, including but not limited to attorneys' fees, consultant/expert fees, and other defense costs, arising from or in any way related to the Subcontractor's work on the Project. The Subcontractor's indemnification obligation shall arise regardless of whether or not such claim, damage, injury, loss and expense is caused in part by an Indemnified Party; provided, however, the Subcontractor shall not be required to indemnify any one Indemnified Party for damages proximately caused by or resulting from the sole negligence of that Indemnified Party. In any and all claims against an Indemnified Party by any employee of the Subcontractor, anyone directly or indirectly employed by the Subcontractor, or anyone for whose acts the Subcontractor may be liable, the indemnification obligation hereunder shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Subcontractor under Workmen's Compensation acts, disability acts or other employee benefit acts. The Subcontractor's obligations hereunder shall not negate, abridge, or otherwise reduce other rights or obligations of indemnity which would otherwise exist as to any Indemnified Party. The foregoing indemnification obligations shall survive the completion or abandonment of the Project or the termination of this Subcontract.
23. Comply with all conditions of Department of Labor's SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION as outlined in Federal Register Volume 36, No. 75, dated April 17, 1971, or as may be thereafter amended. If a citation is given due to negligence, this Subcontractor will be fully responsible for all costs.

THE CONTRACTOR SHALL:

24. Be bound to the Subcontractor by all the obligations that the Owner assumes to the Contractor under the Contract Documents and by all the provisions thereof affording remedies and redress to the Contractor from the Owner insofar as applicable to this Subcontract.
25. Pay the Subcontractor within seven (7) days after the payment by the Owner of certificates issued under the Contractor's schedule of values, or as described in Article IV herein. The amount of the payment shall be equal to the percentage of completion certified by the Owner or his authorized agent for the work of this Subcontractor applied to the amount set forth under Article IV and allowed to the Contractor on account of the Subcontractor's work to the extent of the Subcontractor's interest therein. The Contractor reserves the right to establish percentage of completion for work to date.
26. Agree that upon the failure to make payments to the Subcontractor as herein provided for any cause not the fault of the Subcontractor within seven (7) days from the Contractor's receipt of payment, then the Subcontractor may upon seven (7) days written notice to the Contractor stop work without prejudice to any other remedy the Subcontractor may have.
27. Not issue or give any instructions, orders or directions directly to employees or workmen of the Subcontractor other than to the persons designated as the authorized representative(s) of the Subcontractor.
28. Make no demand for liquidated damages in any sum in excess of such amount as may be specifically provided in this Subcontract and/or the Contract Documents, provided, however, no liquidated damages shall be assessed against the Subcontractor for delays or causes attributable to other subcontractors for whom the Subcontractor is not responsible.

THE CONTRACTOR AND THE SUBCONTRACTOR AGREE:

511/08/SC

5 of 7

29. To the extent permitted or required by law, Subcontractor agrees to participate in and be bound by the dispute resolution procedure for resolving disputes between the Contractor and the Owner that is established by the Prime Contract. Claims, disputes or other matters in question between the Contractor and the Subcontractor that do not involve the Owner, and arise out of or relate to this Subcontract or breach thereof shall be subject to and decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect. Demand for arbitration shall be filed in writing with the other party to this Subcontract and with the American Arbitration Association. A demand for arbitration shall be made within a reasonable time after the claim, dispute or other matter in question has arisen. In no event shall the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statutes of limitations. No arbitration arising out of or relating to this Subcontract shall include, by consolidation, joinder or in any other manner, an additional person or entity not a party to this Subcontract, except by written consent containing a specific reference to this Subcontract signed by the Contractor and the Subcontractor and any other person or entity sought to be joined. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent or with a person or entity not named or described therein. If, however, in the Contractor's sole judgment, any dispute between the Contractor and the Subcontractor is related to claims by or against any third party, including subcontractors or suppliers of the Subcontractor and/or the Contractor, the Contractor may, at its sole option, join that third party in the Contractor's arbitration with the Subcontractor for adjudication of the related claims.

30. Should any dispute between the Contractor and the Subcontractor be arbitrated, the decision rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

31. This Subcontract is solely for the benefit of the signatories hereto and shall be binding upon and inure to the benefit of the Contractor and the Subcontractor, their successors and permitted assigns.

32. This Subcontract is subject to the right of the Owner to terminate the Prime Contract between the Owner and the Contractor as provided therein in which event the provisions of the termination article of the Prime Contract shall become operative as if set forth herein at length and the Contractor shall have the same rights, remedies and privileges with respect to the Subcontractor as the Owner possesses under the Prime Contract with respect to the Contractor. The Subcontractor hereby expressly agrees to comply with all of the obligations with respect to the termination that the Contractor is required to comply with under the terms of the Prime Contract. In the event of such termination, the Contractor's liability to the Subcontractor under this Subcontract shall not exceed the termination allowance which shall be made by the Owner to the Contractor for the work covered herein less such part of said sum as represents the Contractor's overhead and profit allocable thereto.

33. Failure by the Contractor in any instance to insist upon strict observance or performance by the Subcontractor of the terms, conditions or provisions of this Subcontract shall not be deemed a waiver by the Contractor to insist upon strict observance of performance of other terms, conditions, and provisions hereof; waiver of any one breach shall not be deemed a waiver of any other breach; and payment of any sum by the Contractor to the Subcontractor with knowledge of any breach shall not be deemed to be a waiver of any such breach or any other breach.

34. If the Subcontractor's performance of the Work is delayed or otherwise hindered by (1) any unforeseeable causes beyond the control and without any fault or negligence of the Subcontractor, or (2) any other reason recognized by the Contract Documents to be a Force Majeure event, the Subcontractor may request an extension of time for the performance of the Work. Such extension will be granted to the extent permitted under the Contract Documents. An extension of time shall be the Subcontractor's sole and exclusive remedy for any such delay or hindrance. The Subcontractor shall not be entitled to any increase in the Subcontract Amount, or damages of any type, or additional compensation as a consequence of such delay or hindrance. If the delay or hindrance is due in whole or in part to (1) a cause reasonably foreseeable by the Subcontractor, or (2) a cause within the control of the Subcontractor, or (3) the fault or negligence of the Subcontractor or those for whom the Subcontractor is responsible, the Subcontractor shall not be entitled to any extension of time, damages, additional compensation, or any other remedy for the delay or hindrance.

The Subcontractor agrees that it will not be entitled to nor claim any cost reimbursement, compensation or damages for any delay, obstruction or interference to the work except to the extent the Contractor actually recovers such reimbursement, compensation or damages from the Owner under the Contract Documents for that delay, obstruction, or interference. To the extent permitted by law, the Subcontractor waives any and all other claims for reimbursement, compensation or damages due to such delay, obstruction, or interference, however caused.

If the Subcontractor maintains it has been delayed by any cause justifying an extension of time or other remedy permitted by the Contract Documents, the Subcontractor shall provide the Contractor with written notice of that claim within forty-eight (48) hours of the commencement of such delay. The Subcontractor agrees such notice is a condition precedent to the Subcontractor's right to claim an extension of time or other remedy, and the Subcontractor's failure to comply with this notice requirement shall constitute a waiver of any claims, rights or other remedy otherwise available to the Subcontractor for such delay, obstruction, or interference.

35. Each provision of this Subcontract shall be interpreted in a manner as to be effective and valid under applicable law. If, however, any provision of this Subcontract, or portion thereof, is prohibited by law or found invalid under any law, only such invalid provision or portion thereof shall be rendered ineffective. All remaining provisions of this Agreement and valid portions of the questioned provision (which are hereby deemed severable) shall remain in full force and effect. The offending provision shall be enforced to the extent permitted by law or, if permissible, judicially rewritten to give force and effect to the parties' clear intent.

36. Since both the Subcontractor and the Contractor have reviewed this Subcontract, the normal rule of construction that any ambiguities in this Subcontract are to be resolved against the drafting party shall not be employed in the interpretation of this document.

37. This Subcontract shall be construed and enforced under the laws of the State designated in the Prime Contract. If no State is designated, this Subcontract shall be construed and enforced under the laws of the State of South Carolina, without regard to that State's choice of law rules.

38. This Subcontract may be amended only by the written agreement of the Contractor and the Subcontractor. No waiver of any provision nor consent to any exception to the terms of this Subcontract shall be effective unless in writing and signed by the party to be bound, and then only to the specific purpose, extent and instance so provided.

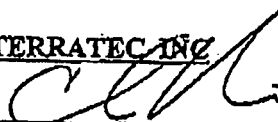
THIS SUBCONTRACT EXPRESSES THE ENTIRE INTENT AND UNDERSTANDING OF THE PARTIES WITH REFERENCE TO THE SUBJECT MATTER HEREOF, AND THERE IS NO OTHER UNDERSTANDING, AGREEMENT, OR REPRESENTATION DEFINING OR RELATING TO THE PROVISIONS HEREOF.

IN WITNESS WHEREOF, the parties hereto have executed this Subcontract under seal, the day and year first above written.

Attest:

(Seal)

TERRATEC INC



Authorized Subcontractor's Signature

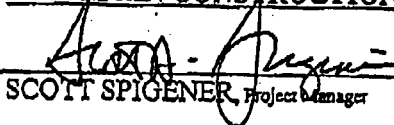
CHRIS MORRISON V.P.

Type or Print Name and Title

Attest:

(Seal)

M. B. KAHN CONSTRUCTION CO., INC.



SCOTT SPIGENER, Project Manager

NOTICE TO SUBCONTRACTORS/SUPPLIERS

M. B. Kahn Construction Co., Inc. is a federal contractor as defined by 41 CFR 60-4.1, 41 CFR 60-250.1, and 41 CFR 60-741.1. As our Subcontractor/Supplier, you may be subject to these regulations. Accordingly, the notices and provisions required by 41 CFR 60-1 et seq., including but not limited to 41 CFR 60-1.4, 41 CFR 60-250.1(b), and 41 CFR 60-741.5(b), are incorporated herein by reference to the extent required by law.

ATTACHMENT "A"
PROJECT: RIVERS EDUCATION CENTER
TERRATEC INC
02/28/2011

SAFETY REQUIREMENTS

Your attention is called to Article VIII paragraph 23 of your Subcontract Agreement with M. B. Kahn Construction Co., Inc.

These provisions require that you not only comply with the Occupational Safety and Health Standards of the Department of Labor in the performance of your subcontract, but with all safety requirements set forth by M. B. Kahn Construction Co., Inc., as well.

The on-site superintendent or other authorized representative of M. B. Kahn Construction Co., Inc., will enforce safety regulations in a manner that best promotes operation of a safe and productive work place. These safety requirements may exceed those of the Occupational Safety and Health Administration.

M. B. Kahn Construction Co., Inc., will take whatever actions necessary and legally available to fully enforce these requirements and all subcontract provisions.

TERRATEC INC

Authorized Subcontractor's Signature

M. B. KAHN CONSTRUCTION CO., INC.

SCOTT SPIGENER, Project Manager

ATTACHMENT "B"
PROJECT: RIVERS EDUCATION CENTER
TERRATEC INC.
02/28/2011

ALCOHOL AND SUBSTANCE ABUSE PROGRAM

The Subcontractor will comply with all articles of the Contractor's "Alcohol and Substance Abuse Policy" as follows, or with a program substantially similar to this policy, which is intended to create and maintain a safe workplace free of alcohol and drug abuse.

The Subcontractor may, at its discretion, make pre-employment testing optional unless required by the owner.

The emphasis of M. B. KAHN CONSTRUCTION CO., INC.'S Alcohol and Substance Abuse Policy is that the safety and health of employees is of paramount concern. A work place free of drugs and alcohol abuse is an extremely important factor in maintaining a safe work environment.

Possession, use or distribution of illegal drugs, liquor, or any alcoholic beverages on company property or jobsites, including parking lots and company vehicles, or reporting to work under the influence of illegal drugs, liquor, or any alcoholic beverages will result in discipline up to and including termination.

The policy uses drug and alcohol testing in the following circumstances:

1. **Pre-employment:** Only applicants who are offered a position may be tested before being employed. Pre-employment job applicants who test positive will not be hired. Refusal to submit to testing is automatic grounds for the company to refuse to consider the applicant for employment.
2. **Owner/Cilent Requirements:** An employee may be required by an owner to submit to testing before working on the project.
3. **Accident/Incident:** An employee involved in an on-the-job accident, incident, or near accident will be required to submit to testing within 24 hours of the accident/incident. This includes all employees involved in the accident/incident.
4. **Testing For Cause:** Employees may be asked to submit to a test if cause exists to indicate that their health or ability to perform work may be impaired. Factors that would establish cause include, but are not limited to:
 - > Sudden change in work performance.
 - > Repeated failure to follow instructions or work procedures.
 - > Violation of safety policy, or failure to follow safe work practices.
 - > Being involved in a preventable accident.
 - > Negligence or carelessness.
 - > Discovery of drugs or alcohol in employee's possession.
 - > Odor of alcohol or marijuana on the employee.
 - > Unexplained and/or frequent absenteeism.
 - > Unusual, irrational, or erratic behavior.
 - > Arrested for a drug-related crime.

ATTACHMENT "B" continued
PROJECT: RIVERS EDUCATION CENTER

TERRATEC INC
02/28/2011

ALCOHOL AND SUBSTANCE ABUSE PROGRAM

5. **Random Testing:** All employees are subject to random testing once a month. An employee may be randomly selected more than once or not at all during the calendar year. The random selection procedure places all employees in a computer-based pool.
6. **Commercial Vehicle Operators:** Employees who operate commercial vehicles for the company are subject to testing as required for general employees. Drivers are also subject to testing as required by federal and state statutes.

Refusal to submit to testing in any of the above circumstances, or a positive test, is grounds for termination. An employee may remain eligible for employment under the company's Employee Assistance Program.

TERRATEC INC

Authorized Subcontractor's Signature

M. B. KAHN CONSTRUCTION CO., INC.

SCOTT SPICENER, Project Manager

ATTACHMENT "C"
PROJECT: RIVERS EDUCATION CENTER
TERRATEC INC
02/28/2011

NPDES GENERAL PERMIT

NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES THAT ARE CLASSIFIED AS "ASSOCIATED WITH INDUSTRIAL ACTIVITY" BY EPA REGULATION (PERMIT No.(SCR10A311))

CO-PERMITTEE AGREEMENT

All contractors and subcontractors of the owner/operator whose activities at the construction site may impact storm water discharges or controls at the construction site along the duration of the construction project, shall sign a copy of the certification statement given below:

"I certify by my signature below that I accept the terms and conditions of the Storm Water Pollution Prevention Plan (SWPPP) as required by the general National Pollutant Discharge Elimination System (NPDES Permit No.(SCR10A311)) issued to the owner/operator of the construction activity for which I have been contracted to perform construction related professional services. Further, by my signature below, I understand that I am becoming a co-permittee with the owner/operator and other contractors that have been co-permittees to the general NPDES permit issued to the owner/operator of the facility for which I have been contracted to perform professional construction services. As a co-permittee, I understand that I, and my company, as the case may be, are legally accountable to the SC Department of Health and Environmental Control(DHEC), under the authorities of the federal Clean Water Act and the SC Pollution Control Act, to ensure compliance with the terms and conditions of the SWPPP. I also understand that DHEC enforcement actions may be taken against any specific co-permittee or combination of co-permittees if the terms and conditions of the SWPPP are not met. Therefore, having understood the above information, I am signing this certification and am receiving co-permittee status to the aforementioned general permit." The date of the signature, the title of the person providing the signature, and the name, address, and telephone number of the contracted firm, shall also be provided. In the event the SWPPP is amended by the owner, such amendments should be incorporated to the plan and the contractors and subcontractors should acknowledge by signature.

The signatory requirements of South Carolina's Water Pollution Control Permits Regulation 61-9.122.22, as provided in Part VI.G of Permit No.(SCR10A311), are applicable to each contracted entity that must sign the contractor's certification statement. Upon signing the certification, the contractor is a co-permittee and becomes accountable to DHEC to ensure the terms and conditions of Permit No.(SCR10A311) are implemented. All co-permittees are subject to DHEC enforcement actions if Permit No.(SCR10A311) conditions are not met. Enforcement actions may be taken against any specific co-permittee or combination of co-permittees, with consideration given to the party responsible for the violation. The owner/operator submitting the NOI shall retain all contractor certifications for at least three years after a contractor has completed work at the site. Copies of all contractor certifications and a copy of Permit No.(SCR10A311) shall be retained on the site of the construction activity. The owner/operator of the construction project covered by Permit No.(SCR10A311) shall make all contractor certifications available upon request to DHEC.

11/08/SC

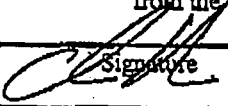
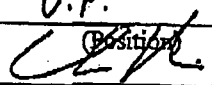
1 of 2

ROA000259

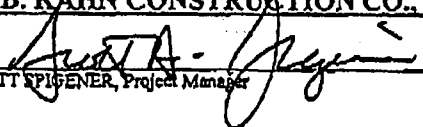
ATTACHMENT "C" continued
PROJECT: RIVERS EDUCATION CENTER
TERRATEC INC
02/28/2011

NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION
 ACTIVITIES THAT ARE CLASSIFIED AS "ASSOCIATED WITH INDUSTRIAL ACTIVITY" BY EPA
 REGULATION (PERMIT No. SCR10A311)

CO-PERMITTEE AGREEMENT

CONTRACTOR'S CERTIFICATION		
Certification as co-permittee with CHARLESTON COUNTY SCHOOL DISTR under the South Carolina NPDES General Permit for Storm Water Discharges from Construction Activities that are classified as "Associated with Industrial Activity" by EPA Regulation (Permit No. SCR10A311).		
I certify under penalty of law that I understand the terms and conditions of the National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction project of the owner/operator identified as part of this certification.		
 Signature	For	Responsible for
<u>CHRIS MORRISON</u> (Name) <u>V.P.</u> (Position)  (Signature) Date: <u>4/15/2011</u>	<u>TERRATEC INC</u> (Company) <u>1350 METHODIST PARK</u> (Street or PO Box) <u>W COLUMBIA, SC 29170</u> (City, State, Zip) Phone:	 (Activity)

M. B. KAHN CONSTRUCTION CO., INC.


 SCOTT EPIFENER, Project Manager

ATTACHMENT "D"
PROJECT: RIVERS EDUCATION CENTER
TERRATEC INC
02/28/2011

ILLEGAL IMMIGRATION REFORM

The Contractor is committed to the following, and the Subcontractor certifies that it will comply with all applicable provisions of the South Carolina Illegal Immigration Reform Act (ACT), and agrees to provide any documentation required to establish the applicability and compliance of those provisions of the Act to its Sub-subcontractors. The Subcontractor agrees to include in any contracts with its Sub-subcontractors language requiring those Sub-subcontractors to also comply with the applicable provisions of this Act. This requirement applies to service contracts that have a total value in excess of \$15,000 over a 12 month period. Purchase orders for end products, equipment, commodities, and professional/consultant services are excluded from this requirement.

TERRATEC INC

Authorized Subcontractor's Signature

M. B. KAHN CONSTRUCTION CO., INC.

SCOTT SEIGENER, Project Manager

**Rivers Education Center Seismic Retrofit,
Exterior Restoration & Core Utilities
EXHIBIT "A"**

LIST OF DRAWINGS

<u>Drawing</u>	<u>Description</u>	<u>Date</u>	<u>Revision</u>
CIVIL			
VS101	EXISTING CONDITIONS SURVEY	1/3/2011	ORIG.
CS101	SITE ACCESS AND LAYDOWN PLAN	1/3/2011	ORIG.
CE101	EROSION CONTROL, TREE PROTECTION, AND SECURITY FENCING PLAN	1/3/2011	ORIG.
CD101	SITE DEMOLITION PLAN	1/3/2011	ORIG.
CS102	SITE PLAN	1/3/2011	ORIG.
CG101	CRAWL SPACE DRAINAGE PLAN	1/3/2011	ORIG.
CD501	SITE CONSTRUCTION DETAILS	1/3/2011	ORIG.
CD502	SITE CONSTRUCTION DETAILS	1/3/2011	ORIG.
CD503	SITE CONSTRUCTION DETAILS	1/3/2011	ORIG.
ARCHITECTURAL			
A001	CODE ANALYSIS, UL DESCRIPTIONS	1/3/2011	ORIG.
A002	UL DESCRIPTIONS	1/3/2011	ORIG.
A003	RENOVATION FIRE RATING AND LIFE SAFETY PLANS	1/3/2011	ORIG.
A101	DEMOLITION FIRST FLOOR PLAN	1/3/2011	ORIG.
A102	DEMOLITION SECOND FLOOR PLAN	1/3/2011	ORIG.
A103	RENOVATION FIRST FLOOR PLAN	1/3/2011	ORIG.
A104	RENOVATION SECOND FLOOR PLAN	1/3/2011	ORIG.
A105	DEMOLITION ATTIC FLOOR PLAN	1/3/2011	ORIG.
A106	RENOVATION ATTIC FLOOR PLAN	1/3/2011	ORIG.
A107	DEMOLITION ROOF PLAN	1/3/2011	ORIG.
A108	RENOVATION ROOF PLAN	1/3/2011	ORIG.
A109	RENOVATION ROOF DETAILS	1/3/2011	ORIG.
A109A	RENOVATION ROOF DETAILS	1/3/2011	ORIG.
A110	ENLARGED PATIO PLAN, FRONT STAIR DETAILS	1/3/2011	ORIG.
A111	ENLARGED PATIO ELEVATIONS AND SECTIONS	1/3/2011	ORIG.
A112	FIRE PUMP BUILDING PLANS AND DETAILS	1/3/2011	ORIG.
A113	FIRE PUMP BUILDING ELEVATIONS, SECTION AND DETAILS	1/3/2011	ORIG.
A201	DEMOLITION BUILDING ELEVATIONS	1/3/2011	ORIG.
A202	DEMOLITION BUILDING ELEVATIONS	1/3/2011	ORIG.
A203	RENOVATION BUILDING ELEVATIONS	1/3/2011	ORIG.
A204	RENOVATION BUILDING ELEVATIONS	1/3/2011	ORIG.
A205	GREENHOUSE PLANS, ELEVATIONS, SECTION AND DETAILS	1/3/2011	ORIG.
A301	EXISTING BUILDING SECTION AND ROOF EAVE DETAILS	1/3/2011	ORIG.
A302	RENOVATION BUILDING SECTION	1/3/2011	ORIG.
A303	AUDITORIUM SECTION	1/3/2011	ORIG.
A304	BUILDING SECTIONS	1/3/2011	ORIG.
A305	ELEVATOR SECTION AND DETAILS	1/3/2011	ORIG.
A308	STAIR SECTIONS AND DETAILS	1/3/2011	ORIG.
A401	ENLARGED FLOOR PLANS, REFLECTED CEILING PLAN	1/3/2011	ORIG.
A501	DOOR SCHEDULE, ELEVATIONS AND DETAILS	1/3/2011	ORIG.
A502	WINDOW SCHEDULE, ELEVATION AND DETAILS	1/3/2011	ORIG.
A502A	WINDOW DETAILS	1/3/2011	ORIG.
A503	DETAILS	1/31/2011	REV. 1

<u>Drawing</u>	<u>Description</u>	<u>Date</u>	<u>Revision</u>
<u>STRUCTURAL</u>			
S000	EXISTING SCHOOL BUILDING- SEISMIC RETROFIT	1/3/2011	ORIG.
S001	FIRE PUMP HOUSE STRUCTURAL DESIGN CRITERIA AND GENERAL NOTES	1/3/2011	ORIG.
S100	FOUNDATION RETROFIT PLAN AND DETAILS	1/3/2011	ORIG.
S101	FIRST FLOOR RETROFIT PLAN	1/3/2011	ORIG.
S102	SECOND FLOOR RETROFIT FRAMING PLAN	1/3/2011	ORIG.
S103	SECOND FLOOR RETROFIT FRAMING PLAN	1/3/2011	ORIG.
S104	ROOF RETROFIT FRAMING PLAN	1/3/2011	ORIG.
S400	FOUNDATION RETROFIT ENLARGED PLANS	1/3/2011	ORIG.
S401	FOUNDATION RETROFIT ENLARGED PLANS	1/3/2011	ORIG.
S402	FOUNDATION RETROFIT SECTIONS & DETAILS	1/3/2011	ORIG.
S403	ELEVATOR FRAMING PLANS	1/3/2011	ORIG.
S404	STAIRWELL FRAMING SECTIONS AND DETAILS	1/3/2011	ORIG.
S500	MASONRY WALL OVERLAY RETROFIT PLAN	1/3/2011	ORIG.
S501	MASONRY WALL OVERLAY RETROFIT PLAN	1/3/2011	ORIG.
S502	MASONRY WALL OVERLAY RETROFIT ELEVATIONS	1/3/2011	ORIG.
S503	MASONRY WALL OVERLAY RETROFIT ELEVATIONS	1/3/2011	ORIG.
S504	MASONRY WALL OVERLAY RETROFIT ELEVATIONS	1/3/2011	ORIG.
S505	MASONRY WALL OVERLAY RETROFIT ELEVATIONS	1/3/2011	ORIG.
S506	SHOTCRETE OVERLAY SHEAR WALL SECTIONS	1/3/2011	ORIG.
S507	SHOTCRETE OVERLAY SHEAR WALL DETAILS	1/3/2011	ORIG.
S508	SHOTCRETE OVERLAY SHEAR WALL DETAILS	1/3/2011	ORIG.
S509	SINGLE AND DOUBLE SHEAR WALL DETAILS	1/3/2011	ORIG.
S510	EXISTING CHIMNEY RETROFIT DETAILS	1/3/2011	ORIG.
S511	EXISTING BOILER ROOM CHIMNEY RETROFIT DETAILS	1/3/2011	ORIG.
S512	EXISTING CHIMNEY RETROFIT DETAILS	1/3/2011	ORIG.
S513	FIRE PUMP HOUSE PLANS AND SECTIONS	1/3/2011	ORIG.
S514	MASONRY DETAILS	1/3/2011	ORIG.
S515	GREENHOUSE SECTIONS AND DETAILS	1/3/2011	ORIG.
S516	CONCRETE PATIO AND RAMP ENLARGED FOUNDATION PLAN AND DETAILS	1/3/2011	ORIG.
<u>FIRE PROTECTION</u>			
FS101	FIRE PROTECTION SITE PLAN	1/3/2011	ORIG.
FP101	FIRST FLOOR FIRE PROTECTION PLAN AND SECTIONS	1/3/2011	ORIG.
FP102	SECOND FLOOR FIRE PROTECTION PLAN AND SECTIONS	1/3/2011	ORIG.
FP103	ATTIC FIRE PROTECTION PLAN	1/3/2011	ORIG.
FP501	FIRE PUMP SKID PACKAGE	1/3/2011	ORIG.
<u>PLUMBING</u>			
PD101	CRAWL SPACE DEMOLITION PLAN	1/3/2011	ORIG.
PD102	FIRST FLOOR DEMOLITION PLAN	1/3/2011	ORIG.
PD103	SECOND FLOOR DEMOLITION PLAN	1/3/2011	ORIG.
P101	CRAWL SPACE PLUMBING PLAN	1/3/2011	ORIG.
<u>MECHANICAL</u>			
MD101	FIRST FLOOR MECHANICAL DEMOLITION PLAN	1/3/2011	ORIG.
MD102	SECOND FLOOR MECHANICAL DEMOLITION PLAN	1/3/2011	ORIG.
MD103	ATTIC MECHANICAL DEMOLITION PLAN	1/3/2011	ORIG.
M101	MECHANICAL CRAWL SPACE PLAN	1/3/2011	ORIG.
M102	FIRST FLOOR MECHANICAL PLAN	1/3/2011	ORIG.
M103	SECOND FLOOR MECHANICAL PLAN	1/3/2011	ORIG.
M201	MECHANICAL SECTION VIEWS	1/3/2011	ORIG.

<u>Drawing</u>	<u>Description</u>	<u>Date</u>	<u>Revision</u>
M401	FIRE PUMP BUILDING ENLARGED MECHANICAL PLAN	1/3/2011	ORIG.
M501	MECHANICAL DETAILS	1/3/2011	ORIG.
M601	MECHANICAL SCHEDULES	1/3/2011	ORIG.
<u>ELECTRICAL</u>			
E001	SYMBOLS AND LEGENDS, DETAIL DRAWING	1/3/2011	ORIG.
ED101	FIRST FLOOR DEMOLITION PLAN	1/3/2011	ORIG.
ED102	FIRST FLOOR DEMOLITION PLAN	1/3/2011	ORIG.
ED103	SECOND FLOOR DEMOLITION PLAN	1/3/2011	ORIG.
ED104	SECOND FLOOR DEMOLITION PLAN	1/3/2011	ORIG.
ED105	ATTIC DEMOLITION PLAN	1/3/2011	ORIG.
ED106	ATTIC DEMOLITION PLAN	1/3/2011	ORIG.
E100	COMMUNICATION SITE PLAN	1/3/2011	ORIG.
E101	FIRST FLOOR GENERAL LIGHTING PLAN	1/3/2011	ORIG.
E102	FIRST FLOOR GENERAL LIGHTING PLAN	1/3/2011	ORIG.
E103	SECOND FLOOR GENERAL LIGHTING PLAN	1/3/2011	ORIG.
E104	SECOND FLOOR GENERAL LIGHTING PLAN	1/3/2011	ORIG.
E105	ATTIC POWER, LIGHTING, & FIRE ALARM PLAN	1/3/2011	ORIG.
E106	ATTIC POWER, LIGHTING, & FIRE ALARM PLAN	1/3/2011	ORIG.
E107	FIRST FLOOR POWER & SYSTEM PLAN	1/3/2011	ORIG.
E108	FIRST FLOOR POWER & SYSTEM PLAN	1/3/2011	ORIG.
E109	SECOND FLOOR POWER & SYSTEM PLAN, GROUNDING SCHEMATIC DIAGRAM	1/3/2011	ORIG.
E110	SECOND FLOOR POWER & SYSTEM PLAN	1/3/2011	ORIG.
E301	EXISTING SWITCHBOARD SINGLE LINE DIAGRAM	1/3/2011	ORIG.
E302	SCHEMATIC DIAGRAMS, LIGHT FIXTURE SCHEDULE	1/3/2011	ORIG.
E303	LIGHT FIXTURE, ELECTRICAL DEVICES, AND CABLE TRAY MOUNTING HEIGHT	1/3/2011	ORIG.
E401	PUMP HOUSE & TELECOMMUNICATION ROOM, LARGE	1/3/2011	ORIG.
E501	PANELBOARD SCHEDULE	1/3/2011	ORIG.
E502	PANELBOARD SCHEDULE	1/3/2011	ORIG.

END OF DRAWINGS

LIST OF ADDENDUM

Date

AMENDMENT NO. 1

2/2/2011

END OF ADDENDUM

LIST OF CLARIFICATIONS

Date

CLARIFICATION #C-01

2/2/2011

CLARIFICATION #C-02

2/8/2011

END OF CLARIFICATIONS

**Rivers Education Center.
Seismic Retrofit, Exterior Restorations and Core Utilities**

TABLE OF CONTENTS

00100	Invitation for Bids
_____	Instructions to Bidders
0030	Solicitation Outline
_____	Bidding Schedule
_____	Offeror's Checklist (Attachment A)
_____	Minority Participation Affidavit (Attachment B)
_____	Questionnaire (Attachment C)
_____	Minority Business Enterprise (MBE) Utilization Commitment (Attachment D)
_____	Statement of Intent to Perform Work Without Subcontracting (Attachment E)
_____	Certificate of Minority Business Enterprise Unavailability (Attachment F)
_____	No Bid Reply Form (Attachment G)
_____	Project Directory
_____	Contract Documents

DIVISION 1. GENERAL REQUIREMENTS

Section I	Special Conditions
Section II	Schedule
Section III	Submittals
01040	Owner Furnished / Contractor Installed (OF/CI) and Owner Furnished / Owner Installed (OF/OI) Equipment
01045	Cutting and Patching
01050	Field Engineering
01060	Regulatory Requirements
01061	Permits and Rights-of-Way
01080	Phasing of Work
01152	Applications for Payment
01153	Change Order Procedure
_____	Change Proposal Form
01200	Project Meetings
01210	Allowances
01230	Alternates
01270	Unit Prices
01290	Payment Procedures
01300	Project Schedule
01310	Project Management & Coordination
01330	Submittal Procedures
01335	Submittal of Substitutions
01350	Safety
01360	Special Work Conditions & Procedures

JOB NO. 30615.18
DATE: JANUARY 2011

Page 1 of 5

ROA000265

DIVISION 1. GENERAL REQUIREMENTS - Cont.

01370	Schedule of Values
01400	Special Tests and Inspections
—	Statement of Special Inspections
—	Schedule of Special Inspections - Chapter 1
—	Schedule of Special Inspections - Chapter 17
01405	Contract Quality Control
01410	Testing Laboratory Services
01420	References
01500	Temporary Facilities
01600	Product Requirements
01640	Product Handling
01710	Cleaning
01720	Project Record Documents
01730	Operation and Maintenance Data
01740	Warranties and Bonds
01750	Contract Closeout
01810	General Commissioning Requirements
01815	Commissioning of HVAC

DIVISION 2. SITE WORK

02050	Demolition and Removal
02100	Clearing and Grubbing
02122	Tree Protection and Trimming
02220	Excavation and Backfill
02369	Micropiles
02400	Shoring
02456WP	Ductile Iron Water Pipe
02466FM	Polyvinyl Chloride Force Main
02485	Valves, Hydrants and Appurtenances
02494	Testing Pipelines
02496	Disinfecting Pipelines
02710	Fences and Gates
02820	Hydroseeding

DIVISION 3. CONCRETE

03300	Cast-In-Place Concrete
03310	Sidewalks
03371	Shotcrete

DIVISION 4. MASONRY

04200	Unit Masonry
04901	Clay Masonry Restoration and Cleaning

JOB NO. 30615.16

DATE: JANUARY 2011

Page 2 of 5

ROA000266

DIVISIONS 5 METALS

05120	Structural Steel Framing
05210	Steel Joist Framing
05310	Steel Decking
05400	Cold Formed Metal Framing
05500	Miscellaneous Metals
05510	Metal Stairs

DIVISIONS 6 WOOD & PLASTICS

06100	Rough Carpentry

DIVISION 7. THERMAL & MOISTURE PROTECTION

07111	Elastomeric Waterproofing, Sheet Applied
07232	Ceiling, Wall, and Floor Insulation
07240	Firestopping
07315	Synthetic Slate Shingles
07411	Preformed Metal Roofing and Siding
07525	Modified Bituminous Sheet Roofing
07600	Flashing and Sheet Metal
07900	Joint Sealants

DIVISION 8. DOORS & WINDOWS

08110	Steel Doors and Frames
08200	Wood Doors
08220	Fiberglass Doors and Frames
08520	Aluminum Windows
08630	Metal Framed Greenhouse
08700	Finish Hardware
08800	Glazing

DIVISION 9. FINISHES

09250	Gypsum Wallboard and Metal Stud Framing
09401	Cementitious Terrazzo
09900	Painting

DIVISION 10. SPECIALTIES

10550	Fire Extinguishers

DIVISIONS 11. AND 12.

Not Applicable

JOB NO. 30615.16

DATE: JANUARY 2011,

Page 3 of 5

ROA000267

DIVISION 13. SPECIAL CONSTRUCTION

13915 Fire Suppression Piping
13922 Diesel-Drive, Centrifugal Fire Pumps

DIVISION 14.

14214 Hydraulic Passenger Elevators

DIVISION 15. MECHANICAL

15010 Mechanical General Requirements
15010A Substitution Request Form
15010B Submittal Cover Sheet
15055 Motors
15060 Hangers and Supports
15075 Mechanical Identification
15081 Duct Insulation
15083 Pipe Insulation
15183 Refrigerant Piping
15241 Mechanical Vibration Controls and Seismic Restraints
15313 Metal Ducts
15323 HVAC Power Ventilators
15413 Facility Storm Drainage Piping
15423 Storm Drainage Piping Specialties
15429 Sump Pumps
15656 Make up Air Units
15732 Packaged Air Conditioning
15738 Split System Air Conditioning Units
15855 Diffusers, Registers, and Grilles
16900 HVAC Instrumentation and Controls
15990 Testing, Adjusting, and Balancing

DIVISION 16. ELECTRICAL

16010 General Provisions - Electrical
16071 Seismic Controls for Electrical Work
16111 Cable Trays
16112 Raceways
16112A Conduit Specification Sheet
16120 Low Voltage Wires and Cables 0-600 Volts
16135 Outlet, Junction and Pull Boxes
16140 Wiring Devices
16195 Electrical Identification
16450 Grounding
16471 Panelboards - Circuit Breaker Type
16475 Overcurrent Protective Devices

JOB NO. 30615.16
DATE: JANUARY 2011

Page 4 of 5

ROA000268

DIVISION 16. ELECTRICAL --Conf.

16710	Security Systems
16720	Fire Alarm Systems

APPENDIX A

Geotechnical Report

APPENDIX B

Addendum to Geotechnical Report

APPENDIX C

Materials Testing Report

APPENDIX D

2008 AHERA Three-Year Inspection

(End of Table of Contents)

JOB NO. 30615.16
DATE: JANUARY 2011

Page 5 of 5

ROA000269

TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
803-791-8888 - OFFICE
803-791-1050 - FAX

DAVIS & FLOYD, INC.

Review is only for conformance with the design concept of the project and compliance with information given in the Contract Documents. Approval is general only and shall not relieve or in any respect diminish the responsibility of the Contractor for details of design, dimensions, etc. necessary for proper fitting and construction of the Work, as required by the Contract, for achieving the results and performance specified and for coordination of the work of all trades

APPROVED

Todd J. Warren

Reviewed by Todd J. Warren on May 10, 2011

May 10, 2011

Attn: Mr. Scott Spigener
M.B. Kahn Construction Company
2950 Farrow Road
Columbia, South Carolina 29203

803-730-4411 mobile
803-776-4870 office
803-776-5507 fax

Pile Load Test Program Submittal - Revision #3
Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Dear Mr. Spigener:

Please allow this submittal to serve as our proposed Pile Load Test Program for the above referenced project. This program contains details relating to the construction and load testing of test piles that meet the specifications established in the project bid documents, in addition to suggestions from our design and installation team.

Purpose of Load Test Program

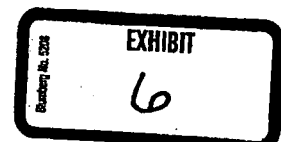
It is our understanding that the purpose of the load test program at this site is to determine an acceptable embedment depth to achieve the design working loads of 100 kips in compression and tension for the planned 8 inch diameter micropiles.

Project Background

Based upon our review of the available information, and from our review of the project, we understand that the existing structure was built in the 1930s, and that it is abandoned and no longer in use. Furthermore, we understand that the project at the site is to include the renovation and seismic up-fit of the existing structure, and the construction of a fire pump house, which requires the installation of 627 micropiles. Our review of the geotechnical report, and addendum, prepared by S&ME, that was provided as a portion of the project plans and specifications details anticipated pile capacities to reach the design standards (100 kips axial compression and tension) with the installation of 8 inch diameter micropiles installed to depths ranging from 70 feet to 115 feet, with a mean anticipated installation depth of 78 feet. With the proposed micropile bid depth, and subsequent depths detailed in the geotechnical report, our design team has developed a comprehensive pile load test program that will establish a best fit line detailing the available axial and tensile capacities developed by the 8" micropiles versus their embedment in the Cooper Marl.

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

ROA000270



TEST PILE CONSTRUCTION

Based upon our understanding of the project, and our experience with similar project and geologic conditions, Terratec offers the following construction details for consideration.

Micropile Borehole Construction Methods

Our design team explored most practical installation methods and determined that the best method for installation of the micropiles would require the use of drilling equipment to create an adequate borehole to achieve the required 8 inch diameter micropile specified by project documents. The use of other installation methods are not anticipated to achieve the required diameter due to borehole cave from the relaxation of the overconsolidated Cooper Marl. This condition could hinder the establishment of a competent pile, resulting in performance penalties. Therefore, the test piles will be installed utilizing drilling methods that will be employed during the construction of the production piles.

Micropile Construction Details

Upon completion of the borehole, the test micropile will be constructed in-place, and will be comprised of a single, centrally located, 1.75 inch diameter, 150 grade threaded rod extended to the micropile tip elevation that will be encapsulated in a plastic grout to the planned pile head elevation. Specific manufacturer and building component details are provided in the subsequent sections of this program.

Threaded Rod: The threaded rod proposed for this project, as stated above, will consist of 1.75 inch diameter, 150 grade rod manufactured by Williams Form Engineering Corp. The rod will be installed in sections, and will be coupled, where necessary, with a grade 150 coupler that will also be manufactured by Williams Form Engineering Corp. Based upon a structural analysis of this rod, ultimate axial and tensile loading that the proposed rod may be exposed to, prior to experiencing excessive deformation, is approximately 225 kips. Alternative reinforcement materials that will also yield adequate loading capacities include; a #18, 60 grade rebar, and a 2.25 inch diameter, grade 62.5 threaded rod. Schematics and a representative of the mill data for the specified rod and couplers is attached in Appendix A.

Plastic Grout: For this project, Terratec has selected a plastic grout yielding an average 28-day compressive strength of 4,000 psi. The grout will be comprised of a mixture of Type I portland cement blended to specified design ratios with a fine sand aggregate, and will be supplied by Ready Mixed Concrete Company

In order to encapsulate the threaded rod, the plastic grout will be injected into the annular space of the auger utilizing a grout pump that will operate at a minimum pressure of 500 psi during grouting operations. A recording of the grouting pressure will be made in the field at the time of injection. In addition, an adequate number of representative grout specimen will be sampled during pile installation of the test/reaction piles.

A copy of the grout mix material specifications and the mix design test data results is attached in Appendix A.

Test and Reaction Pile Depths, Location and Configuration: A total of four (4) test piles and five (5) reaction piles are planned to be constructed to the specifications detailed in this section at the locations, and in the configuration, indicated in the attached Test Pile Location Plan, which is attached in Appendix A.

An array of test pile embedment depths were selected for this load test program. At this time, we propose to install 4 test piles with embedment depths of 66, 70, 75 and 80 feet below ground surface (bgs). The designation of these depths will allow for the project design team to establish a best fit line detailing the available axial and tensile capacities developed by the 8" micropiles versus their embedment in the Cooper Marl, as the Marl is understood to be present at a depth of roughly 55 feet bgs. For loading purposes, the test piles will be sleeved and extended an adequate depth above ground surface (ags) to allow proper loading.

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

ROA000271

The reaction piles will be installed to maximum depths of 70 feet bgs, but will establish a minimum embedment depth of 23 feet into the Cooper Marl. Per the represented configuration, two reaction piles, will be installed as support for the reaction frame after the installation of the test pile. The reaction piles will not be installed less than 5 reaction pile diameters distance from the test pile or reference beam supports. These distances are measured between the faces of the test pile and reaction piles. Additional spacing details are provided in the above referenced drawing, and in subsequent sections of this program.

LOAD FRAME, LOADING SYSTEM AND MEASUREMENT SPECIFICATIONS

Load Frame Details

For this project, Terratec will be utilizing an I beam load frame that is capable of transferring both axial and tensile loads up to 300 kips with minimal cross-sectional deflection that is anticipated to not exceed 0.35 inches. The dimensions of the load frame require that the test and reaction piles be spaced approximately 6 feet and/or 6-1/2 feet, on center, depending on the cross-sectional alignment of the frame. The test/reaction pile spacing requirement of the proposed load frame eliminates the interference of loading and pressures that may be encountered within proximity of the test pile, as it exceeds the industry standard minimum, face to face spacing of 3 times the test pile diameter (i.e. 24 inches) and 5 times the reaction pile diameter (i.e. 40 inches).

The design of the reaction frame and reaction piles was selected to resist two times the pile design load indicated in the contract documents without undergoing a magnitude of deflection exceeding 75 percent of maximum travel of the jack.

Loading System Details

The load application system will be comprised of calibrated hydraulic jacking system, having a capacity of at least two times the pile design load indicated in the contract documents. Terratec will use jacks with a minimum travel of 6 in. (150 mm), but not less than 25 percent of the test pile's maximum cross-section dimension. The selected jack(s) will be equipped with spherical bearing plates, to bear firmly and concentrically against the pile bearing plate and load-beam bearing plate. The system will be engaged utilizing an automatic load-maintaining pump with manual supplement to control load application. A pressure gage will be attached to the system so that the pressure reading corresponding to the pile design load indicated in the contract documents is between one-fourth and one-third of maximum gage pressure. A load cell will be placed (either electric or hydraulic, unless one or the other is specified in the contract documents) to measure strains for load monitoring during the load test. A schematic of the loading apparatus is attached in Appendix B of this submittal. In addition, the load cell specifications and calibration are attached for review.

Loading Measurement Apparatus

An apparatus for measuring deflection, consisting of a primary system and at least one auxiliary system; and a network of settlement reference points will be established. Two fixed independent benchmarks will be established at least 50 ft. (15 mm) from the test site to monitor the settlement reference points. The auxiliary system may also be referenced to these benchmarks. All measuring devices, scales, and reference points will be clearly marked and identified with numbers or letters to ensure accurate data recording.

Primary System Measuring Devices: These primary instrument packages are to monitor movement of the pile top and will consist of: 1.) three (3) dial gages having at least 2 in. (50 mm) of travel, and 2.) an adequate number of suitable gage blocks to increase the travel to at least an additional 4 in. (100 mm). The dial gages will be aligned parallel to the longitudinal axis of the test pile and the axis of load application. They will be attached to a simply supported reference beam, completely independent of the test pile and loading apparatus. Care will be taken to ensure the load application system will not interfere with any measuring devices during any part of the test.

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

ROA000272

Auxiliary System Measuring Devices: One or more of the following auxiliary measuring systems will be established to measure the deflection of the load testing for this project: 1.) wire, mirror, and scale, 2.) surveyor's level and target rod, or, as an alternative, 3.) electrical or optical levels will be installed on the test pile set up and or reaction frame.

Auxiliary System Option 1 - Wire, Mirror, and Scale: The pile movement will be determined by means of a single strand of wire drawn in front of a graduated scale mounted on a mirror. This scale will be at least 6 in. (150 mm) long and machine-divided in graduations of 1/32 of an inch, and will be mounted on a 3 in. x 6 in. (75 mm x 150 mm) mirror with metal-and-glass bonding adhesive or electrical tape. The mirror will be attached directly to the pile head and oriented so that the mirror face is parallel to the reference beam. The wire will be mounted between the ends of the reference beam, with one end fixed and the other placed over a pulley with a weight to maintain tension. Prior to loading, our personnel will locate the wire so that it is level and within 1" (25.5 mm) of the mirror face.

Auxiliary System Option 2 - Surveyor's Level and Target Rod: As an additional unit of measure we may use a level and leveling rod to determine deflections by readings on the two fixed independent benchmarks on an established scale or fixed point on the pile top.

LOAD TESTING OPERATIONS

This procedure presents uniform procedures for conducting and reporting the results of load testing of a pile in static axial compressive and tensile loading conditions. These tests have three primary objectives: To establish load-deflection relationships in the pile-soil system, to determine capacity of the pile-soil system, and to determine load distribution in the pile-soil system. These tests will confirm design assumptions, or provide information to allow those assumptions, so that the design of the planned production piles may be modified prior to installation.

Load Testing Method

The load testing program proposed for this project will be conducted in general accordance with the minimum requirements established in ASTM D3689 *Standard Test Methods for Deep Foundations Under Static Axial Tensile Load*, unless otherwise altered by the design engineer. At this time we propose that the load testing at the project be modified, as stipulated in subsequent sections of this program, and that the test be conducted as a "Quick-Load" test. This modification is offered based on two principles, that include; 1.) the intended application and support conditions that these piles are designed for will experience relatively quick loading when exposed to seismic conditions, and 2.) the installation of two (2) additional test piles exceeds the project specifications and should establish more than adequate information to alter the design production pile prior to installation, if necessary.

Test Pile Acceptance for Loading Criteria

After Installation of the test pile and reaction piles is complete, the piles will be allowed to set for a minimum of 14 days, prior to the attachment of the load apparatus, while load testing will not be conducted until the pile grout has established a minimum compressive strength of 4,000 psi. Grout specimens sampled during pile installation will be tested in compression prior to the load test being conducted, and the results of these tests will be forwarded to the contractor and the design engineer for approval.

Load Testing Apparatus Set Up and Preparation

As stipulated in previous sections of this program, the load will be applied to the test pile, first in compression and second in tension, by jacking against the two reaction piles with one or more calibrated hydraulic jacks. The load application system arrangement and constructed elements of the load-application system will conform with details provided in this program, and to the following details for compressive and tensile loading:

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

ROA000273

Compressive Test Pile Loading Preparation: As stated previously, the test piles will be sleeved and extended an adequate depth ags to provide ample pile for both loading conditions. Preparation of the pile butt will continue as detailed below;

- 1.) At the appropriate pile elevation, our personnel will cut off the pile butt and cap it to provide a level bearing surface perpendicular to the pile axis. A steel plate, or a neat cement paste, will be placed over the head of the pile to ensure a level surface to place the jack.
- 2.) To distribute load over the pile's entire cross-section, our personnel will install a solid steel billet (bearing plate) of sufficient thickness (1 in. (25 mm) minimum) to prevent bending between the capped pile and the jack base. The size of the solid steel billet shall be not less than the size of the pile butt or less than the area covered by the jack base.
- 3.) Install the load application system (including hydraulic jack, spherical bearing and load cell) between the bearing plate on the pile and the center of the underside of the load beams. The system will be constructed so that all components are centered along the pile's longitudinal axis, to ensure application of a concentric minimal load.
- 4.) To distribute load over the entire width of the load beams, another solid steel billet of sufficient thickness (1 in. (25 mm) minimum) will be placed as a bearing plate between the load beam and the load application system.
- 5.) Immediately before starting the load test, our personnel will verify that at least 1 in. (25 mm) of clear space exists between the upper bearing plate and load beams, or the upper bearing plate and load application system.

Tensile Test Pile Loading Preparation: Upon completion of the compressive loading test, the test piles will be reconfigured to provide adequate exposure of the threaded rod for tensile testing, as detailed below;

- 1.) At the appropriate pile elevation, our personnel will cut off the pile butt and expose an adequate length of the threaded rod to attach the loading mechanism.
- 2.) The threaded rod will be attached to the load jack and cell by double bolting the threaded rod to an adequately thick bearing plate.
- 3.) Install the load application system (including hydraulic jack, spherical bearing and load cell) between the bearing plate on the pile and the center of the underside of the load beams. The system will be constructed so that all components are centered along the pile's longitudinal axis, to ensure application of a concentric minimal load.
- 4.) To distribute load over the entire width of the load beams, another solid steel billet of sufficient thickness (2 in. (50 mm) minimum) will be placed as a bearing plate between the load beam and the load application system.
- 5.) Immediately before starting the load test, our personnel will verify that at least 1 in. (25 mm) of clear space exists between the upper bearing plate and load beams, or the upper bearing plate and load application system.

Pile Loading Procedure

As proposed above, the pile loading is recommended to be applied under the "Quick-Load" test method on the subject test piles, first in compression and second in tension. Based on our understanding of this method, we plan to load the test piles in increments of 5% of the design load (i.e. 200 kips and 200 kips in compression and tension, respectively) until reaching failure or the specified design ultimate loads. Upon reaching design or failure loads, the pile will then be unloaded in 25% increments until the load on the pile equals zero. Magnitude and sequence of load and unload increments are as follows:

Loading Increments: Maintain each load increment for 5 minutes, but no more than 15 minutes, after the measureable deflection in the test pile stabilizes (i.e. as defined by a change in deflection of no more than 0.01 in (0.25 mm)). Maintain the 200% design load for 30 minutes after the measureable deflection in the test pile stabilizes.

Confidential and Proprietary
Copyright 2011 TeraTec
ALL RIGHTS RESERVED

ROA000274

Unloading Increments: Maintain each rebound load increment for 5 minutes, but no more than 15 minutes, after the measureable deflection in the test pile stabilizes. After removing the total applied load, allow the pile to stabilize for 15 minutes and record the final (rebound) reading on the measuring devices.

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

ROA000275

APPENDIX A - TEST PILE CONSTRUCTION DATA

Typical Test Pile Detail

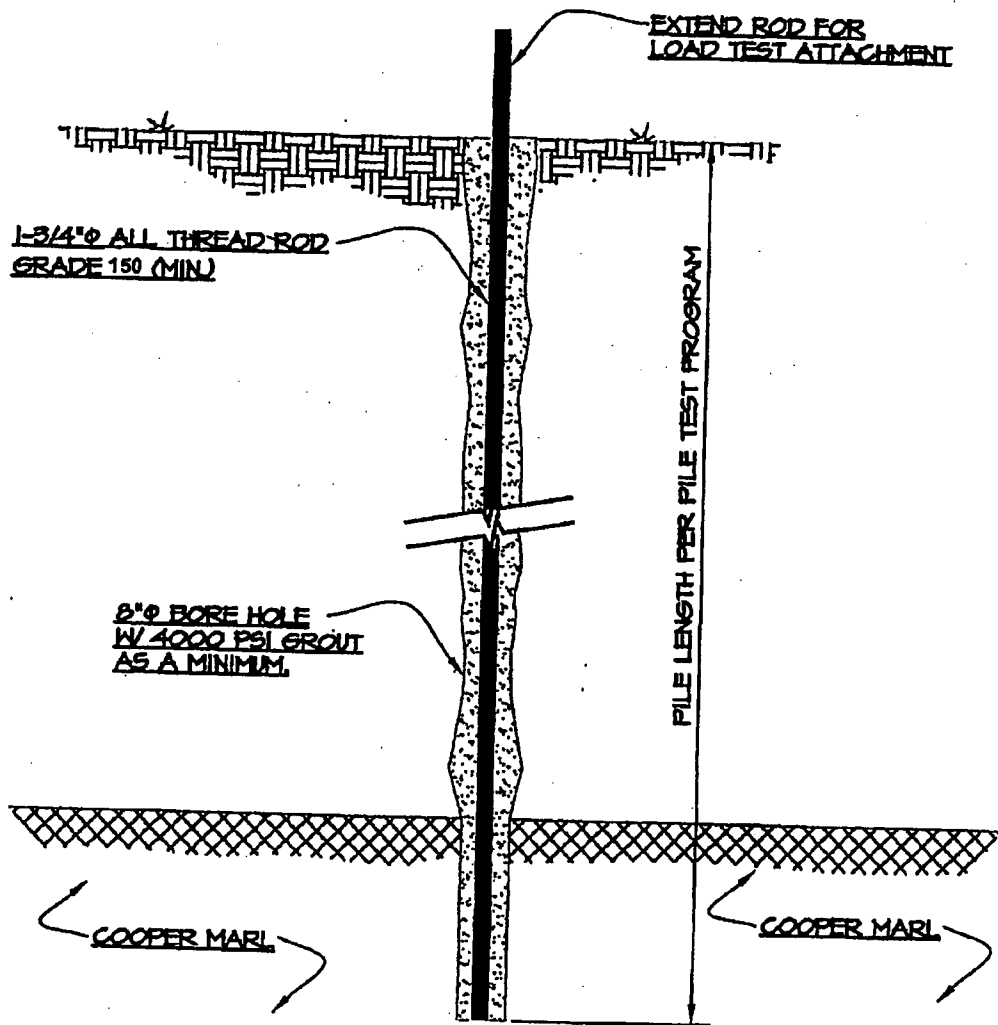
Threaded Rod Specifications and Mill Data

Plastic Grout Materials Specifications and Test Data

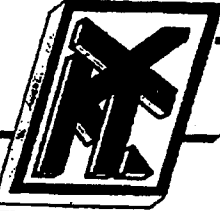
Test Pile Location Plan

**Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED**

ROA000276



TEST PILE - MICROPILE ELEVATION
NOT TO SCALE

KYZER & TIMMERMAN STRUCTURAL ENGINEERS 580 Chris Drive, West Columbia S.C. 29169 Ph. 803.791.4511 Fax 803.791.4522		
TEST PILE - MICROPILE ELEVATION		
JOB NUMBER 11-158	DATE APRIL 7TH, 2011	SHEET 5102



KYZER & TIMMERMAN
STRUCTURAL ENGINEERS, LLC

May 09, 2011

Mr. Chris Morrison
Terratec, Inc.
1350 Methodist Park Road
West Columbia, South Carolina 20170

Re: Rivers Educational
Charleston, South Carolina

Dear Chris:

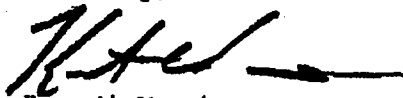
Attached you will find the reinforcing rod information and calculations pertaining to the piles for the above project.

Based on the attached calculations, the 1-3/8 diameter rods (150 ksi All-Thread-Bar) (127.7 yield) can be used for the production piles. In order to meet the 80% criteria for test piles 1-3/4" diameter rods can be used for these piles.

The calculations for production and test piles are based on 150 ksi All-Thread-Bar by Williams (127.7 ksi Yield). The attached mill certs indicate 135.2 ksi for the 1-3/8" rods and 142.2 ksi for the 1-3/4" rods.

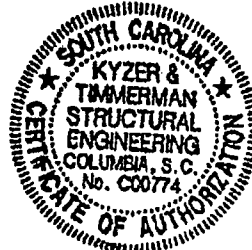
Please feel free to call if you have any questions.

Sincerely,



Kenneth W. Timmerman, P.E.

cc: File



580 CHRIS DRIVE • WEST COLUMBIA, SC 29169
(803) 791-4511 • (803) 791-4522 FAX

ROA000278



150 KSI All-Thread-Bar

Threaded
Bar Types

150 KSI
Information

150 KSI
Accessories

Case
Histories

Corrosion
Protection

Concrete
Anchor
Systems

Concrete
Anchor
Systems

Post
Tensioning
Systems

Threaded
Bars with
Fasteners

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Reinforcing
Bars

Structural Properties	
Yield Stress	Ultimate Stress
127.7 KSI (880.8 MPa)	150 KSI (1034.3 MPa)
Elongation in 20 bar diameters	Reduction of Area
4%	20%



Unique Thread Form

R71 150 KSI All-Thread-Bar - ASTM A722

Nominal Bar Diameter	Minimum Net Area Thru Threads	Minimum Ultimate Strength	Minimum Yield Strength	Nominal Weight	Approx. Thread Major Dia.	Part Number
1" (25 mm)	0.85 in ² (549 mm ²)	128 kips (567 kN)	102 kips (454 kN)	3.09 lbs./ft. (4.6 Kg/M)	1-1/8" (28.6 mm)	R71-08
1-1/4" (32 mm)	1.25 in ² (807 mm ²)	188 kips (834 kN)	150 kips (667 kN)	4.51 lbs./ft. (6.71 Kg/M)	1-7/16" (30.5 mm)	R71-10
1-3/8" (38 mm)	1.58 in ² (1019 mm ²)	237 kips (1054 kN)	190 kips (843 kN)	5.71 lbs./ft. (8.50 Kg/M)	1-9/16" (39.7 mm)	R71-11
1-3/4" (45 mm)	2.60 in ² (1684 mm ²)	400 kips (1779 kN)	320 kips (1423 kN)	9.06 lbs./ft. (13.5 Kg/M)	2" (50.8 mm)	R71-14
2-1/4" (57 mm)	4.08 in ² (2632 mm ²)	613 kips (2727 kN)	490 kips (2181 kN)	14.1 lbs./ft. (20.8 Kg/M)	2-1/2" (64 mm)	R71-18
2-1/2" (65 mm)	5.19 in ² (3350 mm ²)	778 kips (3457 kN)	622 kips (2766 kN)	18.2 lbs./ft. (27.1 Kg/M)	2-3/4" (68.9 mm)	R71-20
3" (76 mm)	8.46 in ² (5469 mm ²)	989 kips (4311 kN)	775 kips (3448 kN)	22.3 lbs./ft. (32.7 Kg/M)	3-3/64" (78.2 mm)	R71-24

PRODUCTION PLANT
TEST PLANT

Effective cross sectional areas shown are as required by ASTM A 722-98. Actual areas may exceed these values. ACI 308.1R section 3.2.5.1 indicates an ultimate strength in shear has a range of .6 to .7 of the ultimate tensile strength. Designers should provide adequate safety factors for safe shear strengths based on the condition of use. Per PTI Recommendations for Prestressed Rock and Soil Anchors section 6.6, anchors should be designed so that:

- The design load is not more than 80% of the specified minimum tensile strength of the prestressing steel.
- The lock-off load should not exceed 70% of the specified minimum tensile strength of the prestressing steel.
- The maximum test load should not exceed 80% of the specified minimum tensile strength of the prestressing steel.

** The 2-1/4" and 3" diameter bars are not covered under ASTM A722.

Properties

Williams 150 KSI All-Thread-Bars are manufactured in strict compliance with ASTM A-722-98 and AASHTO M276 Highway Specifications. The prestressing steel is high in strength yet ductile enough to exceed the specified elongation and reduction of area requirement.

MAY 09-2011

CALCULATIONS FOR 1 3/8" 150 ALL THREAD ROD

ALL THREAD ROD DATA: $A = 1.58 \text{ in}^2$ } PER ATTACHED
 $f_y = 127.7 \text{ KSI}$ } DATA SHEET

MILRO FINE CONCRETE DATA: $f'_c = 4000 \text{ PSI}$ MINIMUM

$$\text{AREA OF CONCRETE} = \pi R^2 - 1.58 = \pi (4)^2 - 1.58 = 48.69 \text{ in}^2$$

FOR ALLOWABLE COMPRESSION LOADS

$$\begin{aligned} P_{allc} &= 0.33 f'_c A_{grout} + 0.4 f_{yarm} A_{arm} \\ &= 0.33 (4 \text{ KSI}) (48.69 \text{ in}^2) + (0.4) (127.7 \text{ KSI}) (1.58) = 64.3 + 80.7 \\ &= 145 \text{ K} > 100 \text{ K} \quad \text{OK} \end{aligned}$$

FOR ALLOWABLE TENSION LOADS

$$P_{allt} = 0.6 (f_{yarm} A_{arm}) = 0.6 (127.7 \text{ KSI}) (1.58 \text{ in}^2) = 121.0 \text{ K} > 100 \text{ K} \quad \text{OK}$$

FOR ULTIMATE COMPRESSION LOADS

$$\begin{aligned} P_{uc} &= 0.85 f'_c A_{grout} + f_{yarm} A_{arm} \\ &= 0.85 (4 \text{ KSI}) (48.69) + (127.7 \text{ KSI}) (1.58 \text{ in}^2) = 165.6 + 201.8 \end{aligned}$$

FOR ULTIMATE TENSION LOADS

$$P_{ut} = f_{yarm} A_{arm} = 127.7 \text{ KSI} (1.58 \text{ in}^2) = 201.8 \text{ K} > 200 \text{ K} \quad \text{OK}$$

FOR TEST PILE

$$\text{FOR } 1 3/8" \phi \text{ ROD } 80\% f_y (1.58 \text{ in}^2) = 200 \text{ K} \therefore f_y = 158.2 \text{ KSI}$$

$$158.2 \text{ KSI} > 127.7 \text{ KSI}$$

$$\text{FOR } 1 3/4" \phi \text{ ROD } 80\% f_y (2.60 \text{ in}^2) = 200 \text{ K} \leftarrow \therefore 60 \text{ TO } 1 3/4" \text{ ROD}$$

$$\therefore f_y = 96.15 \text{ KSI} < 127.7 \text{ KSI} \quad \text{OK}$$

FINAL RESULT: (MILL CAPS TO ACHIEVE 127.7 KSI MIN)

-USE 1 3/8" ϕ 150 KSI ALL-THREAD ROD (PRODUCTION PILES)

-USE 1 3/4" ϕ 150 KSI ALL-THREAD ROD (TEST PILES)



ST PAUL STEEL MILL
1678 ROCK ROAD
ST PAUL, MN 55118 USA
(651) 731-8800

Chemical and Physical Test Report MADE IN UNITED STATES

Page 1 of 2

JUN 24 2010

M-083587

SHIP TO : WILLIAMS FORM ENGINEERING CORP 231 ROONEY RD GOLDEN, CO 80401	INVOICE TO WILLIAMS FORM ENGINEERING CORP ACCTS PAYABLE 8185 GRAPHIC DR. BELMONT, MI 48308	SHIP DATE 06/17/10 CUST. ACCOUNT NO 70000086

PRODUCED IN: ST PAUL

SHAPE & SIZE		GRADE		SPECIFICATION														SALES ORDER		CUST P.O. NUMBER	
D1.478 STRETCH 1.472		A722M00		A722M/A722M-07 Type I (Meets Material Properties)														0084742-01		18162-01	
HEAT ID.		C	Mn	P	S	Si	Cr	Mo	V	Nb	Sn	Al									
M009126		.51	1.82	.010	.017	.44	.21	.46	.24	.018	.003	.003	.030	.003							
Mechanical Test:		(Yield 195200 PSI)		K32.17 MPa		Load 228 KPS		Tensile 751700 PSI, 1114.88 MPa		Y.E. 7.02%		E.L. 7.62%									
Continuum Breakdown Test:																					

Mechanical Test: Yield 135200 PSI, 1332.17 MPa, Load 228 KIPS, Tensile: 761700 PSI, 1114.88 MPa, %EL: 7.028.5in, 7.1/749.3mm, Bend: OK, Red R 18.86
 Customer Requirements: SOURCE: GA-STP CASTING: STRAND CAST
 Comment: meet shop heat M100879

made in the USA
 steel not exposed to mercury, no weld repairment performed.
 Meets the mech property req. of A722 based on a machined test specimen.

Mechanical Test: Yield 137800 PSI, 948.03 MPa, Load 234 KIPS, Tensile: 100500 PSI, 1108.81 MPa, %EL: 7.129.5in, 7.1/749.3mm, Bend: OK, Red R 18.86
 Customer Requirements: SOURCE: GA-STP CASTING: STRAND CAST
 Comment: made in the USA

Williams Form Engineering Corp.
 This Quality Assurance document has been
 received and deemed acceptable as noted:

1-3/8" ϕ ROD
 135.2 KSI > 127.7 KSI OK

by: Heidi Peltier on 6/10
 Quality Assurance Mgr (date)
 checked by: _____

Customer Notes
 NO WELD REPAIRMENT PERFORMED. STEEL NOT EXPOSED TO MERCURY.
 This material, including the billets, was melted and manufactured in the United States of America

Maskary
 Director Yelamanchili
 Quality Director
 Gerdau Ameristeel

THE ABOVE FIGURES ARE CERTIFIED EXTRACTS FROM THE ORIGINAL CHEMICAL AND PHYSICAL TEST RECORDS AS CONTAINED IN THE PERMANENT RECORDS OF COMPANY.

[Signature]

Metallurgical Services Manager
 ST PAUL STEEL MILL

Seller warrants that all material furnished shall comply with specifications subject to standard published manufacturing variations. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE SELLER, AND SPECIFICALLY EXCLUDED ARE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. In no event shall seller be liable for indirect, consequential or punitive damages arising out of or related to the materials furnished by seller. Any claim for damages for materials that do not conform to specifications must be made from buyer to seller immediately after delivery of same in order to allow the seller the opportunity to inspect the material in question.

ROA000281



King Steel
Corporation

King Steel
6225 East Cook Rd.
Grand Blanc, MI 48439
Tel 810-653-7637
Fax 810-953-1718

Material Certification

Heat: NF10201280
Grade: A434BD/A722

Note: 1.843 A434BD/A722 SBQ HR RD Q&T BAR 600 IN. PART# A1S-14-150-50

Tensile: 154500 PSI
Yield: 142200 PSI
Elongation: 17%
Reduction of Area: 57%
Microhardness: 35 HRC

1 3/4" ϕ ROD

142.2 KSI > 127.7 KSI
OK

THIS MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA

Material Specification Type	Material Specification	Actual
Chemical	C	0.4100 %
	Mn	0.8300 %
	P	0.0000 %
	S	0.0000 %
	Si	0.0000 %
	Ni	0.0000 %
	Cr	0.9600 %
	Mo	0.1700 %
	Al	0.0020 %
	B	0.0000 %
	Cu	0.1400 %
	Ti	0.0000 %
	V	0.0000 %
	Nb	0.0020 %
	Zr	0.0000 %
	Sn	0.0000 %
	Cs	0.0002 %
	Se	0.0000 %
	Pb	0.0000 %
	Fe	0.0000 %
	Co	0.0000 %
	Bi	0.0000 %
	As	0.0000 %
	N	0.0000 %
Physical	Tensile Strength (PSI)	0.0000 psi
	Yield Strength (PSI)	0.0000 psi
	% Elongation	0.0000 %
	Reduction of Area	0.0000 %
	Hardness HRB or HRC?	0

by: [Signature] OR 9/10
Quality Assurance Mgr (date)

We hereby certify that chemical analysis and/or physical characteristics shown are a true copy of original test reports on file with us from the producing source covering the heat or lot from which this material was taken.

Letter Of Transmittal



04/07/2011 2:14:54PM

Report 146737 (internal use only)

Please use the submittal number located on the following pages when referring to the set of documents contained within this submittal.

The following items are included in this mix submittal:
Submittal #10108 for Project: Rivers Middle School Retrofit

Detailed Data for Submittal #10108

BASF_Glenium 7500.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

BASF_Pozzolith 300R.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

Holcim_Holly Hill.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

SEFA_Group.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

Murray Mines_Summerville.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

BASF_Pozzolith 80.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

Ready Mixed Concrete Company
2769 Three Lakes Rd.
Charleston, SC 29418

Office Telephone: (843) 744-3535
Office Fax: (843) 747-0478
Dispatch: (843) 747-0424



Submittal No. 10108
Date Issued: 4/7/2011

Contractor: GS2 Engineering
Project: Rivers Middle School Retrofit

Dear Shawn:

We are submitting these mixes in accordance with ACI 318 (Chapter 5), proportioning on the basis of field experience and/or the trial mixture method:

Mix Code Number	Description	Intended Use
50GNF197	5000GROUTNAASH	Auger Cast

When placing orders for this project, please order by product mix code number.

Ready Mixed Concrete Company warrants that the concrete as delivered to this project will meet or exceed the design strength specified on the delivery ticket when evaluated in accordance with ACI-318, ACI-301, and ASTM C-94, latest revision. The measured slump, and the concrete must be tested in strict accordance with the provisions of ASTM standards C-172, C-143, C-31, C-39, C-817, C-231, C-173, C-138, C-1019, C-78, C-567, C-1084, latest revisions.

All samples and testing of samples for acceptance shall be conducted at the point of discharge from the concrete delivery truck.

Should the Purchaser choose not to purchase temperature control measures, the Purchaser shall assume all liability for rejected concrete due to non-compliant concrete temperatures.

Responsibility for concrete when others supply mix designs will be the sole responsibility of those parties supplying the mix design.

Customer assumes total responsibility for concrete placement, finishing, initial and final curing, placement of joints at proper spacing, and any aesthetic concerns/issues (such as cracks, discoloration, etc.) that may arise in the plastic and hardened state.

The contents of this packet, with particular consideration in regard to the mix designs themselves, are considered proprietary in nature and are to be treated as confidential.

This information is being submitted for approval for use on this project. Please provide Ready Mixed Concrete Company an approved copy or a copy with the notes for correction of this submittal, when available.

Concrete will be delivered to the nearest accessible point over passable roads; customer assumes responsibility for all damages to city, state, and personal property, including concrete mixer truck if customer instructs concrete mixer truck to drive beyond curb lines. Customer should provide concrete mixer truck with wash down area.

In accordance with ASTM C-94, please copy our office with all test results obtained on this concrete by independent testing laboratories.

All raw materials are subject to change depending on availability. All substitutes are guaranteed to meet or exceed projects performance specification requirements.

Thank you for your business and cooperation in this matter.

Dewayne Hartzell
Q. A. Manager

1992 - 2011 Digital Site Systems, Inc.

Ready Mixed Concrete Company
2769 Three Lakes Rd.
North Charleston, SC 29418

Office Telephone: (843) 744-3535
Office Fax: (843) 747-0478
Dispatch: (843) 747-0424



Submittal No. 10108

Date Issued: 4/7/2011

Customer: GS2 Engineering
Project: Rivers Middle School Retrofit
Plant: [51 - Charleston]

Mix Code: 50GNF197						
Mix Code must be used when ordering concrete.						
Description	Mfg. Source	Tradename	ASTM	Spec. Gravity	oz/cwt	Weight (lb)
Type I-II	Holly Hill, SC	Holdim	C - 150	3.15		960
Fly Ash F	Winyah Station	SEFA	C - 618	2.25		140
Natural Sand	Murray Mines	Murray Sand	C - 33	2.64		2,357
Potable	City	Water	C - 94	1.00		401
Type A Water Reducer	BASF	Pozzolith 80	C - 494	1.00	4.00	
Specified Fc :	5,000 psi @ 28 days	Designed Unit Weight:	142.9 lbs./cu.ft.		TOTAL	3,857
Specified Slump	8.00 +/- 1.00 in.	Designed W/C + P Ratio:	0.36			
Specified Air:	1.50 +/- 1.50 %	Designed Volume:	27.00 cu.ft.			

NOTES:

Ready Mixed Concrete Company has no knowledge or authority regarding where this mix is to be placed; therefore, it is the responsibility of the project architect, engineer, and/or contractor to ensure that the above designed mix parameters of compressive strength, water-to-cementitious ratio (W/C+P), cement content, and air content are appropriate for the anticipated environmental conditions (ie. ACI-318 sections 4.1-4.3, and local Building Codes).

Customer assumes total responsibility for concrete placement, finishing, initial and final curing, placement of joints at proper spacing, and any aesthetic concerns/issues (such as cracks, discoloration, etc.) that may arise in the plastic and hardened state.

Customer assumes responsibility for any performance issues (strength, aesthetic, durability, air entrainment etc.) as a result of water added to concrete at the project site that exceeds the w/c+p.

Designed mix cementitious content, is stated as a minimum, and Ready Mix Concrete Company reserves the right to increase cementitious content.

Chemical admixtures are added in accordance with the manufacturer's recommendations. Ready Mixed Concrete Company reserves the right to adjust these dosages to meet the changes in jobsite demands.

All raw materials are subject to change depending on availability. All substitutes are guaranteed to meet or exceed projects performance specification requirements.

Ready Mixed Concrete Company may use admixtures or procedures not listed above to control the mixture during Hot or Cold weather, for pumping, long hauls, or other special applications, unless restricted in writing by the client.

In accordance with ASTM C-94, please copy our office with all test results obtained on this concrete by independent testing laboratories.

COMMENTS:

Dewayne Hartzell
Q. A. Manager



The Chemical Company

February 1, 2010

Certificate of Conformance
Glenium 7500
BASF Construction Chemicals* Admixture for Concrete

(*Previously doing business as BASF Admixtures, Inc and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.)

Ready Mixed Concrete Co.
Attn: Ken Vickers
ken.vickers@rmcc.com

TO WHOM IT MAY CONCERN:

State of Ohio)
County of Cuyahoga) ss

Before me, a Notary Public, in and for the aforesaid State and County, personally appeared Mark E. Piechuta, who being duly sworn, deposes and says:

That he is Sr. Technical Marketing Specialist for BASF Construction Chemicals, LLC in Cleveland, Ohio; and

That no calcium chloride or chloride based ingredient is used in the manufacture of GLENIUM 7500; and

That GLENIUM 7500, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.00017 percent (1.7 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That GLENIUM 7500 meets the requirements for a Type A, Water-Reducing, and Type F, Water-Reducing, High Range Admixture specified in ASTM C 494, Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Mark E. Piechuta
BASF Construction Chemicals

Subscribed and sworn to before me
This 1st day of February, 2010

Charlene R. Mandat
Notary Public, State of Ohio
My Commission Expires 11/4/11
(Recorded in Summit County)

* Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.

BASF Construction Chemicals
23700 Chagrin Boulevard
Cleveland, Ohio 44122 USA
216 839-7500 ph
www.masterbuilders.com

**Master
Builders**

Admixture Solutions

ROA000286



The Chemical Company

APPROVED

Argos USA
Director, Corporate Quality Assurance

2/7/10

February 1, 2010

Certificate of Conformance
Pozzolith 300R
BASF Construction Chemicals* Admixture for Concrete

(*Previously doing business as BASF Admixtures, Inc and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.)

Ready Mixed Concrete Co.
Attn: Ken Vickers
ken.vickers@rmcc.com

TO WHOM IT MAY CONCERN:

State of Ohio)
County of Cuyahoga) ss

Before me, a Notary Public, in and for the aforesaid State and County, personally appeared Mark E. Piechuta, who being duly sworn, deposes and says:

That he is Sr. Technical Marketing Specialist for BASF Construction Chemicals, LLC in Cleveland, Ohio; and

That no calcium chloride or chloride based ingredient is used in the manufacture of Pozzolith 300R; and

That Pozzolith 300R, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.0002 percent (2.0 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That Pozzolith 300R meets the requirements for a Type B, Retarding, and Type D, Water-Reducing and Retarding Admixture specified in ASTM C 494, Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Mark E. Piechuta
BASF Construction Chemicals

Subscribed and sworn to before me
This 1st day of February, 2010

Charlene R. Mandat
Notary Public, State of Ohio
My Commission Expires 11/4/11
(Recorded in Summit County)

* Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.

BASF Construction Chemicals
23700 Chagrin Boulevard
Cleveland, Ohio 44122 USA
216 839-7500 ph
www.masterbuilders.com

**Master
Builders**

Admixture Solutions

ROA000287



Holcim (US) Inc.
9624 Bailey Road, Suite 275
Cornellus, NC 28031
Phone 800-845-1120
Fax 704-895-8961

APPROVED
[Signature]
Ready Mix Concrete Company
Director, Corporate Quality Assurance
8/24/09

AFFIDAVIT

This is to certify that Type I Portland Cement, as manufactured by Holcim (US) Inc. at our facility at Holly Hill, South Carolina, is warranted to conform at time of shipment, to current A.S.T.M. Specification C-150, A.A.S.H.T.O. Specification M-85 and Federal Specification SS-C-1960/3 for Type I Portland Cement.

Additionally, this same cement is warranted at time of shipment to meet A.S.T.M. Specification C-150 and Federal Specification SS-C-1960/3 for Type II Portland Cement.

The total alkali content expressed as sodium equivalent $[Na_2O+K_2O (0.658)]$ is less than 0.60% and Tricalcium Aluminate (C3A) content does not exceed (8%).

No other warranty is made or to be implied.

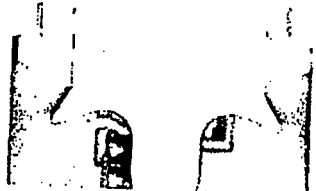
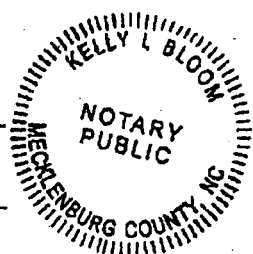
[Signature]
Witness

[Signature]
Eddie Deaver
Technical Services Engineer

[Signature]
Witness

Sworn to and subscribed before me this 18th day of August 2009

[Signature]
Notary Public of State of North Carolina
My commission expires 3/31/2014





APPROVED
Angus USA
Director, Corporate Quality Assurance
2/28/11

February 2, 2011

Mr. Ken Vickers
Technical Services Manager
Ready Mixed Concrete Company
3610 Bush Street
Raleigh, NC 27069

RE: 2011 Fly Ash Certification

Dear Mr. Vickers

The SEFA Group certifies through this letter that the fly ash from our South Carolina, North Carolina, and Maryland sources comply with the requirements set forth in ASTM C 618, Class F, when sampled and tested in accordance with ASTM C 311. Our fly ash meets the requirements of AASHTO M-295 and the SC, NC, GA, and VA departments of transportation. Unless written notification of change in status is received by you in a letter from The SEFA Group, this certification will apply to any and all phases on construction projects supplied by Ready Mixed Concrete Co., Inc.

Source	Avg. LOI
Wateree CBO, Wateree, SC	2.47%
Winyah CBO, Georgetown, SC	2.44%
Cliffside Station, Mooresboro, NC	2.15%
Cross Station, Pineville, SC	3.27%
Morgantown Station, Newburg, MD	6.12%
McMeekin Station, Columbia, SC	0.92%
Belews Creek Station, Belews Creek, NC	2.56%

The weight % of water soluble chloride is < 0.002 .

We appreciate the opportunity to serve you. Please let us know if we can be of further assistance.

Sincerely,

Bert Nunn
Vice President, Operations

Notary Public

Sworn to and Subscribed Before Me,

This 2nd Day of February, 2011

Signed: [Signature]
Notary Public of South Carolina

My Commission Expires: October 19, 2015

Administrative Office
217 Cedar Road
Lexington, SC 29073
Tel (803) 520-9000
Fax (803) 520-9001

Corporate Office
P.O. Box 6
Moncks Corner, SC 29461
Tel (843) 761-1999
Fax (843) 899-7213

ROA000289

MURRAY MINES, INC.
2696 HIGHWAY 17-A, SOUTH
SUMMERVILLE, SC 29483
PHONE (843)873-0056 FAX (843)873-4423

APPROVED
[Signature]
Argos USA
Director, Corporate Quality Assurance
11/9/10

April 28, 2010

Ready Mixed Concrete
2769 Three Lakes Road
North Charleston, SC 29418

Murray Mines, Inc. certifies that the sand purchased by Ready Mixed Concrete designated as FA-10 meets ASTM C33 and SCDOT requirements.

[Signature: Elaine C. Murray]
Elaine C. Murray
Vice President

State of South Carolina
County of Dorchester

On this 28th day of April 2010 before me personally appeared Elaine C. Murray who provided satisfactory evidence of her identification to be the person whose name is subscribed to this instrument, and she acknowledged that she executed the foregoing instrument.

[Signature: Leigh H. Murray]
Leigh H. Murray - Notary Public
Berkeley County, South Carolina
My Commission Expires: March 2, 2015

ROA000290



Project Name:
Project Number:
GS2 Laboratory ID:
Aggregate Type:
Date:

Murray Mines

10-8172L

88303

Concrete Sand

29-Mar-2010

Test Procedure	ASTM Designation	Sample Results
Bulk Density	C29	104.5 lb/ft ³
Organic Impurities	C40	Color Plate 2
Soundness (Magnesium Sulfate)	C88	8.3% Total Weighted Percentage Loss
Wash 200	C117	1.1 % Passing # 200 Sieve
Lightweight Particles (shale/chert)	C123	0.20%
Specific Gravity	C128	Specific Gravity = 2.64
Specific Gravity	C128	Bulk SSD Gravity = 2.64
Specific Gravity	C128	Apparent Gravity = 2.65
Specific Gravity	C128	Absorption = 1.6 %
Clay Lumps and Friable Particles	C142	0.10%
Alkali-Silica Reactivity	C289	Innocuous
Water Soluble Chloride Ion Content	C1218	< 0.002%
Mortar Bar Expansion	C1260	0.01%
Sand Equivalent	D2419	94 %
Particle Distribution	C136	Percent Passing
3/8 inch		100
# 4		100
# 8		97
# 16		85
# 30		58
# 50		23
# 100		1
Fineness Modulus		Fineness Modulus = 2.33



ROA000291

S. C. DEPARTMENT OF
TRANSPORTATION
FORM AGG203

TEST REPORT
FINE AGGREGATE
(SC STANDARD 701)

LABORATORY NO. 6878846
N. CHAS., SC 2/24/2010

FILE NO. 10426A PROJECT NO. PIN 22336

SAMPLE OF	FA-10	SUBMITTED BY	RICKIE GREEN
DATE SAMPLED	2/15/2010	ADDRESS	N. CHAS., S.C.
IDENTIFICATION MARKS	26+48 I-26	TO BE USED IN	12" Full Depth Patch
SAMPLE TAKEN FROM	Mini Stockpile	DATE RECEIVED	2/17/2010
SAMPLED BY	Don K.	DATE TESTED	2-22&24-2010
QUANTITY REPRESENTED	500 TONS	TESTED BY	M. BROWN
SUPPLY SOURCE	MURRY MINES		
ADDRESS	RIDGEVILLE, SC	SM SAMPLE ID.	610-00-1518

FINE AGGREGATE GRADATION (AASHTO T-27)

TOTAL PASSING 3/8"	100	%
TOTAL PASSING No. 4	100	%
TOTAL PASSING No. 8	96	%
TOTAL PASSING No. 16	80	%
TOTAL PASSING No. 30	48	%
TOTAL PASSING No. 60	15	%
TOTAL PASSING No. 100	2	%
TOTAL PASSING No. 200	0	%

ORGANIC IMPURITIES IN FINE AGGREGATES (AASHTO T-21)

ORGANIC COLORIMETRIC (AASHTO T-21) 2. Impurities are within tolerance.

EFFECT OF ORGANIC IMPURITIES IN FINE AGGREGATE ON STRENGTH OF MORTAR (AASHTO T-71)

STRENGTH TEST AT 7 DAYS %

STRENGTH TEST AT 28 DAYS %

Note: Strength test is not required if color is less than 4.

This sample of FA-10 Does meet SCDOT specifications.

NOTES

COPY TO	CENTRAL LAB FILE	COPY TO	DIST. 6 LAB FILE
COPY TO	MATLAB	COPY TO	
COPY TO	LOCKMAN	COPY TO	

AASHTOT21
Rev. 8/00

M. O. FLETCHER
MATERIALS AND RESEARCH ENGINEER

ROA000292



The Chemical Company

February 1, 2010

Certificate of Conformance
Pozzolith 80
BASF Construction Chemicals* Admixture for Concrete

(*Previously doing business as BASF Admixtures, Inc and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.)

Ready Mixed Concrete Co.
Attn: Ken Vickers
ken.vickers@rmcc.com

TO WHOM IT MAY CONCERN:

State of Ohio)
County of Cuyahoga) ss

Before me, a Notary Public, in and for the aforesaid State and County, personally appeared Mark E. Piechuta, who being duly sworn, deposes and says:

That he is Sr. Technical Marketing Specialist for BASF Construction Chemicals, LLC in Cleveland, Ohio; and

That no calcium chloride or chloride based ingredient is used in the manufacture of Pozzolith 80; and

That Pozzolith 80, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.0002 percent (2.0 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That Pozzolith 80, depending upon the dosage used, meets the requirements for a Type A, Water-Reducing, Type B, Retarding, and Type D, Water-Reducing and Retarding Admixture specified in ASTM C 494 and Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Mark E. Piechuta
BASF Construction Chemicals

Subscribed and sworn to before me
This 1st day of February, 2010

Charlene R. Mandat
Notary Public, State of Ohio
My Commission Expires 11/4/11
(Recorded in Summit County)

* Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.

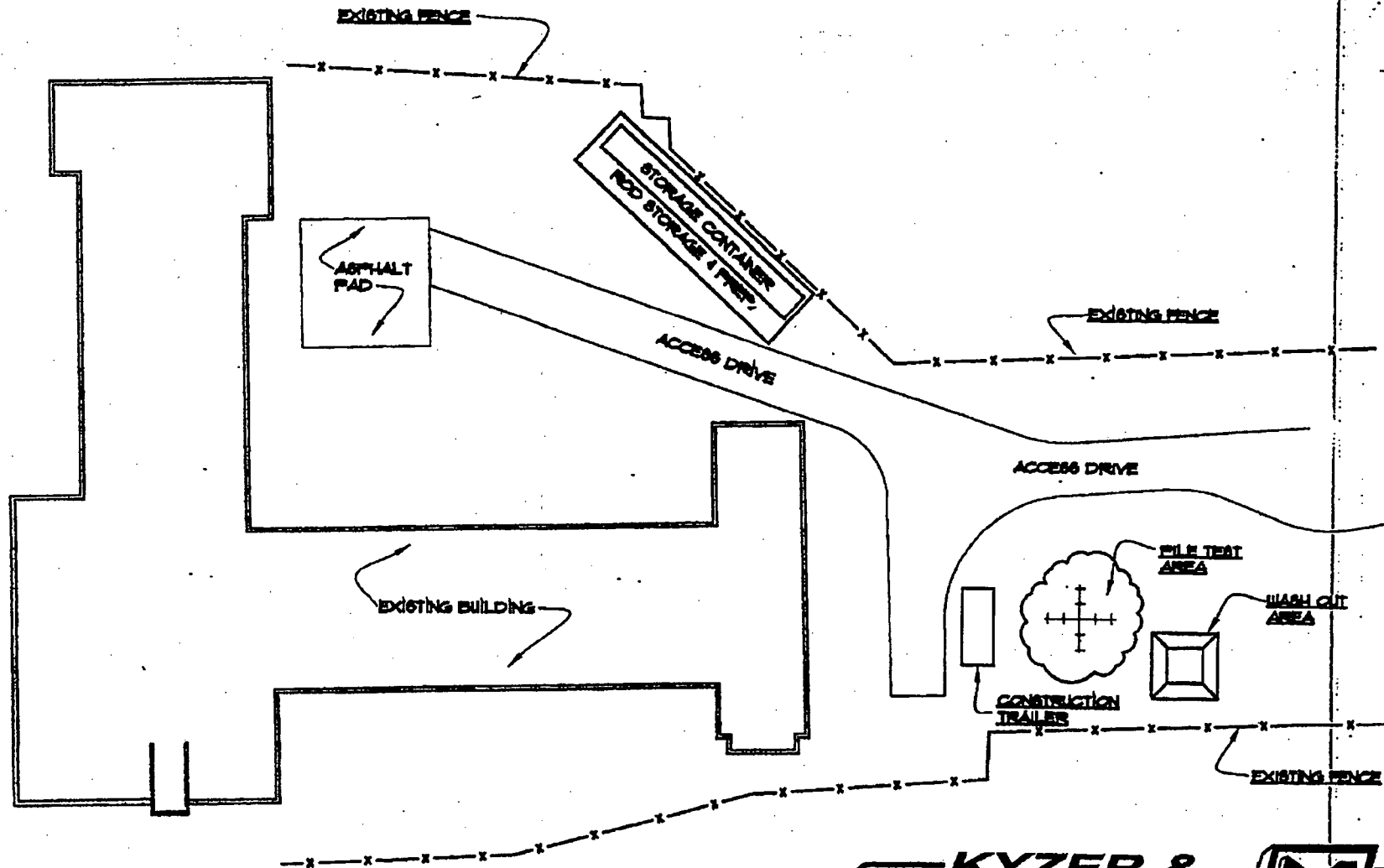
BASF Construction Chemicals
23700 Chagrin Boulevard
Cleveland, Ohio 44122 USA
216 839-7500 ph
www.masterbuilders.com

**Master
Builders**

Admixture Solutions

ROA000293

ROA000294



SITE LAYOUT
NOT TO SCALE

**KYZER &
TIMMERMAN**
STRUCTURAL ENGINEERS

543 Chris Drive, West Columbia, S.C. 29189 Ph. 803.781.4511 Fax 803.781.4522

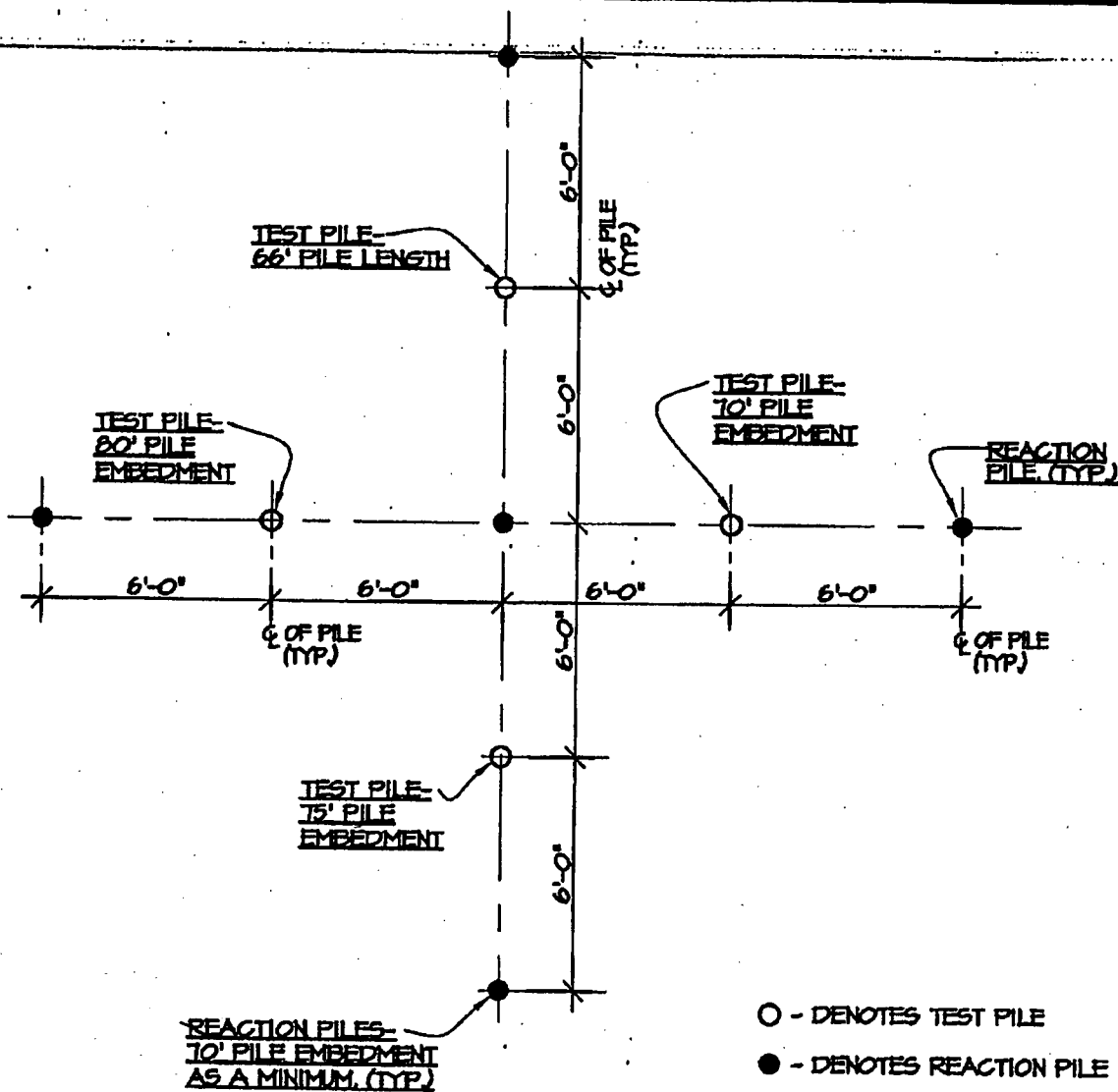


SITE LAYOUT

11-158

APRIL 11TH, 2011

5100



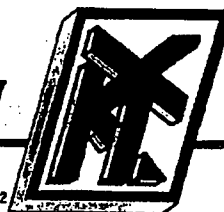
TEST PILE CONFIGURATION

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

KYZER & TIMMERMAN

STRUCTURAL ENGINEERS

580 Chris Drive, West Columbia S.C. 29169 Ph. 803.791.4511 Fax 803.791.4522



TEST PILE CONFIGURATION

JOB NUMBER

11-158

DATE

APRIL 11TH, 2011

SHEET 5101

ROA000295

APPENDIX B - LOAD TESTING APARATUS

Load Frame Details

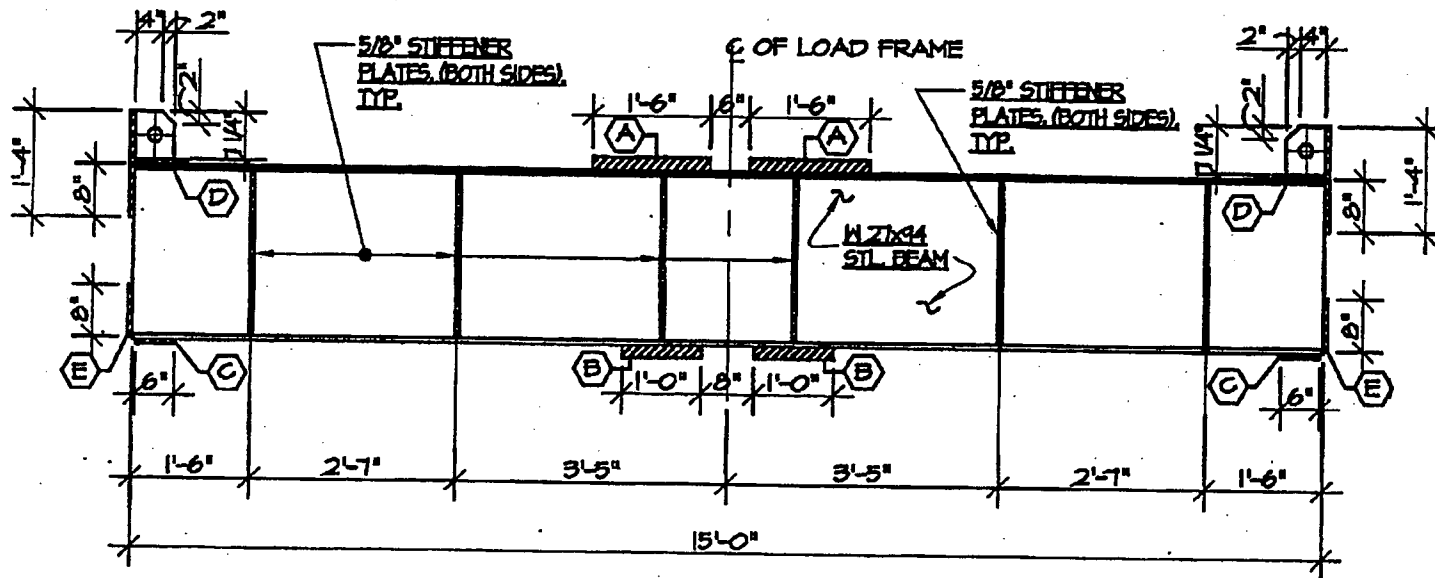
Load Jack and Cell Specifications and Calibration Data

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

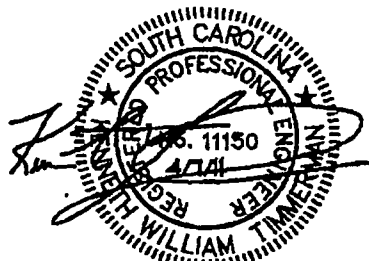
ROA000296

ROA000297

- (A) PLATE: 2" THICK x 18"x 2'-0"
- (B) PLATE: 2" THICK x 12"x 2'-0"
- (C) PLATE: 3/4" THICK x 6"x 2'-0"
- (D) PLATE: 3/4" THICK x 8"x 2'-0"
- (E) PLATE: 3/4" THICK x 8"x 2'-2"



LOAD FRAME
SCALE 1/2" = 1'-0"



SC -COA #C00T14

**KYZER &
TIMMERMAN**

STRUCTURAL ENGINEERS

580 Chris Drive, West Columbia S.C. 29169 Ph. 803.791.4511 Fax 803.791.4522



LOAD FRAME

JOB NUMBER

11-158

DATE

APRIL 7TH, 2011

REVISION 5104



WELCOME GUEST
[Global](#) | [Register](#) | [Login](#)

ITEMS FOR QUOTE - 0

[PRODUCTS](#) | [SUPPORT](#) | [MY ACCOUNT](#) | [OUR COMPANY](#) | [CONTACT US](#)

[FAQ](#) | [Live Chat](#) | [Mobile](#) | [Help](#)

800-472-6703

[Home](#) > [Products](#) > [Indicators/Controllers](#) > [Rice Lake](#) > [920i[®] Programmable Indicator/Controller](#)

[Email](#) | [Print](#) | [Share](#)

[News](#)

[Training](#)

[Webinars](#)

[Overview](#) | [Model 9i](#) | [Options](#) | [Parts](#) | [Manuals](#) | [Literature](#) | [Software](#) | [Resources](#)

Please click the tabs above for more information on models and pricing.

920i[®] Programmable Indicator/Controller

request quote
 request info



specifications page

360° view

more images

media

webinars

articles

literature



Rice Lake's well-rounded indicator selection is led by the impressive and adaptable 920i, delivering more features, more programmability, and more power for your process. The 920i combines performance-driven circuitry, simplified architecture, and customized display features to take your system further. Choose from our universal, panel mount, or wall-mount style.

Up to ten different screens can be programmed to change with any given process, while graphic icons and messages show setpoint and function status. The multi-channel display feature shows the weight on an individual scale or a combination of totalized scales. When used in batching/mixing applications, one 920i is capable of handling multiple scale, flow temperature and pulse. It can control hundreds of I/O setpoints, queuing such things as gates and conveyors. The 920i's complete database capability stores your important data and files.

- Large (4.5" W x 3.4" H, 320 x 240 pixel) back-lit LCD graphical display
- Selectable character sizes from .25" to 1.2"
- 60 configurable operator prompts
- Display up to four scale channels per screen with required legal-for-trade information
- 32 scale accumulators
- Five soft keys with 10 user-defined, 14 preset functions per screen
- 10 programmable display screens
- Millivolt calibration, 5-point linearization and geographical calibration
- NEMA 4X/IP66 stainless steel enclosure
- Selectable A/D measurement rate up to 960/second
- 100 setpoints, 30 configurable setpoint types
- Two slots for option cards
- 1,000-ID truck register for in/out weighing
- 64K user on-board NV RAM
- User programmable 1024K flash memory
- Refresh memory to upgrade firmware
- Power for 16, 350 ohm load cells per A/D board
- 4 communication ports

Approvals






[Overview](#) | [Model 9i](#) | [Options](#) | [Parts](#) | [Manuals](#) | [Literature](#) | [Software](#) | [Resources](#)

Follow Us On:

To be the best by every measure[™]

© Rice Lake Weighing Systems. All rights reserved
 An ISO Registered Company

230 W Coleman St Rice Lake, WI 54868
 800-472-6703 | prodinfo@ricelake.com

Products	Support	Our Company	Contact Us	Features	Website Help
Download PDF Catalogs Products A-Z Recently Viewed Products Website Search	Article Library Download PDF Catalogs Frequently Asked Questions Manuals Request Service Sales Support	About Rice Lake Careers Company History Directions How to Buy Products ISO Accreditations	Contact Us Directions Emergency Contacts Request a Dealer Website Help	eSource Global Resources from Rice Lake Weighing Systems News On Location Bus	Help Privacy Policy Site Map Terms of Use

CAROLINA SCALES



Scale Calibration Data

P.O. BOX 8238

Columbia, South Carolina, 29203

(803) 738-1386

(803) 738-1386

www.carolinascales.com

ISO 17025

Certificate No.

ISO/IEC 17025 L05-01

Customer: J.E. Overat & Sons
Address: 1561 Chiquagon Rd
City, State Zip: Batesburg, SOUTH CAROLINA 29006

Certificate ID: 12431102801
ISO Number: ISO/IEC 17025 L05-01
Date: 1/26/2010

Indicator Mtg
Rise Laby
Indicator Model
3701
Indicator Serial
1385700103
Test Interval
1 Year

Base Mtg.

Revers

Base Model

CSPT-200K

Base Serial

023283

Customer Scale ID

1385700103

Cal Date

1/26/2010

Due Date

1/31/2011

Procedure

N/A

Scale ID

1

Scale Class

0

Scale Status

In Service

Scale Location

Punc

Scale Range

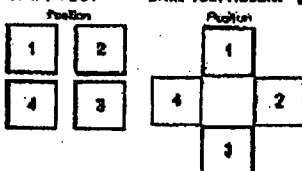
0 - 250000 lb x 100 lb

EQUIPMENT CONDITIONS

[Working] Non-Working [Clean] Dirty Out of Level Out of Service

SHIFT TEST

Shift Test Result: [Pass] Fail Adjust Not Applicable



All tolerances calculated in accordance with specified fixed weights.

LOAD TEST

Preliminary Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10000 lb	0 lb
20000 lb	20100 lb	100 lb
30000 lb	30100 lb	100 lb
40000 lb	40200 lb	200 lb
45000 lb	45200 lb	200 lb

In maintenance tolerance? [Yes] No

Final Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10200 lb	200 lb
20000 lb	20300 lb	300 lb
30000 lb	30400 lb	400 lb
40000 lb	40500 lb	500 lb
45000 lb	45000 lb	0 lb

In acceptance tolerance? [Yes] No

TEST INFORMATION

Test Weight Classifications

NIST Traceability Certificate Number:

Standards Used:

Test Location:

Overall Result:

Was the scale within customer required accuracy?

Environmental Conditions:

Comments / Notes:

Technician:

F

3063211500 Cal Date: 1/26/2010 Recal Date: 1/26/2011

ECN Test Req

[Drifted] Offset:

[Pass] Fail Adjust

[Y] N

[Acceptable] Unacceptable

N/A

Gregg Broadnax

Scales were calibrated with certified test weights. Adjustments were made to restore and/or maintain the accuracy of the scale conform to the tolerances established by the National Institute of Standards and Technology as specified in Handbook 44 Section 2.2, or Manufacturers Specifications. Best measurement of uncertainty calculated using a coverage factor of K=2. This provides confidence level of 95%. This certificate shall not be reproduced, except in full, with the written approval of the laboratory. Measurement uncertainty available on request.

CAROLINA SCALES



Scale Calibration Data

P.O. BOX 8233
Columbia, South Carolina, 29203
(803) 738-4360
(803) 738-4365
www.carolinascales.com

ISO 17025
Certificate No.
ISO/IEC 17025 L05-00

Customer: J.E. Cowart & Sons
Address: 1561 Chiquiquin Rd
City, State Zip: Bennettsville, SC 29008

Certificate ID: 12632102801
ISO Number: ISO/IEC 17025 L07-102-01
Date: 1/29/2010

Indicator Mfg.
Rice Lake
Indicator Model
8201
Indicator Serial
1385700033
Test Interval
1 Year

Base Mfg.
Rexnord
Base Model
CSP-1-200K
Date Serial
2
Customer Scale ID
1385700033

Cal Date
1/29/2010
Due Date
03/1/2011
Procedure
N/A

Scale ID
2
Scale Class
N
Scale Status
In Service

Scale Location
Plant
Scale Range
0 - 200000 lb x 100 lb

EQUIPMENT CONDITIONS

[Working] Non-Working [Clean] Dirty Out of Level Out of Service

SHIFT TEST

Shift Test Result: [Pass] Fail Adjust Not Applicable

Position		Position	
1	2	1	
4	3	4	2
		3	

All tolerances calculated in accordance with specified test weights.

LOAD TEST

Preliminary Load Test		
Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10200 lb	200 lb
20000 lb	20200 lb	200 lb
30000 lb	30200 lb	200 lb
40000 lb	40200 lb	200 lb
45000 lb	45200 lb	200 lb

In maintenance tolerance? [Yes] No

Final Load Test		
Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10000 lb	0 lb
20000 lb	20000 lb	0 lb
30000 lb	30000 lb	0 lb
40000 lb	40000 lb	0 lb
45000 lb	45100 lb	100 lb

In acceptance tolerance? [Yes] No

TEST INFORMATION

Test Weight Classification:
NIST Traceability Certificate Number:
Standards Used:
Test Location:
Overall Results:
Was the scale within customer's required accuracy?
Environmental Conditions:
Comments / Notes:
Technician:

F
S083211009 Cal Date 1/29/2010 Recal Date 1/26/2011
S08 Test Rig
(Unset) Offsets
(Pass) Fail Adjust
(Y) N
(Acceptable) Unacceptable
N/A
Gregg Broachan

Scales were calibrated with certified test weights. Adjustments made to restore and/or maintain the accuracy of the scale conform to the tolerances established by the National Institute of Standards and Technology as specified in Handbook 44 Section 7.2, or Manufacturer's Specifications. Test measurement of uncertainty calculated using a coverage factor of K=2. This provides confidence level of 95%. This certificate shall not be reproduced except in full with the written approval of the laboratory. Measurement uncertainty available on request.

CAROLINA SCALES



Scale Calibration Data

P.O. BOX 8233

Columbia, South Carolina, 29203
(803) 738-4360
(803) 738-4365
www.carolinascales.com

ISO 17025
Certificate No.
ISO/IEC 17025 L05-56

Customer: J.F. Gwalt & Sons
Address: 1581 Chinquapin Rd
City, State Zip: Batesburg, SOUTH CAROLINA 29006

Certificate ID: 12433102801
ISO Number: ISO/IEC 17025 L07-102-R1
Date: 1/28/2010

Indicator Mfg
Rite L, Inc.
Indicator Model
300
Indicator Serial
138570003
Test Interval
1 Year

Base Mfg
Review
Base Model
CRP1-200K
Base Serial
900287
Customer Scale ID
138570003

Cal Date
1/28/2010
Due Date
1/31/2011
Procedure
N/A

Scale ID
3
Scale Class
III
Scale Status
In Service

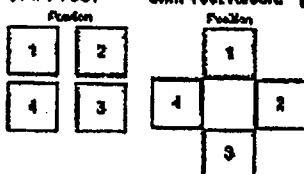
Scale Location
Plant
Scale Range
0 - 200000 lb x 100 lb

EQUIPMENT CONDITIONS

(Working) Non-Working (Clean) Dirty Out of Level Out of Service

SHIFT TEST

Shift Test Results (Pass) Fail Adjust Not Applicable



All tolerances calculated in conformance with specified rated weight.

LOAD TEST

Preliminary Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10000 lb	0 lb
20000 lb	20000 lb	0 lb
30000 lb	30000 lb	0 lb
40000 lb	40000 lb	0 lb
50000 lb	50000 lb	0 lb

In acceptance tolerance? [Yes] No

Final Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10000 lb	0 lb
20000 lb	20000 lb	0 lb
30000 lb	30000 lb	0 lb
40000 lb	40000 lb	0 lb
50000 lb	50000 lb	0 lb

In acceptance tolerance? [Yes] No

TEST INFORMATION

Test Weight Classification:
NIST Traceability Certificate Number:
Standards Used:
Test Location:
Overall Result:
Was the scale within customer required accuracy?
Environmental Conditions:
Comments / Notes:
Technician:

P
30032J1609 Cal Date: 1/28/2010 Recal Date: 1/28/2011
Sck York Mfg
(Qualify) Offsite
(Pass) Fail Adjust
[Y] N
(Acceptable) Unacceptable
N/A
Gregg Broadnax

Scales were calibrated with certified test weights. Adjustments made to restore and/or maintain the accuracy of the scale conform to the tolerances established by the National Institute of Standards and Technology as specified in NIST Handbook 44 Section 2.2, or Manufacturers Specifications. The measurement of uncertainty calculated using a coverage factor of K=2. This provides confidence level of 95%. This certificate shall not be reproduced except in full, with the written approval of the laboratory. Measurement uncertainty available on request.

CAROLINA SCALES

Scale Calibration Data

P.O. BOX 8232

Columbia, South Carolina 29203

(803) 738-4360

(803) 738-4366

www.carolinascales.com

ISO 17025
Certificate No
ISO/IEC 17025 L07-01

Customer: J.E. Oswald & Sons
Address: 1561 Chiquappa Rd
City, State Zip: Batesburg, SOUTH CAROLINA 29008

Certificate No: 12431102801
ISO Number: ISO/IEC 17025 L07-012 R1
Date: 1/26/2010

Indicator Mfg.
Rico Lake
Indicator Model
0201
Indicator Serial
1385700033
Test Interval
1 Year

Base Mfg.
Total Corp
Base Model
TCP1-200L
Base Serial
39990
Customer Scale ID
1385700033

Cal Date
1/26/2010
Due Date
1/31/2011
Procedure
N/A

Scale ID
4
Scale Class
F3
Scale Status
In Service

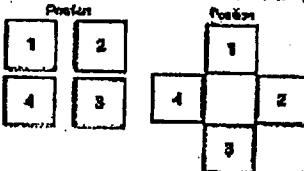
Scale Location
Plant
Scale Range
0 - 200000 lb x 100 lb

EQUIPMENT CONDITIONS

[Working] Non-Working [Clean] Dirty Out of Level Out of Service

SHIFT TEST

Shift Test Result: [Pass] Fail Adjust Not Applicable



All tolerances calculated in conformance with specified fixed weights.

LOAD TEST

Preliminary Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
70000 lb	10100 lb	100 lb
20000 lb	20100 lb	100 lb
30000 lb	30200 lb	200 lb
40000 lb	40200 lb	200 lb
45000 lb	45300 lb	300 lb

In maintenance tolerance? Yes [No]

Final Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10000 lb	0 lb
20000 lb	20000 lb	0 lb
30000 lb	30000 lb	0 lb
40000 lb	40000 lb	0 lb
45000 lb	45000 lb	0 lb

In acceptance tolerance? [Yes] No

TEST INFORMATION

Test Weight Classification:
NIST Traceability Certificate Number:
Standards Used:
Test Location:
Overall Result:
Was the scale within customers required accuracy?
Environmental Conditions:
Comments / Notes:
Technician:

F
30532J/609 Cal Date: 1/26/2010 Recd Date: 1/26/2010
80K Test Rtg
[Onsite] Offsite
[Pass] Fail Adjust
[Y] N
[Acceptable] Unacceptable
N/A
Gregg Broadnax

Scales were calibrated with certified test weights. Adjustments made to restore and/or maintain the accuracy of the scale conform to the tolerances established by the National Institute of Standards and Technology as specified in Handbook 44 Section 2.2, or Manufacturers Specifications. Best measurement of uncertainty calculated using a coverage factor of k=2. This provides confidence level of 95%. This certificate shall not be reproduced except in full, with the written approval of the Laboratory. Measurement uncertainty available on request.

CAROLINA SCALES

Scale Calibration Data

P.O. Box 8233

Columbia, South Carolina 29203

(803) 738-4350

(803) 738-4355

www.carolinascales.com

ISO-17025

Certificate No

ISO17025 17025.1.05-06

Customer: J.F. Cress & Sons
Address: 1561 Chippenden Rd
City, State Zip: Rainburg, SOUTH CAROLINA 29026

Certificate ID: 17456102801
ISO Number: 1501EC 17025.1.07-11.0 R1
Date: 1/26/2010

Indicator Mfg.
Rye Leds
Indicator Model
9201
Indicator Serial
1305/00033
Test Interval
1 Year

Base Mfg.
Total Comp
Base Model
TCF-1200L
Base Serial
51841
Customer Scale ID
1285700033

Cal Date
1/26/2010
Due Date
1/31/2011
Procedure
N/A

Scale ID
A
Scale Class
III
Scale Status
In Service

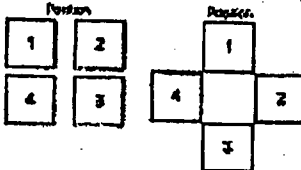
Scale Location
RAC
Scale Range
0 - 200000 lb x 100 lb

EQUIPMENT CONDITIONS

(Working) (Not Working) (Clean) (Dry) (Level) (Out of Service)

SHIFT TEST

Shift Test Result: (Pass) (Fail) (Adjust) (Not Applicable)



All tolerances calculated in conformance with Handbook 44 Table 6.

LOAD TEST

Preliminary Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10200 lb	200 lb
20000 lb	20200 lb	200 lb
30000 lb	30300 lb	300 lb
40000 lb	40300 lb	300 lb
45000 lb	45300 lb	300 lb

In maintenance tolerance? Yes (No)

Final Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10000 lb	0 lb
20000 lb	20000 lb	0 lb
30000 lb	30000 lb	0 lb
40000 lb	40000 lb	0 lb
45000 lb	45000 lb	0 lb

In acceptance tolerance? (Yes) (No)

TEST INFORMATION

Test Weight Classification:

NIST Traceability Certificate Number:

Standards Used:

Test Location:

Overall Results:

Was the scale within customer required accuracy?

Environmental Conditions:

Comments / Notes:

Technician:

F

3083211600 Cal Date: 1/26/2010 Recal Date: 1/26/2011

50k Test Rig

(Onsite) (Offsite)

(Pass) (Fail) (Adjust)

(Y) (N)

(Acceptable) (Unacceptable)

N/A

Gregg Brachman

Scales were calibrated with certified test weights. Adjustments made to restore and/or maintain the accuracy of the scale conform to the tolerances established by the National Institute of Standards and Technology as specified in Handbook 44 Section 2.2, or Manufacturer Specifications. Final measurement of uncertainty calculated using a coverage factor of K=2. This provides confidence level of 95%. This certificate shall not be required, except in full, with the written approval of the laboratory. Measurement uncertainty available on request.

* Load cell used in T.P.1

CAROLINA SCALES

Scale Calibration Data

P.O. BOX 8223

CONWAY, South Carolina 29503

(803) 739-4360

(803) 738-4365

www.carolina-scales.com

ISO 17025

Certificate No.

ISO/IEC 17025 L05-00

Customer: J.E. Owsen & Sons
Address: 1551 Chinquapin Rd
City, State Zip: Santee, SOUTH CAROLINA 29506

Certificate ID: 1243610201
ISO Number: ISO/IEC 17025 L07-102 R1
Date: 1/26/2010

Indicator Mfg.
Rice Lake
Indicator Model
920
Indicator Serial
1385700033
Test Interval
1 Year

Scale Mfg.
Tulac Comp
Base Model
TCP1-200L
Base Serial
51910
Customer Scale ID
1385700033

Cal Date
1/26/2010
Due Date
1/31/2011
Procedure
N/A

Scale ID
S
Scale Class
III
Scale Status
In Service

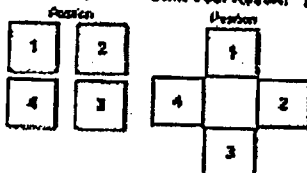
Scale Location
Plant
Scale Range
0 - 200000 lb x 100 lb

EQUIPMENT CONDITIONS

[Working] Non-Working [Clean] Dirty Out of Level Out of Service

SHIFT TEST

Shift Test Result: [Pass] Fail Adjust No Applicable



All tolerances calculated in conformance with Handbook 44 Table 6.

LOAD TEST

Preliminary Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10100 lb	100 lb
20000 lb	20200 lb	200 lb
30000 lb	30200 lb	200 lb
40000 lb	40200 lb	200 lb
45000 lb	45200 lb	200 lb

In maintenance tolerance? Yes [No]

Final Load Test

Test Wt.	Reading	Error
0 lb	0 lb	0 lb
10000 lb	10000 lb	0 lb
20000 lb	20000 lb	0 lb
30000 lb	30000 lb	0 lb
40000 lb	40000 lb	0 lb
45000 lb	45000 lb	0 lb

In acceptance tolerance? [Yes] No

TEST INFORMATION

Test Weight Classification:

NIST Traceability Certificate Number:

Standards Used:

Test Location:

Overall Result:

Was the scale within customers required accuracy?

Environmental Conditions:

Comments / Notes:

Technician:

F

30632/1009 Cal Date: 1/26/2010 Recal Date: 1/26/2011

90% Test Pkg

[Onsite] Offsite

[Pass] Fail Adjust

[Y] N

[Acceptable] Unacceptable

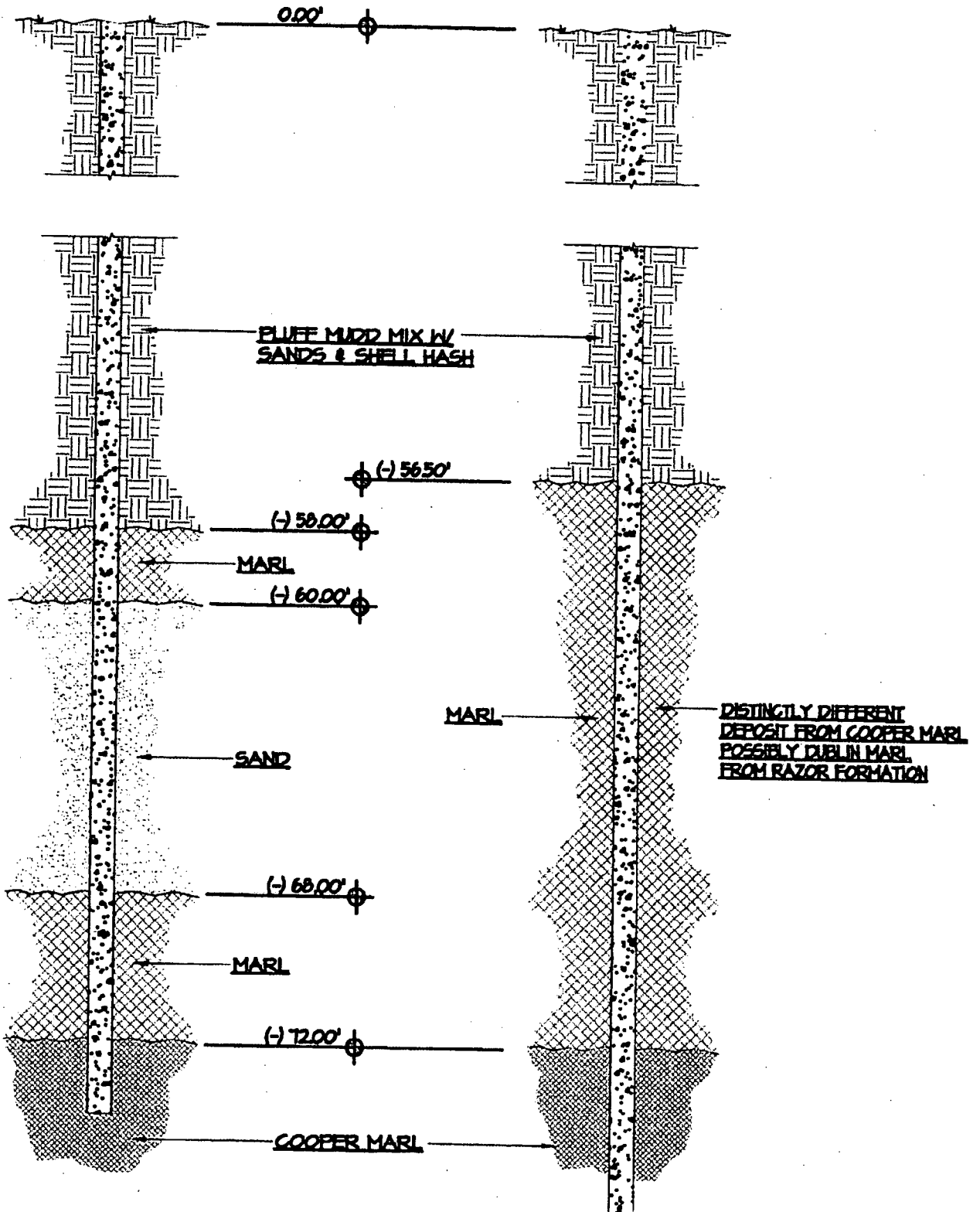
N/A

Gregg Broadnax

Scales were calibrated with certified test weights. Adjustments made to restore and/or maintain the accuracy of the scale conform to the tolerances established by the National Institute of Standards and Technology as specified in Handbook 44 Section 2.2, or Manufacturer's Specifications. Uncertainty of measurement of uncertainty calculated using a coverage factor of K=2. This provides confidence level of 95%. This valid date and not be interpreted, except in full, with the written approval of the laboratory. Measurement uncertainty available on request.

LOAD TEST AREA

NEAR BUILDING



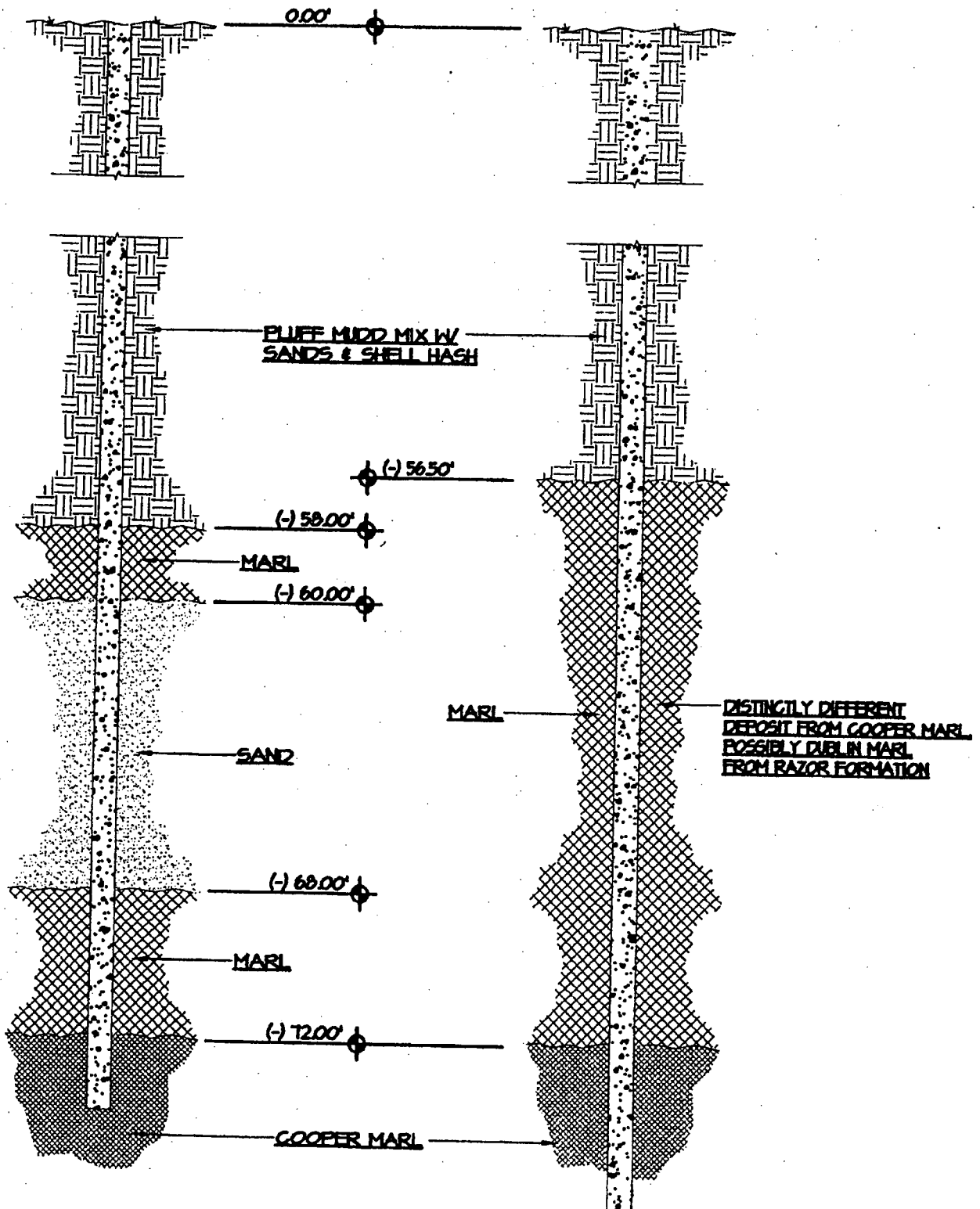
RIVERS EDUCATION SEISMIC RETROFIT
ROUGH CROSS-SECTION (NO LAB DATA)

ROA000305

H7

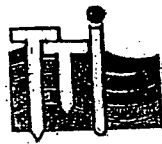
LOAD TEST AREA

NEAR BUILDING



RIVERS EDUCATION SEISMIC RETROFIT

ROA000306



TERRATEC, INC.
Soil and Foundation Stabilization Specialists

June 25, 2011

Mr. Scott Spigener
M.B.Kahn Construction Company
2950 Farrow Road
Columbia, South Carolina 29203

Re: Rivers Educational Center Seismic Retrofit
and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Dear Scott:

This memo will serve as notification that Terratec, Inc. anticipates the submittal of a formal request for a substantial delay. We respectfully forward this memo as required in the contract documents for your use.

As you know, there are differences concerning the soil conditions and the results of the load tests. We are in the process of gathering information to assist the design team in resolving the issues pertaining to the deep foundations for this project. Hopefully, these issues can be resolved quickly.

It is our goal to provide the design team with supplemental data and at the same time continue to move forward with the project.

Sincerely,

Chris Morrison

cc: File



CHANGE ORDER REQUEST

No. 2

TERRATEC

1350 METHODIST PARK ROAD

WEST COLUMBIA, SC 29170

803-791-8888 - OFFICE

803-791-1050 - FAX

Date: September 1, 2011

Attn: Mr. Scott Spigener

**Proj.: Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina**

Ref: Schedule Delay - Tier 1, June 25, 2011 - Load Test No.1 Change Order Request

Dear Mr. Spigener:

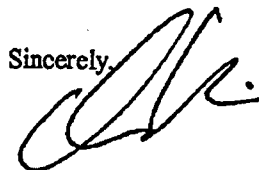
As we identified in our June 25, 2011 Notification, per contract documents, Terratec experienced a substantial schedule delay in the execution of the load test program, due to the presence of a subsurface anomaly that was encountered at the initial load test location.

Verification of this anomaly was exacted initially by the conductance of a soil boring completed on June 24, 2011. It was further verified upon the successful completion of load testing on similar piles at the alternate load test location. A summary of the soil boring data was provided in our original Notification, while the results of the most recent load test has been submitted in the Pile Load Test Results Report, dated August 24, 2011.

As recorded in the soil boring, the soil conditions recorded at the first test pile location undeniably did not match the soil conditions represented to exist by the design and contract documents under which we conducted our initial design for the test piles. Alternately, the soil conditions at the second test pile location more closely resembled the subsurface conditions represented as the "Best Estimate" in the design and contract documents. Further, the performance of the test piles during load testing were markedly improved at the second load test location. In comparison, the 78 foot pile at the second load test location undeniably outperformed the 78 foot pile at the initial load test location, and the projected pile length at the second test pile location was 9 feet shallower than the shortest projected production pile length established at the initial load test location.

As a result of the varying subsurface conditions in which the test piles were installed, and due to the fact that the design and construction team selected the test pile location (e.g. the test pile location was not specified on the bid documents), we are requesting a Change Order be made to our existing contract to cover our costs associated with the initial load test due to conditions beyond our control (e.g. unforeseen subsurface conditions and test pile location directive). The amount of this Change Order follows the fee established under our schedule of values for load testing (e.g. \$65,000.00). A pay application is attached. Please contact us with any questions or comments.

Sincerely,



Chris Morrison, Vice President
Terratec

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED
ROA000308



ITEMIZED - CHANGE ORDER
No. 2

TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
8037918888 OFFICE
8037911050 FAX

Proj.: Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Ref: Schedule Delay - Tier 1, June 25, 2011 - Load Test No.1 Change Order Request

A summary of the conditions surrounding the itemized breakdown detailed below is attached to the cover sheet.

Change Order Work Task Description - Load Test No. 1

Work Task	% Complete	Start and Complete Dates	Reason for Change Order	Schedule of Values	Schedule of Values Fee	Non-Schedule Cost	Markup	Delay Accrued (days)	CO Request Amount
Load Test #1	100%	May 10 - June 14, 2011	Unforeseen Site Conditions	Yes	\$65,000.00	\$0.00	0%	35	\$65,000.00

Total Change Order Request \$65,000.00

ITEMIZED - CHANGE ORDER No.**2**

TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
8037918888 OFFICE
8037911050 FAX

Proj.: Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Ref: Schedule Delay - Tier 1, June 25, 2011 - Load Test No.1 Change Order Request

A summary of the conditions surrounding the itemized breakdown detailed below is attached to the cover sheet.

Change Order Work Task Description - Load Test No. 1

Work Task	% Complete	Start and Complete Dates	Reason for Change Order	Schedule of Values	Schedule of Values Fee	Non-Schedule Cost	Markup	Delay Accrued (days)	CO Request Amount
Load Test #1	100%	May 10 - June 14, 2011	Unforeseen Site Conditions	Yes	\$65,000.00	\$0.00	0%	35	\$65,000.00

Total Change Order Request \$65,000.00

ROA000310

WorkCentre 7120

Job History Report

Date & Time : 03/06/2012 12:11 PM

Page : 1 (Last Page)

Date	Time	Input Source	Output Destination	Job Information	Page Information	Pages	Sheets	Job Status
03/06/2012	12:11:20 PM	Scanner	Send Fax	File 6232				Completed
03/06/2012	12:11:19 PM	Folder	Super Q3:18886006513:MetroFax	File 6232				Completed

ROA000311

CHANGE ORDER REQUEST

No. 3

TERRATEC

1350 METHODIST PARK ROAD

WEST COLUMBIA, SC 29170

803-791-8888 - OFFICE

803-791-1050 - FAX

Date: September 1, 2011

Attn.: Mr. Scott Spigener

Proj.: Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Ref: Schedule Delay - Tier 1, June 25, 2011 - Load Test No.1 Delay and Design Change Order Request

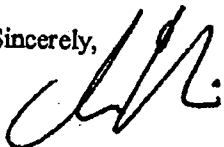
Dear Mr. Spigener:

As we identified in our June 25, 2011 Notification, per contract documents, Terratec experienced a substantial schedule delay in the execution of the load test program, due to the presence of a subsurface anomaly that was encountered at the initial load test location. Verification of this anomaly was exacted initially by the conductance of a soil boring completed on June 24, 2011. It was further verified upon the successful completion of load testing on similar piles at the alternate load test location. A summary of the soil boring data was provided in our original Notification, while the results of the most recent load test has been submitted in the Pile Load Test Results Report, dated August 24, 2011.

The presence of the subsurface anomaly created an unnecessary financial burden on Terratec that would have been averted if the bid and design conditions actually existed at the initial test pile location. In particular, this burden included the conductance of field drilling and sampling at two locations, additional design fees, and excessive administrative fees associated with the determination for failure and the submission of multiple subsequent submittals for the second load test. Additionally, Terratec was burdened financially with additional insurance fees and ongoing lease payments for equipment that was secured specifically for this project.

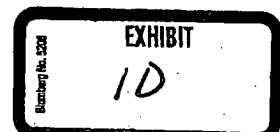
As a result of the varying subsurface conditions in which the test piles were installed, and due to the fact that the design and construction team selected the test pile location (e.g. the test pile location was not specified on the bid documents), we are requesting a Change Order be made to our existing contract to cover our costs associated with these unnecessary design and delay oriented costs due to conditions beyond our control (e.g. unforeseen subsurface conditions and test pile location directive). The amount of this Change Order request is on the order of \$46,143.27. A detailed breakdown of the costs incurred and a pay application are attached. Please contact us with any questions or comments.

Sincerely,



Chris Morrison, Vice President
Terratec

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED
ROA000312



ITEMIZED - CHANGE ORDER No. 3

TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
8037918888 OFFICE
8037911050 FAX

Proj.: Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Ref: Schedule Delay - Tier 1, June 25, 2011 - Load Test No.1 Delay and Design Change Order Request

A summary of the conditions surrounding the itemized breakdown detailed below is attached to the cover sheet.

Change Order Work Task Description - Load Test No. 1 Delay and Design

Work Task	% Complete	Start and Complete Dates	Reason for Change Order	Schedule of Values	Schedule of Values Fee	Non-Schedule Cost	Markup	Delay Accrued (days)	CO Request Amount
Terratec - Project Management	100%	June 15 - July 15, 2011	Unforeseen Site Conditions	No	\$0.00	\$10,000.00	0%	30	\$10,000.00
Terratec - Insurance	100%	June 15 - July 15, 2011	Unforeseen Site Conditions	No	\$0.00	\$4,755.87	0%	30	\$4,755.87
GS2 - SPT Drilling and Geotechnical Consultation	100%	June 15 - July 15, 2011	Unforeseen Site Conditions	No	\$0.00	\$13,710.00	10%	30	\$15,081.00
K&T - Structural Design and Consultation	100%	June 15 - July 15, 2011	Unforeseen Site Conditions	No	\$0.00	\$9,500.00	10%	30	\$10,450.00
ICE LA-3 Rental	100%	June 15 - July 15, 2011	Unforeseen Site Conditions	No	\$0.00	\$5,000.00	10%	30	\$5,500.00
Blanchard Rental	100%	June 15 - July 15, 2011	Unforeseen Site Conditions	No	\$0.00	\$324.00	10%	30	\$356.40

Total Change Order Request \$46,143.27

PAYMENT STATEMENT

Return this portion of invoice with payment
Terms are net 30 days from date of invoice.

Terratec, Inc.
1350 Methodist Park Rd
W. Columbia, SC 29170

Attention: Chris Morrison

Reference: Rivers Education Center
Project Number: 11-6332C
Invoice Number: 32180

Design /
Geo
& Envr.
GS2
ENGINEERING & ENVIRONMENTAL
CONSULTANTS, INC.

Corporate Office
1200 Veterans Road
Columbia, SC 29209
(Office) (803) 776-2105
(Fax) (803) 776-2106

Make Checks Payable to:
GS2 Engineering & Environmental Consultants, Inc.

Invoice Period: 16
Invoice Sub-Total Due: \$5,535.00
Finance Charges (%): \$0.00

Remit Payment to:
1200 Veterans Road
Columbia, SC 29209

Credit Card Payments May be Arranged

Invoice Overall Total Due: \$5,535.00

Keep this portion of invoice for your records



GS2 Engineering & Environmental Consultants, Inc.
Columbia Main Office - 241 Business Park Boulevard
Columbia, South Carolina 29203
(803) 750-1510 (803) 750-0773

Project Name: Rivers Education Center
Project No.: 11-6332C

Inv. Date: 8/19/11
Inv. No.: 32180

I N V O I C E

For Services Provided From 07/30/2011 to 08/12/2011

CONTRACT SERVICES

Personnel

Date	Work Task	Personnel	No. Hours	Unit Fee (per hr.)	Cost
1/1/00	SPT Drilling	Drilling Technician	8.00	\$40.00	\$320.00
1/1/00	Load / Travel	Drilling Technician	1.00	\$40.00	\$40.00
1/1/00	SPT Drilling	Licensed Driller	8.00	\$40.00	\$320.00
1/2/00	SPT Drilling	Drilling Technician	8.00	\$40.00	\$320.00
1/2/00	Load / Travel	Drilling Technician	3.00	\$40.00	\$120.00
1/2/00	SPT Drilling	Licensed Driller	7.00	\$40.00	\$280.00
1/2/00	Load / Travel	Licensed Driller	2.00	\$40.00	\$80.00
7/31/11	Load / Travel	Drilling Technician	6.00	\$40.00	\$240.00
7/31/11	Load / Travel	Licensed Driller	6.00	\$40.00	\$240.00
8/1/11	SPT Drilling	Drilling Technician	8.00	\$40.00	\$320.00
8/1/11	SPT Drilling	Project Manager	9.00	\$60.00	\$540.00
8/1/11	SPT Drilling	Licensed Driller	8.00	\$40.00	\$320.00
8/2/11	Sample Pick-up	Project Manager	1.00	\$60.00	\$60.00
8/2/11	SPT Drilling	Drilling Technician	5.50	\$40.00	\$220.00
8/2/11	Load / Travel	Drilling Technician	2.00	\$40.00	\$80.00
8/2/11	SPT Drilling	Licensed Driller	7.50	\$40.00	\$300.00
8/10/11	SPT Drilling	Project Manager	3.00	\$60.00	\$180.00
8/12/11	Project Support	Admin. Asst	1.00	\$45.00	\$45.00
01/01/1900*	SPT Drilling	Drilling Technician	3.50	\$60.00	\$210.00
01/01/1900*	SPT Drilling	Licensed Driller	4.50	\$60.00	\$270.00
08/01/2011*	SPT Drilling	Drilling Technician	4.50	\$60.00	\$270.00

Sub Total \$5,505.00

Report Type

Sub Total \$0.00

Personnel
Project Manager

Vehicle
Truck

Unit		
<u>Miles/Trips</u>	<u>Fee (per Mi/Trip.)</u>	<u>Cost</u>
1	\$30.00	\$30.00

Sub Total \$30.00

CONTRACT SERVICES SUBTOTAL \$5,535.00

OVERALL TOTAL DUE \$5,535.00

PAYMENT STATEMENT

Return this portion of invoice with payment
Terms are net 30 days from date of invoice.

Terratec, Inc.
1350 Methodist Park Rd.
W. Columbia, SC 29170

Attention: Chris Morrison

Reference: Rivers Education Center
Project Number: 11-6332C
Invoice Number: 32093

Invoice Period: 13
Invoice Sub-Total Due: \$11,085.00
Finance Charges (%): \$0.00

Make Checks Payable to:
GS2 Engineering & Environmental Consultants, Inc.

Remit Payment to:
1200 Veterans Road
Columbia, SC 29209

Credit Card Payments May be Arranged

Invoice Overall Total Due: \$11,085.00

Keep this portion of invoice for your records



GS2 Engineering & Environmental Consultants, Inc.
Charleston Office - 4301 Dorchester Road, Suite A
Charleston, South Carolina 29405
(843) 763-4093 (843) 763-4094

Project Name: Rivers Education Center
Project No.: 11-6332C

Inv. Date: 7/11/11
Inv. No.: 32093

I N V O I C E

For Services Provided From 6/18/11 to 7/11/11

CONTRACT SERVICES

LABOR

Project Management, Engineering and Quality Control

Date	Work Task	Personnel	No. Hours	Unit Fee (per hr.)	Cost
06/18/11	Project Management	Prof. Engineer - GS	3.00	\$55.00	\$165.00
06/19/11	Project Management	Prof. Engineer - GS	3.00	\$55.00	\$165.00
06/20/11	Project Management	Prof. Engineer - GS	4.00	\$55.00	\$220.00
06/21/11	Project Management	Prof. Engineer - GS	2.00	\$55.00	\$110.00
06/22/11	Project Management	Prof. Engineer - GS	4.00	\$55.00	\$220.00
06/23/11	Project Management	Prof. Engineer - GS	5.00	\$55.00	\$275.00
06/23/11	On-Site Classification for SPT	Staff Prof. - SE	10.00	\$30.00	\$300.00
06/23/11	On-Site Classification for SPT	Staff Prof. - BS	6.00	\$30.00	\$180.00
06/24/11	Project Management	Prof. Engineer - GS	2.00	\$55.00	\$110.00
06/24/11	On-Site Classification for SPT	Staff Prof. - SE	12.00	\$30.00	\$360.00
06/24/11	On-Site Classification for SPT	Staff Prof. - WC	12.00	\$30.00	\$360.00
06/25/11	Project Management	Prof. Engineer - GS	2.00	\$55.00	\$110.00
06/25/11	On-Site Classification for SPT	Staff Prof. - SE	6.00	\$30.00	\$180.00
06/25/11	On-Site Classification for SPT	Staff Prof. - WC	6.00	\$30.00	\$180.00
06/26/11	Project Management	Prof. Engineer - GS	2.00	\$55.00	\$110.00
06/27/11	Project Management	Prof. Engineer - GS	3.00	\$55.00	\$165.00

06/28/11	Project Management	Prof. Engineer - GS	3.00	\$55.00	\$165.00
06/29/11	Project Management	Prof. Engineer - GS	7.00	\$55.00	\$385.00
06/30/11	Project Management	Prof. Engineer - GS	3.00	\$55.00	\$165.00
07/01/11	Project Management - Meeting	Prof. Engineer - GS	6.00	\$55.00	\$330.00
07/01/11	Project Management - Meeting	Staff Prof. - SE	5.00	\$30.00	\$150.00
07/01/11	Project Management - Meeting	Staff Prof. - BS	5.00	\$30.00	\$150.00
				Labor Total	\$4,555.00

Drilling Labor for SPT Borings

<u>Date</u>	<u>Work Task</u>	<u>Personnel</u>	<u>No. Hours</u>	<u>Unit Fee (per hr.)</u>	<u>Cost</u>
06/23/11	SPT Borings (Crew #1)	Drilling Supervisor - RW	9.00	\$50.00	\$450.00
06/23/11	SPT Borings (Crew #1)	Drilling Tech - BW	9.00	\$30.00	\$270.00
06/23/11	SPT Borings (Crew #1)	Drilling Tech - AL	9.00	\$30.00	\$270.00
06/23/11	SPT Borings (Crew #1)	Drilling Tech - CF	9.00	\$30.00	\$270.00
06/24/11	SPT Borings (Crew #1)	Drilling Supervisor - RW	9.00	\$50.00	\$450.00
06/24/11	SPT Borings (Crew #1)	Drilling Tech - BW	9.00	\$30.00	\$270.00
06/24/11	SPT Borings (Crew #1)	Drilling Tech - AL	9.00	\$30.00	\$270.00
06/24/11	SPT Borings (Crew #1)	Drilling Tech - CF	9.00	\$30.00	\$270.00
06/25/11	SPT Borings (Crew #1)	Drilling Supervisor - RW	9.00	\$50.00	\$450.00
06/25/11	SPT Borings (Crew #1)	Drilling Tech - BW	9.00	\$30.00	\$270.00
06/25/11	SPT Borings (Crew #1)	Drilling Tech - AL	9.00	\$30.00	\$270.00
06/25/11	SPT Borings (Crew #1)	Drilling Tech - CF	9.00	\$30.00	\$270.00
				Labor Total	\$3,780.00

TRAVEL, PER DIEM AND LODGING

<u>Date</u>	<u>Personnel</u>	<u>Vehicle</u>	<u>Miles/Trips</u>	<u>Unit Fee (per Mi/Trip.)</u>	<u>Cost</u>
06/23/11	Drill Crew #1	Drill Rig Mobilization	1	\$350.00	\$350.00
06/23/11	Drill Crew #1 - RW, BW, AL, CF	Per Diem	4	\$25.00	\$100.00
06/23/11	Drill Crew #1	Support Truck - Mob	2	\$20.00	\$40.00
06/23/11	Drill Crew #1	Lodging (2) Rooms	1	\$220.00	\$220.00
06/23/11	Staff Prof. - BS and SE	Truck	2	\$10.00	\$20.00
06/24/11	Drill Crew #1 - RW, BW, AL, CF	Per Diem	4	\$25.00	\$100.00
06/24/11	Drill Crew #1	Support Truck - Mob	2	\$20.00	\$40.00
06/24/11	Drill Crew #1	Lodging (2) Rooms	1	\$220.00	\$220.00
06/24/11	Staff Prof. - WC and SE	Truck	2	\$10.00	\$20.00
06/25/11	Staff Prof. - WC and SE	Truck	2	\$10.00	\$20.00
				Travel Total	\$1,130.00

SPT Borings

<u>Boring #</u>	<u>Footage (feet drilled)</u>	<u>Unit Cost Per foot</u>	<u>Cost</u>
SPT#1	80	\$9.00	\$720.00
SPT#2	100	\$9.00	\$900.00
Total			\$1,620.00

CONTRACT SERVICES SUBTOTAL \$11,085.00

* = Depicts Overtime Rates

OVERALL TOTAL DUE \$11,085.00

KYZER & TIMMERMAN, LLC

STRUCTURAL ENGINEERS

580 Chris Drive
West Columbia, SC 29169
803-791-4511

Invoice

Date	Invoice #
9/8/2011	2011-346-01

Bill To
Mrs. Margaret Morrison Terrateo 1350 Methodist Park Road West Columbia, SC 29170

Due Date
Due Upon Receipt

Project Name	Amount
Rivers Education Structural design and consultation 06-15-2011 through 07-15-2011	9,500.00
Please call Hazel at (803)791-4511 if you have any questions. NOTE: If you feel this invoice is in error, please contact us immediately. Thank you.	
Total	\$9,500.00



International Construction Equipment Inc.

Specializing in Foundation Construction Equipment
301 Warehouse Drive Matthews, North Carolina, 28104
Phone: (888) ICE-USA1 (704) 821-8200 Fax: (704) 821-8201
Remit Payment to: PO Box 402494, Atlanta, GA 30384-2494

Invoice

Invoice Date	Page
7/19/2011	1
Invoice Number	
IN112814	

SOLD TO:

Terratec, inc
1350 Methodist Park Rd
West Columbia, SC 29170

SHIP TO:

Terratec, inc
Charleston, SC

3

PO Number KEVIN THOMAS			S/P# 0053	Ship Via LNDSTR	Ship From ICE Sayreville, NJ	Ship Date 5/19/2011	Order No. SO112825	Customer ID TER	Terms Upon Receipt	
Qty. Ord.	Qty. Shp.	Qty. B/O	Item Number	Description			Unit Price	UOM	Extended Price	
2.00	2.00	0.00	/R308	LA3 Drill Idle rate Rental 5/19-7/18/11 308157 ***Attn : Chris Morrison *** ***Payment terms: Due upon receipt***			5,000.00	MONTH	10,000.00	
Comments:								Subtotal:		10,000.00
PLEASE REMIT INVOICE NUMBER WITH PAYMENT IN US DOLLARS All applicable taxes are the responsibility of the customer. Freight includes all shipping and handling charges.								Discount:		0.00
								Total SalesTax:		750.00
								Invoice Total:		10,750.00

ROA000320

PLEASE REMIT TO LOCK BOX:

BLANCHARD MACHINERY CO.
P.O. BOX 402197
ATLANTA, GA 30384-2197

BLANCHARD MACHINERY CO.
151 Farmington Road
Summerville, SC 29483

Phone: (843) 871-2000
Fax: (843) 821-1229

www.blanchardmachinery.com

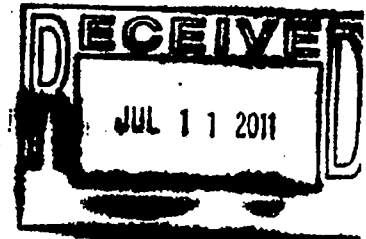
Blanchard **CAT**

28



TERRATEC
1350 METHODIST PARK RD
WEST COLUMBIA SC 29170-2842

CUSTOMER PICK UP



INVOICE NO.	DATE	SLM	CM	T	BR	MILES/HOURS	AGREEMENT NO.	DATE	PAGE	
P1488702	07-05-11	833	10	R	82	0	P14887	05-16-11	1	
CUSTOMER NO.	CUST. ORDER NO.	MAKE	MODEL	SERIAL NUMBER	EQ-NO	SHIP VIA				
0006544	CHRIS	AA	924IT FK	EU6020045	94041	CAT				
QTY.	DESCRIPTION					TOTAL				
1.0	CUSTOMER CONTACT: CHRIS EQUIPMENT LEASE FROM 06/13/11 THRU 07/10/11 CAT MODEL 924IT FKS FORKS ID NO: 94041 SERIAL NO: EU6020045 FOB: SVL * THANKS FOR RENTING FROM THE CAT RENTAL STORE * INVOICE DUE ON 7/16/11 SC DEPARTMENT OF REVENUE HAS IMPOSED A RENTAL SURCHARGE TAX. SC SALES TAX LOCAL SALES TAX SPECIAL OPTION TAX					300.00 18.00 3.00 3.00 324.00				
ALL BILLS ARE PAYABLE BY 10TH OF MONTH FOLLOWING DATE OF INVOICE. STOCK ITEMS RETURNED WITHIN 90 DAYS - FULL CREDIT. AFTER 90 DAYS, UP TO 365 DAYS - 85% CREDIT. AFTER 365 DAYS - NO CREDIT. NON-STOCK ITEMS RETURNED WITHIN 90 DAYS - 85% CREDIT. AFTER 90 DAYS - NO CREDIT. WE ARE UNABLE TO ACCEPT NON-STOCK, NON RETURNABLE PARTS. THESE ARE IDENTIFIED BY AN (*) ON SHIPPING LIST. BLANCHARD'S COMPLETE RETURN POLICY IS AVAILABLE AT OUR PARTS DEPARTMENT OR MAY BE ACCESSED ON OUR WEBSITE. Out Sourced items accepted for return only if authorized by the vendor. We will allow credit less freight and restock fees. We reserve the right to change all or any part of this policy without prior notice. Invoices and charges not paid in full by the 20th of the month following purchase are subject to a time price differential of 1.5% per Annum on the unpaid balance each month of fraction thereof remaining unpaid. Blanchard Machinery Co. the Seller, expressly disclaims all warranties, either expressed or implied, including any implied warranty of merchantability or fitness for any particular use. The Seller neither assumes nor authorizes any other person to assume for it any liability in connection with the sales of this item/items. The Seller is not responsible for any consequential damages. Only the Manufacturers' Warranty, if any, applies to this sales transaction.							PAY THIS AMOUNT →	324.00		
							AMOUNT CREDITED →			

WE APPRECIATE YOUR BUSINESS !

REMITTANCE DOCUMENT

To insure proper credit, please detach this portion and return with remittance

BLANCHARD MACHINERY CO.
PO BOX 402197
ATLANTA GA 30384-2197



CUSTOMER NUMBER
0006544
INVOICE DATE
07-05-11

INVOICE NUMBER
P1488702
AMOUNT ENCLOSED

ROA000321



KAHN
CORPORATION
CULLUM
DIVISION

Robert Corbin
Heery International, Inc
3999 Bridge View Drive
North Charleston, SC 29405

M.B. Kahn Construction Co., Inc.
P.O. BOX 1179 / COLUMBIA, SC 29202 / PHONE (803) 738-2950 / FAX (803) 699-6413

Re: Rivers Education Center - Micropiles

Dear Robert,

We have read the letter that accompanied the rejected 2nd micropile load test program. Let me apologize for the length of this letter, but we are confused. The original test pile program was performed in significant soil type and property differences from those described in the bid document soils report. The original auger cast test pile program and the location for the test pile program were submitted and approved. The location of the Cooper Marl has been determined to be between 65 feet below ground surface (bgs) and 72 feet below ground surface. The soil consultants involved disagree on this point. The Cooper Marl was represented in the original soils report to be located at 55 feet below ground surface. From actual soil borings it was determined that the test pile location had a small clay layer, a significant deep sand layer, and then what appeared to be green Cooper Marl below the sand layer. We do not understand the apparent conclusion that the pile type is the sole cause for the unsuccessful original test pile program. The test was conducted in soils that were significantly different from those anticipated and based upon the soils report. It is most likely that three of the four test piles never productively entered the Cooper Marl because they were placed at lengths of 66 feet bgs, 70 feet bgs, 75 feet bgs and 80 feet bgs. It is our understanding based on the soils report and bid documents that embedment into the Cooper Marl of at least 23 feet is required to achieve successful pile loading. This embedment would dictate a pile length of at least 88 feet bgs up to 95 feet bgs. The difference between the two embedment pile lengths is based on the difference of opinion on the Cooper Marl depth between the pile engineer and the Soils Design Engineer.

As you know, you now have the 2nd part of the submittal, which is for a different type of micropile (i.e. a Titan pile). Titan is a brand name from Con Tech. This new part of the submittal will allow for the testing of this type of pile which was suggested by Bill Wright with WPC. Our sole purpose in moving forward with the deeper auger cast pile re-submittal was to make sure that this time we have a successful test. If we as a team refuse to consider a deeper auger cast pile and then the Titan pile fails we will experience even more delays than we have to this point. Also we may find out that longer auger cast piles may be more cost effective than Titan piles. We believe it would



M.B. Kahn Construction Co., Inc.

be a mistake to fail to consider longer piles because "several" may cross the property line. Surely the talent we have on our collective team can find a solution to that problem.

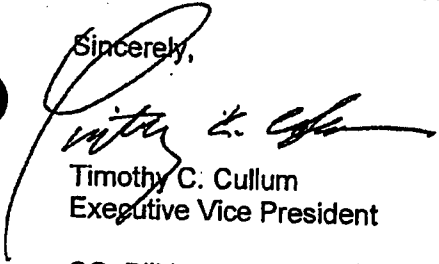
We agree that the "best fit curve" has the information on which the contractor should base their design upon. This best fit curve was the basis for the original test pile program and we now know it was not accurate for the original test pile location. As it relates to the second test pile location we think it may be important that the sand layer encountered at the first test pile location is not present at the second test pile location. At 56.5 feet bgs a tan clay material was encountered and at 72 feet bgs a green clay material was encountered. We are hopeful that these two materials have the same properties and the proposed pile lengths will confirm if this is the case.

Concerning the spacing of the reaction piles we agree that the ASTM standard should be met. Allowable approach methods need to be agreed upon.

We will expedite the remaining calculations and information requested from Terratec. As you know, they were an approved bidder.

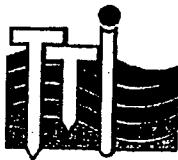
We would sincerely like to solve this problem as a team and get on with this project. We have lost too much time already. We are unsure of the cost impact to the project since a solution has not been determined. As we discussed we will keep you advised as closely as possible.

Sincerely,



Timothy C. Cullum
Executive Vice President

CC Bill Lewis
Kevin Kelly
Scott Spigener



TERRATEC, INC.

Soil and Foundation Stabilization Specialists

1350 Methodist Park Road
West Columbia, South Carolina 29170
Office - (803)-791-8888 Fax - (803)-791-1050

March 14, 2013

Mr. Scott Spigener
M.B. Kahn Construction Co., Inc.
P.O. Box 1179
Columbia, SC 29202

**Re: Response to DRB Conclusion Summary, Terratec CO #2, #3 and #4, dated February 26, 2013
Rivers Education Center, Charleston, South Carolina**

Dear Mr. Spigener;

Please allow this letter to serve as our formal response to the DRB findings that were reported to the Charleston County School District in the above referenced report for the Rivers Education Center project. The following comments address in short the DRB's points, while additional comments and information may be presented at a later date;

Change Orders #2 and #3 (COs #47 and #48)

- We are actually seeking compensation for the first Load Test.
- We do not see how a comparative soil "strength gain" between both areas is possible where the unanticipated sands were only encountered at the first load test area. The assumptions are reaching, at best, that the areas showed similar soil strength characteristics, as the piles at the first site were much weaker than the 10-20 kip difference eluded to.
- We agree that the micropiles did not perform as anticipated. However, there's more to the story, and the simple wipe over that the DRB presented with regards to soil types is misrepresentative with respect to micropile design and performance, specifically to their bonding capacity in different soil types. The non-elastic bonding nature of the sands at Load Test 1 is far different than the bonding nature of the Cooper Marl (which was not present until a depth of 72 feet at the site), which explains why the piles mobilized much more quickly than the piles supported in the Cooper Marl at the second Load Test site. The Cooper Marl bond allows a much more "bend but not break" pile/soil interaction. This is why we have stated MULTIPLE times that the grout selected for the project was done so with the soil medium represented. This point is neglected in the DRB's response. So, in fact, the soil type and pile/soil interaction WAS a function of our initial design, and these conditions were not as represented because the Cooper Marl was missing in a large portion of the bond zone of the micropiles. Therefore, the presence of the sand layer DID create a condition that affected the performance of the micropile with respect to the grout selected. The proper grout that should have been utilized for the required capacities t Load Test site 1 would be a neat cement. The use of

Confidential and Proprietary
Copyright 2013 Terratec
ALL RIGHTS RESERVED
ROA000324

EXHIBIT

12

neat cement in cast piles is well documented, including case studies for the piles installed in Charleston to support the new Cooper River Bridge.

- It is also quite misleading to state that the "pile system" was at fault alone, when in fact it was the "pile/soil interaction" or "pile/soil bond" that produced the lower than anticipated capacity results. The comment above describes our points on this issue. Further, by redefining the "pile system" to mean the "pile/soil bond" casts more credibility on the true issue surrounding the fact that the soil types were not as anticipated, which, without question was beyond the control of Terratec, as the sand layer would have definitely altered our design if they had been reported to be present.
- The initial tensile Load Test results were skewed by the compression test, which, even though it was not relied upon, produced a 30 feet embedment in the Marl for production. Coincidentally, the final production lengths required a 31 feet embedment in the Marl to achieve capacity. Moving beyond this point CCSD's design team approved the sequence of testing in our initial submittal, which is why the testing proceeded the way it did. Had they denied the compression tests, the piles at the first Load Test site would have still failed in tension because of the weak mobilized pile/soil bond created by the layer of sand combined with an inadequate bond length in the Marl (which was in part not the "Cooper Marl" as represented in the soils report).
- Section 3.4.2.d is unrealistic where unforeseen conditions are encountered, as supported in our comments above.
- We do not concur that CCSD is not responsible in part for the payment of COs #2 and #3, as the design team/owner's representatives hired by CCSD have a large part in the responsibility of failed Load Test 1. Further, we assert that Terratec is not 100% responsible for the failure, as we were directed to move the site of the initial Load Test, which resulted in the different soil conditions that ultimately produced weaker than anticipated micropiles. Finally, we assert that while the DRB does identify that CCSD is not responsible, it does not identify who is responsible.

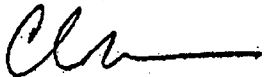
In summary, Terratec is not willing to accept the determination of the DRB in part or in whole. While we believe that the DRB presentations provided sufficient evidence to support our claim, it appears that the DRB ignored the obvious physical evidence presented graphically that detailed the lower than expected performance of the in-place soils at both Load Test locations.

Change Order #4 (CO #49)

As requested, we have revised our invoice to reflect changes that were identified and conveyed to Terratec by M.B. Kahn during the DRB. The revised invoice is attached. While we never provided costs associated with installing these hollow bar micropiles, we were directed to install both (2) of the micropiles by M.B. Kahn representatives, with the second, added, hollow bar required in case the 78 feet hollow bar failed to reach capacity. We do not plan on reducing this invoice any further, as our profit for installing them was removed during our revision. Please relinquish the check for the attached invoice as soon as possible.

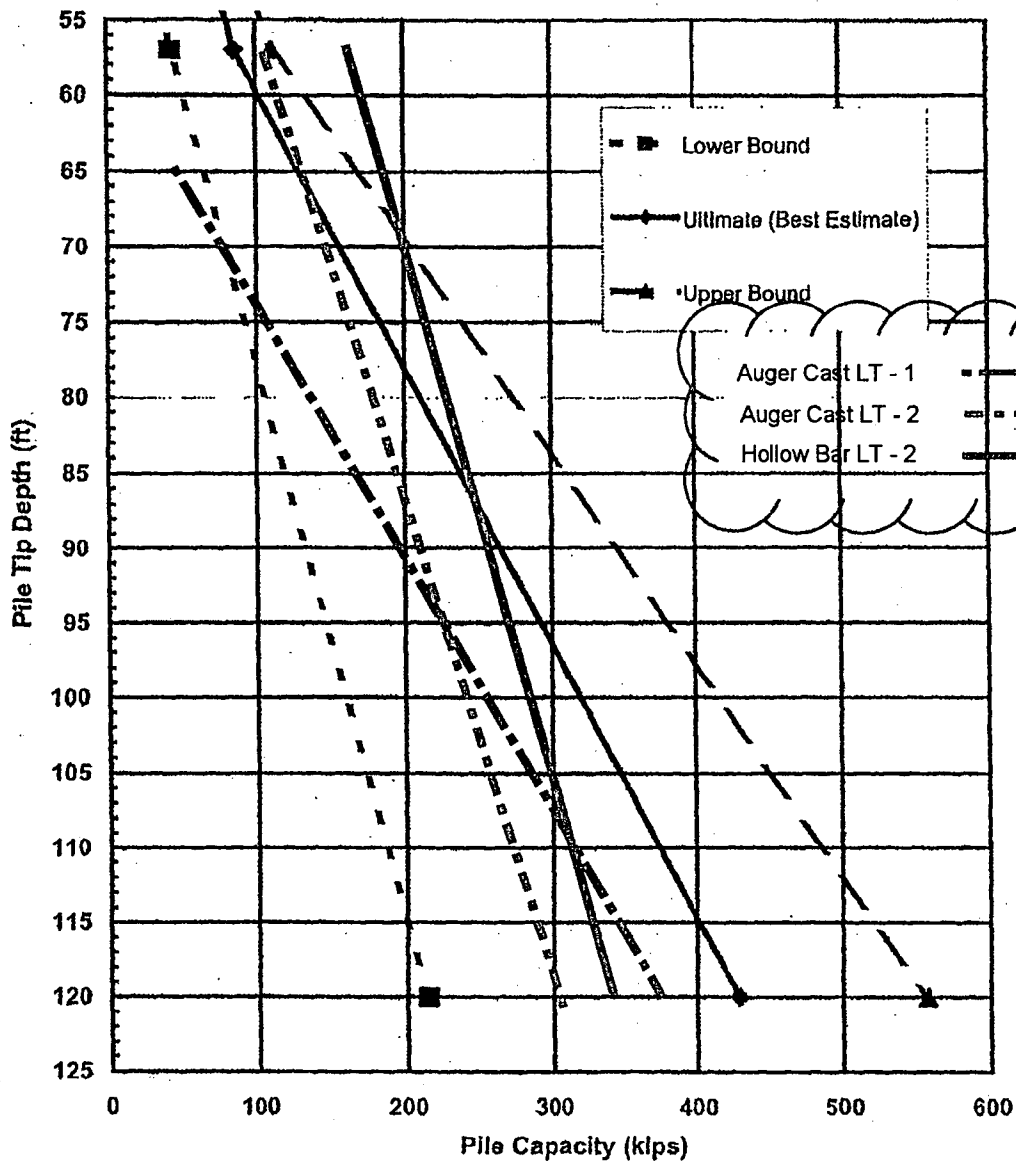
I would appreciate the opportunity to meet with representatives of CCSD, the DRB, and any other group, in order to provide any additional information necessary to support my complaint. Please do not hesitate to contact me.

Sincerely,



Christopher A. Morrison
Vice President

8-in. Micropile



NOTES:

- 1) The structural capacity of the piles has not been considered in our analysis.
- 2) The capacities presented represent ultimate resistance without consideration of a factor of safety or resistance factor.
- 3) The upper and lower bound capacity values represent the possible range in the actual pile capacity. The solid line represents our best estimate of the anticipated actual ultimate capacity.

Project No.: 1131-09-615
Date: July 2010

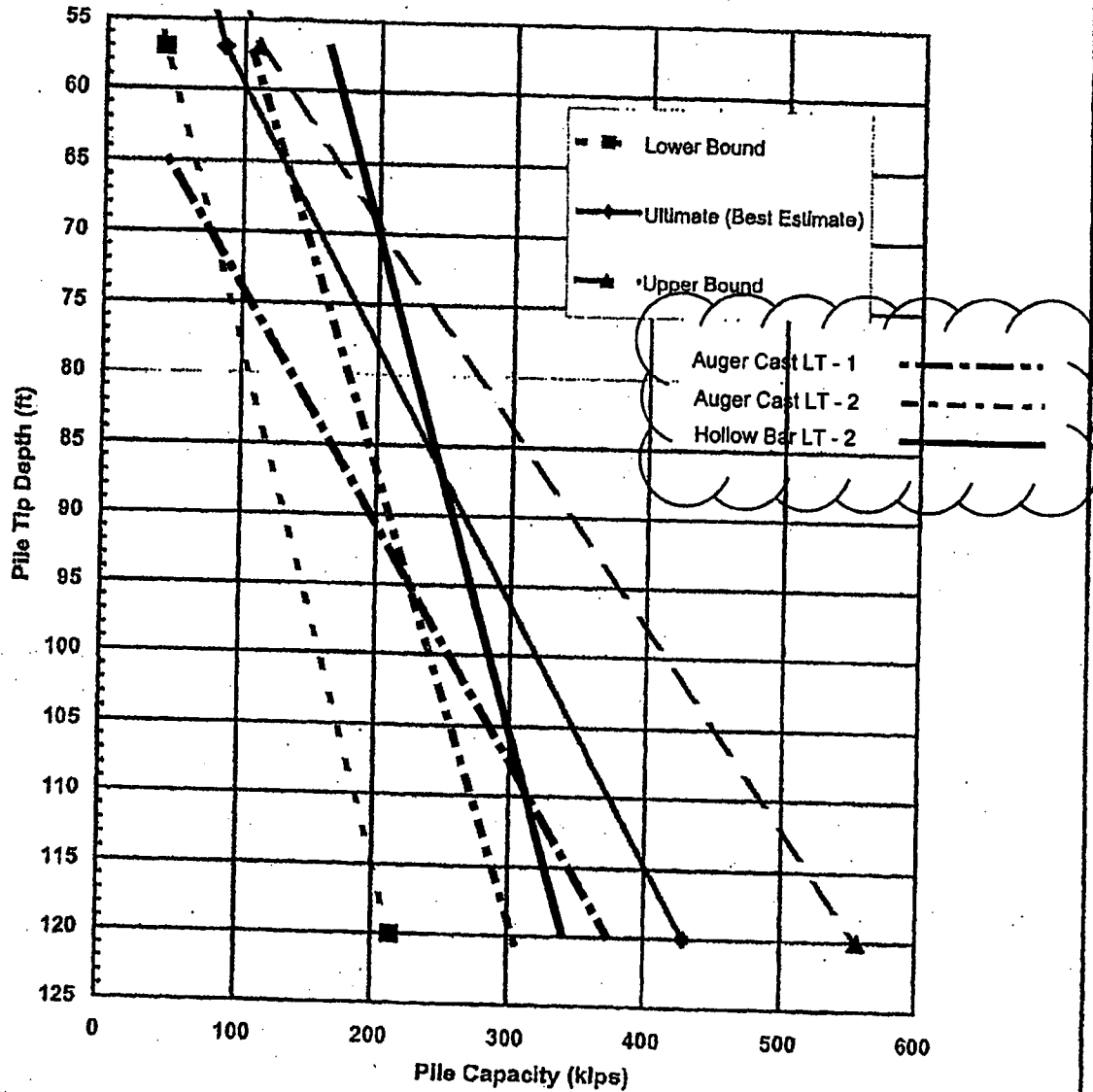


PILE RESISTANCE

Rivers Education Center
Charleston, South Carolina

Fig. 1

8-in. Micropile



NOTES:

- 1) The structural capacity of the piles has not been considered in our analysis.
- 2) The capacities presented represent ultimate resistance without consideration of a factor of safety or resistance factor.
- 3) The upper and lower bound capacity values represent the possible range in the actual pile capacity. The solid line represents our best estimate of the anticipated actual ultimate capacity.

Project No.: 1131-09-615
Date: July 2010



PILE RESISTANCE

Rivers Education Center
Charleston, South Carolina

Fig. 1

ROA000327

EXHIBIT

13

CHANGE ORDER REQUEST

No. 1B

TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
803-791-8888 - OFFICE
803-791-1050 - FAX

Date: May 17, 2012

Attn.: Mr. Scott Spigener

Proj.: Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Ref: Base Bid Additional Pile Footage - Change Order Request

Dear Mr. Spigener:

In your response to our request for Change Order #5, dated April 30, 2012, you presented our original proposal for the installation of the micropiles as your Exhibit 5. This document reveals that our original proposal was to construct the production micropiles to a depth of 66 feet below ground surface for the contract amount of \$1,992,835.32. Statements included in the proposal submitted to Mr. Chris Pettit, of MB Kahn, prior to project award discuss the fact that the bid documents were ambiguous, at best, as to the depth of the production pile length, which is why Terratec proposed the depth of 66 feet below ground surface per the bid documents. Clearly, at that time, the actual production pile lengths were not known. In fact, the intent of the bid documents was to determine the final production pile length after the successful conclusion of a load test. Our proposal goes on to clearly state that any additional pile length installed beyond a depth of 66 feet will be done so at a cost of \$45.00 per foot.

MB Kahn selected Terratec, based upon the merits of this proposal, and represented Terratec as their micropile contractor in their bid documents to the school district for consideration. Ultimately, MB Kahn, based upon their bid document submittal, was selected to construct the project.

As you are aware, the actual production pile lengths, as determined by the second load test program, were established to be at a depth of 86 feet. Additionally, as you are aware, Terratec was awarded a contract change order that allowed 10 additional days for construction efforts AND a contract amount addition of \$227,610.00. The contract amendment was allowed for the addition of 8 feet to the production length beyond the 78 feet established in the project geotechnical report. In total, 5,058 feet were added collectively to the production micropile lengths at a unit rate of \$45.00 per foot.

As a result of the required production pile length increase to 86 feet, and in consideration to the fact that Terratec's proposal and estimate was based on shorter (66 feet) production piles, Terratec asserts that proper compensation for the work conducted at the project has not been received. In fact, only a partial compensation (Change Order #1) for the labor, materials and equipment costs expended by Terratec to construct the longer micropiles has been allowed for. Additionally, no allowance for a time extension was afforded to Terratec due to the fact that the production piles were longer than proposed. In both cases, Terratec has been damaged, and is therefore requesting a Change Order be made to our existing contract to cover our additional schedule and costs associated with the additional production pile lengths not accounted for originally in Change Order #1. The requested contract amendments are summarized as follows;

Confidential and Proprietary

Copyright 2012 Terratec
ROA000328
ALL RIGHTS RESERVED

EXHIBIT

14

- **Contract Amount Adjustment:** We are requesting that our contract be amended to include costs expended to install an additional 12 feet of micropiles (eg 86' - 66' = 20 extra feet for production pile required - 8 feet allowed for in CO#1 = 12 feet). Per the agreed upon unit rate of \$45.00 per foot, we are requesting an additional **\$338,580.00** be added to the contract amount (eg 12' x 627 = 7,524 additional feet x \$45.00 = \$338,580.00).
- **Schedule Adjustment:** We are requesting that our contract be amended to include a schedule extension of 15 production days to our adjusted work schedule of 88 production days (eg 78 production days per our proposal + 10 production days per CO#1).

Please contact us with any questions or comments.

Sincerely,

Chris Morrison, Vice President
Terratec

Confidential and Proprietary

Copyright 2018 Terratec
R03A000925
ALL RIGHTS RESERVED

03/05/12
pg 1 of

CHANGE ORDER REQUEST No. 5

TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
803-791-8888 - OFFICE
803-791-1050 - FAX

Date: March 5, 2012

Attn.: Mr. Will Neely

Proj.: Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Ref: Work Directive - Critical Path #1 - Lost Production, Additional Ramp Up Activities,
and Additional Services

Dear Mr. Spigener:

This change order is associated with the lost production that was incurred by Terratec as direct result of the time constraints and work directives established at the onset of micropile production at the subject site, and it is associated with additional services conducted by Terratec that were not originally a part of our contract. It is our firm assertion that the construction conditions and time constraints detailed below that were placed upon the project stem from the failed initial load test, which has been well documented to exist because of subsurface anomalies. The notification of delay that Terratec filed on June 25th, 2011 documents the delay and anomaly, while more recent documents obtained from WPC, dated February 17, 2012, and a response from our QC firm GS2, dated March 5, 2012, summarize the subsurface conditions to be highly "variable" in nature. The following sections of this request highlight the issues;

Items #5A & 5B - Lost Production and Ramp Up Activities

As you are aware, MB Kahn personnel directed Terratec on several occasions to focus ALL micropile installation activities within the Critical Path #1 area of the project that encompassed Pile Caps PC-423, PC-469 and PC-217, prior to the commencement of micropile installation in our portions of the project. However, during planning meetings and discussions held between the two parties prior to production, Terratec's original understanding of the project included conducting micropile installation from the floor slab elevation. Upon our arrival for commencement of the micropile installation, we were surprised to understand that the floor slab for the above mentioned pile caps had been completely removed. To this point, the balance of the interior micropile installation (Critical Paths #2 through #4) was conducted from the floor slab, as agreed.

The working conditions created by the removal of the slabs within the area of these pile caps was unsafe and unstable, which in turn resulted in a lower than expected daily pile production. This topic was discussed thoroughly in meetings between the two parties held on September 28 and October 5, 2011, and the site conditions and impact to the work schedule are documented in our letter, dated October 14, 2011 (attached for reference). Expanding on these matters, the slab removal and work directive to only focus on Critical Path #1 created delays in the completion of the project, and it created a 20 working day loss in production for Terratec. Also, the extreme duress that MB Kahn placed on Terratec to supplement our services and increase production required that Terratec incur additional costs that were not agreed upon at the onset of the project. This was due to an ever changing schedule and constant

Confidential and Proprietary
Copyright 2012 Terratec
ALL RIGHTS RESERVED

ROA000330



prodding by MB Kahn field personnel. Instead of arguing these facts at the time, Terratec was pushed to proceed under protest to accomplish the work directive. Again, please reference our letter dated October 14, 2011 for verification of these matters.

We have attached documentation to substantiate the losses incurred, that include the following;

- A detailed project timeline that summarizes the production during each of the of the Critical Paths,
- A summary of all costs associated with the production delay and unexpected ramp up activities, and
- Itemized invoices that show actual costs incurred during the first Critical Path will be submitted with the hard copy of CO #5.

In total, we are requesting an adjustment to the contract to compensate Terratec in the amounts of;

- #5A - \$3335,076.34 for Lost Production due to contractor directives, and
- #5B - \$105,050.00 for costs associated with the unforeseen Ramp Up Activities.

Item #5C - Additional Services

As you are aware, Terratec completed multiple services that fell outside of our work agreement. The following work activities, along with a brief description, were conducted;

- On-Site Soil and Grout Stockpiling: Contrary to our agreement, and at the direction of Shamrock Thompson, Terratec was required to move the soil and grout excavated from within the structure and move it to the on-site stockpile area located next to the job trailers. Our original agreement stated that Terratec would place the soils and grout spoils immediately outside of the building, and that MB Kahn would be responsible for the stockpiling and removal of these materials. In fact, MB Kahn honored this agreement through the middle of October 2011, and then required Terratec to handle this work activity thereafter.
- Excavation of the Pile Caps along the Exterior of the Building: Terratec undertook the excavation of the pile caps along the exterior of the structure. It is our understanding that this work was scheduled to be conducted by other subcontractors that were secured to construct the pile caps at the site. As requested by MB Kahn, Terratec excavated the pile cap holes to install the micropiles. Upon completion of the micropile installation at the site, Terratec was requested to leave the pile cap excavations open to save time and effort for the project, and we complied.

In both cases detailed above, Terratec conducted work above and beyond its responsibility in the best interest of the project. With this in mind, we are requesting to be compensated for the labor, materials and equipment required to complete these tasks. The total amount requested for Item #5C is \$33,500.00.

Closing

In closing, we are requesting a Change-Order be made to our existing contract to cover our costs associated with the work completed on this project. The amount of this Change Order request is \$473,626.34. A detailed breakdown of the costs incurred and a pay application are attached. Please contact us with any questions or comments.

Sincerely,



Chris Morrison, Vice President
Terratec

09/03/12
PG 4 of

ITEMIZED - CHANGE ORDER No. 5A

TERLATEC
1330 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
8037918888 OFFICE
8037911050 FAX

Proj: Rivers Education Center School Renovation and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Ref: Work Directive - Critical Path #1 - Lost Production, Additional Ramp Up Activities, and Additional Services

A summary of the conditions surrounding the itemized breakdown detailed below is attached to the cover sheet.

Change Order Work Task Description - #5A Lost Production

Work Task	% Complete	Start and Complete Dates	Reason for Change Order	Schedule of Values	Schedule of Values Plus	Non-Schedule Unit Cost	Markup	Order Amount	CO Request Amount
Labor *	100%	Sept. 18 through Nov. 7, 2011	Project Directive	No	\$0.00	\$10,666.67	0%	28	\$213,313.33
ICE Drill Rig Rental **	100%	Sept. 18 through Nov. 7, 2011	Project Directive	No	\$0.00	\$1,333.33	0%	36	\$34,666.58
Various Project Support/Manual Equipment ***	100%	Sept. 18 through Nov. 7, 2011	Project Directive	No	\$0.00	\$296.58	0%	26	\$32,273.68
Equipment Maintenance Costs ****	100%	Sept. 18 through Nov. 7, 2011	Project Directive	No	\$0.00	\$661.36	10%	20	\$11,227.20
Equipment Fuel Costs ****	100%	Sept. 18 through Nov. 7, 2011	Project Directive	No	\$0.00	\$484.95	10%	20	\$9,739.00
Redd Mix Over Time Fees *****	100%	Sept. 18 through Nov. 7, 2011	Project Directive	No	\$0.00	\$35,676.35	10%	20	\$35,676.35
GC2 - QC Installation	100%	Sept. 18 through Nov. 7, 2011	Project Directive	No	\$0.00	\$3,760.00	10%	20	\$1,760.00
KAY - Structural Construction	100%	Sept. 18 through Nov. 7, 2011	Project Directive	No	\$0.00	\$2,400.00	10%	20	\$2,400.00

* Includes all labor required to install equipment during the time period, normalized to a per day cost, multiplied by 2. Change for lost production. Production rates for Critical Path #1 in Critical Paths #2-4 were determined utilizing the timeline provided in this request, with the tabulated rates of 3.27 miles per production day within CP#1 (346 miles/44 prod. days) and 1 mile per production day for CP#2-4 (232 miles/236 prod. days). If the job had not been cut, then the total number of production days for CP#1 would have been 24 in stead of 44, yielding a total number of 29 lost production days associated with the decision to remove the sticks. ** In the case of rentals, the rental fees incurred are based upon calendar days. Calendar day delays are tabulated as follows, CP#1 (calendar day delay) = 50 days - 24 days = 26 delay days. All rental unit rates are a monthly fee per month, normalized to a per day fee. The schedule of rental fees are as follows:

1. ICE, monthly rental \$40,000.00 / 30 days = \$1,333.33 per day.
2. Drill Rig, monthly rental \$2,000.00 / 30 days = \$66.67 per day.
3. Backhoe, monthly rental \$2,300.00 / 30 days = \$76.67 per day.
4. 30M Tower, monthly rental \$1,300.00 / 30 days = \$43.33 per day.
5. Light Tower, monthly rental \$300.00 / 30 days = \$10.00 per day.
6. Welder, monthly rental \$400.00 / 30 days = \$13.33 per day.
7. Pressure Washer, monthly rental \$2,500.00 / 30 days = \$83.33 per day.
8. Grout Pump, monthly rental \$1,000.00 / 30 days = \$33.33 per day.
9. Support Vehicle, monthly rental \$300.00 / 30 days = \$10.00 per day.

*** Equipment Maintenance and Fuel Costs were determined by calculating the per day maintenance incurred during the time period represented above, and normalizing fees to a per day cost. The calculated daily fees are as follows:

1. Equipment Maintenance Cost (\$18/21 - 1/7/11) = \$24,768.00 / 44 days = \$563.36 per day.
2. Equipment Fuel Cost (\$18/21 - 11/2/11) = \$22,475.00 / 44 days = \$510.80 per day.

**** As a result of the slower production rates, Terlatec has incurred additional costs for overtime and work over fees from Redd-Mix due to excessive time required on-site for the delayed pour out of the gravel tracks. In all, the overtime and weekend fees for this period of time totaled \$35,676.35.

Sept. 2011	OT and Fees	Oct. 2011	OT and Fees	Nov. 2011	OT and Fees
18	\$ 1,000.00	1	\$ 718.00	1	\$ 170.00
19	\$ 1,700.00	2	\$ 765.00	2	\$ 335.00
20	\$ 935.00	3	\$ 1,008.00	3	\$ 765.00
21	\$ 1,163.36	4	\$ 1,305.00	4	\$ 680.00
22	\$ 1,820.00	5	\$ 637.50	5	\$ 340.00
23	\$ 674.50	6	\$ 532.50	6	\$ 610.00
24	\$ 1,000.00	7	\$ 1,275.00		
25	\$ 1,657.30	8	\$ 1,008.00		
26	\$ 1,237.75	9	\$ 1,647.50		
27	\$ 1,792.15	10	\$ 1,705.00		
28	\$ 20,525.95	11	\$ 763.00		
		12	\$ 803.50		
		13	\$ 1,000.00		
		14	\$ 825.00		
		15	\$ 765.00		
		16	\$ 1,333.33		
		17	\$ 1,572.50		
		18	\$ 178.00		
		19	\$ 1,000.00		
		20	\$ 583.50		
		21	\$ 680.00		
		22	\$ 532.50		
		23	\$ 977.50		
		24	\$ 862.50		
		25	\$ 765.00		
		26	\$ 475.00		
		27	\$ 1,740.00		

ITEMIZED - CHANGE ORDER
No. 5B

TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
8037918888 OFFICE
8037911050 FAX

Proj: Rivers Education Center School Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Ref: Work Directive - Critical Path #1 - Lost Production, Additional Ramp Up Activities, and Additional Services

A summary of the conditions surrounding the itemized breakdown detailed below is attached to the cover sheet.

Change Order Work Task Description - #5B Ramp Up Activities

Work Task	% Complete	Start and Complete Dates	Reason for Change Order	Schedule of Values	Schedule of Values Fee	Non-Schedule Unit Cost	Markup	Delay Accrued (days)	CO Request Amount
Ramp Fabrication *	100%	Sept. 18 through Jan. 15, 2012	Project Directive	No	\$0.00	\$6,500.00	0%	14	\$6,500.00
Hoisting and Winching Tooling **	100%	Sept. 18 through Jan. 15, 2012	Project Directive	No	\$0.00	\$2,500.00	0%	14	\$2,500.00
Additional Auger Purchase ***	100%	Sept. 18 through Jan. 15, 2012	Project Directive	No	\$0.00	\$34,800.00	0%	21	\$34,800.00
Additional ICE Equipment Rental ****	100%	Sept. 18 through Jan. 15, 2012	Project Directive	No	\$0.00	\$49,000.00	10%	N/A	\$49,000.00
Additional Various Equipment Rental *****	100%	Sept. 18 through Jan. 15, 2012	Project Directive	No	\$0.00	\$12,250.00	10%	N/A	\$12,250.00

- * Terratec had to design and fabricate a ramp in order to obtain access to the ground surface in Critical Path #1. The ramp was not planned, and had to be expedited 1 week before we proceeded to mobilize to the site.
- ** Terratec had to design and fabricate hoisting tooling in order to retrieve access to the ground surface in Critical Path #1. The tooling was not planned, and had to be expedited 1 week before we proceeded to mobilize to the site.
- *** Terratec, due to the schedule and slower production rates, was required to purchase an additional 80 pieces of hollow stem auger at a unit rate cost of \$435.00 per 5 foot auger.
- **** As a result of the schedule and slower production rates, Terratec was required to rent an additional interior drill to the tune of \$15,000.00 per month. The cost of this machine is incorporated in part in CO #5A, while the balance of the fees are detailed in this CO#5B (e.g. 124 calendar days - 26 lost production days = 98 rental days at a rental rate of \$500.00 per day = \$49,000.00 in additional rent). Additional equipment, consisting primarily of a second mini-excavator and a second skid steer were required to maintain production of the third interior drill rig. Utilizing the figures established in 5A, the daily fee for a mini-excavator and skid steer (\$23.33 and \$41.67) multiplied by a 98 add for rent equals \$12,250.00.

Total Change Order Request for CO #5A \$105,050.00

**ITEMIZED - CHANGE ORDER
No. 5C**

TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
8037918888 OFFICE
8037911050 FAX

Proj: Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina

Ref: Work Directive - Critical Path #1 - Lost Production, Additional Ramp Up Activities, and Additional Services

A summary of the conditions surrounding the itemized breakdown detailed below is attached to the cover sheet.

Change Order Work Task Description - HSC Additional Services

Work Task	% Complete	Start and Complete Dates	Reason for Change Order	Schedule of Values	Schedule of Values Fee	Non-Schedule Unit Cost	Markup	Delay Accrued (days)	CO Request Amount
Soil and Grout Stockpiling *	100%	Oct. 15, 2011 through Jan. 14, 2012	Project Directive	No	\$0.00	\$1,250.00	0%	10	\$12,500.00
Excavation of Pile Caps **	100%	Sept. 18 through Jan. 14, 2012	Project Directive	No	\$0.00	\$1,500.00	0%	14	\$21,000.00

* Terratec's cost in labor, equipment fees, fuel, maintenance, etc. is \$1,250.00 per day to conduct these services. A total of 10 cumulative days was discerned to have been expended in the conductance of these additional services.

** Terratec's cost in labor, equipment fees, fuel, maintenance, etc. is \$1,500.00 per day to conduct these services. A total of 14 cumulative days was discerned to have been expended in the conductance of these additional services.

Total Change Order Request for CO #5A \$33,500.00

03/15/12

Subject: Rivers Resolution Proposal and Change Order #5

Thursday, March 15, 2012

Will:

Please find attached change order #5 mentioned in our last meeting and a proposal to resolve our differences associated with the Rivers project. I suggest we use the resolution proposal as an agenda for tomorrow mornings meeting.

Ken Timmerman and I will be attending the meeting. Chris is still in Charleston and George has other commitments and will not be attending. Ken has gone over with George the technical issues associated with the WPC letter pointing out possible deficiencies with the piles. He will speak on the subject for George and himself.

Pete

ROA000336



KAHN

Since 1997

KAHN
CORPORATION
COLUMBIA
DIVISION

M.B. Kahn Construction Co., Inc.
P.O. BOX 1179 / COLUMBIA SC 29202 / (803) 736-2350 / FAX (803) 699-6413

January 24, 2012

Mr. Pete Morrison
Terratec, Inc.
1350 Methodist Park Road
West Columbia, SC
29170

RE: Rivers Education Center – Micropile Completion

Dear Mr. Morrison,

The purpose of this letter is to address the additional costs incurred by M.B. Kahn Construction Co. as a result of the untimely completion of the Micropile scope of work. Schedule RI03 dated 20Sept11, which includes the 85 day delay to the test pile program completion date, shows a completion date of 1NOV11 for interior piles, a critical path activity. The actual completion date of interior piles was 12DEC11, 41 days later. Terratec's Micropile Production Schedule letter dated October 14, 2011 stated that piles would be complete by December 1, 2011. Actual completion of piles was January 16, 2012, 46 days later. The letter also addresses the 11-15 pile/day goal required to achieve schedule constraints. This goal was not met. The attached break-out details the additional costs incurred as a result of the 41 day delay to interior pile completion.

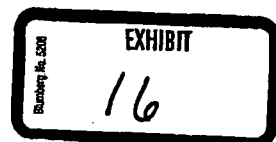
Thank you for your attention to this matter.

Sincerely,

M. B. Kahn Construction Co., Inc

William Neely III
Project Manager

CC:



COLUMBIA, SC / GREENVILLE, SC / MYRTLE BEACH, SC / ATLANTA, GA / RICHMOND, VA / HUNTSVILLE, AL

ROA000337



M. B. KAHN CONSTRUCTION CO., INC.

P O BOX 1179, COLUMBIA, SC, 29202-1179
Phone 803-738-2950 - FAX 803-899-8413

Subcontract Change Order

Subcontractor:
TERRATEC INC
1350 METHODIST PARK
W COLUMBIA, SC 29170

Vendor #: 20887

Date: 01/24/2012

Change Order Number: 2
Subcontract Number: 20887

Contact: CHRIS MORRISON
Email Address: morrison.chris@hotmail.com
Phone (803) 791-8888
Fax: (803) 791-1050

Project: RIVERS EDUCATION CENTER
1002 KING STREET
CHARLESTON, SC 29403

Superintendent: SHAMROCK THOMPSON
Email: sthompson@mbkahn.com
Telephone: (843) 670.2779
Fax:

Project #: 2229

The Subcontract is hereby revised as follows:

Reduction for increase in General Conditions cost resulting from a 41 day increase to project critical path.	(\$58,194.00)
Additional 41 days of monitoring by WPC @ \$567/day.	(\$23,247.00)
Additional pile cap work.	(\$12,143.00)

Total Change Order Amount	\$	-93,584.00

The original Subcontract Value was	\$	1,992,835.00
Sum of changes by prior Subcontract Change Orders	\$	227,610.00
The Subcontract Value prior to this Subcontract Change Order was	\$	2,220,445.00
The Subcontract Value will be changed by this Subcontract Change Order in the amount of	\$	-93,584.00
The new Subcontract Value including this Subcontract Change Order will be	\$	2,126,861.00

CONTRACTOR
M. B. KAHN CONSTRUCTION CO., INC.

SUBCONTRACTOR
TERRATEC INC

BY: WILLIAM NEELY

BY: CHRIS MORRISON

SIGNATURE: _____

SIGNATURE: _____

DATE: _____

DATE: _____

Rivers Education Center
EXTENDED OVERHEAD COSTS
01.23.12

	DESCRIPTION	QUANTITY	UNIT	LABOR UNIT RATE	TOTAL	MATERIAL/ OTHER UNIT RATE	TOTAL	LINE TOTAL
1	Shoring System	41	Day	0.00	0	331.61	13,596	13,596
2	Repair Construction Entrance (50%)	1	LS	0.00	0	888.72	889	889
3	Damage To Tree	1	LS	0.00	0	0.00	0	0
4	Excess Grout/Concrete Haul-off	1	LS	0.00	0	420.00	420	420
	<u>General Conditions</u>							
5	Superintendent	41	Day	252.86	10,367	0.00	0	10,367
6	Field Engineer	41	Day	129.29	5,301	0.00	0	5,301
7	Quality Control Manager	41	Day	120.00	4,920	0.00	0	4,920
8	Employee Fringe	41	Day	0.00	0	73.71	3,022	3,022
9	Temporary Power	41	Day	0.00	0	4.84	198	198
10	Temporary Phone	41	Day	0.00	0	6.45	264	264
11	Temporary Toilets	41	Day	0.00	0	29.90	1,226	1,226
12	Subsistence Cost	41	Day	0.00	0	35.48	1,455	1,455
13	Equipment Cost	41	Day	0.00	0	169.28	6,940	6,940
					20,588		28,011	48,599

PT&I (23%) 4,735
Office Overhead (10%) 4,860
TOTAL \$58,194

Contract Amendment Proposal
Rivers Middle School ■ Charleston, SC
January 3, 2011 ■ WPC Project EN111014



The proposed additional cost for the items detailed above is shown below

ITEM	Amount
I. Additional Production Pile Monitoring	\$35,154.00*

*31 days of full time production pile monitoring- 12 hour day shift and 12 hour night shift.

The original contract amount is \$64,300.00. The amended contract amount to date is \$161,564.00. We propose amending the contract again to include 31 additional days of production pile monitoring to include the amount shown above and would bring the proposed contract total to \$196,718.00.

We appreciate the opportunity to provide this proposal and look forward to continuing to work with you on this project.

Sincerely,
WPC, A Terracon Company


Thomas C. Smoak, III, EIT
Project Manager


Kylie K. Page
Branch Manager

$$\$35,154 / 31 = \$1,134 \text{ day \& night} / 2 = \$567 \text{ per day (day time only)}$$

$$41 \text{ day overrun } (\$567) = \$23,247.00$$



COOPER • RIVER • CONTRACTING

1779 ANTHONY STREET, CHARLESTON, SC 29405 PHONE: (843) 277-0701 • FAX: (843) 278-5914

January 4, 2012

M.B. Kahn Construction, Co., Inc.
P.O. Box 1179
Columbia, SC 29202

Sent Via Email: wneely@mbkahn.com

Attention: Will Neely

Reference: Rivers Middle School
Change Order Request #18

Please find attached our change order request for the additional work as shown below.

- 1) Additional Concrete At Pile Caps
- 2) Rework Pile Cap PC-46A
- 3) Rework Pile Cap PC-42
- 4) Rework Grade Beam GB-3

Total Contract Add - \$12,143.00

Feel free to contact me should you need any further information.

Sincerely,
Cooper River Contracting, LLC

John DeWitte
Project Manager

Cc: Shanrock Thompson - MB Kahn

WWW.COOPERRIVERCONTRACTING.COM

ROA000341

Rework To Pile Caps/Grade Beams

Description of Work Rework To Pile Caps

1. Additional Concrete At Pile Caps

	Quantity	Unit	\$/Unit	Tax	Total	
Material & Equipment Costs						
PC-64 Extra Concrete (Includes Pumping)	9	cyds	\$90.75	\$89.42	\$888.17	
PC-38/PC-8 Extra Concrete (Includes Pump)	9	cyds	\$90.75	\$89.42	\$888.17	
Misc Materials/Consumables 10%	1	sum	\$18.15	\$1.54	\$19.69	
					<u>\$1,792.04</u>	\$1,792.04
Labor Costs						
Labor to Rework Pile Cap	17.00	hrs	\$35.00		\$595.00	
Foreman	0.00	hrs	\$50.00		\$0.00	
Superintendent	1.70	hrs	\$75.00		\$127.50	
Total	<u>18.70</u>				<u>\$722.50</u>	\$722.50

Time Extension 0 day(s)

Subtotal **\$2,514.54**

2. Rework to PC-46A

	Quantity	Unit	\$/Unit	Tax	Total	
Material & Equipment Costs						
CMC Rebar	1	ls	\$500.00	\$42.50	\$542.50	
Misc Materials/Consumables 10%	1	sum	\$50.00	\$4.25	\$54.25	
					<u>\$596.75</u>	\$596.75
Labor Costs						
Labor to Rework Pile Cap	88.00	hrs	\$35.00		\$3,080.00	
Foreman	0.00	hrs	\$50.00		\$0.00	
Superintendent	8.80	hrs	\$75.00		\$660.00	
Total	<u>96.80</u>				<u>\$3,740.00</u>	\$3,740.00

Time Extension 0 day(s)

Subtotal **\$4,336.76**

3. Rework to PC-42

	Quantity	Unit	\$/Unit	Tax	Total	
Material & Equipment Costs						
CMC Rebar	1.00	ls	\$500.00	\$42.50	\$542.50	
Extra Concrete (Includes Pumping)		cyds	\$90.75	\$0.00	\$0.00	
Misc Materials/Consumables 10%	1	sum	\$59.08	\$5.02	\$64.10	
					<u>\$606.60</u>	\$606.60
Labor Costs						
Labor to Rework Pile Cap	38.00	hrs	\$35.00		\$1,280.00	
Foreman	0.00	hrs	\$50.00		\$0.00	
Superintendent	3.80	hrs	\$75.00		\$270.00	
Total	<u>38.80</u>				<u>\$1,550.00</u>	\$1,530.00

Time Extension 0 day(s)

Subtotal **\$2,136.60**

4. Rework to GB-3

	Quantity	Unit	\$/Unit	Tax	Total	
Material & Equipment Costs						
CMC Rebar	1.00	ls	\$500.00	\$42.50	\$542.50	
Misc Materials/Consumables 10%	1	sum	\$50.00	\$4.25	\$54.25	
					<u>\$596.75</u>	\$596.75
Labor Costs						
Labor to Rework Pile Cap	17.00	hrs	\$35.00		\$595.00	
Foreman	0.00	hrs	\$50.00		\$0.00	
Superintendent	1.70	hrs	\$75.00		\$127.50	
Total	<u>18.70</u>				<u>\$722.50</u>	\$722.50

Time Extension 0 day(s)

Subtotal **\$1,319.25**

Overhead 10% \$10,307.14
Profit 5% \$1,030.71
Bond Increase 2% \$588.89
Bond Increase 2% \$238.08

Total **\$12,142.84**

(No Subject)

From: **chris morrison** (morrison.chris@hotmail.com)

Sent: Wed 8/31/11 10:58 AM

To: Scott Spigener (sspigener@mbkahn.com); Will Neely (wneely@mbkahn.com); Shamrock Thompson (sthompson@mbkahn.com)

Gentlemen

I received the updated schedule yesterday and I feel that I need to put in writing that you have cut my original projected schedule by a considerable amount. I do understand that We all need to make up for lost time. Even though Terratec is working on a plan to meet the new schedule, we are not agreeing that we can meet this schedule. I must stress that we have devised a new plan and will be working around the clock in two shifts, and are going to do everything possible to meet the schedule.

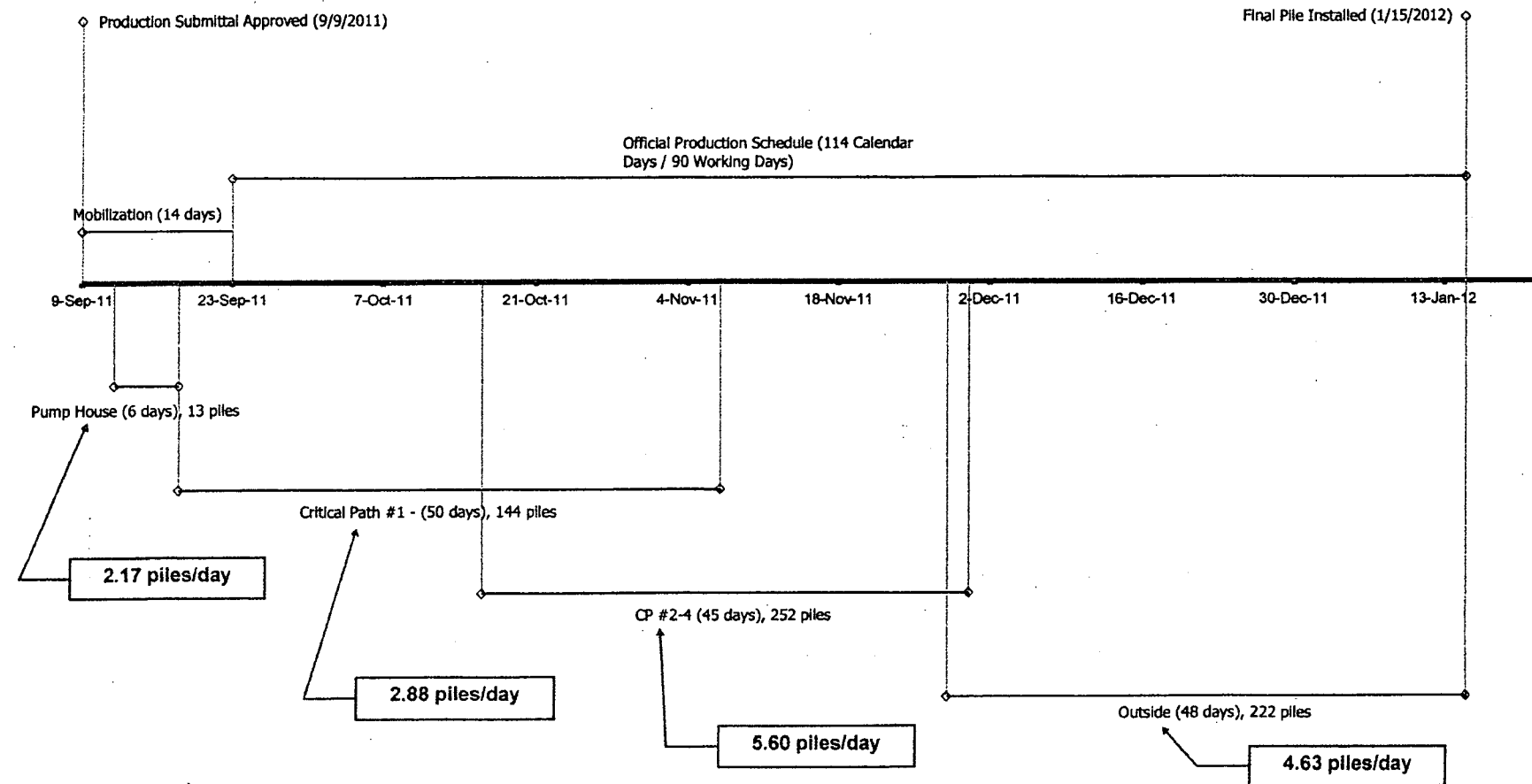
One thing we see slowing us down is the water pressure and flow. We will need a lot more than what has been provided. We will be back with you with any further requests and scheduling.

Thank You

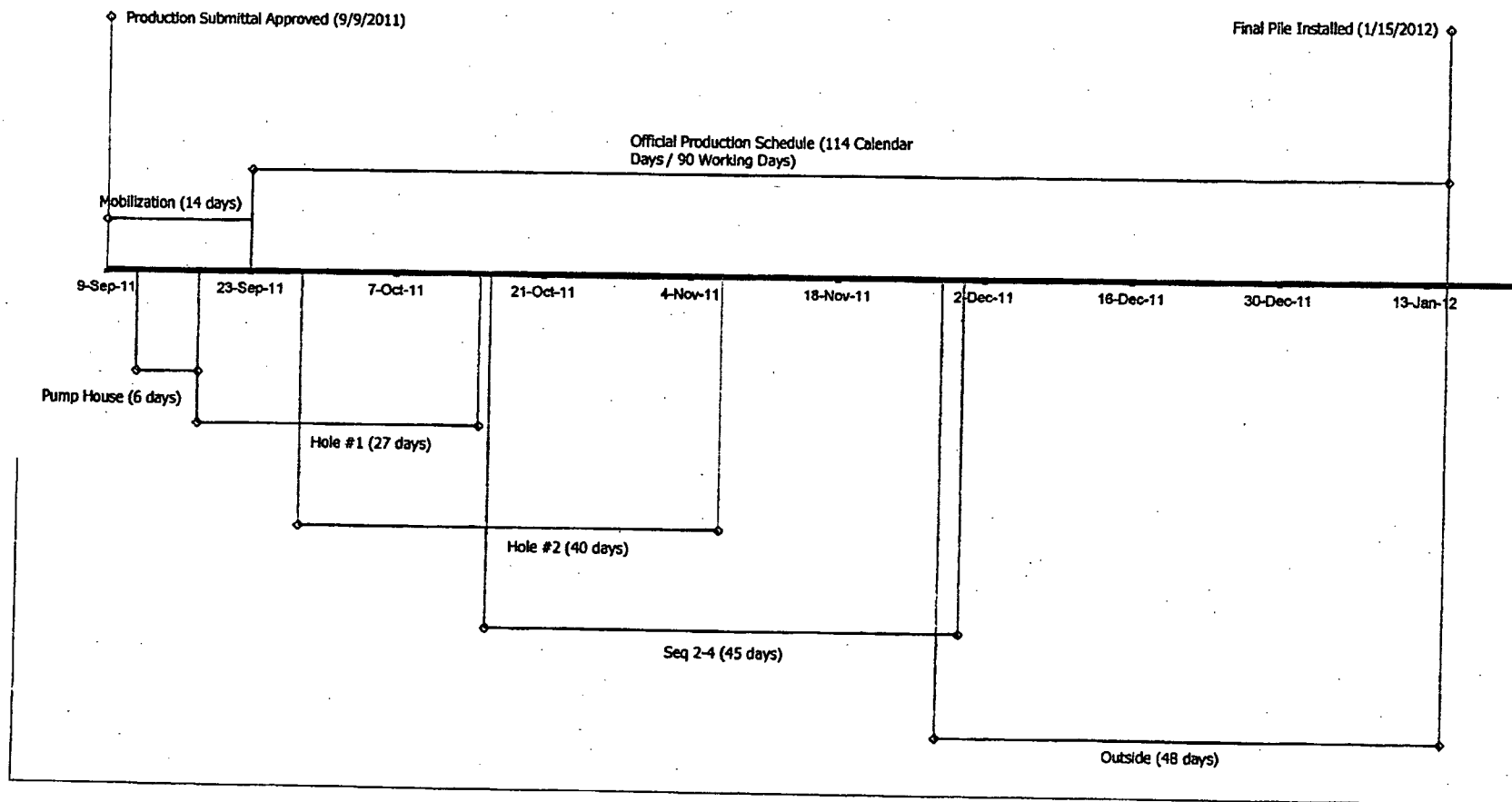
ROA000343



Rivers Seismic Retrofit - Micropile Production Project Timeline

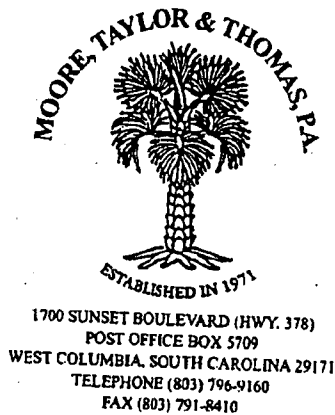


ROA000344

Rivers Seismic Retrofit - Micropile Production Timeline

ROA000345

S. JAHUE MOORE
J. MARK TAYLOR*
DAVID L. THOMAS†
C. VANCE STRICKLIN, JR.
JAMES EDWARD BRADLEY
SHEILA McNAIR ROBINSON
ROBERT D. HAZEL
CHRISTIAN G. SPRADLEY††
C. DAVID SAWYER, JR.††
WILLIAM H. EDWARDS
STANLEY L. MYERS
JANE H. DOWNEY**
S. JAHUE MOORE, JR.
JOHN C. BRADLEY, JR.



MELISSA K. MOORE
WILLIAM B. FORTINO
R. NICHOLS "NICK" RILEY, JR.
M. BROOKS BIEDIGER
AMBER L. FULMER
SARAH TAYLOR CASSIDY
MARGARET "MEG" HAZEL

RETIRED:
BILLY C. COLEMAN††

††SALUDA OFFICE:
(864) 445-4544 OR (866) 604-4544
†GREENVILLE OFFICE:
(864) 271-6371

November 27, 2013

Wayne Wilcher
Director of Contracts and Procurement
Charleston County School District
399 Bridge View Drive
North Charleston, SC 29405
VIA CERTIFIED MAIL and FEDEX OVERNIGHT

Re: Terratec Dispute

Dear Mr. Wilcher:

Please take this letter as a request for appeal from Terratec Inc. Terratec Inc. is appealing the decision of Lawrence Lutrario as Interim Director of Contract and Procurement. We understand this decision was posted November 22, 2013. For your convenience, we attach a copy of this decision as Exhibit 1 to this letter and statement of appeal.

We are appealing pursuant to the Statement of Right to Appeal we received with the letter. For your convenience, I enclose a copy of the Statement of Right to Appeal as Exhibit 2 with this letter. If any further actions, statements or filings need to be made, please let us know. We have reviewed the procurement code and have not found any further requirements for appeal other than notice in writing to you.

For your convenience, we attach additional documentation supporting this appeal. This documentation is as follows:

- Exhibit 3: Letter dated January 14, 2013, from Chris Morrison, Vice President Terratec Inc. to Chief Procurement Officer for CCSD with Exhibits A through U;
- Exhibit 4: Letter dated February 26, 2013, from Allen W. Cadden to William Lewis of CCSD reporting the decision of the Dispute Resolution Board which heard Terratec's claim;

- Exhibit 5: Letter dated March 14, 2013, from Christopher A. Morrison, Vice President Terratec Inc. to Scott Spigener of M. B. Kahn responding to the DRB findings;
- Exhibit 6: Letter dated February 20, 2013, from Fredrick Feil of CCSD to Chris Morrison of Terratec Inc. stating that Terratec's January 14, 2013, request for resolution was premature in view of the DRB proceeding;
- Exhibit 7: Terratec Accounting Cost Breakdown.

At the bottom of page 2, Mr. Lutrario's letter indicates that Terratec has expanded its claims beyond those initially submitted to the Dispute Resolution Board. We disagree with this finding. In fact, the claims Terratec makes at this point are the same claims Terratec made to the Dispute Resolution Board. The Dispute Resolution Board refused to consider those claims. Terratec does not know on what basis the Dispute Resolution Board refused to consider some of those claims, but those claims were presented to the Dispute Resolution Board as indicated by Terratec's letter of January 30, 2013, which was sent to Allen Cadden, Chairman of the Dispute Resolution Board. For your convenience, we attach a copy of that letter as Exhibit 8 to this submittal. For this reason, we disagree with Mr. Lutrario's conclusion that we have expanded the claim. We have continued to maintain that the claim is exactly what it is. The claim was not fully considered by the Dispute Resolution Board over our objection.

Mr. Lutrario's letter on page 3 indicates that he concurs with the decision of the Dispute Resolution Board in total. As our dispute with Mr. Lutrario's position, please refer to our initial letter of January 30, 2013, outlining our disputes to the Dispute Resolution Board, the Dispute Resolution Board's response to that letter, and our response to the Dispute Resolution Board's decision. While we could list every one of these reasons in this letter, we have already done so, and refer you to that previous correspondence as the basis for our exception to Mr. Lutrario's adoption of the Dispute Resolution Board decision in total.

On page 4 of Mr. Lutrario's letter, he indicates that: "The Disputed Change Order described as 'TTi to MBK/CCSD Contract Adjustment (12 feet unpaid at \$45/ft)' in the amount of \$338,580 was not presented for consideration by the DRB and I have no basis or authority to consider this request so it is denied." This dispute was presented to the Dispute Resolution Board as indicated in the January 30, 2013, letter to Allen Cadden. The DRB simply refused to hear it.

We would like to reiterate that Terratec disagrees with the decision of the Dispute Resolution Board and Mr. Lutrario's decision. Terratec relies upon the January 30, 2013 letter to Allen Cadden to set forth all the issues for review which it believes was improperly denied.

Wayne Wilcher
November 27, 2013
Page 3

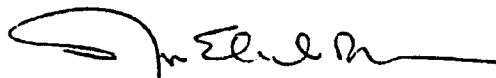
In addition, Terratec believes the make up of the DRB was not as impartial as it is currently in a dispute with M.B. Kahn and Heery. As a result, representatives from those organizations should not have been on the Dispute Resolution Board.

In addition, there has recently been a hearing from the Department of Labor, Licensing and Regulation at which time the Licensing Board determined that WPC, the School District's inspector, were not licensed to perform inspections on Terratec's work. As a result, any amounts paid to this company were improperly paid as an inspector without a license is not entitled to be paid.

As a result, any amounts charged to Terratec for WPC's inspections were improperly charged. WPC should be required to refund any amounts it was paid on this job with any amounts paid by Terratec for WPC's inspections to be refunded to Terratec. Terratec has objected to WPC's involvement with this job for years based upon its belief that WPC was not properly doing its job. The Labor, Licensing and Regulation Commission met on Wednesday, November 20, 2013, at which time it determined that WPC was in violation of South Carolina Law regarding licensing for inspections. We have requested a copy of those findings which we believe are also important in consideration of this matter.

Thank you for your consideration in this matter. Please contact me with any questions or concerns.

Sincerely,



James Edward Bradley

/lgi

Enclosures

cc: Chris Morrison
Brewton Hagood
Lawrence Lutrario

ROA000348

From: Scott Spigener
Date: 3/7/2011 2:04:31 PM
To: alvinb@kyzer-timmerman.com
Subject: Rivers Sections

Ken,

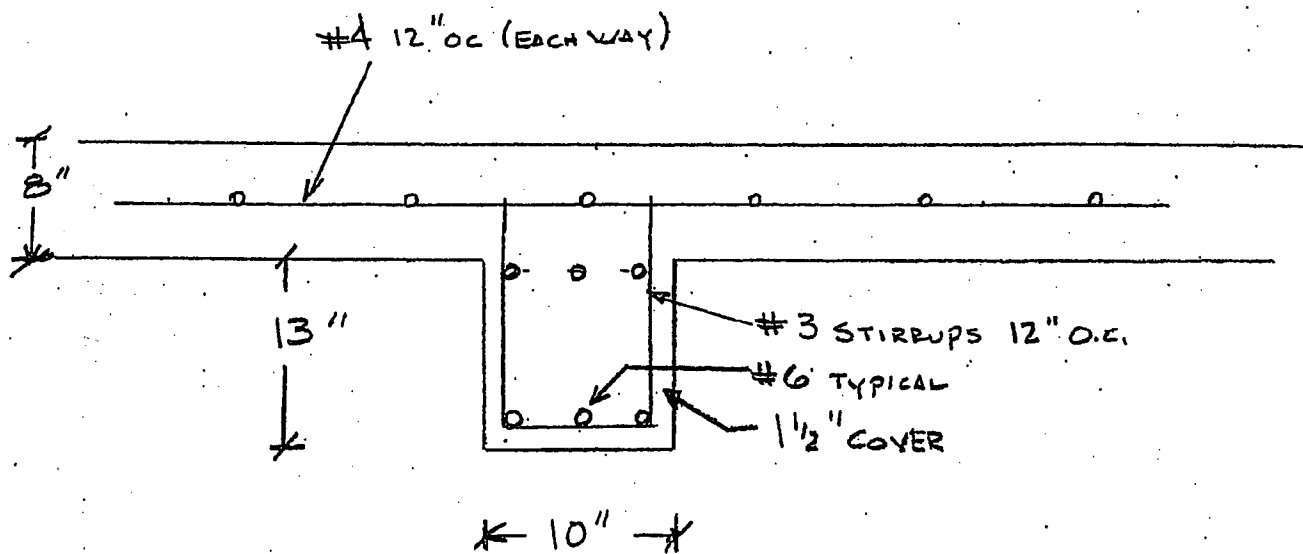
Attached are the floor sections for the 1st floor at the Rivers Project. The beam locations and columns supporting the beams are on the design plans. As we discussed our purpose is to evaluate the stated 40psf load capabilities of the existing floor to see if the actual floor would support more or less of a load. Let me know if you need anything else to evaluate the existing floor. Please note the classroom floor is 6" thick and the corridor floor is 8" thick.

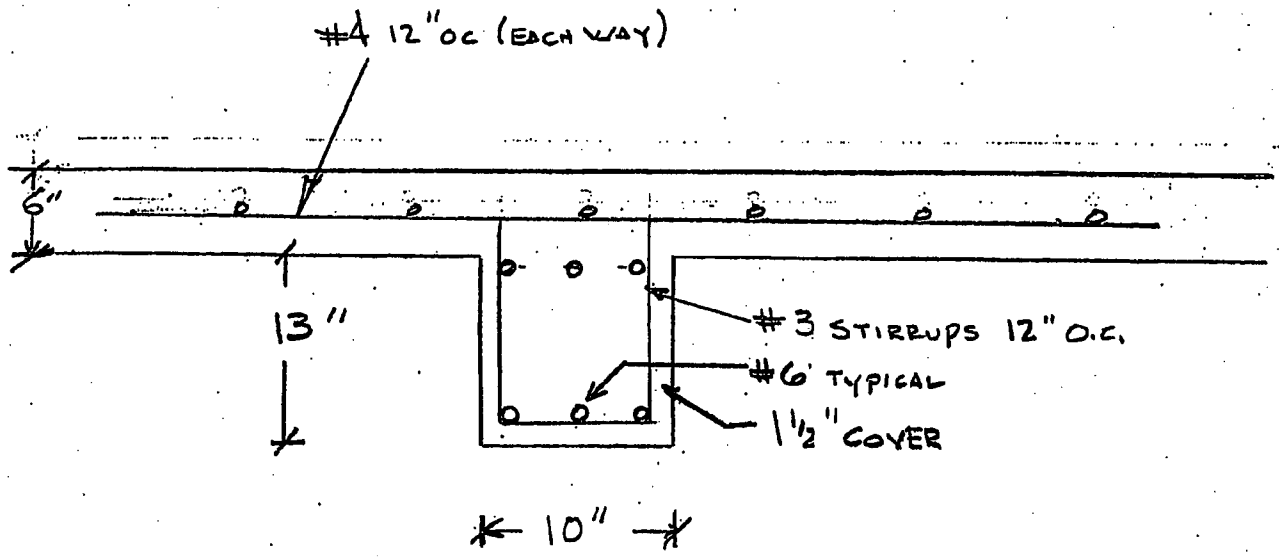
Thanks,

Scott Spigener
Senior Project Director
M. B. Kahn Construction Co., Inc.
Ph: (803) 227-1270
Fx: (803) 699-6413
Cell: (803) 917-5324

SHOW IT - I DON'T LET THE FLOOR LOADS
AS STATED IN THE DRAWINGS. THEY
MUST HAVE USED HIGHER STRENGTH CONCRETE OR
REBAR, OR LESS SPANS, OR END FIX. M.

KST





1/13

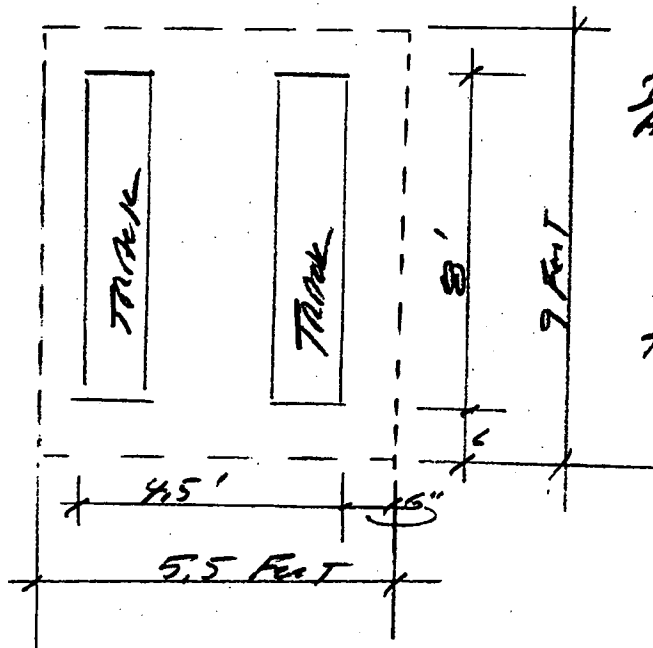
Assumes

- $f'_c = 4000$ PSI CONCRETE
- $f_y = 50$ KSI REBAR
- EQUIP: Assume
- $W_u = 6000$ UNIT
- TRAILER LENGTH 8 FEET
WIDTH 4.5 FEET
- SPEED = CRAWL

RIVERS / EXIST
FLOOR LOADS / SLABS

FILE

PAVE WAY 40 PSI ROLLS
80 PSI CORRIDORS



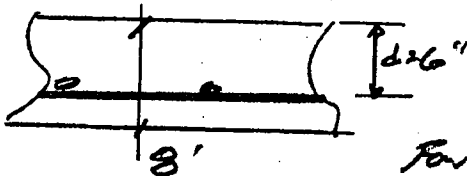
$$\frac{P_u}{A} = \frac{6000}{(5.5)(9)}$$

$$= 121 \text{ PSI}$$

WE NEED THIS
TO AVOID CRACKING
LOOK AT
SLAB INFO

SEE INFO FROM SLOTT.

Look AT CORRIDOR 8' SLAB w/ #4 @ 12" ϕ



$$\rho = \frac{0.2}{(12)(12)} = 0.003$$

For $f_y = 50$ KSI $f'_c = 4000$ PSI

LOW END OF TABLE $\rightarrow \frac{0.003}{0.004} (1941) = 1342 = \frac{M_u}{\phi b d^2} \left(\frac{M_u}{(0.9)(12)(12)} \right)$

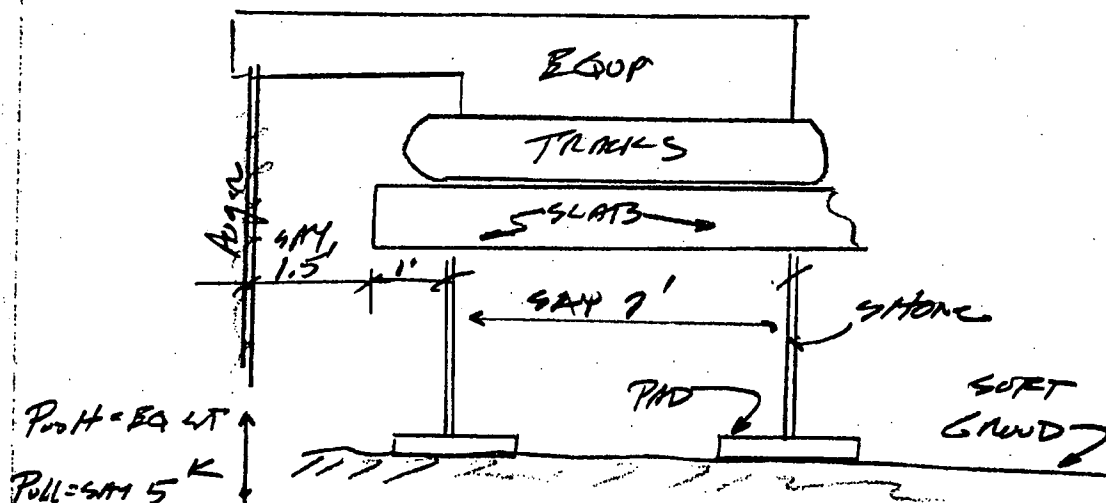
Let $L = 12'$ $\therefore M_u = 52,410$ (FACTORED)

$$\frac{52,410}{12,000 (\text{SAY } 12)} = 2.73 \text{ IN} = \frac{W L^2}{8} = \frac{W (12)^2}{8} \therefore W = 0.152 \text{ KIP}$$

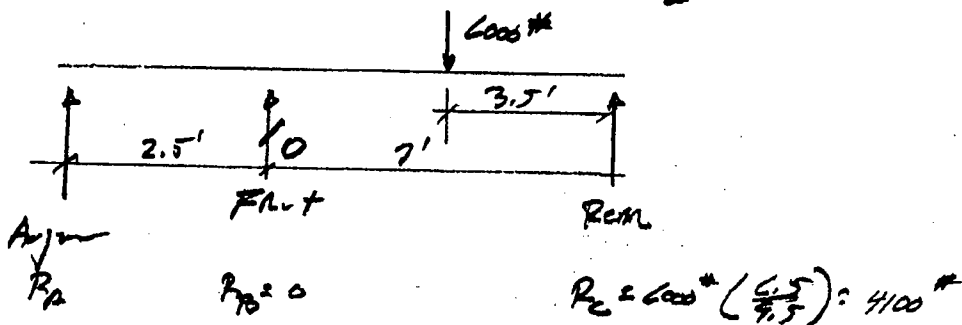
152 PSI - (100 PSI SLAB) = 52 PSI (NEXT CLOSE TO 80)

7/7

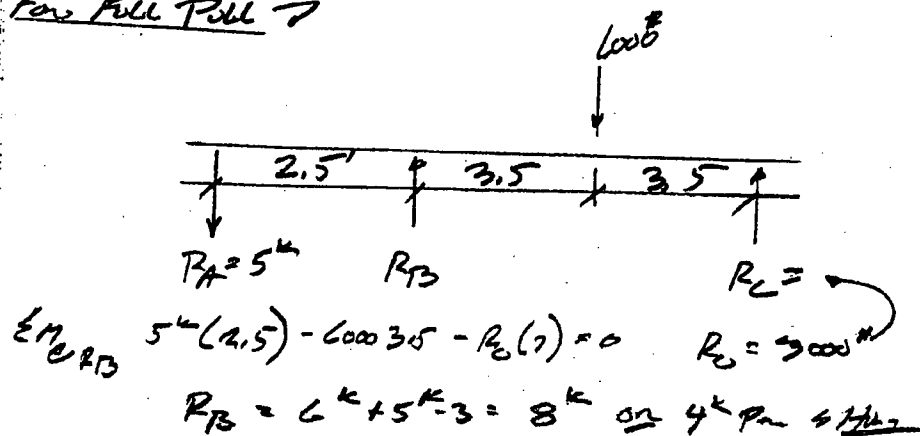
AT SLAB EDGE (WORKING EQUIP)



For Full Push - All Load is on REAR



For Full Pull



EST. STAINY ALLOY EDGE OF SLAB = 8K (IMPACT = 1.5) = 12K

WOOD PAD = $\frac{7 \times 9K}{11KSF} = 3' \times 3'$ SQUAD PAD TRACK FRONT

ROA000354

Published In 2009 Rapid Excavation and Tunneling Conference Proceedings,
copyright 2009 by the Society for Mining, Metallurgy, and Exploration (SME).
All rights reserved. See www.smenet.org for more information about SME.

Daniel Island Surprise – Sand Lens Lurking In Cooper Marl Charleston, SC

Ray Brainard, P.G.⁽¹⁾, Paul Smith⁽¹⁾, Larry Drolet⁽²⁾

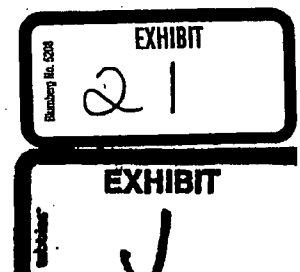
ABSTRACT: Charleston Water System's Daniel Island Extension Tunnel, initially thought to be the simplest of the four replacement tunnels to design and build, became the most challenging after the discovery of an unexpected 30-ft thick lens of sand in the normally consistent Cooper Marl while sinking a shaft on Daniel Island. This paper will explore the challenges involved with determining the extent of the unforeseen lens of sand, the accelerated boring program, and the redesign of the vertical alignment - keeping the alignment between the sand layer and the bottom of the Cooper River. It will describe how the challenges were overcome, and how the Owner, Engineer, and Contractor were able to team together to achieve the desired results.

INTRODUCTION

When the Contractor for Charleston Water System's Daniel Island Extension Tunnel encountered an unexpected thick layer of running sand while attempting to sink the shaft at the Daniel Island Wastewater Treatment Plant, it was crucial for clear and decisive direction to be provided by the Project Construction Management (PCM) team in a timely manner. The Owner, Charleston Water System, and the Engineer / Construction Manager, Black & Veatch Corporation in association with Hussey, Gay, Bell and DeYoung, Inc. (B&V/HGBD), moved quickly to determine a viable solution for this problem, one that was previously not encountered in numerous tunnels and deep foundations in the region. The Daniel Island Extension Tunnel was a negotiated contract with the Contractor, and in an effort to expedite and strengthen the decision making process for this problem, the PCM added the Contractor, Affholder, Inc., to the team. This paper will describe the challenges involved with determining the extent of the unknown lens of sand, the accelerated boring program, the redesign of the vertical

(1) Black & Veatch Corporation
(2) Charleston Water System

ROA000355



alignment, how the challenges were overcome, and how the Owner, Engineer, and Contractor were able to team together to achieve the desired results.

HISTORICAL CHARLESTON

Charleston, South Carolina is an important city in American history, rich in Southern culture and heritage. Originally settled in 1670 by the English, Charleston has over 100 buildings listed on the National Register of Historic Places and was intimately involved with the American Revolution and the American Civil War (See Figure 1). Based on its historic significance and charm, Charleston has experienced an extended boom of tourists and growth with over 1.5 million people visiting Charleston each year (Drolet, McKelvey, and Swartz 2005). Tourism is a major economic engine, driving the local economy and benefiting the area businesses. A disruption in services or the inability to provide those services, notably wastewater conveyance, could cause an economic disaster for any community associated with tourism and growth. Charleston faced this problem when the existing wastewater tunnel system began to fail.

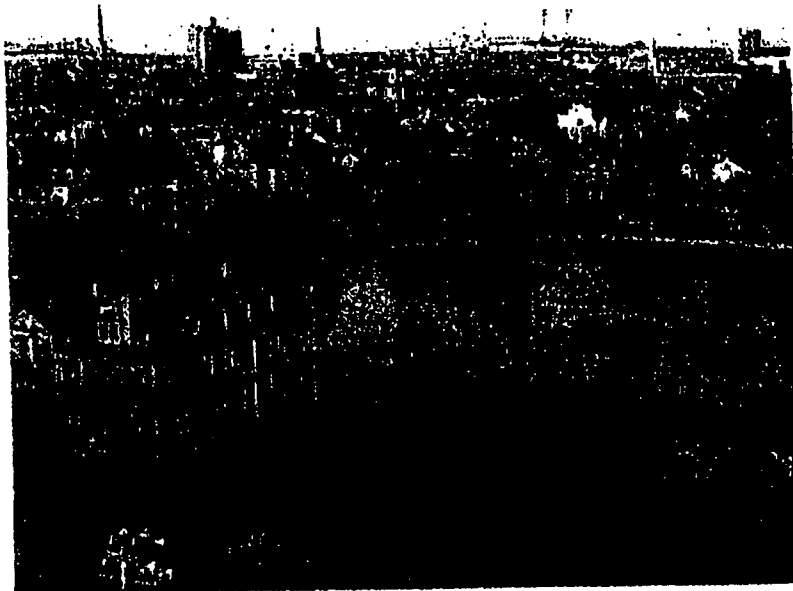


Figure 1. Photo of Historic Charleston

Recognizing the severity of the problem, CWS engaged the services of B&V/HGBD to develop a new Wastewater Tunnel Master Plan, and to design and manage the construction of a replacement wastewater tunnel system. Heavy civil construction in urban settings, especially in historic communities such as Charleston, requires careful and detailed planning. Many hours were spent during the design phase to minimize the impact to historical properties, roadways and neighborhoods. This work included archeological studies, environmental studies, building/structure assessment studies, traffic control studies, and numerous mitigation meetings with neighborhood and business associations (Drolet, McKelvey, and Swartz 2005).

ORIGINAL SYSTEM

Prior to the Water Quality Act of 1965 Charleston, like other municipalities in that era, discharged wastewater directly into adjacent bodies of water. For the Charleston peninsula, this included the Ashley River, Cooper River, and Charleston Harbor. Charleston's original wastewater tunnel system and Plum Island Wastewater Treatment Plant (PIWWTP) were constructed in the late 1960's and early 1970's after the Water Quality Act of 1965 and Clean Water Act of 1972 were signed into law. The original wastewater tunnel system included the Harbor Tunnel, Ashley River Tunnel, Cooper River Tunnel, and West Ashley Tunnel.

When completed, the original system was 12.3 km (40,300 ft) long and consisted of 2.1 m (7 ft) diameter tunnels constructed approximately 36.6 m (120 ft) below ground. A typical cross section of the original tunnel consisted of ribs and lagging boards as the initial support and reinforced concrete pipe 30 to 76 cm (12 to 30 in.) in diameter as the tunnel liner or carrier pipe. Previous experience with water tunnels north of Charleston led to the presumption that new tunnels in the same impervious geological formation would be stable for many years (Drolet, McKelvey, Smith, and Webb 2006). This presumption led to the decision and design of filling the annulus space between the initial support and carrier pipe with water in lieu of grout. Figure 2 is a tunnel section detail from the original drawings that indicates the carrier pipe, steel rib, wood post, wood chocks, and the annulus space to be filled with water.

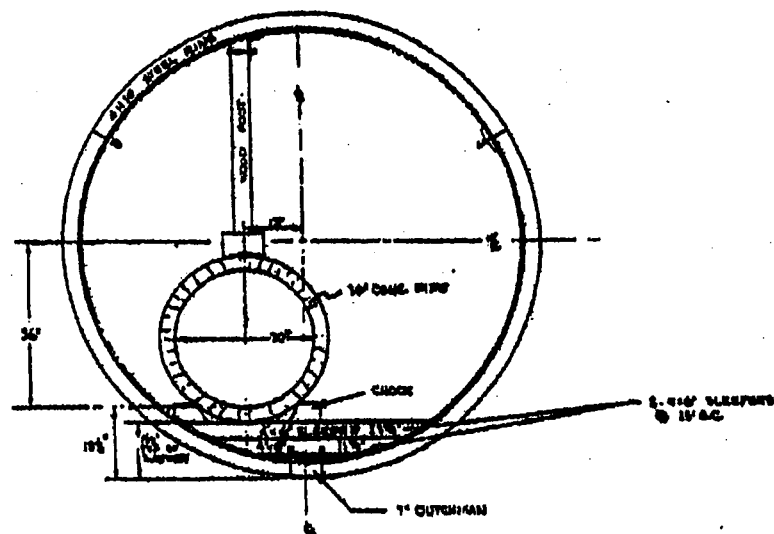


Figure 2. Original Tunnel Section Detail

The original wastewater tunnel system included numerous inlets and drop shafts that collected wastewater from near surface gravity sewer lines and dropped to the tunnel system for conveyance to the PIWWTP. Each inlet structure had a vortex designed to funnel wastewater in a circular motion down the drop shaft pipe, allowing entrained air to be released from the wastewater. The original wastewater tunnel system also included small diameter (15 to 20 cm or 6 to 8 in) ventilation pipes installed in the tunnel system that were designed to expel any remaining trapped air. These ventilation pipes proved to be problematic and eventually became clogged with solids and floatables in the wastewater. Air that could not be released from the system combined with water and hydrogen sulfide gas (H_2S) to produce sulfuric acid, which corroded the reinforced concrete carrier pipes. Ultimately the crown of the carrier pipes, particularly near drop shafts, was breached, and wastewater entered the surrounding water. This in turn led to

corrosion of the steel arch tunnel supports and eventually portions of the tunnel collapsed as shown in Figure 3 (Drolet, McKelvey, Smith, and Webb 2006). The costly blockages that occurred after the collapses began led to the timely development of a replacement system.



Figure 3. Photo of Collapsed Tunnel

REPLACEMENT SYSTEM

The new replacement wastewater tunnel system was specifically designed for a 100 yr life cycle, and in a calculated effort to combat the harsh atmosphere of wastewater and hydrogen sulfide gas, the design incorporated the latest corrosive resistant materials available such as centrifugally cast fiberglass reinforced polymer mortar (CCFRPM) pipe, stainless steel fittings, fiberglass grating, epoxy lined concrete, polymer concrete, and HDPE pipe. Larger ventilation pipes and drop pipes were incorporated into the design along with improved vortexes, approach channels, odor control structures, and a

SCADA monitoring system. Also, incorporated into the design was the same initial support design from the original tunnels (ribs and lagging boards) with one important change – the annulus space between the initial support and carrier pipe was filled with a low density cellular concrete grout (See Figure 4).

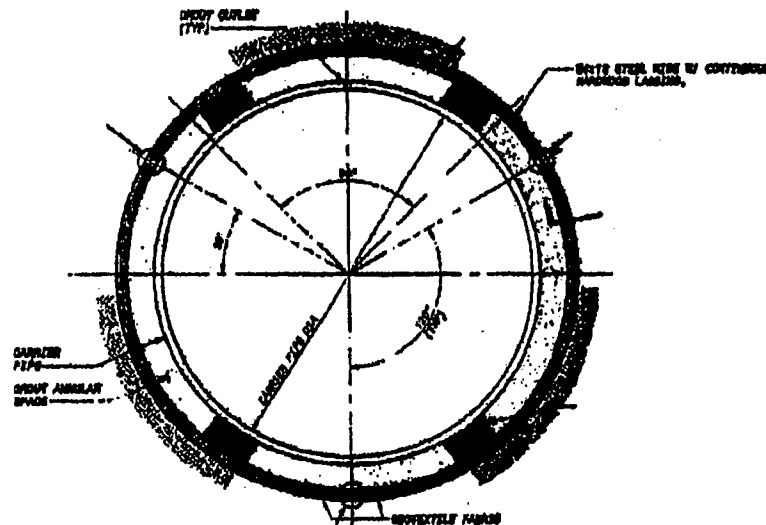


Figure 4. Replacement Tunnel Section Detail

The new replacement wastewater tunnel system, as shown in Figure 5, includes Phase I - Harbor Replacement Tunnel, Phase II - Ashley River Replacement Tunnel, Phase III - Cooper River Replacement Tunnel, Phase IV - Daniel Island Extension Tunnel, and Phase V - West Ashley Replacement Tunnel. When the final scheduled phase, Phase V, is completed, the replacement wastewater tunnel system will be 18.8 km (61,600 ft) long. To date 16.3 km (53,400 ft) of wastewater tunnel has been completed, including the Phase IV Daniel Island Extension Tunnel. The excavated tunnels range from 1.5 to 2.4 m (5 to 8 ft) in diameter, and the CCFRPM carrier pipes installed range from 51 to 137 cm

(20 to 54 in) in diameter. HDPE was utilized for the shaft drop pipes and ventilation pipes, and they range from 51 to 76 cm (20 to 30 in) in diameter installed.

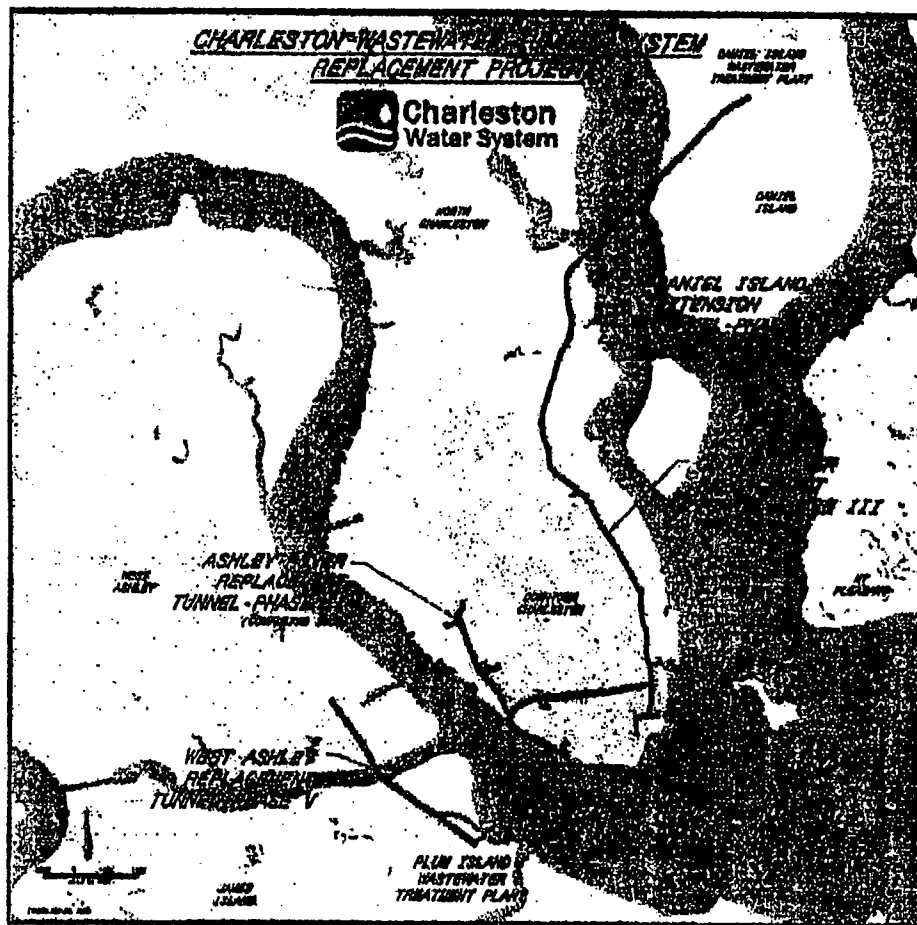


Figure 5. New Replacement Wastewater Tunnel System

Geology

The Charleston Peninsula and Daniel Island were deposited as part of an estuary influenced by the combination of marine and continental processes. The estuarine surficial soils range in thickness from 10.7 to 18.3 m (35 to 60 ft) and consist of artificial fill, cohesive soils, and noncohesive soils. The artificial fill consists mostly of sandy soils and manmade rubble. The cohesive surficial soils, classified as silty clay with sand and sandy clay, includes the zero shear strength formation locally known as "Pluff" mud. The noncohesive surficial soils, located in layers and lens throughout the overburden, are characterized as silty sand, poorly-graded sand, and sand with silt.

Lying below the surficial soils is the Eocene and Oligocene age Cooper Marl. Cooper Marl is a highly calcareous, clay and silt-sized stratum characterized as clayey silt, silty clay and sandy silt (MH, CH, ML, CL, MH-CH, ML-CL) per ASTM D 2487. Based on previous tunnel construction in the area and the geology, the replacement tunnels were located approximately 30.5 to 36.6 m (100 to 120 ft) below the surface within the Marl. The Marl provides a nearly optimum tunneling medium due to its very low permeability, relative softness, sufficient stand-up time for initial support installation, and low abrasivity.

To verify tunnel alignments, a subsurface investigative boring program was conducted along the proposed alignment. Regionally the Marl becomes weaker in a southeastward direction from inland areas to the Charleston Peninsula, but across the Peninsula the range in geotechnical properties is very uniform. Also across the region, the Marl has an

erosional surface with down cut valleys representing paleo-channels. The subsurface investigation was conducted primarily to confirm the top of the Marl and to confirm soil characteristics. Table 1 below represents a summary of the results of the Cooper Marl laboratory testing for the Ashley River, Cooper River, and Daniel Island Tunnel alignments.

	Ashley River Tunnel		Cooper River Tunnel		Daniel Island Tunnel	
	Min	Max	Min	Max	Min	Max
Moisture Content (%)	29	56	27	59	29	75
Dry Unit Wt (kg/m ³)	1121	1297	1121	1458	913	1490
Wet Unit Wt (kg/m ³)	N/A	N/A	1682	2018	1538	1922
Liquid Limit (%)	39	88	41	125	32	155
Plastic Limit (%)	N/A	N/A	23	44	23	84
Plasticity Index (%)	15	57	8	91	4	91
Wash #200 (% passing)	52	92	31	96	18	86
Carbonate Content (%)	54	68	21	75	8	77
Direct Shear c(kPa)/ Φ	0/22	79/32	65/28 (1 test)		0/22	76/35
UCS (kPa)	22	294	51	175	69	155
UU Triaxial (kPa)	86	170	98	202	68	278

Table 1

During the subsurface investigation for the Daniel Island Extension Tunnel, a deep channel into the Marl was discovered just to the east of the Cooper River that would reduce Marl cover over the crown of the tunnel to 3.0 to 4.6 m (10 to 15 ft). Several borings were completed near both banks of the Cooper River, while only a single boring tagging the top of the Marl was completed near the center of the channel, due to heavy ship traffic on the River. Following the investigation, it was decided to lower the vertical alignment of the Tunnel (Figure 6). This was to avoid any chance of excavating out of the Marl if the bottom of the deep incised channel was deeper than seen in the borings and to

increase the Marl cover over the crown of the tunnel under the Cooper River. Generally, a layer of very loose saturated sand is found immediately overlying the Marl, and excavating through that material would require a different Tunnel Boring Machine (TBM) than what the Contractor had available on site.

This change in alignment put the proposed tunnel below most of the borings, including all the borings on Daniel Island. Discussions were held to decide whether additional boring information was needed because of the lack of data at tunnel depth. Because this was a fast tracked project with a hard deadline, and the uniformity of the Marl had been established with fairly high certainty, it was decided to move forward without any further investigations.

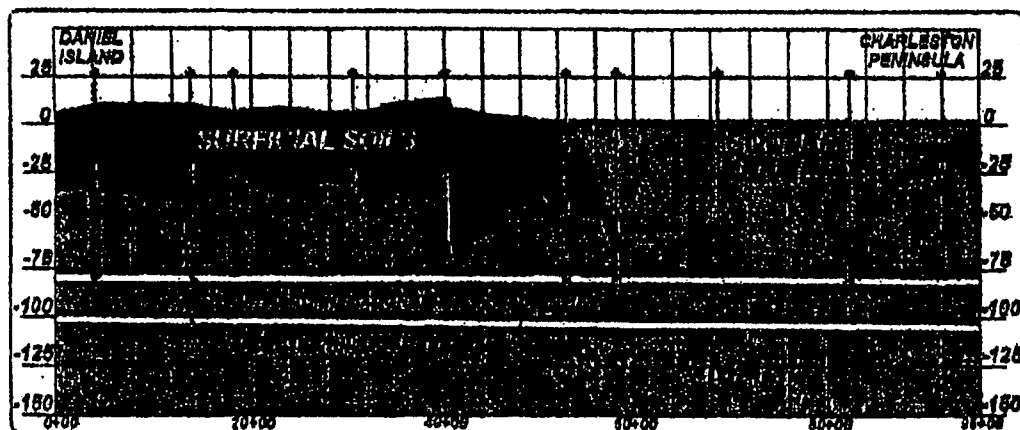


Figure 6. Initial and Proposed Vertical Tunnel Alignment

Shaft Sinking

Analyzing shaft sinking methods through the surficial soils determined that caisson construction for large diameter shafts and steel cased drilled construction for small diameter shafts would minimize the probability of settlement and groundwater drawdown

of surrounding soils at the shaft sites. End terminal shafts, 6 m (20 ft) in diameter, were designed as full depth seismically resistant caissons and sized to provide storage for hydraulic flushing of the tunnel system. Drop shafts, 3 m (10 ft) in diameter, were designed to be flexible and incorporated a final lining of AWWA C-300 reinforced concrete or polymer concrete cylinder pipe, with steel or stainless steel gasketed joints, stacked vertically. The temporary caisson support for the drop shafts was designed and sized by the Contractor. The annulus between the temporary caisson support and the final shaft lining was backfilled with pea gravel as a means of achieving the desired differential movement during a seismic event (Drolet, McKelvey, Smith, and Webb 2006).

Cracks in the Caisson and Running Sand

Caisson and drilled shaft sinking during the Ashley River and Cooper River Replacement Tunnel Contracts was uneventful and went rather smoothly. The Daniel Island caisson shaft sinking proved to be otherwise. The Daniel Island shaft was originally designed as a full depth end terminal shaft with 61 cm (24 in) thick walls. During the sinking operation, with the caisson into the marl, substantial cracks developed in the walls at elevation -18.0 m (-59.0 ft) or 19.7 m (64.5 ft) deep resulting in an unsafe condition if the caisson sinking continued. An investigation into the concrete and the caisson sinking method led to a non-conclusive explanation for the cracks. Subsequently, the shaft was redesigned and resized to allow for ribs and lagging board support down to final grade of -36.8 m (-120.8 ft) and to construct the final shaft lining at a smaller diameter of 4.9 m (16.0 ft). The shaft sinking continued smoothly until the Contractor encountered saturated running sand at

elevation -26.8 m (-88.0 ft), approximately eight feet lower than the initial geotechnical investigation. The Contractor notified the PCM team of the situation and was directed to continue the shaft sinking and grouting of the annulus outside of the ribs and lagging board support in an effort to control the running sand. The Contractor struggled with little or no advancement for several days. During that period, the PCM team quickly determined that supplemental borings were required to determine the limits of the saturated sand. Also during that same period, the PCM team requested the Contractor join forces in an effort to solve the problem in an efficient and expeditious manner. The Contractor brought another level of expertise to the table with intuitive ideas and methods for solving the problem and completing the work.

While the details of a solution and plan were being developed, the Contractor attempted to advance the caisson down by cutting the lagging boards between ribs to shorter lengths in an effort to minimize the amount of ground exposed. In addition, the Contractor procured liner plate as a substitute for the lagging boards. The Contractor also drove 20 cm (8 in) steel channel spilling along side the ribs and attempted to grout the annulus behind the spilling.

Accelerated Boring Program

The PCM team moved quickly and engaged the services of the same drilling subcontractor utilized for the initial subsurface investigation to complete the supplemental subsurface investigation. The drilling subcontractor was able to mobilize very quickly after locations of the borings were determined. The supplemental subsurface

investigation included eight additional borings that were located along the alignment. Work at the shaft stopped after the first two borings near the Daniel Island Shaft revealed that the extent of the sand lens was much deeper than originally anticipated. Two of the eight additional borings were located in the Cooper River, and the accelerated mobilization for the river borings proved to be more difficult to execute than the borings themselves. The logistics of working near a commercial shipping channel involved detailed scheduling, planning, and approvals from multiple agencies including the U.S. Army Corps of Engineers, U.S. Coast Guard, and the South Carolina Department of Health and Environmental Control. Specified dates and work hours were provided by the governing agency. These criteria and the local tide charts dictated how the marine subcontractor and drilling subcontractor were able to plan and complete the two river borings from a barge (See Figure 7).

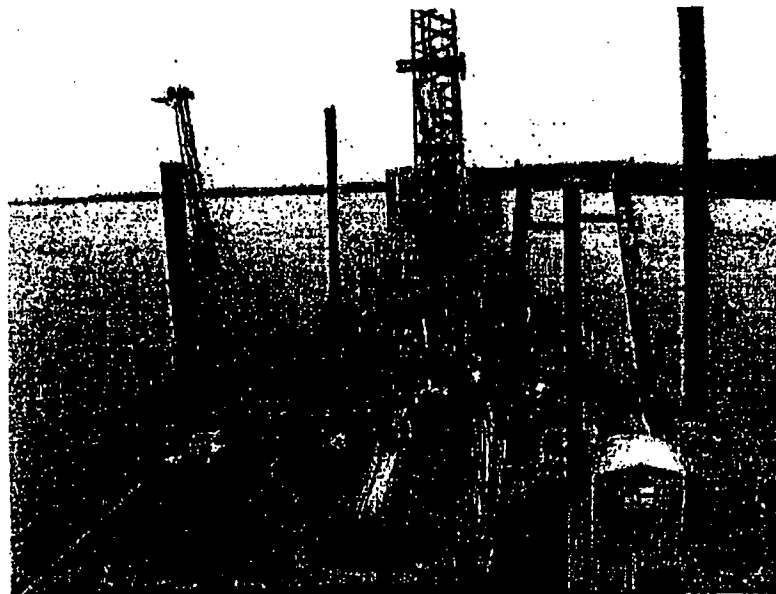


Figure 7. Photo of River Boring from Barge

Redesign of Vertical Alignment

After each boring was completed, the boring log information was added to the geotechnical profile. As the information was added, it became apparent that the sand lens was approximately 9 to 12 m (30 to 40 ft) thick and was dipping southwest from the Daniel Island Shaft to the Cooper River. Preliminary observations indicated the sand lens was not directly linked to the Cooper River. After the borings were complete, a meeting was held to discuss the two options available and decide on the best one moving forward. Everyone was reminded that the Daniel Island Extension Tunnel schedule was driven by the Daniel Island Wastewater Treatment Plant mandated milestone to discharge into the tunnel by a specific date. The connection between the plant and tunnel was completed by others.

The first option would involve continuation of the caisson advancement down to design grade, modification of the TBM to operate in Earth Pressure Balance (EPB) mode, and changing the initial support to a closed system such as liner plates or gasketed segments. This option would significantly reduce caisson and TBM advance rates, and would have increased costs for the changed initial support and schedule impacts. The second option would involve no further caisson advancement, redesign of the vertical alignment, and relocation of the working shaft and tunneling operation from the Daniel Island Shaft to the Greenleaf Shaft. The redesign of the vertical alignment would allow the tunnel to be constructed over the sand lens, but still remain in sufficient marl cover under the deep channel in the marl and under the Cooper River. This option would have increased costs

associated with relocating the tunneling operation to the new shaft location and schedule impacts. The second option was chosen because analysis indicated this option was the most cost effective and offered the most time saving to the Owner. Figure 8 indicates the redesigned vertical alignment and the previously unknown sand lens.

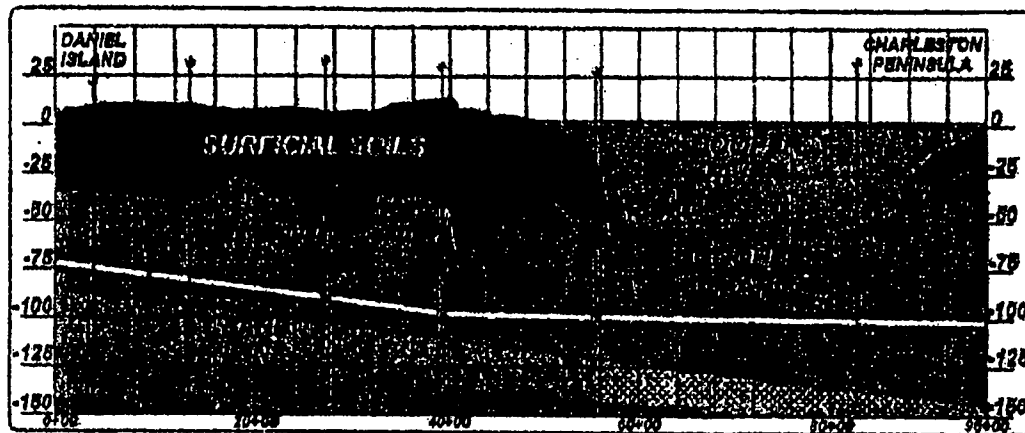


Figure 8. Redesigned Vertical Tunnel Alignment

CONCLUSION

The second option proved to be the correct decision. The logistics of relocating the tunneling operation were completed very quickly and efficiently. The schedule impacts for tunnel excavation and pipe installation were corrected by adding an additional hour to both shifts and working double shifts on Saturdays as needed. This acceleration brought the Contract back on schedule with three months remaining. The relationship between the Owner, Engineer and Contractor proved to be the most important part of the whole process and manifested itself from the previous tunnel contracts. Without this relationship and teamwork, the process of acknowledging the difficult ground as a differing site condition and developing the right direction and compensation would have taken much

longer. That could have potentially impacted the schedule beyond the final completion date and could have cost the Owner a substantial amount in penalties.

The discovery of this previously unseen lithology deep in the Cooper Marl astonished the local contingent of Engineers and Contractors experienced with the ground conditions in the region. There is an old important lesson to be learned again from this experience: Never assume that uniform ground conditions are consistent enough to not warrant additional subsurface investigations when changes are made to the alignment. The cost of a well planned subsurface investigation is great insurance against surprises such as the sand lens lurking in the Charleston Cooper Marl.

REFERENCES

1. Drolet, Larry; McKelvey, James and Swartz, Jason. (2005). *Planning and Fast Track Design in Historical Downtown Charleston*. Rapid Excavation and Tunneling Conference Proceedings.
2. Drolet, Larry; McKelvey, James; Smith, Paul; and Webb, Ross. (2006). *Tunnel Construction in Historical Downtown Charleston*. North American Tunneling Conference Proceedings.

BIBLIOGRAPHY

1. Black & Veatch Corporation in association with Hussey, Gay, Bell & DeYoung, Inc. (2003). *Wastewater Tunnel Master Plan*. Commissioners of Public Works of the City of Charleston, SC
2. Black & Veatch Corporation. (2006). *Geotechnical Baseline Report Daniel Island Extension Tunnel*. Commissioners of Public Works of the City of Charleston, SC
3. Black & Veatch Corporation. (2006). *Geotechnical Data Report Daniel Island Extension Tunnel*. Commissioners of Public Works of the City of Charleston, SC

meeting
min.
6/22

DAVIS Engineering
FLOYD Architects
Environmental & Laboratory Services

Davis & Floyd, Inc. • PO Box 61599 Charleston, SC 29419 • 3229 West Montague Avenue • Charleston, SC 29418 • (843) 554-8602 (office) (843) 747-6485 (fax)

MEETING MEMO

Meeting Date: June 22, 20011

Location: M.B. Kahn Construction Trailer at Rivers Site

Project: Rivers Education Center-Phase I: Seismic Retrofit,
Exterior Restoration, & Core Utilities

Subject: Micropile Load Test Results

Attendees:	Scott Spigener	M.B. Kahn
	Shamrock Thompson	M.B. Kahn
	Michael Myjak	M.B. Kahn
	Chris Morrison	Terratec
	George Sambos	GS2
	Bill Wright	WPC
	Jeremy Grady	WPC
	Forest Foshee	S&ME
	Aaron Goldberg	S&ME
	Kevin Kelly	Heery International
	Ed Dempster	Heery International
	Rhett Reidenbach	Davis & Floyd
	John Orvin	Davis & Floyd

The meeting was held to discuss the Report of Pile Load Testing Results prepared by the micropile subcontractor, Terratec. All four of the test piles have failed to reach the ultimate axial load capacity of 200 kips specified in the Contract Documents. Following is a summary of the items discussed and decisions that were made in an effort to resolve the problems with micropile program and eliminate any further delays in the construction schedule:

1. M.B. Kahn presented the four following components/potential issues of the test pile program that they believed needed to be addressed in order to determine what was the cause of the failure of the micropile load tests:
 - i. Installation of test piles
 - ii. Possible variability in soil properties
 - iii. Geotechnical anomaly at test pile location
 - iv. Test procedure-Was there an error in the procedure that would cause poor results?
2. The findings of the supplemental CPT's taken by S&ME at the existing test pile location and proposed new test pile location were recapped by Heery International. All CPT's taken at the project site to date have shown basically the same soil profile. The CPT taken at existing test pile location encountered the Cooper Marl at a depth of 64 feet. The CPT's taken at all other areas of the project site encountered the Cooper Marl at a depth

ROA000373



of about 55 to 57 feet. M.B. Kahn asked if the difference in the top of the marl at the test pile site and the rest of the site affects the total capacity of the test piles. S&ME explained that in their opinion the 7 to 9 foot difference of the depth of the top of the Cooper Marl at the existing load test site as compared to the rest of the site would not cause a dramatic reduction in pile axial capacity. This is due to the test piles having a longer embedment in the dense sand layer directly above the marl at the load test site.

3. WPC discussed that because micropiles are a type of cast in place concrete pile, and in contrast to driving a precast concrete pile, the choice of micropile type/installation method selected by the contractor is the major factor which limits the ultimate strength of a micropile.
4. Terratec and GS2 presented data in their report to show that the integrity of the installed test piles is competent based on their grout volume readings and drilling depths measured for the test piles. GS2 concluded that the low pile capacities were caused by either embedment in Cooper Marl that is not competent or there is a possible anomaly present at the test pile site. They also recommended that SPT's should be also performed at the load test sites to collect soil samples and laboratory tests conducted to verify the soil data gathered by the CPT's.
5. Both WPC and S&ME strongly disagreed with the statement that the marl is not competent at the project site. They discussed that the CPT data collected at the site shows that the marl strength is comparable to the historic strengths of the Cooper Marl shown from data collected from other areas in Charleston. S&ME also explained that the CPT data collected at the test pile site does not support the idea of an anomaly being present and if one was present that it is more likely to be found using a CPT than a SPT. S&ME also disagreed with GS2's statement that CPT's only provide correlated data not real soil data. They explained that a CPT directly measures the true in situ soil properties every 2 centimeters of depth; therefore they have provided the best data available.
6. It was agreed upon by all parties that because GS2 is the geotechnical engineer of record for the pile design and if they will feel more comfortable with SPT's and laboratory testing that they can perform the additional borings and testing at their own expense. WPC, acting as the special inspector for CCSD, and S&ME, as Davis & Floyd's geotechnical consultant, will be present during the performance of the borings and will also review the lab test results to confirm that data is consistent with the soil conditions indicated by the CPT soundings.
7. Bill Wright with WPC presented some of the issues that WPC observed during their special inspection of the micropile load testing. Bill Wright stated that Terratec did not strictly follow the ASTM procedures specified for the load testing. Some of these issues were:
 - a. Submitted calibration sheets for load cells and jacks were more than 1 year old. ASTM D 1143 requires that calibrations cannot be more than 1 year old.
 - b. Calibration for the load cell was only 45 kips and not the full 200 kips plus 20%

~~coverage required. Therefore no load cell was used. ASTM requires that a load cell is used for compression testing of over 100 tons.~~

- c. The spacing of the reaction piles was less than the minimum spacing of 8 feet indicated by ASTM D 1143.
- d. Test piles were failed in compression before they were tested in tension, therefore the tension test results are not considered valid.

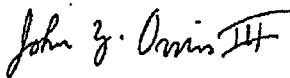
Although the load test did not strictly follow the specified ASTM procedures, Bill Wright stated that in his opinion this did not cause the poor load test results. He also stated that any new load tests conducted should strictly follow the ASTM procedures to help eliminate potential dispute of test results.

- 8. Bill Wright with WPC presented that in his opinion the micropile design/installation method selected by Terratec is the cause of the low micropile capacities exhibited by the test piles. He stated that he learned 25 years ago that an augered cast type pile, as selected by Terratec, will not work in the Charleston area. He explained that an augered cast type pile creates a uniform skin friction against the pile side wall which results in a reduced capacity of 50% to 75% of the normal cohesion available in the Cooper Marl. Bill Wright suggested that Terratec modify their pile design/installation methods looking at methods that have been used successfully in the Charleston area. One of the methods suggested was a wet-holed rotary drilled method, such as the Titan IBO (injection bore system). S&ME also agreed that it is their opinion that the micropile design/installation method selected by the Terratec for the test piles is not appropriate for the Charleston area.
- 9. Terratec agreed to modify their pile design considering the Titan system. They will submit the new pile design/installation method for review by D&F, WPC, and S&ME.
- 10. Terratec stated that they have experience with the Titan system, but have not installed any piles in the Charleston area. Terratec was asked to submit their qualifications installing piles with the Titan system for review by D&F, WPC, and S&ME. These qualifications are required to be submitted as outlined in sections 1.4.1.a and 1.4.1.b in the micropile technical specification of the contract documents.

This concludes my meeting minutes please contact me with any revisions or corrections that you may have.

Very truly yours,

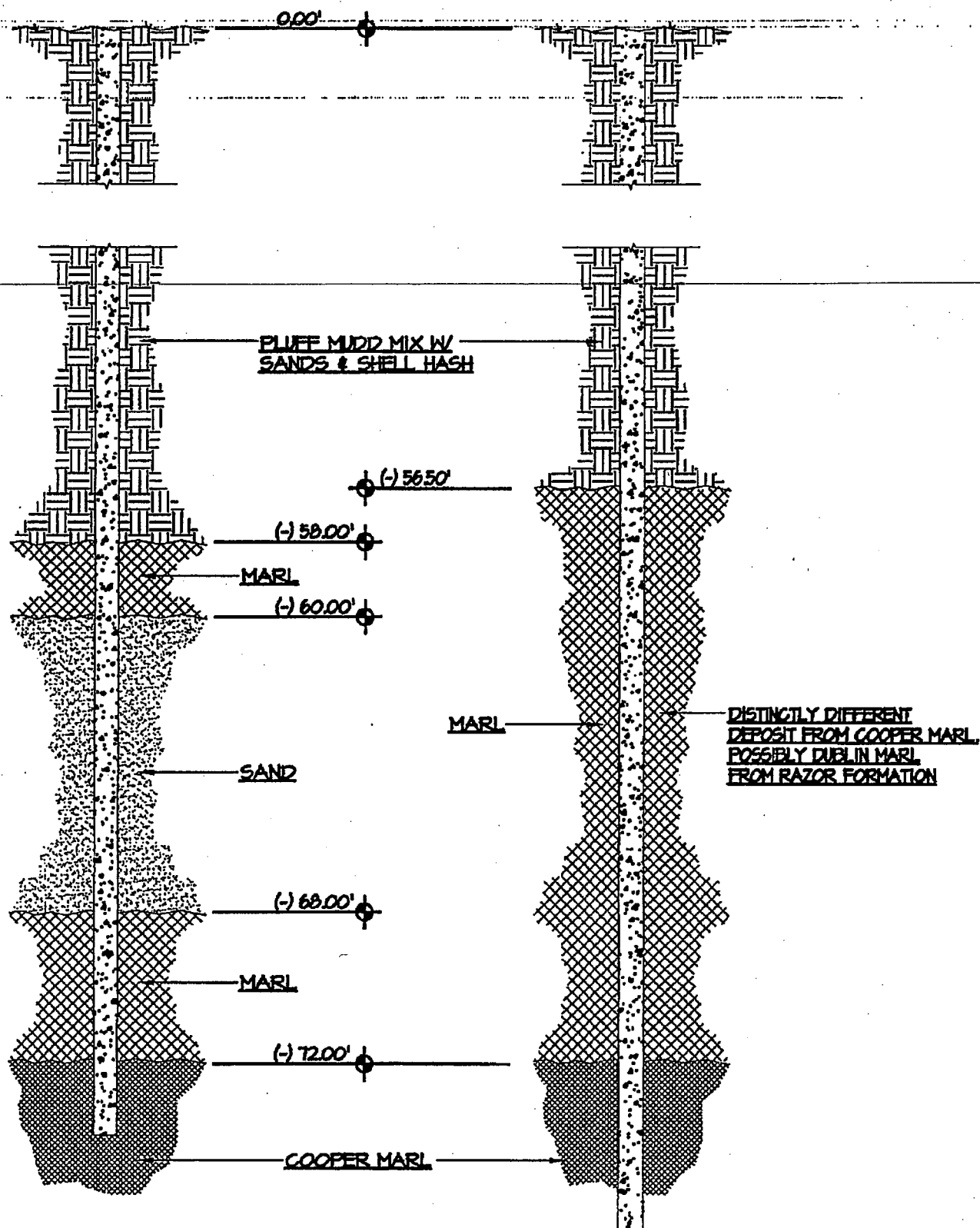
DAVIS & FLOYD, INC.



John Y. Orvin, III, P.E.
Senior Structural Engineer

FTW-1
LOAD TEST AREA

FTW-2
NEAR BUILDING



**RIVERS EDUCATION SEISMIC RETROFIT
ROUGH CROSS-SECTION (NO LAB DATA)**

ROA000376

New Boring



SOIL TEST BORING LOG

Project Name: Proposed Rivers Middle School - Micropiles

Boring Number: FTW-2

Project Number: 11-6332-G

Date of Test: June 24-25, 2011

Depth (feet)	Soil Description	Sample Interval	Blow Counts*	Remarks
1	SURFACE MATERIALS: N/A Boring was predrilled to a depth of 43 -1/2 feet then began sampling.	0 to 1-1/2'		
2				
3				
4				
5		3-1/2' to 5'		
6				
7				
8		6' to 7-1/2'		
9				
10		8-1/2' to 10'		
11				
12				
13				
14				
15		13-1/2' to 15'		
16				
17				
18				
19				
20		18-1/2' to 20'		
21				
22				
23				
24				
25		23-1/2' to 25'		

Depth of Boring (ft): 100 Feet

Location of Boring: See Boring Location Plan

Depth of Groundwater T.O.B. (feet): Not Available

Method of drilling: Rotary Drilled w/ Mud

Depth of Groundwater 24 hrs. (feet): Not Available

Performed By: GS2 Engineering

* The Blow Counts given above are recorded for a 140 pound hammer (falling 30 inches/blow) to drive a 2 inch O.D., 1.375 inch I.D. split-barrel sampler 12 inches, after an initial 6 inch seating increment.



SOIL TEST BORING LOG

Project Name: Proposed Rivers Middle School - Microplies

Project Number: 11-6332-G

Boring Number: FTW-2 CONT

Date of Test: June 24-25, 2011

Depth (feet)	Soil Description	Sample Interval	Blow Counts*	Remarks
26	...continued Boring was predrilled to a depth of 43 - 1/2 feet then began sampling.			
27				
28				
29				
30		28-1/2' to 30'		
31				
32				
33				
34				
35		33-1/2' to 35'		
36				
37				
38				
39				
40				
41				
42				
43				
44	Very Loose, Grey, Silty SAND (SM) w/ Shell Fragments.			
45		43-1/2' to 45'	4	
46				
47	Soft to Firm Grey Sandy Clay (CL)	45' to 47'	4	
48				
49		47' to 49'	5	
50				

Depth of Boring (ft): 100 Feet

Depth of Groundwater T.O.B. (feet): Not Available

Depth of Groundwater 24 hrs. (feet): Not Available

Location of Boring: See Boring Location Plan

Method of drilling: Rotary Drilled w/ Mud

Performed By: GS2 Engineering

* The Blow Counts given above are recorded for a 140 pound hammer (falling 30 inches/blow) to drive a 2 inch O.D., 1.375 inch I.D. split-barrel sampler 12 inches, after an initial 6 inch seating increment.

Page 2 of 4

ROA000378



SOIL TEST BORING LOG

Project Name: Proposed Rivers Middle School - Micropiles

Project Number: 11-0332-G

Boring Number: FTW-2 CON'T

Date of Test: June 24-25, 2011

Depth (feet)	Soil Description	Sample Interval	Blow Counts*	Remarks
51	continued Soft to Firm Grey Sandy Clay (CL)	49' to 51'	6	
52				
53		51' to 53'	5	
54				
55		53' to 55'	5	
56				
57	Stiff to Very Stiff, Light Greenish Tan, Slightly Calcareous, Sandy SILT (ML)	55' to 57'	10	
58				
59		57' to 59'	14	
60				
61		59' to 61'	26	
62	Stiff to Very Stiff, Light Greenish Tan, Slightly Calcareous, Sandy SILT (ML)			
63		61' to 63'	13	
64				
65		63' to 65'	14	
66				
67		65' to 67'	15	
68				
69		67' to 69'	20	
70	Very Stiff, Light Greenish Tan, Slightly Calcareous, Sandy SILT (ML)			
71		69' to 71'	15	
72	Stiff to Very Stiff, Olive Green, Very Calcareous, Sandy Silt (ML). Locally Referred to as The Cooper Marl Formation.			
73		71' to 73'	19	
74				
75		73' to 75'	28	

Depth of Boring (ft): 100 Feet

Depth of Groundwater T.O.B. (feet): Not Available

Depth of Groundwater 24 hrs. (feet): Not Available

Location of Boring: See Boring Location Plan

Method of drilling: Rotary Drilled w/ Mud

Performed By: GS2 Engineering

* The Blow Counts given above are recorded for a 140 pound hammer (falling 30 inches/blow) to drive a 2 inch O.D., 1.375 inch I.D. split-barrel sampler 12 inches, after an initial 6 inch seating increment.

Page 3 of 4

ROA000379



SOIL TEST BORING LOG

Project Name: Proposed Rivers Middle School - Micropiles

Project Number: 11-5332-G

Boring Number: FTW-2 CONT

Date of Test: June 24-25, 2011

Depth (feet)	Soil Description	Sample Interval	Blow Counts*	Remarks
76	Very Stiff, Olive Green, Very Calcareous, Sandy Silt (ML). Locally Referred to as The Cooper Marl Formation.	75' to 77'	20	
77				
78				
79	Stiff to Very Stiff, Olive Green, Very Calcareous, Sandy Silt (ML). Locally Referred to as The Cooper Marl Formation.	77' to 79'	17	
80				
81				
82				
83				
84				
85				
86				
87				
88				
89				
90	Stiff, Olive Green, Very Calcareous, Sandy Silt (ML). Locally Referred to as The Cooper Marl Formation.	83-1/2' to 85'	14	
91				
92				
93				
94				
95				
96				
97				
98				
99				
100	Boring Terminated at 100 feet.	88-1/2' to 90'	16	
91				
92				
93				
94				
95				
96				
97				
98				
99				
100	Boring Terminated at 100 feet.	93-1/2' to 95'	18	
91				
92				
93				
94				
95				
96				
97				
98				
99				
100	Boring Terminated at 100 feet.	98-1/2' to 100'	11	
91				
92				
93				
94				
95				
96				
97				
98				
99				

Depth of Boring (ft): 100 Feet

Depth of Groundwater T.O.B. (feet): Not Available

Depth of Groundwater 24 hrs. (feet): Not Available

Location of Boring: See Boring Location Plan

Method of drilling: Rotary Drilled w/ Mud

Performed By: GS2 Engineering

* The Blow Counts given above are recorded for a 140 pound hammer (falling 30 inches/blow) to drive a 2 inch O.D., 1.375 inch I.D. split-barrel sampler 12 inches, after an initial 6 inch seating increment.

LOAD TEST AREA



SOIL TEST BORING LOG

Project Name: Proposed Rivers Middle School - MicropilesBoring Number: FTW-1Project Number: 11-6332-GDate of Test: June 23-24, 2011

Depth (feet)	Soil Description	Sample Interval	Blow Counts*	Remarks
1	SURFACE MATERIALS: N/A Boring was predrilled to a depth of 39 -1/2 feet then began sampling.	0 to 1-1/2'		
2				
3		3-1/2' to 5'		
4				
5				
6				
7				
8		6' to 7-1/2'		
9				
10		8-1/2' to 10'		
11				
12				
13		13-1/2' to 15'		
14				
15				
16				
17				
18		18-1/2' to 20'		
19				
20				
21				
22				
23		23-1/2' to 25'		
24				
25				

Depth of Boring (ft): 80 FeetLocation of Boring: See Boring Location PlanDepth of Groundwater T.O.B. (feet): Not AvailableMethod of drilling: Rotary Drilled w/ MudDepth of Groundwater 24 hrs. (feet): Not AvailablePerformed By: GS2 Engineering

* The Blow Counts given above are recorded for a 140 pound hammer (falling 30 inches/blow) to drive a 2 inch O.D., 1.375 inch I.D. split-barrel sampler 12 inches, after an initial 6 inch seating increment.

Page 1 of 4

ROA000381



SOIL TEST BORING LOG

Project Name: Proposed Rivers Middle School - Micropiles

Boring Number: FTW-1 CONT

Project Number: 11-4332-G

Date of Test: June 23-24, 2011

Depth (feet)	Soil Description	Sample Interval	Blow Counts*	Remarks
26	...continued Boring was predrilled to a depth of 39 - 1/2 feet then began sampling.			
27				
28				
29				
30		28-1/2' to 30'		
31				
32				
33				
34				
35		33-1/2' to 35'		
36				
37				
38				
39				
40	Firm to Very Loose, Grey, Silty SAND (SM) w/ shell fragments.			
41		39-1/2' to 41'	14	WET
42				
43				
44				
45		43-1/2' to 45'	4	WET
46				
47				
48				
49	Soft to Firm Grey Clayey Silt (CL-ML)			
50		48-1/2' to 50'	3	

Depth of Boring (ft): 80 Feet

Location of Boring: See Boring Location Plan

Depth of Groundwater T.O.B. (feet): Not Available

Method of drilling: Rotary Drilled w/ Mud

Depth of Groundwater 24 hrs. (feet): Not Available

Performed By: GS2 Engineering

* The Blow Counts given above are recorded for a 140 pound hammer (falling 30 inches/blow) to drive a 2 inch O.D., 1.375 inch I.D. split-barrel sampler 12 inches, after an initial 6 inch seating increment.



SOIL TEST BORING LOG

Project Name: Proposed Rivers Middle School - Microplies

Boring Number: FTW-1 CONT

Project Number: 11-6332-G

Date of Test: June 23-24, 2011

Depth (feet)	Soil Description	Sample Interval	Blow Counts*	Remarks
51	...continued Soft to Firm Grey Clayey Silt (CL-ML).			
52				
53				
54				
55		53-1/2' to 55'	7	
56	Stiff, Grey Clayey Silt (CL-ML) w/ traces of Sand.			
57				
58		56-1/2' to 58'	13	
59				
60	Firm, Light Tan, Silty SAND (SM).	58' to 60'	16	
61				
62	Dense to Very Dense, Grey, Silty SAND (SM).	60' to 62'	31	
63				
64		62' to 64'	70	
65	Very Dense to Very Firm, Grey, Poorly Graded SAND (SP).			
66		64' to 66'	107	
67				
68				
69	Very Stiff to Stiff, Light Brown, Sandy Silt (ML).	67' to 69'	25	
70				
71				
72		70' to 72'	15	
73	Stiff to Very Stiff, Olive Green, Very Calcareous, Sandy Silt (ML). Locally Referred to as The Cooper Marl Formation.			
74		72' to 74'	15	
75				

Depth of Boring (ft): 80 Feet

Location of Boring: See Boring Location Plan

Depth of Groundwater T.O.B. (feet): Not Available

Method of drilling: Rotary Drilled w/ Mud

Depth of Groundwater 24 hrs. (feet): Not Available

Performed By: GS2 Engineering

* The Blow Counts given above are recorded for a 140 pound hammer (falling 30 inches/blow) to drive a 2 inch O.D., 1.375 inch I.D. split-barrel sampler 12 inches, after an initial 8 inch seating increment.

Page 3 of 4

ROA000383



SOIL TEST BORING LOG

Project Name: Proposed Rivers Middle School - Microplies

Boring Number: FTW-1 CONT

Project Number: 11-6332-G

Date of Test: June 23-24, 2011

Depth (feet)	Soil Description	Sample Interval	Blow Counts*	Remarks
	<i>....continued</i>			
76	Stiff to Very Stiff, Olive Green, Very Calcareous, Sandy Silt (ML). Locally Referred to as The Cooper Marl Formation.	74' to 76'	20	
77				
	<i>Very Stiff, Olive Green, Very Calcareous, Sandy Silt (ML).</i>			
78	Locally Referred to as The Cooper Marl Formation.	76' to 78'	19	
79				
80				
		78' to 80'	17	

Depth of Boring (ft): 80 Feet

Location of Boring: See Boring Location Plan

Depth of Groundwater T.O.B. (feet): Not Available

Method of drilling: Rotary Drilled w/ Mud

Depth of Groundwater 24 hrs. (feet): Not Available

Performed By: GS2 Engineering

* The Blow Counts given above are recorded for a 140 pound hammer (falling 30 inches/blow) to drive a 2 inch O.D., 1.375 inch I.D. split-barrel sampler 12 inches, after an initial 6 inch seating increment.

DAVIS & FLOYD

Letter of Transmittal

P.O. Box 61599 Charleston, SC 29419 3229 West Montague Avenue Charleston, SC 29418 (843) 554-8602 (office) (843) 747-6485 (fax)

To: Heery International
3125 Ashley Phosphate Rd.
North Charleston, SC 29418

Re: Rivers Education Center
Seismic Retrofit

Job Number: 030615.19

Attention: Ed Dempster

File Number:

Date: Apr 27, 2011

We are sending to you via

the following items:

Copies	Description of Items
1	02369--Micropile Load Test Plan

Remarks: Transmittal #2 - Rejected

Please revise and resubmit

Copy to: File

Todd Warren

ROA000385



TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
803-791-8888 - OFFICE
803-791-1050 - FAX

~~APPROVED~~	
~~APPROVED AS NOTED~~	
<u>REJECTED</u>	✓

Checking is only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Approval is general only and shall not relieve or in any respect diminish the responsibility of the Contractor for details of design, dimensions, etc., necessary for proper fitting and construction of the Work as required by the Contract, for achieving the result and performance specified thereunder and to coordination of the work of all trades.

J. Davis & Floyd, Inc.
J. Davis
(SIGNATURE)
Checked by *JW* Date *4/27/11*

** - Revise & Resubmit*

ROA000386

**TERRATEC
1350 METHODIST PARK ROAD
WEST COLUMBIA, SC 29170
803-791-8888 - OFFICE
803-791-1050 - FAX**

March 11, 2011

Attn.: Mr. Scott Spigener
M.B. Kahn Construction Company
2950 Farrow Road
Columbia, South Carolina 29203

803-730-4411 mobile
803-776-4870 office
803-776-5507 fax

**File Load Test Program Submittal
Rivers Education Center Seismic Retrofit and Fire Pump House Project
Charleston County School District
Charleston, South Carolina**

Dear Mr. Spigener:

Please allow this submittal to serve as our proposed Pile Load Test Program for the above referenced project. This program contains details relating to the construction and load testing of test piles that meet the specifications established in the project bid documents, in addition to suggestions from our design and installation team.

Purpose of Load Test Program

It is our understanding that the purpose of the load test program at this site is to determine an acceptable embedment depth to achieve the design working loads of 100 kips in compression and tension for the planned 8 inch diameter micropiles.

Project Background

Based upon our review of the available information, and from our review of the project, we understand that the existing structure was built in the 1930s, and that it is abandoned and no longer in use. Furthermore, we understand that the project at the site is to include the renovation and seismic up-fit of the existing structure, and the construction of a fire pump house, which requires the installation of 627 micropiles. Our review of the geotechnical report, and addendum, prepared by S&ME, that was provided as a portion of the project plans and specifications details anticipated pile capacities to reach the design standards (100 kips axial compression and tension) with the installation of 8 inch diameter micropiles installed to depths ranging from 70 feet to 115 feet, with a mean anticipated installation depth of 78 feet. With the proposed micropile bid depth, and subsequent depths detailed in the geotechnical report, our design team has developed a comprehensive pile load test program that will establish a best fit line detailing the available axial and tensile capacities developed by the 8" micropiles versus their embedment in the Cooper Marl.

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

ROA000387

TEST PILE CONSTRUCTION

Based upon our understanding of the project, and our experience with similar project and geologic conditions, Terratec offers the following construction details for consideration.

Micropile Borehole Construction Methods

Our design team explored most practical installation methods and determined that the best method for installation of the micropiles would require the use of drilling equipment to create an adequate borehole to achieve the required 8 inch diameter micropile specified by project documents. The use of other installation methods are not anticipated to achieve the required diameter due to borehole cave from the relaxation of the overconsolidated Cooper Marl. This condition could hinder the establishment of a competent pile, resulting in performance penalties. Therefore, the test piles will be installed utilizing drilling methods that will be employed during the construction of the production piles.

Micropile Construction Details

Upon completion of the borehole, the test micropile will be constructed in-place, and will be comprised of a single, centrally located, 1.75 inch diameter, 75 grade threaded rod extended to the micropile tip elevation that will be encapsulated in a plastic grout to the planned pile head elevation. Specific manufacturer and building component details are provided in the subsequent sections of this program.

Threaded Rod: The threaded rod proposed for this project, as stated above, will consist of 1.75 inch diameter, 75 grade rod manufactured by Williams Form Engineering Corp. The rod will be installed in sections, and will be coupled, where necessary, with a grade 150 coupler that will also be manufactured by Williams Form Engineering Corp. Based upon a structural analysis of this rod, ultimate axial and tensile loading that the proposed rod may be exposed to, prior to experiencing excessive deformation, is approximately 225 kips. Alternative reinforcement materials that will also yield adequate loading capacities include; a #18, 60 grade rebar, and a 2.25 inch diameter, grade 62.5 threaded rod. Schematics and a representative of the mill data for the specified rod and couplers is attached in Appendix A.

Plastic Grout: For this project, Terratec has selected a plastic grout yielding an average 28-day compressive strength of 4,000 psi. The grout will be comprised of a mixture of Type I portland cement blended to specified design ratios with a fine sand aggregate, and will be supplied by Ready Mixed Concrete Company

In order to encapsulate the threaded rod, the plastic grout will be injected into the annular space of the auger utilizing a grout pump that will operate at a minimum pressure of 500 psi during grouting operations. A recording of the grouting pressure will be made in the field at the time of injection. In addition, an adequate number of representative grout specimen will be sampled during pile installation of the test/reaction piles.

A copy of the grout mix material specifications and the mix design test data results is attached in Appendix A.

Test and Reaction Pile Depths, Location and Configuration: A total of four (4) test piles and five (5) reaction piles are planned to be constructed to the specifications detailed in this section at the locations, and in the configuration, indicated in the attached Test Pile Location Plan, which is attached in Appendix A.

An array of test pile embedment depths were selected for this load test program. At this time, we propose to install 4 test piles with embedment depths of 66, 70, 75 and 80 feet below ground surface (bgs). The designation of these depths will allow for the project design team to establish a best fit line detailing the available axial and tensile capacities developed by the 8" micropiles versus their embedment in the Cooper Marl, as the Marl is understood to be present at a depth of roughly 43 feet bgs. For loading purposes, the test piles will be sleeved and extended an adequate depth above ground surface (ags) to allow proper loading.

Elevation is given
as EL. -43ft
or roughly 55 ft bgs.
See Geotech Report.

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

The reaction piles will be installed to maximum depths of 70 feet bgs, but will establish a minimum embedment depth of 23 feet into the Cooper Marl. Per the represented configuration, two reaction piles, will be installed as support for the reaction frame after the installation of the test pile. The reaction piles will not be installed less than 5 reaction pile diameters distance from the test pile or reference beam supports. These distances are measured between the faces of the test pile and reaction piles. Additional spacing details are provided in the above referenced drawing, and in subsequent sections of this program.

LOAD FRAME, LOADING SYSTEM AND MEASUREMENT SPECIFICATIONS

Load Frame Details

For this project, Terratec will be utilizing an I beam load frame that is capable of transferring both axial and tensile loads up to 300 kips with minimal cross-sectional deflection that is anticipated to not exceed 0.35 inches. The dimensions of the load frame require that the test and reaction piles be spaced approximately 6 feet and/or 6-1/2 feet, on center, depending on the cross-sectional alignment of the frame. The test/reaction pile spacing requirement of the proposed load frame eliminates the interference of loading and pressures that may be encountered within proximity of the test pile, as it exceeds the industry standard minimum, face to face spacing of 3 times the test pile diameter (i.e. 24 inches) and 5 times the reaction pile diameter (i.e. 40 inches).

The design of the reaction frame and reaction piles was selected to resist two times the pile design load indicated in the contract documents without undergoing a magnitude of deflection exceeding 75 percent of maximum travel of the jack.

Loading System Details

The load application system will be comprised of calibrated hydraulic jacking system, having a capacity of at least two times the pile design load indicated in the contract documents. Terratec will use jacks with a minimum travel of 6 in. (150 mm), but not less than 25 percent of the test pile's maximum cross-section dimension. The selected jack(s) will be equipped with spherical bearing plates, to bear firmly and concentrically against the pile bearing plate and load-beam bearing plate. The system will be engaged utilizing an automatic load-maintaining pump with manual supplement to control load application. A pressure gage will be attached to the system so that the pressure reading corresponding to the pile design load indicated in the contract documents is between one-fourth and one-third of maximum gage pressure. A load cell will be placed (either electric or hydraulic, unless one or the other is specified in the contract documents) to measure strains for load monitoring during the load test. A schematic of the loading apparatus is attached in Appendix B of this submittal. In addition, the load cell specifications and calibration are attached for review.

Loading Measurement Apparatus

An apparatus for measuring deflection, consisting of a primary system and at least one auxiliary system; and a network of settlement reference points will be established. Two fixed independent benchmarks will be established at least 50 ft. (15 mm) from the test site to monitor the settlement reference points. The auxiliary system may also be referenced to these benchmarks. All measuring devices, scales, and reference points will be clearly marked and identified with numbers or letters to ensure accurate data recording.

Primary System Measuring Devices: These primary instrument packages are to monitor movement of the pile top and will consist of: 1.) three (3) dial gages having at least 2 in. (50 mm) of travel, and 2.) an adequate number of suitable gage blocks to increase the travel to at least an additional 4 in. (100 mm). The dial gages will be aligned parallel to the longitudinal axis of the test pile and the axis of load application. They will be attached to a simply supported reference beam, completely independent of the test pile and loading apparatus. Care will be taken to ensure the load application system will not interfere with any measuring devices during any part of the test.

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

Auxiliary System Measuring Devices: One or more of the following auxiliary measuring systems will be established to measure the deflection of the load testing for this project: 1.) wire, mirror, and scale, 2.) surveyor's level and target rod, or, as an alternative, 3.) electrical or optical levels will be installed on the test pile set up and or reaction frame.

Auxiliary System Option 1 - Wire, Mirror, and Scale: The pile movement will be determined by means of a single strand of wire drawn in front of a graduated scale mounted on a mirror. This scale will be at least 6 in. (150 mm) long and machine-divided in graduations of 1/32 of an inch, and will be mounted on a 3 in. x 6 in. (75 mm x 150 mm) mirror with metal-and-glass bonding adhesive or electrical tape. The mirror will be attached directly to the pile head and oriented so that the mirror face is parallel to the reference beam. The wire will be mounted between the ends of the reference beam, with one end fixed and the other placed over a pulley with a weight to maintain tension. Prior to loading, our personnel will locate the wire so that it is level and within 1" (25.5 mm) of the mirror face.

Auxiliary System Option 2 - Surveyor's Level and Target Rod: As an additional unit of measure we may use a level and leveling rod to determine deflections by readings on the two fixed independent benchmarks on an established scale or fixed point on the pile top.

LOAD TESTING OPERATIONS

This procedure presents uniform procedures for conducting and reporting the results of load testing of a pile in static axial compressive and tensile loading conditions. These tests have three primary objectives: To establish load-deflection relationships in the pile-soil system, to determine capacity of the pile-soil system, and to determine load distribution in the pile-soil system. These tests will confirm design assumptions, or provide information to allow those assumptions, so that the design of the planned production piles may be modified prior to installation.

Load Testing Method

The load testing program proposed for this project will be conducted in general accordance with the minimum requirements established in ASTM D3689 *Standard Test Methods for Deep Foundations Under Static Axial Tensile Load*, unless otherwise altered by the design engineer. At this time we propose that the load testing at the project be modified, as stipulated in subsequent sections of this program, and that the test be conducted as a "Quick-Load" test. This modification is offered based on two principles, that include; 1.) the intended application and support conditions that these piles are designed for will experience relatively quick loading when exposed to seismic conditions, and 2.) the installation of two (2) additional test piles exceeds the project specifications and should establish more than adequate information to alter the design production pile prior to installation, if necessary.

Test Pile Acceptance for Loading Criteria

After Installation of the test pile and reaction piles is complete, the piles will be allowed to set for a minimum of 14 days, prior to the attachment of the load apparatus, while load testing will not be conducted until the pile grout has established a minimum compressive strength of 4,000 psi. Grout specimens sampled during pile installation will be tested in compression prior to the load test being conducted, and the results of these tests will be forwarded to the contractor and the design engineer for approval.

Load Testing Apparatus Set Up and Preparation

As stipulated in previous sections of this program, the load will be applied to the test pile, first in compression and second in tension, by jacking against the two reaction piles with one or more calibrated hydraulic jacks. The load application system arrangement and constructed elements of the load-application system will conform with details provided in this program, and to the following details for compressive and tensile loading:

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

ROA000390

Compressive Test Pile Loading Preparation: As stated previously, the test piles will be sleeved and extended an adequate depth ags to provide ample pile for both loading conditions. Preparation of the pile butt will continue as detailed below;

- 1.) At the appropriate pile elevation, our personnel will cut off the pile butt and cap it to provide a level bearing surface perpendicular to the pile axis. A steel plate, or a neat cement paste, will be placed over the head of the pile to ensure a level surface to place the jack.
- 2.) To distribute load over the pile's entire cross-section, our personnel will install a solid steel billet (bearing plate) of sufficient thickness (1 in. (25 mm) minimum) to prevent bending between the capped pile and the jack base. The size of the solid steel billet shall be not less than the size of the pile butt or less than the area covered by the jack base.
- 3.) Install the load application system (including hydraulic jack, spherical bearing and load cell) between the bearing plate on the pile and the center of the underside of the load beams. The system will be constructed so that all components are centered along the pile's longitudinal axis, to ensure application of a concentric minimal load.
- 4.) To distribute load over the entire width of the load beams, another solid steel billet of sufficient thickness (1 in. (25 mm) minimum) will be placed as a bearing plate between the load beam and the load application system.
- 5.) Immediately before starting the load test, our personnel will verify that at least 1 in. (25 mm) of clear space exists between the upper bearing plate and load beams, or the upper bearing plate and load application system.

Tensile Test Pile Loading Preparation: Upon completion of the compressive loading test, the test piles will be reconfigured to provide adequate exposure of the threaded rod for tensile testing, as detailed below;

- 1.) At the appropriate pile elevation, our personnel will cut off the pile butt and expose an adequate length of the threaded rod to attach the loading mechanism.
- 2.) The threaded rod will be attached to the load jack and cell by double bolting the threaded rod to an adequately thick bearing plate.
- 3.) Install the load application system (including hydraulic jack, spherical bearing and load cell) between the bearing plate on the pile and the center of the underside of the load beams. The system will be constructed so that all components are centered along the pile's longitudinal axis, to ensure application of a concentric minimal load.
- 4.) To distribute load over the entire width of the load beams, another solid steel billet of sufficient thickness (2 in. (50 mm) minimum) will be placed as a bearing plate between the load beam and the load application system.
- 5.) Immediately before starting the load test, our personnel will verify that at least 1 in. (25 mm) of clear space exists between the upper bearing plate and load beams, or the upper bearing plate and load application system.

Pile Loading Procedure

As proposed above, the pile loading is recommended to be applied under the "Quick-Load" test method on the subject test piles, first in compression and second in tension. Based on our understanding of this method, we plan to load the test piles in increments of 5% of the design load (i.e. 200 kips and 160 kips) in compression and tension, respectively) until reaching failure or the specified design ultimate loads. Upon reaching design or failure loads, the pile will then be unloaded in 25% increments until the load on the pile equals zero. Magnitude and sequence of load and unload increments are as follows:

Loading Increments: Maintain each load increment for 5 minutes, but no more than 15 minutes, after the measureable deflection in the test pile stabilizes (i.e. as defined by a change in deflection of no more than 0.01 in (0.25 mm)). Maintain the 200% design load for 30 minutes after the measureable deflection in the test pile stabilizes.

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

ROA000391

Unloading Increments: Maintain each rebound load increment for 5 minutes, but no more than 15 minutes, after the measureable deflection in the test pile stabilizes. After removing the total applied load, allow the pile to stabilize for 15 minutes and record the final (rebound) reading on the measuring devices.

Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED

ROA000392

APPENDIX A - TEST PILE CONSTRUCTION DATA

Typical Test Pile Detail

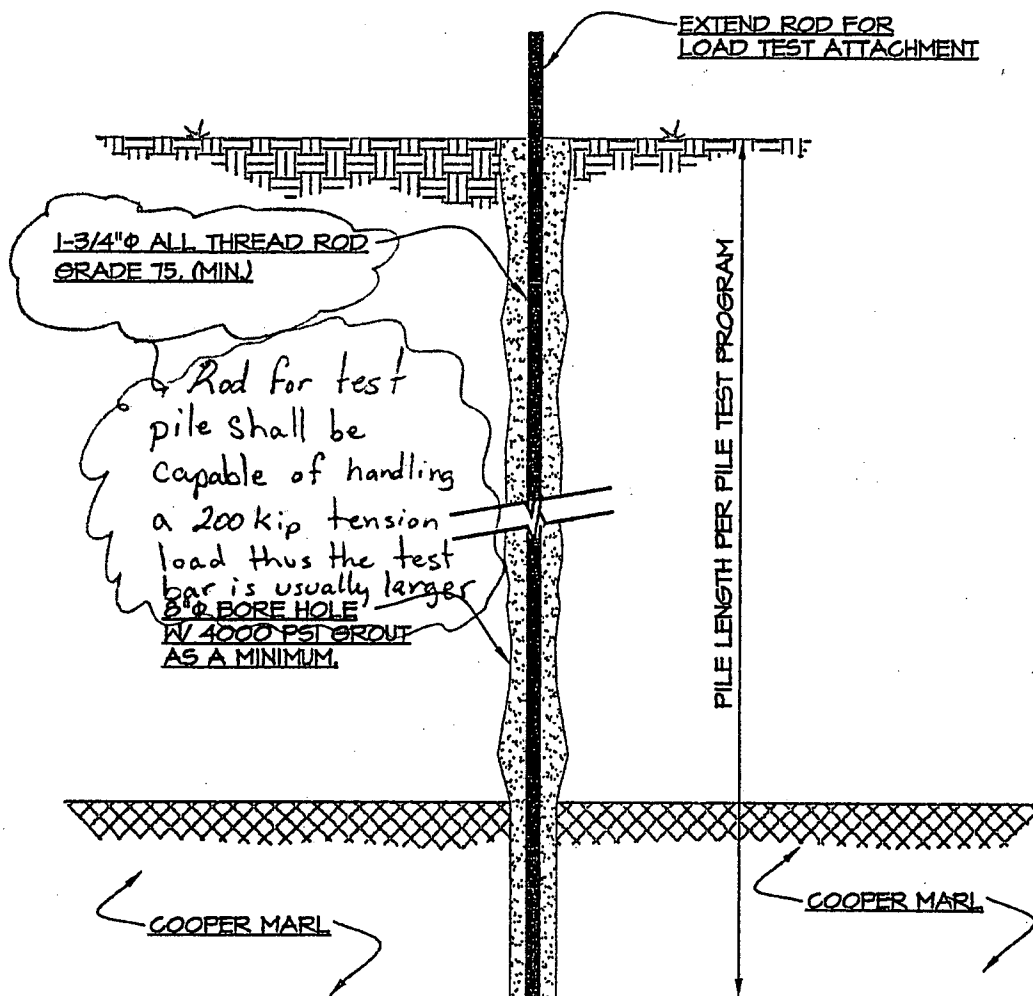
Threaded Rod Specifications and Mill Data

Plastic Grout Materials Specifications and Test Data

Test Pile Location Plan

**Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED**

ROA000393



TEST PILE - MICROPILE ELEVATION NOT TO SCALE

**KYZER &
TIMMERMAN**

STRUCTURAL ENGINEERS

680 Chris Drive, West Columbia S.C. 29169 Ph. 803.781.4511 Fax 803.781.4522



JOB:

TEST PILE - MICROPILE ELEVATION

JOB NUMBER:

11-158

DATE:

APRIL 7TH, 2011

SHEET:

5102

PILE ROD CALCULATIONS: USE EQUATIONS FROM SP12S

For 1 3/4" GRADE 75 ALL THREAD

$D = 1 3/4" \quad AREA = 2.25 in^2 \quad f_y = 75 KSI \quad P_{ALL} = 100^k \quad P_{ULT} = 200^k$
(UP OR DOWN)

$A_{gross} = TC(4) = 2.25 in^2 = 48 in^2$

FOR ALLOWABLE COMPRESSION LOADS

$P_{ALLC} = 0.33 f_c A_{gross} + C_{ASTG} + 0.4 f_{BAR} A_{BAR}$
 $= 0.33 (4 KSI) (48) + 0 + 0.4 (75) (2.25) = 63.4 + 67.5 = 130.9^k$
 $130.9^k = 100^k \quad OK$

FOR ALLOWABLE TENSION LOADS

$P_{ALLT} = 0.6 (C_{ASTG} + f_{BAR} A_{BAR}) = 0.6 (0 + 75 (2.25)) = 101.25^k > 100^k$
 OK

FOR ULTIMATE COMPRESSION LOADS

$P_{ULTC} = 0.85 f_c A_{gross} + C_{ASTG} + f_{BAR} A_{BAR}$
 $= 0.85 (4) (48) + 0 + (75) (2.25) = 163.2^k + 168.8^k = 332^k$
 $332^k > 200^k \quad OK$

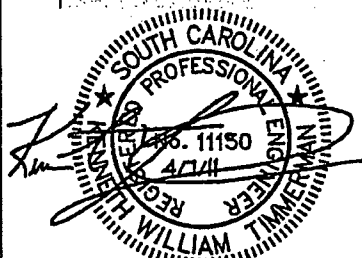
FOR ULTIMATE TENSION LOADS

$P_{ULTT} = C_{ASTG} + f_{BAR} A_{BAR} = 0 + 75 (2.25) = 168.8^k < 200^k$
N.G.

NOTE: FOR THIS CONDITION THE
MILL CERT MUST BE $\frac{200^k}{2.25} = 88.9 KSI$

RESULTS: 1 3/4" ROD MAY BE USED
PROVIDED $f_y = 88.9 KSI$

We need a mill
cert. to show $f_y \geq 88.9 KSI$

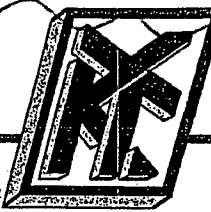


SC COA #600114

**KYZER &
TIMMERMAN**

STRUCTURAL ENGINEERS

580 Chris Drive, West Columbia S.C. 29169 Ph. 803.791.4511 Fax 803.791.4522



MICROPILE ROD CALCULATIONS

JOB#

JOB NUMBER

11-158

DATE

APRIL 11TH, 2011

SHEET

5103

Provide ultimate tension Load for a test pile rod
that can accommodate 200 kip load @ 80% yield stress

ROA000395

NUCOR**NUCOR CORPORATION
NUCOR STEEL NEBRASKA****Mill Certification**

1/31/2011

2911 East Nucor Road
NORFOLK, NE 68701
(402) 644-0200
Fax: (402) 644-0329Sold To: WILLIAMS FORM ENG CORP
8165 GRAPHIC DR
BELMONT, MI 49306-0000
(519) 658-9444
Fax: (402) 371-3022Ship To: WILLIAMS FORM ENG CORP
5501 RUSHE DR
COMSTOCK PK, MI 49321-0000
(616) 866-0815
Fax: (616) 866-1810

Customer P.O.	19336	Sales Order	114117.1
Product Group	Merchant Bar Quality	Part Number	30001887600T630
Grade	ASTM A615-07 Grade 75	Lot ID	NF1120013752
Size	1-11/16" (1.6875) Round	Heat ID	NF11200137
Product	1-11/16" (1.6875) Round 50" A615GR75	B.L. Number	N1-192394
Description	A615GR75	Load Number	N1-141280
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Test outside scope of L-A-B accreditation											
C	Mn	V	Si	S	P	Cu	Cr	Ni	Mo	Al	Cb
0.47%	0.81%	0.062%	0.22%	0.039%	0.013%	0.26%	0.13%	0.11%	0.02%	0.002%	0.002%
Pb	Sn	Ca									
0.000%	0.010%	0.0007%									

*Yield 1: 84,400psi (582MPa)

*Tensile 1: 122,230psi (843MPa)

*Elongation 14% in 8" (% in 203.3mm)

*Bend OK

*Reduction Ratio 20:1

- All manufacturing processes of the steel materials in this product, including melting, have been performed in the United States.
- All products produced are weld free.
- Mercury, in any form, has not been used in the production or testing of this material.
- L-A-B Accredited Chemical Testing, Certificate L-2232 Expires 12-16-2012
- Test conform to ASTM A29-05, ASTM E415 and ASTM E1019 resulfurized grades or applicable customer requirements.

Design Calcs require 88.9 ksi
Please provide data to support

WFEC SIZE
DESIGNATION # 14Williams Form Engineering Corp.
A Quality Assurance document has been
created and stored electronically as noted.by: Ken Bell on 02/11
Quality Assurance Mgr (date)
checked by: _____

NBMG-10 May 12, 2009

Jim Hill
Division Metallurgist

Page 1 of 1

ROA000396

Letter Of Transmittal

04/07/2011 2:14:54PM

Report 146737 (Internal use only)



Please use the submittal number located on the following pages when referring to the set of documents contained within this submittal.

The following items are included in this mix submittal:
Submittal #10108 for Project: Rivers Middle School Retrofit

Detailed Data for Submittal #10108

BASF_Glenium 7500.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

BASF_Pozzolith 300R.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

Holcim_Holly Hill.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

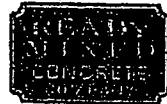
SEFA_Group.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

Murray Mines_Summerville.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

BASF_Pozzolith 80.pdf attachment for Submittal #10108 for Project: Rivers Middle School Retrofit

Ready Mixed Concrete Company
2769 Three Lakes Rd.
Charleston, SC 29418

Office Telephone: (843) 744-3535
Office Fax: (843) 747-0478
Dispatch: (843) 747-0424



Submittal No. 10108
Date issued: 4/7/2011

Contractor: GS2 Engineering
Project: Rivers Middle School Retrofit

Dear Shawn:

We are submitting these mixes in accordance with ACI 318 (Chapter 5), proportioning on the basis of field experience and/or the trial mixture method:

Mix Code Number	Description	Intended Use
50GNF197	5000GROUTNAASH	Auger Cast

When placing orders for this project, please order by product mix code number.

Ready Mixed Concrete Company warrants that the concrete as delivered to this project will meet or exceed the design strength specified on the delivery ticket when evaluated in accordance with ACI-318, ACI-301, and ASTM C-94, latest revision. The measured slump, and the concrete must be tested in strict accordance with the provisions of ASTM standards C-172, C-143, C-31, C-39, C-817, C-231, C-173, C-138, C-1019, C-78, C-587, C-1064, latest revisions.

All samples and testing of samples for acceptance shall be conducted at the point of discharge from the concrete delivery truck.

Should the Purchaser choose not to purchase temperature control measures, the Purchaser shall assume all liability for rejected concrete due to non-compliant concrete temperatures.

Responsibility for concrete when others supply mix designs will be the sole responsibility of those parties supplying the mix design.

Customer assumes total responsibility for concrete placement, finishing, initial and final curing, placement of joints at proper spacing, and any aesthetic concerns/issues (such as cracks, discoloration, etc.) that may arise in the plastic and hardened state.

The contents of this packet, with particular consideration in regard to the mix designs themselves, are considered proprietary in nature and are to be treated as confidential.

This information is being submitted for approval for use on this project. Please provide Ready Mixed Concrete Company an approved copy or a copy with the notes for correction of this submittal, when available.

Concrete will be delivered to the nearest accessible point over passable roads; customer assumes responsibility for all damages to city, state, and personal property, including concrete mixer truck if customer instructs concrete mixer truck to drive beyond curb lines. Customer should provide concrete mixer truck with wash down area.

In accordance with ASTM C-94, please copy our office with all test results obtained on this concrete by independent testing laboratories.

All raw materials are subject to change depending on availability. All substitutes are guaranteed to meet or exceed projects performance specification requirements.

Thank you for your business and cooperation in this matter.

Dewayne Hartzell
Q. A. Manager

Ready Mixed Concrete Company
2769 Three Lakes Rd.
North Charleston, SC 29418

Office Telephone: (843) 744-3535
Office Fax: (843) 747-0478
Dispatch: (843) 747-0424



Submittal No. 10108

Date issued: 4/7/2011

Customer: GS2 Engineering
Project: Rivers Middle School Retrofit
Plant: [51 - Charleston]

Mix Code: 50GNF197		Mix Code must be used when ordering concrete.				
Description	Mfg. Source	Tradename	ASTM	Spec. Gravity	oz/cwt	Weight (lb)
Type II	Holly Hill, SC	Holcim	C - 150	3.15		960
Fly Ash F	Winyah Station	SEFA	C - 618	2.25		140
Natural Sand	Murray Mines	Murray Sand	C - 33	2.84		2,357
Potable	City	Water	C - 94	1.00		401
Type A Water Reducer	BASF	Pozzolith 80	C - 494	1.00	4.00	
Specified F'c :	5,000 psi @ 28 days	Designed Unit Weight:	142.9 lbs./cu.ft.		TOTAL	3,857
Specified Slump	8.00 +/- 1.00 in.	Designed W/C + P Ratio:	0.36			
Specified Air:	1.50 +/- 1.50 %	Designed Volume:	27.00 cu.ft.			

NOTES:

Ready Mixed Concrete Company has no knowledge or authority regarding where this mix is to be placed; therefore, it is the responsibility of the project architect, engineer, and/or contractor to ensure that the above designed mix parameters of compressive strength, water-to-cementitious ratio (W/C+P), cement content, and air content are appropriate for the anticipated environmental conditions (i.e. ACI-318 sections 4.1-4.3, and local Building Codes).

Customer assumes total responsibility for concrete placement, finishing, initial and final curing, placement of joints at proper spacing, and any aesthetic concerns/issues (such as cracks, discoloration, etc.) that may arise in the plastic and hardened state.

Customer assumes responsibility for any performance issues (strength, aesthetic, durability, air entrainment etc.) as a result of water added to concrete at the project site that exceeds the w/o+p.

Designed mix cementitious content, is stated as a minimum, and Ready Mix Concrete Company reserves the right to increase cementitious content.

Chemical admixtures are added in accordance with the manufacturer's recommendations. Ready Mixed Concrete Company reserves the right to adjust these dosages to meet the changes in jobsite demands.

All raw materials are subject to change depending on availability. All substitutes are guaranteed to meet or exceed projects performance specification requirements.

Ready Mixed Concrete Company may use admixtures or procedures not listed above to control the mixture during Hot or Cold weather, for pumping, long hauls, or other special applications, unless restricted in writing by the client.

In accordance with ASTM C-94, please copy our office with all test results obtained on this concrete by independent testing laboratories.

COMMENTS:

Dewayne Hartzell
Q. A. Manager



The Chemical Company

February 1, 2010

Certificate of Conformance

Glenium 7500

BASF Construction Chemicals* Admixture for Concrete

(*Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.)

Ready Mixed Concrete Co.

Attn: Ken Vickers

ken.vickers@mcc.com

TO WHOM IT MAY CONCERN:

State of Ohio)
County of Cuyahoga) ss

Before me, a Notary Public, in and for the aforesaid State and County, personally appeared Mark E. Piechuta, who being duly sworn, deposes and says:

That he is Sr. Technical Marketing Specialist for BASF Construction Chemicals, LLC in Cleveland, Ohio; and

That no calcium chloride or chloride based ingredient is used in the manufacture of GLENIUM 7500; and

That GLENIUM 7500, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.00017 percent (1.7 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That GLENIUM 7500 meets the requirements for a Type A, Water-Reducing, and Type F, Water-Reducing, High Range Admixture specified in ASTM C 494, Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Mark E. Piechuta
BASF Construction Chemicals

Subscribed and sworn to before me

This 1st day of February, 2010

Charlene R. Mandat

Notary Public, State of Ohio

My Commission Expires 11/4/11

(Recorded in Summit County)

* Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.

BASF Construction Chemicals
23700 Chagrin Boulevard
Cleveland, Ohio 44122 USA
216 839-7500 ph
www.masterbuilders.com

**Master
Builders**

Admixture Solutions

ROA000400



The Chemical Company

February 1, 2010

Certificate of Conformance
Pozzolith 300R
BASF Construction Chemicals* Admixture for Concrete

(*Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.)

Ready Mixed Concrete Co.
Attn: Ken Vickers
ken.vickers@rmcc.com

TO WHOM IT MAY CONCERN:

State of Ohio)
County of Cuyahoga) ss

Before me, a Notary Public, in and for the aforesaid State and County, personally appeared Mark E. Plechuta, who being duly sworn, deposes and says:

That he is Sr. Technical Marketing Specialist for BASF Construction Chemicals, LLC in Cleveland, Ohio; and

That no calcium chloride or chloride based ingredient is used in the manufacture of Pozzolith 300R; and

That Pozzolith 300R, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.0002 percent (2.0 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That Pozzolith 300R meets the requirements for a Type B, Retarding, and Type D, Water-Reducing and Retarding Admixture specified in ASTM C 494, Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Mark E. Plechuta
BASF Construction Chemicals

Subscribed and sworn to before me
This 1st day of February, 2010

Charlene R. Mandat
Notary Public, State of Ohio
My Commission Expires 11/4/11
(Recorded in Summit County)

* Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.

BASF Construction Chemicals
23700 Chagrin Boulevard
Cleveland, Ohio 44122 USA
216 839-7500 ph
www.masterbuilders.com

**Master
Builders**

Admixture Solutions

ROA000401



Holcim (US) Inc.
9624 Bailey Road, Suite 275
Cornellus, NC 28031
Phone: 800-845-1120
Fax: 704-895-5961

APPROVED
[Signature]
Ready Mixed Concrete Company
Director, Corporate Quality Assurance
8/24/09

AFFIDAVIT

This is to certify that Type I Portland Cement, as manufactured by Holcim (US) Inc. at our facility at Holly Hill, South Carolina, is warranted to conform at time of shipment, to current A.S.T.M. Specification C-150, A.A.S.H.T.O. Specification M-85 and Federal Specification SS-C-1960/3 for Type I Portland Cement.

Additionally, this same cement is warranted at time of shipment to meet A.S.T.M. Specification C-150 and Federal Specification SS-C-1960/3 for Type II Portland Cement.

The total alkali content expressed as sodium equivalent $[Na_2O + K_2O (0.658)]$ is less than 0.60% and Tricalcium Aluminate (C3A) content does not exceed (8%).

No other warranty is made or to be implied.

[Signature]

Witness

[Signature]

Eddie Deaver
Technical Services Engineer

[Signature]

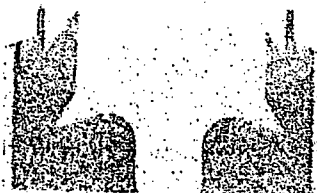
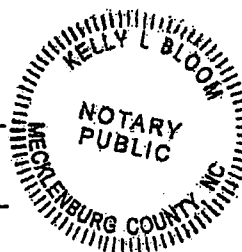
Witness

Sworn to and subscribed before me this 18th day of August 2009

[Signature]

Notary Public of State of North Carolina

My commission expires 3/31/2014



ROA000402



APPROVED
[Signature]
Argos USA
Director, Corporate Quality Assurance
2/28/11

February 2, 2011

Mr. Ken Vickers
Technical Services Manager
Ready Mixed Concrete Company
3610 Bush Street
Raleigh, NC 27069

RE: 2011 Fly Ash Certification

Dear Mr. Vickers

The SEFA Group certifies through this letter that the fly ash from our South Carolina, North Carolina, and Maryland sources comply with the requirements set forth in ASTM C 618, Class F, when sampled and tested in accordance with ASTM C 311. Our fly ash meets the requirements of AASHTO M-295 and the SC, NC, GA, and VA departments of transportation. Unless written notification of change in status is received by you in a letter from The SEFA Group, this certification will apply to any and all phases on construction projects supplied by Ready Mixed Concrete Co., Inc.

Source	Avg. LOI
Wateree CBO, Wateree, SC	2.47%
Winyah CBO, Georgetown, SC	2.44%
Cliffside Station, Mooresboro, NC	2.15%
Cross Station, Pineville, SC	3.27%
Morgantown Station, Newburg, MD	6.12%
McMeekin Station, Columbia, SC	0.92%
Belews Creek Station, Belews Creek, NC	2.56%

The weight % of water soluble chloride is < 0.002.

We appreciate the opportunity to serve you. Please let us know if we can be of further assistance.

Sincerely,

[Signature]

Bert Nunn
Vice President, Operations

Notary Public

Sworn to and Subscribed Before Me,

This 2nd Day of February, 2011

Signed: *[Signature]*
Notary Public of South Carolina

My Commission Expires: October 19, 2015

Administrative Office
217 Cedar Road
Lexington, SC 29073
Tel (803) 520-9000
Fax (803) 520-9001

Corporate Office
P.O. Box 6
Moncks Corner, SC 29461
Tel (843) 761-1999
Fax (843) 899-7213

ROA000403

MURRAY MINES, INC.
2696 HIGHWAY 17-A, SOUTH
SUMMERVILLE, SC 29483
PHONE (843)873-0056 FAX (843)873-4423

APPROVED
[Signature]
Argos USA
Director, Corporate Quality Assurance
1/9/10

April 28, 2010

Ready Mixed Concrete
2769 Three Lakes Road
North Charleston, SC 29418

Murray Mines, Inc. certifies that the sand purchased by Ready Mixed Concrete designated as FA-10 meets ASTM C33 and SCDOT requirements.

[Signature: Elaine C. Murray]
Elaine C. Murray
Vice President

State of South Carolina
County of Dorchester

On this 28th day of April 2010 before me personally appeared Elaine C. Murray who provided satisfactory evidence of her identification to be the person whose name is subscribed to this instrument, and she acknowledged that she executed the foregoing instrument.

[Signature: Leigh H. Murray]
Leigh H. Murray - Notary Public
Berkeley County, South Carolina
My Commission Expires: March 2, 2015



ROA000404



Project Name:
 Project Number:
 GS2 Laboratory ID:
 Aggregate Type:
 Date:

Murray Mines

10-6172L

88303

Concrete Sand

29-Mar-2010

Test Procedure	ASTM Designation	Sample Results
Bulk Density	C29	104.5 lb/ft ³
Organic Impurities	C40	Color Plate 2
Soundness (Magnesium Sulfate)	C88	8.3% Total Weighted Percentage Loss
Wash 200	C117	1.1 % Passing # 200 Sieve
Lightweight Particles (shale/char)	C123	0.20%
Specific Gravity	C128	Specific Gravity = 2.64
Specific Gravity	C128	Bulk SSD Gravity = 2.64
Specific Gravity	C128	Apparent Gravity = 2.65
Specific Gravity	C128	Absorption = 1.8 %
Clay Lumps and Friable Particles	C142	0.10%
Alkali-Silica Reactivity	C289	Innocuous
Water Soluble Chloride Ion Content	C1218	< 0.002%
Mortar Bar Expansion	C1260	0.01%
Sand Equivalent	D2419	94 %
Particle Distribution	C136	Percent Passing
3/8 inch		100
#4		100
#8		97
#16		85
#30		58
#50		23
#100		1
Fineness Modulus		Fineness Modulus = 2.33

ROA000405

S.C. DEPARTMENT OF
TRANSPORTATION
FORM AGG203

TEST REPORT
FINE AGGREGATE
(SC STANDARD 701)

LABORATORY NO. 6B78645
N. CHAS, SC 2/24/2010

FILE NO. 10.426A

PROJECT NO.

PIN 22336

SAMPLE OF	FA-10	SUBMITTED BY	RICKIE GREEN
DATE SAMPLED	2/15/2010	ADDRESS	N. CHAS, S.C.
IDENTIFICATION MARKS	26-46 628	TO BE USED IN	12" Full Depth Patch
SAMPLE TAKEN FROM	Mini Stockpile	DATE RECEIVED	2/17/2010
SAMPLED BY	Don K.	DATE TESTED	2-22-24-2010
QUANTITY REPRESENTED	500 TONS	TESTED BY	M. BROWN
SUPPLY SOURCE	MURRY MINES		
ADDRESS	RIDGEVILLE, SC	SN SAMPLE ID	610-08-1518

FINE AGGREGATE GRADATION (AASHTO T-27)

TOTAL PASSING 3/8"	100	%
TOTAL PASSING No. 4	100	%
TOTAL PASSING No. 8	98	%
TOTAL PASSING No. 16	80	%
TOTAL PASSING No. 30	48	%
TOTAL PASSING No. 50	15	%
TOTAL PASSING No. 100	2	%
TOTAL PASSING No. 200	0	%

ORGANIC IMPURITIES IN FINE AGGREGATES (AASHTO T-21)

ORGANIC COLORIMETRIC (AASHTO T-21) 2. Impurities are within tolerance.

EFFECT OF ORGANIC IMPURITIES IN FINE AGGREGATE ON STRENGTH OF MORTAR (AASHTO T-71)

STRENGTH TEST AT 7 DAYS %

STRENGTH TEST AT 28 DAYS %

Note: Strength test is not required if color is less than 4.

This sample of FA-10

Does meet SCDOT specifications.

NOTES

COPY TO	CENTRAL LAB FILE	COPY TO	DIST. 6 LAB FILE
COPY TO	MATLAB	COPY TO	
COPY TO	LOCKMAN	COPY TO	

AASHTO T21
Rev. 8/06

M. O. FLETCHER
MATERIALS AND RESEARCH ENGINEER



The Chemical Company

February 1, 2010

Certificate of Conformance
Pozzolith 80
BASF Construction Chemicals* Admixture for Concrete

(*Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.)

Ready Mixed Concrete Co.
Attn: Ken Vickers
ken.vickers@rmcc.com

TO WHOM IT MAY CONCERN:

State of Ohio)
County of Cuyahoga) ss

Before me, a Notary Public, in and for the aforesaid State and County, personally appeared Mark E. Piechuta, who being duly sworn, deposes and says:

That he is Sr. Technical Marketing Specialist for BASF Construction Chemicals, LLC in Cleveland, Ohio; and

That no calcium chloride or chloride based ingredient is used in the manufacture of Pozzolith 80; and

That Pozzolith 80, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.0002 percent (2.0 ppm) chloride ions by weight of the cement when used at the rate of 65 mL per 100 kg (1 fluid ounce per 100 pounds) of cement; and

That Pozzolith 80, depending upon the dosage used, meets the requirements for a Type A, Water-Reducing, Type B, Retarding, and Type D, Water-Reducing and Retarding Admixture specified in ASTM C 494 and Corps of Engineers' CRD-C 87 and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Mark E. Piechuta
BASF Construction Chemicals

Subscribed and sworn to before me
This 1st day of February, 2010

Charlene R. Mandat
Notary Public, State of Ohio
My Commission Expires 11/4/11
(Recorded in Summit County)

* Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.

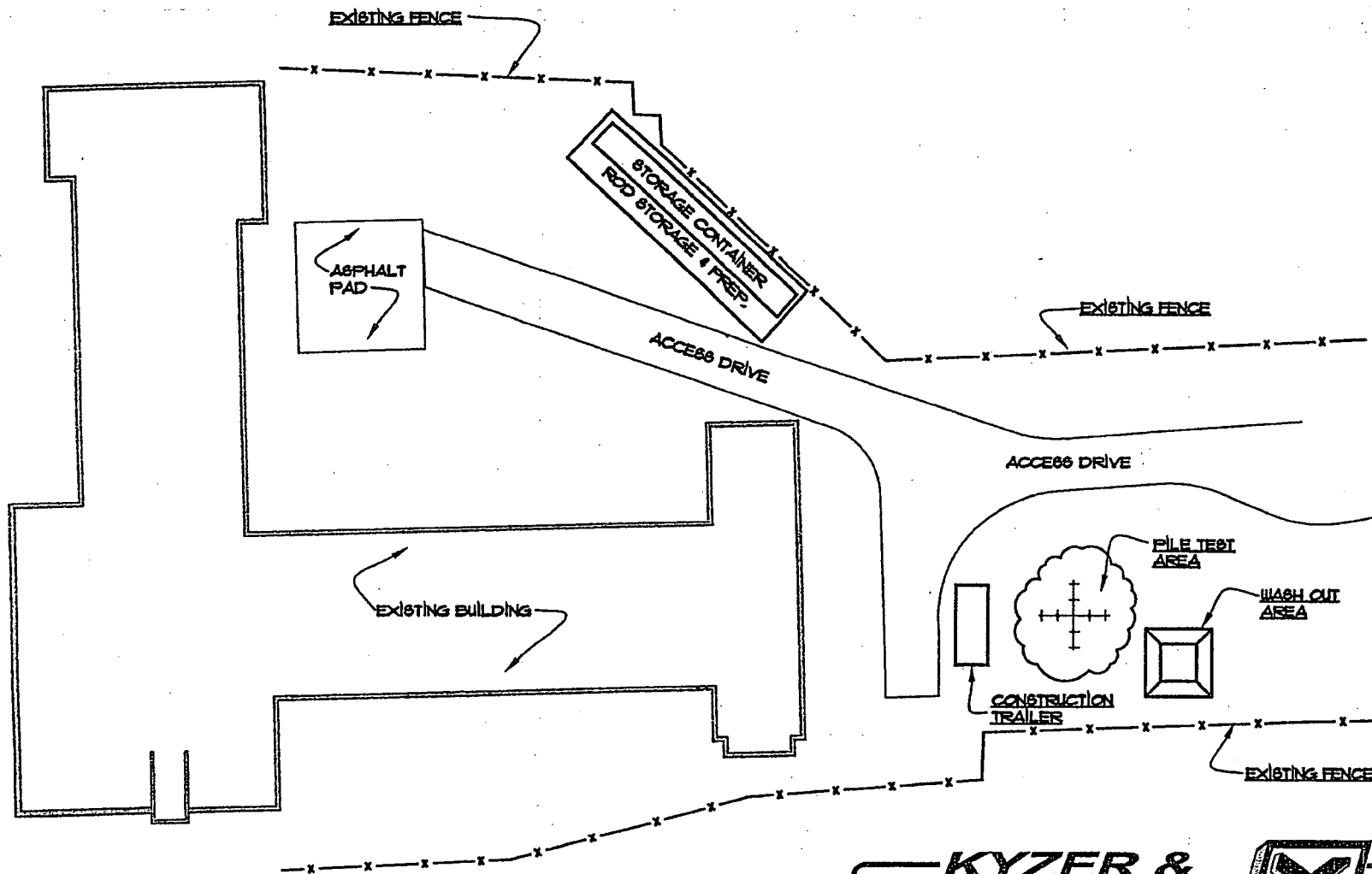
BASF Construction Chemicals
23700 Chagrin Boulevard
Cleveland, Ohio 44122 USA
216.839.7600 ph
www.masterbuilders.com

**Master
Builders**

Admixture Solutions

ROA000407

ROA000408



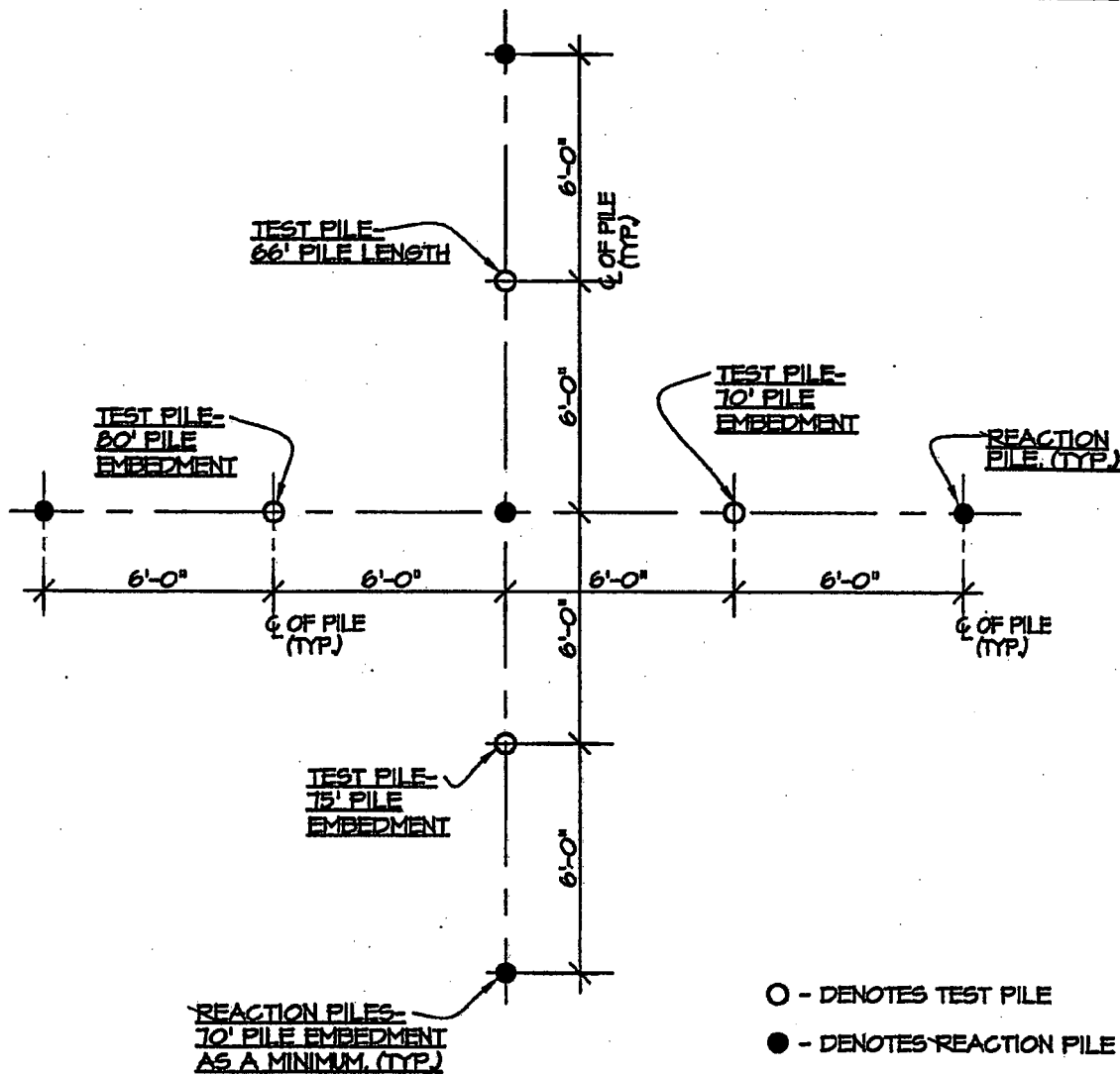
SITE LAYOUT
NOT TO SCALE

**KYZER &
TIMMERMAN**
STRUCTURAL ENGINEERS

530 Chas Drive, West Columbia S.C. 29169 Ph. 803.791.4511 Fax 803.791.4522



SITE LAYOUT		
NO. 11-150	DATE APRIL 7TH, 2011	SCALE 1/8"=1'-0"



TEST PILE CONFIGURATION
 SCALE: 1/4" = 1'-0"

**KYZER &
 TIMMERMAN**

STRUCTURAL ENGINEERS

550 Chris Drive, West Columbia S.C. 29169 Ph. 803.791.4511 Fax 803.791.4522



JOB#

TEST PILE CONFIGURATION

JOB NUMBER

11-158

DATE

APRIL 7TH, 2011

WEEK

5101

APPENDIX B - LOAD TESTING APARATUS

Load Frame Details

Load Jack and Cell Specifications and Calibration Data

**Confidential and Proprietary
Copyright 2011 Terratec
ALL RIGHTS RESERVED**

ROA000410



WELCOME GUEST
Global | Register | Login

ITEMS FOR QUOTE - 0

[FAQ](#) | [Live Chat](#) | [Mobile](#) | [Help](#)

800-472-6703

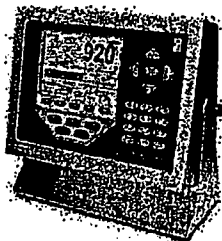
[Home](#) > [Products](#) > [Indicators/Controllers](#) > [Rice Lake](#) > [620[®] Programmable Indicator/Controller](#)

[Email](#) | [Print](#) | [Share](#)

[Overview](#) | [Model #s](#) | [Options](#) | [Parts](#) | [Manuals](#) | [Literature](#) | [Software](#) | [Resources](#)

Please click the tabs above for more information on models and pricing.

[Close](#)



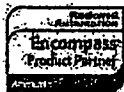
specifications
page



360° view



more
images



Products

[Download PDF Catalogs](#)
[Products A-Z](#)
[Recently Viewed Products](#)
[Website Search](#)

Support

[Article Library](#)
[Download PDF Catalogs](#)
[Frequently Asked Questions](#)
[Manuals](#)
[Request Service](#)
[Sales Support](#)

Our Company

[About Rice Lake](#)
[Careers](#)
[Company History](#)
[Directions](#)
[How to Buy Products](#)
[ISO Accreditations](#)

Contact Us

[Contact Us](#)
[Directions](#)
[Emergency Contacts](#)
[Request a Dealer](#)
[Website Help](#)

Features

[eSource](#)
[Global Resources from Rice Lake Weighing Systems](#)
[News](#)
[On Location Bus](#)

Website Help

[Help](#)
[Privacy Policy](#)
[Site Map](#)
[Terms of Use](#)

ROA000412

RECEIVED

MAR 30 2011

 AIA® Document A132™ – 2009

HEERY INTERNATIONAL
CHARLESTON, SC

Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

This Document is hereby modified to be entitled: AIA Document A132-2009, Standard Form of Agreement Between Owner and Contractor, Program Manager as Adviser Edition

AGREEMENT made as of the Twenty Eighth (28) day of March in the year 2011
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Charleston County School District
3999 Bridgeview Drive
North Charleston, SC 29405

and the Contractor:
(Name, legal status, address and other information)

M.B. Kahn Construction Company, Inc.
101 Flintlake Road
Columbia, SC 29223

for the following Project:
(Name, location and detailed description)

Rivers Education Center Seismic Retrofit, Exterior Restoration and Core Utilities
1002 King Street
Charleston, SC. 29403

The Program Manager:
(Name, legal status, address and other information)

Heery International, Inc.
3125 Ashley Phosphate Road, Suite 130
North Charleston, South Carolina 29418

The Architect:
(Name, legal status, address and other information)

Davis & Floyd, Inc.
P.O. Box 61599
Charleston, SC 29419

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A232™-2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition; B132™-2009, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™-2009, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

AIA Document A232™-2009 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.

AIA Document A132™ – 2009 (formerly A101™CMA – 1992). Copyright © 1975, 1980, 1992 and 2009 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 13:34:12 on 03/25/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.
User Notes:

(1348875567)

ROA000413



TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS
- 10 INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9.

The Contractor represents and agrees that it has carefully examined and understands this Agreement and the other Contract Documents, has investigated the nature, locality and site of the Work and the conditions and difficulties under which it is to be performed, and that it enters into this Agreement on the basis of its own examination, investigation, and evaluation of all such matters and not in reliance upon any opinions or representations of the Owner, Program Manager, Architect or any of their respective officers, agents, servants, employees or Board of Directors. The Contract Documents do not include any other documents, including, but not limited to, soils, geotechnical or other reports, surveys or analyses, which may be printed, bound, or assembled with the Contract Documents or otherwise made available to the contractor for review or information under this Agreement, unless specifically enumerated and directly incorporated by reference in Article 9 of this Agreement.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work is the date established in a written Notice to Proceed. If there is no written Notice to Proceed, it shall be the date of the Agreement or such other date as may be established by the Program Manager or the Owner in writing.

(Paragraphs deleted) The date of commencement of the work is the date established in a Written Notice to Proceed.

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall promptly commence and diligently prosecute the Work and achieve Substantial Completion of the entire Work not later than Two Hundred Fifty Two (252) calendar days from the date of commencement, or as follows:

Init.

AIA Document A132™ - 2009 (formerly A101™ CMA - 1992). Copyright © 1975, 1980, 1992 and 2009 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 13:34:12 on 03/25/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.
User Notes:

(1348875567)

(Paragraphs deleted)

Portion of the Work
All Work

Substantial Completion Date
252 calendar days

, subject to adjustments of this Contract Time as provided in the Contract Documents.

§ 3.4 Time is of the essence. All times stated in the Contract Documents, including, without limitation, those for the commencement, prosecution, interim milestones, and completion of the Work, and for the delivery and installation of materials and equipment, are of the essence in this Agreement.

§ 3.5 The date of Substantial Completion of the Work or a designated portion thereof is the date, certified by the Architect, when construction is sufficiently complete in accordance with the Contract Documents that the Owner may, if it so elects, occupy and use the Work or designated portion thereof for the purposes for which it was intended. Specific requirements for Substantial Completion are detailed by Article 9.8 and elsewhere in the AIA A232 General Conditions of the Contract for Construction, Program Manager as Advisor Edition, as amended, as well as elsewhere in Contract Documents including specification sections concerning contract completion and closeout.

§ 3.6 The Contractor acknowledges and recognizes that the Owner is entitled to full and beneficial occupancy and use of the completed Work following expiration of the Contract Time and that the Owner has entered into, or will enter into, binding agreements demising all or part of the premises where Work is to be completed based upon the Contractor's achieving Substantial Completion of the Work within the Contract Time, the Owner will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, the Owner and the Contractor agree as set forth below:

§ 3.6.1 If the Contractor fails to achieve Substantial Completion of the Work within the Contract Time and as otherwise required by the Contract Documents, the Owner shall be entitled to retain or recover from the Contractor, as liquidated damages and not as a penalty, daily amounts of \$1,500.00 commencing upon the first day following expiration of the Contract Time and continuing until the actual date of Substantial Completion. Such liquidated damages are hereby agreed to be a reasonable pre-estimate of damages the Owner will incur as a result of delayed completion of the Work. If the Contractor fails to obtain Final Completion with 100% of the punchlist completed within thirty days from the date of Substantial Completion, the Owner shall be entitled to retain or recover from the Contractor as liquidated damages the amount of \$1,000.00 per calendar day from the thirty-first day following the date of Substantial Completion until completion of the punchlist and until a Final Completion Certificate is obtained, regardless of how the punchlist is completed.

§ 3.6.2 The Owner may deduct liquidated damages as described in Article 3.6 and 3.6.1 from any unpaid amounts then or thereafter due the Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due the Contractor shall be payable to the Owner at the demand of the Owner, together with interest from the date of the demand at a rate of 12%.

§ 3.7 The Contractor shall begin the Work on the Date of Commencement and shall perform the Work diligently, expeditiously, and with adequate resources so as to complete all the Work within the Contract Time. The Contractor shall reschedule or re-sequence the Work, to the extent possible, to avoid or minimize any delay to the Contract time. The Contractor shall not, without the Owner's prior approval, reschedule or re-sequence the Work so that an action, approval or activity of the Owner moves onto the critical path or otherwise becomes critical to the Contract Time. Neither the Owner, its representatives nor its agents shall be obligated or liable to the Contractor for, and the Contractor hereby expressly waives any claims against any of them, on account of any damages, costs or expenses of any nature whatsoever that the Contractor, its subcontractors or sub-subcontractors or any other person may incur as a result of any delays, interferences, suspensions, rescheduling, changes in sequences, congestion, disruptions, or the like arising from or out of any act or omission of the Owner, its representatives, or agents, it being understood and agreed that the Contractor's sole and exclusive remedy in such event shall be in accordance with the provisions of the Contract Documents.

§ 3.8 The time during which the Contractor is delayed in the performance of the Work by the acts or omissions of the Owner, the Owner's representatives or their employees or agents, acts of God, unusually severe and abnormal climatic conditions or other conditions beyond the Contractor's control and that the Contractor could not reasonably have foreseen and provided against shall be added to the time for completion of the Work, (i.e. the Contract Time) stated in the Agreement

Init.

AIA Document A132™ - 2009 (formerly A101™ CMA - 1992). Copyright © 1975, 1980, 1992 and 2009 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 13:34:12 on 03/25/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.
User Notes:

3

(1348875567)

ROA000415

and as determined by AIA A232 General Conditions of the Contract for Construction, Program Manager as Advisor Edition, as amended.

§ 3.9 Whenever, in the opinion of the Owner after consultation with the Program Manager and/or the Architect, the Work falls behind schedule, the Contractor shall, to the extent necessary to meet said schedule, increase its labor force and/or provide overtime, Saturday, Sunday, and/or holiday work and shall have each subcontractor do likewise, all at no additional cost to or compensation from the Owner. Further, the Owner shall have the right to offset against any amounts then or thereafter due the Contractor, or to be reimbursed by the Contractor for, any additional costs the Owner may incur as a direct result of said increase in labor force or overtime, Saturday, Sunday and/or holiday work. See Article 3.10 of the AIA A232 General Conditions of the Contract for Construction, Program Manager as Advisor Edition, as amended, for further requirements concerning such "Extraordinary Measures".

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in the amount of Nine Million Three Hundred Twenty Three Thousand Dollars (\$9,323,000.00) in current funds for the Contractor's performance of the
(Paragraphs deleted)
Contract, subject to additions and deductions as provided in the *Contract Documents*.

§ 4.2. The Contract Sum is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

None issued

(Table deleted)

(Paragraphs deleted)

(Table deleted)

(Paragraphs deleted)

§ 4.3 Unit prices, if any, are set forth in the "Schedule of Unit Prices" attached hereto and made a party hereof as Exhibit "A". Such unit process are considered complete and include (1) all materials, equipment, labor, delivery, installation, overhead and profit, and (2) any other costs or expenses in connection with, or incidental to, the performance of that portion of the Work to which such unit process apply.

(Paragraph deleted)

(Table deleted)

(Paragraphs deleted)

§ 4.4 Allowance amounts are complete and include, without limitation, 1) all materials, equipment, labor, delivery, installation, overhead, and profit, and 2) any other cost or expense in connection with, or incidental to, to performance of that portion of the Work to which each allowance applies. Allowances included in the Contract Sum, if any, include:

Item	Allowance
Door Hardware	Sixty Thousand Dollars (\$60,000.00).
Abatement	Fifty-Five Thousand Dollars (\$55,000.00)
Masonry Cleaning/Restoration	Forty-Five Thousand Dollars (\$45,000.00)

(Paragraphs deleted)

(Table deleted)

(Paragraphs deleted)

(Table deleted)

(Paragraphs deleted)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment including all supporting documentation submitted by the Contractor to the Program Manager, and upon certification of the Application and Certificate for Payment by the Program Manager and the Architect as more fully described in Article 9 of the AIA A232 General Conditions of the Contract for Construction, Program Manager as Advisor Edition, as amended, the Owner shall make progress payments on account of the Contract Sum to the Contractor.

Init.

AIA Document A132™ - 2009 (formerly A101™CMA - 1992). Copyright © 1975, 1980, 1992 and 2009 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 13:34:12 on 03/25/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.
User Notes:

(1348875567)

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month.

§ 5.1.3 Pay applications will be processed as follows:

- .1 Prior to submitting a formal pay application, the Contractor will submit a draft pay application and will meet with the Program Manager and the Architect to review that draft pay application and determine the amounts due for that period;
- .2 After determination of the amounts due for that period, the Contractor will submit a formal pay application invoicing amounts determined due at the meeting with the Program Manager and Architect. The formal pay application will be submitted to the Program Manager for processing.
- .3 The Program Manager will promptly forward the formal pay application to the Architect for review and certification. The Architect will return the formal pay application and certification to the Program Manager within seven (7) days of receipt. Upon its return, the Program Manager will promptly review the formal pay application, indicate its concurrence, and submit the pay application to the Owner for payment.
- .4 The Owner will make payment to the Contractor based on the formal pay application as certified by the Architect and approved by the Program Manager. Payment will be made within thirty (30) days of receipt of the formal pay application by the Program Manager from the Contractor.

§ 5.1.4. Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work and be prepared in such form and supported by such data to substantiate its accuracy as the Program Manager and Architect may require. This schedule, once approved, shall be used as a basis for reviewing the Contractor's Applications for Payment.

(Paragraphs deleted)

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

(Paragraphs deleted)

§ 5.1.6 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of three and one half percent (3.5 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided in Section 7.3.9 of the General Conditions;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of three and one half percent (3.5 %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Program Manager or Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of the General Conditions.

§ 5.1.7 No progress payments made under this Agreement shall be conclusive evidence of the performance of this Agreement either in whole or in part, and no such payment shall be construed to be acceptance of defective work or improper materials.

(Paragraphs deleted)

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract including, but not limited to, submission of all closeout documentation; and

Init.

AIA Document A132™ - 2009 (formerly A101™CMA - 1992). Copyright © 1975, 1980, 1992 and 2009 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 13:34:12 on 03/25/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.
User Notes:

(1348875567)

- 2 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect; such final payment shall be made by the Owner not more than 30 days after the issuance of the final Certificate for Payment.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document

(Paragraphs deleted)

A232-2009 General Conditions of the Contract for Construction, Program Manager as Advisor Edition, as amended.

§ 6.2

(Paragraphs deleted)

When claims are not resolved pursuant to the terms of Article 15.2 and 15.3 of the AIA Document A232-2009 General Conditions of the Contract for Construction, Program Manager as Advisor Edition, as amended, they shall be filed in the Court of Common Pleas, Charleston County, South Carolina and shall be decided pursuant to South Carolina law. Either prior to or after a claim is filed, the parties may agree to mediate the dispute.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232-2009 General Conditions of the Contract for Construction, Program Manager as Advisor Edition, as amended.

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232-2009 General Conditions of the Contract for Construction, Program Manager as Advisor Edition, as amended.

(Paragraphs deleted)

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232-2009 or another Contract Document, the reference refers to that provision as amended therein, or as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Contractor represents and warrants the following to the Owner (in addition to any other representations and warranties contained in the Contract Documents):

- i. that it and its subcontractors are financially solvent, able to pay all debts as they mature and possessed of sufficient working capital to complete the Work and perform all obligations hereunder;
- ii. that it is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform its obligations hereunder;
- iii. that it is authorized to do business in the State of South Carolina and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the Project;
- iv. that its execution of this Agreement and its performance thereof is within its duly authorized powers;
- v. that its duly authorized representative has visited the site of the Project, familiarized himself with the local and special conditions under which the Work is to be performed and correlated his observations with the requirements of the Contract Documents;
- vi. that it possesses a high level of experience and expertise in the business administration, construction, construction management and superintendence of projects of the size, complexity and nature of this particular Project, and it will perform the Work with the care, skill and diligence of such a Contractor.

The foregoing warranties are in addition to, and not in lieu of, any and all other liability imposed upon the Contractor by law with respect to the Contractor's duties, obligations and performance hereunder. The Contractor acknowledges that the Owner is relying upon the Contractor's skill and experience in connection with the Work called for hereunder.

(Paragraphs deleted)

§ 8.6 Other provisions:

Init.

AIA Document A132™ - 2009 (formerly A101™CMA - 1992). Copyright © 1975, 1980, 1992 and 2009 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 13:34:12 on 03/25/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.
User Notes:

6

(1348875567)

ROA000418

None

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A132-2009, Standard Form of Agreement Between Owner and Contractor, Program Manager as Adviser Edition, as amended.

§ 9.1.2 The General Conditions are, AIA Document A232-2009, General Conditions of the Contract for Construction, Program Manager as Adviser Edition, as amended.

§ 9.1.3 The Supplementary and other Conditions of the Contract as follows:

Document	Title	Date	Pages
Project Manual	Rivers Education Center Seismic Retrofit, Exterior Restoration and Core Utilities	January 3, 2011	Volume 1

§ 9.1.4 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Title of Specifications exhibit: Exhibit B – Table of Contents

(Table deleted)

§ 9.1.5 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Title of Drawings exhibit: Exhibit C – List of Drawings

(Table deleted)

§ 9.1.6 The Addenda, if any:

Number	Date	Pages
Addenda 01	February 02, 2011	15 and 12 attachments
Clarification C-01	February 02, 2011	2
Clarification C-02	February 08, 2011	2

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents are:

(Paragraphs deleted)

.1 Other documents, if any, listed below:

(Paragraphs deleted)

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 and 16 of AIA Document A232-2009.

Int.

AIA Document A132™ – 2009 (formerly A101™ CMA – 1992). Copyright © 1975, 1980, 1992 and 2009 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 13:34:12 on 03/25/2011 under Order No.5987107358_1 which expires on 01/22/2012, and is not for resale.
User Notes: (1348875567)

7

ROA000419

This Agreement is entered into as of the day and year first written above.

OWNER

W. H. Lewis 3/28/11
(Signature)
William H. Lewis
Chief Operating Officer Capital Programs
Charleston County School District
3999 Bridgeview Drive
North Charleston, SC 29405
(Printed name and title)

OWNER

Michael Bobby 3/28/11
(Signature)
Michael Bobby
Chief Finance and Operations Officer
Charleston County School District
3999 Bridgeview Drive
North Charleston, SC 29405
(Printed name and title)

OWNER

Nancy J. McGinley 3/28/11
(Signature)
Nancy J. McGinley, Ed. D
Superintendent of Schools
Charleston County School District
75 Calhoun Street
Charleston, SC 29401
(Printed name and title)

CONTRACTOR

Timothy C. Cullum
(Signature)
Timothy C. Cullum
Executive Vice President
M.B. Kahn Construction Company, Inc.
101 Flintlake Road
Columbia, SC 29223
(Printed name and title)

Init.

AIA Document A132™ - 2009 (formerly A101™ CMA - 1992). Copyright © 1975, 1980, 1992 and 2009 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 13:34:12 on 03/25/2011 under Order No.5987 107356_1 which expires on 01/22/2012, and is not for resale.
User Notes:

(1348875567)

8

ROA000420

Rivers Education Center

Seismic Retrofit, Exterior Restoration and Core Utilities

Unit Pricing

UNIT PRICES (Refer to Article 4.3):

Unit Price # 1 – Concrete Walk (4" thick)	\$ 6.00 /SF
Unit Price # 2 – Chain Link Fencing (6' high)	\$ 30.00 /LF
Unit Price # 3 – Remove/Replace Existing Canopy	\$ 40.00 /LF
Unit Price # 4 – Re-point Exterior Brick Joints	\$ 25.00 /LF
Unit Price # 5 – Chemically Remove Graffiti	\$ 20.00 /SF
Unit Price # 6 – Remove/Replace Wood Plank Roof Deck	\$ 5.00 /SF
Unit Price # 7 – Remove/Replace Downspouts/Drain Lines	\$ 350.00 /EA

**Rivers Education Center
Seismic Retrofit, Exterior Restorations and Core Utilities**

TABLE OF CONTENTS

00100	Invitation for Bids
-----	Instructions to Bidders
0030	Solicitation Outline
-----	Bidding Schedule
-----	Offeror's Checklist (Attachment A)
-----	Minority Participation Affidavit (Attachment B)
-----	Questionnaire (Attachment C)
-----	Minority Business Enterprise (MBE) Utilization Commitment (Attachment D)
-----	Statement of Intent to Perform Work Without Subcontracting (Attachment E)
-----	Certificate of Minority Business Enterprise Unavailability (Attachment F)
-----	No Bid Reply Form (Attachment G)
-----	Project Directory
-----	Contract Documents
	AIA Document A132 – 2009 – Contract
	AIA Document A232 – 2009 – General Conditions

DIVISION 1. GENERAL REQUIREMENTS

Section I	Special Conditions
Section II	Schedule
Section III	Submittals
01040	Owner Furnished / Contractor Installed (OF/CI) and Owner Furnished / Owner Installed (OF/OI) Equipment
01045	Cutting and Patching
01050	Field Engineering
01060	Regulatory Requirements
01061	Permits and Rights-of-Way
01080	Phasing of Work
01152	Applications for Payment
01153	Change Order Procedure
-----	Change Proposal Form
01200	Project Meetings
01210	Allowances
01230	Alternates
01270	Unit Prices
01290	Payment Procedures
01300	Project Schedule
01310	Project Management & Coordination
01330	Submittal Procedures
01335	Submittal of Substitutions
01350	Safety
01360	Special Work Conditions & Procedures
01370	Schedule of Values
01400	Special Tests and Inspections
-----	Statement of Special Inspections
-----	Schedule of Special Inspections – Chapter 1
-----	Schedule of Special Inspections – Chapter 17
01405	Contract Quality Control
01410	Testing Laboratory Services
01420	References
01500	Temporary Facilities

DIVISION 1. GENERAL REQUIREMENTS - Cont.

01600 Product Requirements
01640 Product Handling
01710 Cleaning
01720 Project Record Documents
01730 Operation and Maintenance Data
01740 Warranties and Bonds
01750 Contract Closeout
01810 General Commissioning Requirements
01815 Commissioning of HVAC

DIVISION 2. SITE WORK

02050 Demolition and Removal
02100 Clearing and Grubbing
02122 Tree Protection and Trimming
02220 Excavation and Backfill
02369 Micropiles
02400 Shoring
02456WP Ductile Iron Water Pipe
02466FM Polyvinyl Chloride Force Main
02485 Valves, Hydrants and Appurtenances
02494 Testing Pipelines
02496 Disinfecting Pipelines
02710 Fences and Gates
02820 Hydroseeding

DIVISION 3. CONCRETE

03300 Cast-In-Place Concrete
03310 Sidewalks
03371 Shotcrete

DIVISION 4. MASONRY

04200 Unit Masonry
04901 Clay Masonry Restoration and Cleaning

DIVISION 5. METALS

05120 Structural Steel Framing
05210 Steel Joist Framing
05310 Steel Decking
05400 Cold Formed Metal Framing
05500 Miscellaneous Metals
05510 Metal Stairs

DIVISION 6. WOOD & PLASTICS

06100 Rough Carpentry

DIVISION 7. THERMAL & MOISTURE PROTECTION

07111 Elastomeric Waterproofing, Sheet Applied
07232 Ceiling, Wall, and Floor Insulation
07240 Firestopping
07315 Synthetic Slate Shingles

DIVISION 7. THERMAL & MOISTURE PROTECTION – Cont.

07411 Preformed Metal Roofing and Siding
07525 Modified Bituminous Sheet Roofing
07600 Flashing and Sheet Metal
07900 Joint Sealants

DIVISION 8. DOORS & WINDOWS

08110 Steel Doors and Frames
08200 Wood Doors
08220 Fiberglass Doors and Frames
08520 Aluminum Windows
08630 Metal Framed Greenhouse
08700 Finish Hardware
08800 Glazing

DIVISION 9. FINISHES

09250 Gypsum Wallboard and Metal Stud Framing
09401 Cementitious Terrazzo
09900 Painting

DIVISION 10. SPECIALTIES

10550 Fire Extinguishers

DIVISIONS 11. AND 12.

Not Applicable

DIVISION 13. SPECIAL CONSTRUCTION

13915 Fire Suppression Piping
13922 Diesel-Drive, Centrifugal Fire Pumps

DIVISION 14. CONVEYING SYSTEMS

14214 Hydraulic Passenger Elevators

DIVISION 15. MECHANICAL

15010 Mechanical General Requirements
15010A Substitution Request Form
15010B Submittal Cover Sheet
15055 Motors
15060 Hangers and Supports
15075 Mechanical Identification
15081 Duct Insulation
15083 Pipe Insulation
15183 Refrigerant Piping
15241 Mechanical Vibration Controls and Seismic Restraints
15313 Metal Ducts
15323 HVAC Power Ventilators
15413 Facility Storm Drainage Piping
15423 Storm Drainage Piping Specialties
15429 Sump Pumps
15656 Make up Air Units

DIVISION 15. MECHANICAL – Cont.

15732 Packaged Air Conditioning
15738 Split System Air Conditioning Units
15855 Diffusers, Registers, and Grilles
15900 HVAC Instrumentation and Controls
15990 Testing, Adjusting, and Balancing

DIVISION 16. ELECTRICAL

16010 General Provisions – Electrical
16071 Seismic Controls for Electrical Work
16111 Cable Trays
16112 Raceways
16112A Conduit Specification Sheet
16120 Low Voltage Wires and Cables 0-600 Volts
16135 Outlet, Junction and Pull Boxes
16140 Wiring Devices
16195 Electrical Identification
16450 Grounding
16471 Panelboards – Circuit Breaker Type
16475 Overcurrent Protective Devices
16710 Security Systems
16720 Fire Alarm Systems

APPENDIX A

Geotechnical Report

APPENDIX B

Addendum to Geotechnical Report

APPENDIX C

Materials Testing Report

APPENDIX D

2008 AHERA Three-Year Inspection

(End of Table of Contents)

RIVERS EDUCATION CENTER
SEISMIC RETROFIT, EXTERIOR RESTORATION AND CORE UTILITIES
SHEET INDEX

CIVIL

VS101	EXISTING CONDITIONS PLAN - Bid Set 01/03/2011
CS101	SITE ACCESS AND LAYDOWN PLAN - Bid Set 01/03/2011
CE101	EROSION CONTROL, TREE PROTECTION, AND CONSTRUCTION FENCING PLAN - Bid Set 01/03/2011
CD101	SITE DEMOLITION PLAN - Bid Set 01/03/2011
CS102	SITE PLAN - Bid Set 01/03/2011
CG101	CRAWL SPACE DRAINAGE PLAN - Bid Set 01/03/2011
CD501	SITE CONSTRUCTION DETAILS - Bid Set 01/03/2011
CD502	SITE CONSTRUCTION DETAILS - Bid Set 01/03/2011
CD503	SITE CONSTRUCTION DETAILS - Bid Set 01/03/2011

ARCHITECTURAL

A-001	CODE ANALYSIS, UL DESCRIPTIONS - Bid Set 01/03/2011
A-002	UL DESCRIPTIONS - Bid Set 01/03/2011
A-003	RENOVATION FIRE RATING AND LIFE SAFETY PLANS - Bid Set 01/03/2011
A-101	DEMOLITION FIRST FLOOR PLAN - Bid Set 01/03/2011
A-102	DEMOLITION SECOND FLOOR PLAN - Bid Set 01/03/2011
A-103	RENOVATION FIRST FLOOR PLAN - Bid Set 01/03/2011
A-104	RENOVATION SECOND FLOOR PLAN - Bid Set 01/03/2011
A-105	DEMOLITION ATTIC FLOOR PLAN - Bid Set 01/03/2011
A-106	RENOVATION ATTIC FLOOR PLAN - Bid Set 01/03/2011
A-107	DEMOLITION ROOF PLAN - Bid Set 01/03/2011

A-108 RENOVATION ROOF PLAN - Bid Set 01/03/2011
A-109 RENOVATION ROOF DETAILS - Bid Set 01/03/2011
A-109A RENOVATION ROOF DETAILS - Bid Set 01/03/2011
A-110 ENLARGED PATIO PLAN, FRONT STAIR DETAILS - Bid Set 01/03/2011
A-111 ENLARGED PATIO ELEVATIONS AND SECTIONS - Bid Set 01/03/2011
A-112 FIRE PUMP BUILDING- PLANS AND DETAILS - Bid Set 01/03/2011
A-113 FIRE PUMP BUILDING- ELEVATIONS, SECTIONS, AND DETAILS - Bid Set 01/03/2011
A-201 DEMOLITION BUILDING ELEVATIONS - Bid Set 01/03/2011
A-202 DEMOLITION BUILDING ELEVATIONS - Bid Set 01/03/2011
A-203 RENOVATION BUILDING ELEVATIONS - Bid Set 01/03/2011
A-204 RENOVATION BUILDING ELEVATIONS - Bid Set 01/03/2011
A-205 GREENHOUSE PLANS, ELEVATIONS, SECTION AND DETAILS - Bid Set 01/03/2011
A-301 EXISTING BUILDING SECTION AND ROOF EAVE DETAILS - Bid Set 01/03/2011
A-302 RENOVATION BUILDING SECTION - Bid Set 01/03/2011
A-303 AUDITORIUM SECTIONS - Bid Set 01/03/2011
A-304 Building Sections - Bid Set 01/03/2011
A-305 ELEVATOR SECTIONS AND DETAILS - Bid Set 01/03/2011
A-306 STAIR SECTIONS AND DETAILS - Bid Set 01/03/2011
A-401 ENLARGED FLOOR PLANS, REFLECTED CEILING PLAN - Bid Set 01/03/2011
A-501 DOOR SCHEDULE, ELEVATIONS, AND DETAILS - Bid Set 01/03/2011
A-502 WINDOW SCHEDULE, ELEVATIONS, AND DETAILS - Bid Set 01/03/2011
A-502A WINDOW DETAILS - Bid Set 01/03/2011
A-503 DETAILS - Addendum No. 1 - 01/31/2011

STRUCTURAL

S-000	EXISTING SCHOOL BUILDING- SEISMIC RETROFIT DESIGN CRITERIA AND GENERAL NOTES - Bid Set 01/03/2011
S-001	FIRE PUMP HOUSE- STRUCTURAL DESIGN CRITERIA AND GENERAL NOTES - Bid Set 01/03/2011
S-100	FOUNDATION RETROFIT PLAN AND DETAILS - Bid Set 01/03/2011
S-101	FIRST FLOOR RETROFIT PLAN - Addendum No. 1 - 01/31/2011
S-102	SECOND FLOOR RETROFIT FRAMING PLAN - Bid Set 01/03/2011
S-103	SECOND FLOOR RETROFIT FRAMING PLAN - Bid Set 01/03/2011
S-104	ROOF RETROFIT FRAMING PLAN - Bid Set 01/03/2011
S-400	FOUNDATION RETROFIT ENLARGED PLANS - Bid Set 01/03/2011
S-401	FOUNDATION RETROFIT ENLARGED PLANS - Bid Set 01/03/2011
S-402	FOUNDATION RETROFIT SECTIONS AND DETAILS - Bid Set 01/03/2011
S-403	ELEVATOR FRAMING PLANS - Bid Set 01/03/2011
S-404	STAIRWELL FRAMING SECTIONS AND DETAILS - Bid Set 01/03/2011
S-500	MASONRY WALL OVERLAY RETROFIT PLAN - Bid Set 01/03/2011
S-501	MASONRY WALL OVERLAY RETROFIT PLAN - Bid Set 01/03/2011
S-502	MASONRY WALL OVERLAY RETROFIT ELEVATIONS - Bid Set 01/03/2011
S-503	MASONRY WALL OVERLAY RETROFIT ELEVATIONS - Bid Set 01/03/2011
S-504	MASONRY WALL OVERLAY RETROFIT ELEVATIONS - Bid Set 01/03/2011
S-505	MASONRY WALL OVERLAY RETROFIT ELEVATIONS - Bid Set 01/03/2011
S-506	SHOTCRETE OVERLAY SHEAR WALL SECTIONS - Bid Set 01/03/2011
S-507	SHOTCRETE OVERLAY SHEAR WALL DETAILS - Bid Set 01/03/2011
S-508	SHOTCRETE OVERLAY SHEAR WALL DETAILS - Bid Set 01/03/2011
S-509	SINGLE AND DOUBLE SHEAR WALL DETAILS - Bid Set 01/03/2011
S-510	EXISTING CHIMNEY RETROFIT DETAILS - Bid Set 01/03/2011
S-511	EXISTING BOILER ROOM CHIMNEY RETROFIT DETAILS - Bid Set 01/03/2011
S-512	EXISTING CHIMNEY RETROFIT DETAILS - Bid Set 01/03/2011

S-513	FIRE PUMP HOUSE PLANS AND SECTIONS - Bid Set 01/03/2011
S-514	MASONRY DETAILS - Bid Set 01/03/2011
S-515	GREENHOUSE SECTION AND DETAILS - Bid Set 01/03/2011
S-516	CONCRETE PATIO AND RAMP ENLARGED FOUNDATION PLAN AND DETAILS Bid Set 01/03/2011

FIRE PROTECTION

FS-101	FIRE PROTECTION SITE PLAN - Bid Set 01/03/2011
FP-101	FIRST FLOOR FIRE PROTECTION PLAN AND SECTIONS - Bid Set 01/03/2011
FP-102	SECOND FLOOR FIRE PROTECTION PLAN AND SECTIONS - Bid Set 01/03/2011
FP-103	ATTIC FIRE PROTECTION PLAN - Bid Set 01/03/2011
FP-501	FIRE PUMP SKID PACKAGE - Bid Set 01/03/2011

PLUMBING

PD-101	CRAWL SPACE DEMOLITION PLAN - Bid Set 01/03/2011
PD-102	FIRST FLOOR DEMOLITION PLAN - Bid Set 01/03/2011
PD-103	SECOND FLOOR DEMOLITION PLAN - Bid Set 01/03/2011
P-101	CRAWL SPACE PLUMBING PLAN - Bid Set 01/03/2011

MECHANICAL

MD-101	FIRST FLOOR MECHANICAL DEMOLITION PLAN - Bid Set 01/03/2011
MD-102	SECOND FLOOR MECHANICAL DEMOLITION PLAN - Bid Set 01/03/2011
MD-103	ATTIC MECHANICAL DEMOLITION PLAN - Bid Set 01/03/2011
M-101	MECHANICAL CRAWL SPACE PLAN - Bid Set 01/03/2011
M-102	FIRST FLOOR MECHANICAL PLAN - Bid Set 01/03/2011
M-103	SECOND FLOOR MECHANICAL PLAN - Bid Set 01/03/2011
M-201	MECHANICAL SECTION VIEWS - Bid Set 01/03/2011
M-401	FIRE PUMP BUILDING- ENLARGED MECHANICAL PLAN - Bid Set 01/03/2011

- M-501 MECHANICAL DETAILS - Bid Set 01/03/2011
M-601 MECHANICAL SECHDULES - Bid Set 01/03/2011

ELECTRICAL

- E-001 SYMBOLS AND LEGENDS, DETAIL DRAWING - Bid Set 01/03/2011
ED-101 FIRST FLOOR DEMOLITION PLAN - Bid Set 01/03/2011
ED-102 FIRST FLOOR DEMOLITION PLAN - Bid Set 01/03/2011
ED-103 SECOND FLOOR DEMOLITION PLAN - Bid Set 01/03/2011
ED-104 SECOND FLOOR DEMOLITION PLAN - Bid Set 01/03/2011
ED-105 ATTIC DEMOLITION PLAN - Bid Set 01/03/2011
ED-106 ATTIC DEMOLITION PLAN - Bid Set 01/03/2011
E-100 COMMUNICATION SITE PLAN - Bid Set 01/03/2011
E-101 FIRST FLOOR GENERAL LIGHTING PLAN - Bid Set 01/03/2011
E-102 FIRST FLOOR GENERAL LIGHTING PLAN - Bid Set 01/03/2011
E-103 SECOND FLOOR GENERAL LIGHTING PLAN - Bid Set 01/03/2011
E-104 SECOND FLOOR GENERAL LIGHTING PLAN - Bid Set 01/03/2011
E-105 ATTIC POWER, LIGHTING, & FIRE ALARM PLAN - Bid Set 01/03/2011
E-106 ATTIC POWER, LIGHTING, & FIRE ALARM PLAN - Bid Set 01/03/2011
E-107 FIRST FLOOR POWER & SYSTEM PLAN - Bid Set 01/03/2011
E-108 FIRST FLOOR POWER & SYSTEM PLAN - Bid Set 01/03/2011
E-109 SECOND FLOOR POWER & SYSTEM PLAN, GROUNDING SCHEMATIC DIAGRAM - Bid Set 01/03/2011
E-110 SECOND FLOOR POWER & SYSTEM PLAN - Bid Set 01/03/2011
E-301 EXISTING SWITCHBOARD SINGLE LINE DIAGRAM - Bid Set 01/03/2011
E-302 SCHEMATIC DIAGRAMS, LIGHT FIXTURE SCHEDULE - Bid Set 01/03/2011

- E-303 LIGHT FIXTURE, ELECTRICAL DEVICES, AND CABLE TRAY MOUNTING HEIGHT - Bid Set 01/03/2011
- E-401 PUMP HOUSE AND TELECOMMUNICATION ROOM, LARGE SCALE PLAN, & PANELBOARD SCHEDULE - Bid Set 01/03/2011
- E-501 PANELBOARD SCHEDULE - Bid Set 01/03/2011
- E-502 PANELBOARD SCHEDULE - Bid Set 01/03/2011

AIA® Document A232™ – 2009

General Conditions of the Contract for Construction, Construction Manager as Adviser Edition

This Document is hereby modified to be entitled: AIA Document A232-2009, General Conditions of the Contract for Construction, Program Manager as Adviser Edition

For the following PROJECT:
(Name, and location or address)

Rivers Education Center Seismic Retrofit, Exterior Restoration and Core Utilities
1002 King Street
Charleston, SC. 29403

THE PROGRAM MANAGER:
(Name, legal status and address)

Heery International, Inc.
3125 Ashley Phosphate Road, Suite 130
North Charleston, South Carolina 29418

THE OWNER:
(Name, legal status and address)

Charleston County School District
3999 Bridgeview Drive
N. Charleston, SC 29405

THE ARCHITECT:
(Name, legal status and address)

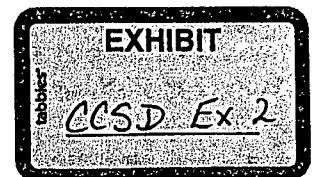
Davis & Floyd, Inc.
P.O. Box 61599
Charleston, SC 29419

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A132™-2009, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™-2009, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™-2009, Standard Form of Agreement Between Owner and Construction Manager as Adviser.



Init.

AIA Document A232™ – 2009 (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. All rights reserved.
WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.
This document was produced by AIA software at 15:25:28 on 03/24/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.
User Notes: (1484087859)

1

ROA000432

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work executed. The Contractor hereby waives and forfeits all other claims for payment and damages, including, without limitation, anticipated profits. The Owner shall be credited for (i) payments previously made to the Contractor for the terminated portion of the Work, (ii) claims that the Owner has against the Contractor under the contract, and (iii) the value of the materials, supplies, equipment, or other items that are to be disposed of by the Contractor that are part of the Contract Sum. All obligations of the Contractor under the Contract with respect to completed Work, including but not limited to all warranties, guarantees and indemnities shall apply to all Work completed or substantially completed by the Contractor prior to a convenience termination by the Owner. Notwithstanding the above, any convenience termination by the Owner or payments to the Contractor shall be without prejudice to any claims or legal remedies that the Owner may have against the Contractor for any cause.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. A claim must be made by written notice as detailed herein.

§ 15.1.2 Notice of Claims. Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Architect with a copy sent to the Program Manager provided, however, that the claimant shall use its best efforts to furnish the Program Manager, Architect and the other party, as expeditiously as possible, with notice of any Claim, including, without limitation, those in connection with concealed or unknown conditions, once such Claim is recognized, and shall cooperate with the Program Manager, Architect and the party against whom the Claim is made in any effort to mitigate the alleged or potential damages, delay, or other adverse consequences arising out of the condition that is the cause of the Claim. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. If the event causing the claim is ongoing, a Claim may also be reserved in writing within the time limits set forth herein. Any notice of claim or reservation of Claim must clearly identify the alleged cause and the nature of the Claim and include data and information then available to the claimant that will facilitate prompt verification and evaluation of the Claim. The Architect will not commence its investigation for a decision until receipt of complete information documenting the claim including the additional time or money sought by the claimant.

§ 15.1.3 Continuing Contract Performance. Pending final resolution of a Claim, except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract. The Program Manager will prepare Change Orders and the Architect will issue a Certificate for Payment or Project Certificate for Payment in accordance with the decisions of the Architect.

§ 15.1.4 Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.3. If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Architect, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with the procedure established herein.

§ 15.1.5 Claims for Additional Time

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of any cost, if applicable and allowed pursuant to the terms of the Contract Documents, and of probable effect of delay on progress of the critical path of the Work. In the case of a continuing delay only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction. Completion time will not be extended for

Init.

AIA Document A232™ - 2009 (formerly A201™ CMA - 1992). Copyright © 1992 and 2009 by The American Institute of Architects. All rights reserved.
WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.
This document was produced by AIA software at 15:25:28 on 03/24/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.
User Notes: (1484087859)

46

normal adverse weather. The time for completion as stated in the Contract Documents includes due allowance for adverse weather day which will be defined as days that rainfall for the Charleston, SC station and the rain begins to fall prior to 3:00 pm on-site that day. Structural steel activities will include adverse weather days defined as any day rain falls prior to 3:00 pm or days in which excessive wind is present. For the purpose of this agreement, the Contractor agrees that normal adverse weather will be defined and that he will anticipate to lose working days to weather in accordance with the following table:

January - 8 days	July - 9 days
February - 7 days	August 9 days
March - 7 days	September - 7 days
April - 6 days	October - 5 days
May - 6 days	November - 5 days
June - 8 days	December - 6 days

Each time that the Contractor is affected by inclement weather, he must submit notice within 48 hours of the occurrence and must document how the contract critical path schedule was actually impacted and delayed. If the actual total number of accumulated working days lost to adverse weather from the start of Work until the building is enclosed exceeds the expected total number of lost working days for the same period (based on the table above), the time for Substantial Completion will be extended by the number of calendar days that the actual number of lost working days exceeds the expected number of lost working days. No extension will be made for days of adverse weather occurring after the building is enclosed. No changes in the Contract Sum will be authorized because of adjustment of Contract Time due to weather.

§ 15.1.6 Claims for Consequential Damages. Notwithstanding any other provision of the Contract Documents, but subject to a duty of good faith and fair dealing (S.C. Code Ann §11-35-30), the Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

1. damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
2. damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, rent, utilities and office equipment, for losses of financing, business and reputation, and for loss of profit.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.1.7 Waiver of Claims Against the Architect and Program Manager.

Notwithstanding any other provision of the Contract Documents, but subject to a duty of good faith and fair dealing, the Contractor waives all claims against both the Architect and any other design professional who provided design and/or project or construction management services to the Owner, either directly or as independent contractors or consultants to the Architect and/or Program Manager, for Consequential Damages arising out of or relating to this Contract. Consequential Damages are damages incurred by the Contractor for principal office expenses and overhead, (including, but not limited to, the compensation of personnel stationed there, rent, utilities, and office equipment), for losses of financing, business and reputation, and for lost profits.

§ 15.1.8 Waiver of Claims: Final Payment.

The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:

1. liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
2. failure of the Work to comply with the requirements of the Contract Documents; or
3. terms of special warranties required by the Contract Documents.

§ 15.2 Decision of the Architect

§ 15.2.1 Claims shall be referred to the Architect for a decision which shall be required as a condition precedent to litigation of a Claim between the contractor and Owner as to all such matters arising prior to the date final payment is due.

Init.

§ 15.2.2 The Architect will review Claims and, within ten days of the receipt of a Claim, take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Architect is unable to resolve the Claim if the Architect lacks sufficient information to evaluate the merits of the Claim or if the Architect concludes that, in the Architect's sole discretion, it would be inappropriate for the Architect to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Architect may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Architect in rendering a decision. The Architect may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Architect requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Architect when the response or supporting data will be furnished or (3) advise the Architect that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Architect will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Architect will render a decision approving or rejecting the Claim, or indicating that the Architect is unable to resolve the Claim. This decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Program Manager of any change in the Contract Sum or Contract Time or both.

§ 15.3 Dispute Resolution Board

§ 15.3.1 Purpose: The purpose of the Dispute Resolution Board (DRB) is to provide a fair and equitable resolution to claims under the contract preventing delays to the construction schedule and negative financial impacts to the project.

§ 15.3.2 Membership: The DRB shall be comprised of three (3) members who will attend all Monthly Executive Briefings. The three members shall include one selected by the Contractor, one selected by the Owner, and the third selected by agreement of the Owner and Contractor. The member selected by agreement of the Owner and Contractor shall serve as the Chairman. DRB members shall be part of the Monthly Executive Briefings and kept up to date by the Project Team on all aspects of the project in an Executive Team briefing format. The Contractor shall be responsible for any cost or stipend due the member that they appoint. The Owner shall include an Allowance in the Contract for the cost of the member it appoints and the neutral party chosen by the Contractor and the Owner. The appointments to the DRB shall be made within thirty (30) calendar days of the Notice to Proceed and shall cease at Substantial Completion of the last completed project phase, unless outstanding claims exist at that time.

§ 15.3.3 Function: If the Owner or Contractor disagrees with the decision of the Architect on a claim, either party may request that the matter be reviewed by the DRB. The review of claims by the DRB after the Architect's decision has been made is an express condition precedent to filing a claim in the Court of Common Pleas. The DRB shall hear the facts, review relevant documents presented, and make a formal written recommendation to the parties in an effort to reach resolution. The DRB recommendation shall be non-binding. Either party may seek further relief by filing a claim in the Court of Common Pleas for Charleston County, South Carolina. Any claim filed in the Court of Common Pleas prior to completion of the DRB review shall be stayed until completion of the DRB review unless such a review is waived by both the Owner and the Contractor in writing.

§ 15.3.4 Submission and Decisions: To request a DRB review, the requesting party shall submit a written request briefly describing the dispute to the Chairman of the DRB. A copy of the request shall be forwarded concurrently to the other party and the Program Manager. This request shall be made within fourteen (14) calendar days after issuance of the Architect's decision on a claim. The Chairman shall convene a meeting of the DRB to hear the issue within seven (7) calendar days of the request for review. Any written documentation supporting a party's position should be submitted during the review; it will not be accepted by the DRB prior to or after the review. The DRB shall make a written recommendation to the Contractor, Owner, Program Manager and Architect with copies to the Executive Team and Project Team within seven (7) calendar days of the review date.

§ 15.3.5 Actions Taken Based on Review Recommendations The DRB recommendation is a non-binding attempt to help resolve project disagreements prior to the use of traditional dispute resolution methods and is an express

Int.

condition precedent required prior to filing a claim in the Court of Common Pleas for Charleston County, South Carolina, unless waived by both the Owner and the Contractor in writing.

Int.

AIA Document A232™ – 2009 (formerly A201™ CMs – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. All rights reserved.
WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.
This document was produced by AIA software at 15:25:28 on 03/24/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.
User Notes: (1484087859)

49

ROA000436



SUBCONTRACTOR SHALL COMPLY WITH: Attachment A - Safety Requirements, Attachment B - Alcohol and Substances Abuse Program, Attachment C - NPDES General Permit, Attachment D - Illegal Immigration Reform
ACCEPTANCE OF THIS SUBCONTRACT IS CONTINGENT UPON THE SUBCONTRACTOR'S FURNISHING A PAYMENT AND PERFORMANCE BOND IN ACCORDANCE WITH ARTICLE V. BOND REQUIRED: YES or NO

This Subcontract is intended to cover all of the Contractor's responsibility to the Owner for the above listed work whether specifically set forth in the above referenced plans and specifications or not. The above work includes all work customarily performed by this trade.

ARTICLE III. The Subcontractor agrees to accomplish the work of his trade in the time allotted in the Progress Schedule and shall collaborate with the Contractor in developing a schedule suitable to the overall job schedule and to maintain job progress.

TIME IS OF THE ESSENCE UNDER THIS SUBCONTRACT. No extension of time of this Subcontract will be recognized without the written consent of the Contractor. Extensions of time will be granted only where specifically authorized by this Subcontract or other Contract Documents. The Subcontractor shall be responsible to the Contractor for all delays caused by or attributable to the Subcontractor, and those parties for whom the Subcontractor is responsible, and the Subcontractor shall indemnify and hold the Contractor harmless from all damages caused by such delays.

ARTICLE IV. The Contractor agrees to pay, as provided herein below, the Subcontractor for the performance of this work, the sum shown in Article II, subject to additions and deductions for changes as may be agreed upon in writing, and to make payments on account thereof based on estimates and certificates of the Architect/Engineer/Owner.

Partial payments shall be paid by the Contractor to the Subcontractor as the work progresses, based upon estimates and certificates of the Architect. Monthly billings shall be submitted no later than the 25th of the month, to Contractor's COLUMBIA, SC office and shall be paid following receipt of partial payment from the Owner, ten (10%) to be retained. Final payment shall be made within thirty (30) days after the completion of the work included in this Subcontract and upon written acceptance of the Architect/Engineer/Owner and full payment therefore by the Owner.

The Subcontractor shall pay for all materials and labor used in, or in connection with the performance of the Subcontract. Before issuance of any partial payment or the final payment the Subcontractor shall submit lien waivers together with such evidence satisfactory to the Contractor that all payrolls, material bills, and all known indebtedness connected with the Subcontractor's work have been satisfied. The Subcontractor agrees to indemnify and hold harmless the Contractor, the Owner, any party providing financing to the Project, and these entities' heirs, successors and assigns from any claims involving the Subcontractor's failure or alleged failure to pay its subcontractors, suppliers, laborers, or materialmen. The Subcontractor shall not allow mechanic's or materialmen's liens to be filed against the Project or the property on which the Project is located unless the Contractor is in breach of its payment obligations under this Subcontract. The Subcontractor agrees that any liens filed in violation of this provision shall be promptly bonded off by the Subcontractor at the Subcontractor's expense. These obligations shall survive the completion or abandonment of the Project or the termination of this Subcontract.

Any warranties, as-built drawings and other documents required by the Contract Documents shall be submitted by the Subcontractor prior to final payment. The Subcontractor shall also comply with and be subject to all other conditions precedent to payment established by the Contract Documents.

ARTICLE V. The Subcontractor, if required, shall furnish a performance bond and a payment bond on the Contractor's bond forms, dated as of the date of this Subcontract, each in the penal sum of 100% of the Subcontract Amount, with a good and sufficient surety acceptable to the Contractor and having a Best rating of A- or better. In the event that this Subcontract is signed without bonds being furnished by the Subcontractor, such signing shall not constitute a waiver of the Subcontractor's obligation to furnish the required bonds. The Contractor may demand performance and payment bonds at any time before final payment is made to the Subcontractor and failure by the Subcontractor to furnish such bonds, within five (5) days after demand, shall constitute a default hereunder.

ARTICLE VI. Temporary Site Facilities - Job Conditions

(Here insert any requirements and terms concerning temporary site facilities, i.e., storage, sheds, water, heat, light, power, toilets, hoists, elevators, scaffolding, cold weather protection, ventilating, pumps, watchman service, etc.)

ARTICLE VII. Insurance

1. Prior to starting work the insurance required to be furnished by the Subcontractor shall be obtained by the Subcontractor, at the Subcontractor's cost and expense, from a responsible company or companies to provide proper and adequate coverage not less than the limits provided herein below, or in such limits as may be specified in the Contract Documents and/or required by Law, whichever is greater.

2. The type of insurance and minimum limits of coverage required of the Subcontractor and described below are minimum requirements and do not establish limits to the Subcontractor's liability. Any deficiency in the coverage or policy limits of the Subcontractor will be the sole responsibility of the Subcontractor.

3. Required Coverages: The Subcontractor shall maintain the required coverages at all times during the progress of the work with insurers licensed to do business in the state where the work is being performed and with a Best rating of A- VII or better. The Subcontractor, by its legal name on the Subcontract, shall be the named insured on each policy of insurance.

- (A) Worker's Compensation and Employer's Liability in accordance with the laws of all states exercising jurisdiction over the Subcontractor's employees, including the state in which the work is being performed.
- Employer's Liability Limit - Not less than \$500,000/\$500,000/\$500,000

211/08/SC

2 of 7

ROA000438

Subcontractor shall not utilize occupational accident or health insurance policies, or the equivalent, in lieu of mandatory Workers' Compensation Insurance, or otherwise attempt to opt out of the statutory Workers' Compensation system.

- (B) Commercial General Liability (CGL) written on ISO occurrence form CG 00 01 or its equivalent, providing coverage for Premises and Operations, Products-Completed Operations, Independent Contractors, Personal and Advertising Injury, Blanket Contractual Liability, and Broad Form Property Damage (including coverage for Explosion, Collapse, and Underground Hazards). The General Aggregate Limit shall apply separately to each project or the policy may be endorsed to apply a separate aggregate limit to this Project. The Contractor, the Owner, and any other party the Contractor is required in its contract with the Owner to name as additional insured, shall be included as additional insured under ISO endorsements CG 20 10 (ongoing operations) and CG 20 37 (completed operations). These insurance coverages shall apply on a primary and non-contributory basis before any other insurances available to the additional insureds. The Subcontractor's General Liability policy shall contain a Cross Liability or Severability of Interest clause. The Subcontractor shall maintain CGL coverage for itself and the additional insureds for the duration of the Project and maintain Completed Operations coverage for itself and the additional insureds for at least three (3) years after final acceptance of the Subcontractor's work.

General Aggregate - Not less than \$2,000,000 per project
Products-Completed Operations Aggregate - Not less than \$2,000,000
Personal and Advertising Injury - Not less than \$1,000,000
Each Occurrence - Not less than \$1,000,000

- (C) Business Automobile Liability, including liability arising out of any owned, leased, non-owned or hired automobile with limits of liability of not less than \$1,000,000.
- (D) Umbrella Excess Liability in excess of the Employer's Liability, Commercial General Liability, and Business Automobile Liability with limits of at least \$1,000,000. All additional insureds on the CGL policy shall be included as additional insureds on the Umbrella policy. This coverage shall apply before any other insurance available to the additional insureds.

4. Waiver of Subrogation: The Subcontractor hereby waives all right of recovery against the Contractor, the Owner, and their respective officers, directors, employees, agents, and representatives, with respect to claims covered by insurance obtained pursuant to these insurance requirements. The Subcontractor agrees to cause its Worker's Compensation, General Liability and Automobile Liability insurers to waive their rights of subrogation against the Contractor, the Owner, and their respective officers, directors, employees, agents, and representatives.

5. Notice of Cancellation: The Subcontractor shall have all insurance policies endorsed to provide the Contractor with thirty (30) days' prior written notice in the event of cancellation, non-renewal or a reduction in the required coverage or limits.

6. Certificate of Insurance: Prior to the start of construction, the Subcontractor shall furnish a Certificate of Insurance on an Acor form to the Contractor, evidencing that the coverage, coverage extensions, policy endorsements and waivers of subrogation required under this Subcontract are maintained in force. No payments will be made to the Subcontractor under this Subcontract unless an acceptable Certificate of Insurance is on file with the Contractor. The current Best rating for each insurance company shall appear on the Certificate of Insurance. The words "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the Company, its agents or representatives" shall be deleted from the "Cancellation" provision or a copy of the required cancellation clause endorsed on each policy of insurance must be attached to the Certificate of Insurance. The Certificate of Insurance must specifically identify the Contractor's project in the "Description", and must bear the signature of an authorized representative of each insurer. Should the Subcontractor submit any portion of this work, the same insurance requirements shall apply to such third party as provided herein. Failure of the Contractor to request a Certificate of Insurance or other evidence of full compliance with these insurance requirements or failure of the Contractor to identify a deficiency from evidence that is provided shall not be construed as a waiver of the Subcontractor's obligation to maintain such insurance.

7. Theft Loss: The Contractor shall not be responsible to the Subcontractor for any loss arising out of theft.

8. Builder's Risk Coverage: Should the Owner or the Contractor provide Builder's Risk coverage, the Subcontractor shall be responsible for the payment of any deductible as follows:

- (A) Should the loss be due to a negligent act or omission of the Subcontractor, the Subcontractor shall be responsible for payment of the entire deductible.
- (B) Should the loss be due to a cause other than a negligent act or omission of the Subcontractor, the Subcontractor shall be responsible for a pro-rata portion of the deductible, calculated based on the proportion the loss sustained by the Subcontractor bears to the total of all claims being made under the Builder's Risk policy for that occurrence.

ARTICLE VIII. In addition to the foregoing provisions,

THE SUBCONTRACTOR SHALL:

1. Be bound to the Contractor by the terms of the Contract Documents and this Subcontract, and assume toward the Contractor all of the obligations and responsibilities that the Contractor, by those documents, assumes toward the Owner, as applicable to this Subcontract.
2. Not discriminate against any employee or applicant for employment because of race, sex, creed, color, or national origin.
3. Submit to the Contractor applications for payment on forms provided by the Contractor at such times as stipulated in Article IV so as to enable the Contractor to apply for payment. If payments are made on valuations of work done, the Subcontractor shall, before the first application, submit to the Contractor a schedule of values of the various parts of the work, aggregating the total sum of this Subcontract, made out in such detail as the Subcontractor and the Contractor may agree upon, or as required by the Owner, and, if required, supported by such evidence as to its correctness as the Contractor may direct. This schedule, when approved

311/08/SC

3 of 7

ROA000439

by the Contractor, shall be used as a basis for Certificates for Payment unless it is found to be in error. In applying for payment, the Subcontractor shall submit a statement based upon this schedule.

If payments are made on account of materials not incorporated in the work but delivered and suitably stored at the site, or at some other location agreed upon in writing, and if acceptable to the Owner, such payments shall be in accordance with the terms and conditions of the Contract Documents. A copy of invoices for material stored may be required before payment will be made.

4. Make all claims for extras, for extensions of time and for damages for delays or otherwise (to the extent permitted) within forty-eight (48) hours after the cause thereof or such other time as may be required by the Contract Documents. The Subcontractor's failure to comply with this notice requirement shall constitute a waiver of any claims, rights or other remedy otherwise available to the Subcontractor.
5. Be responsible for the care and protection of this work until the final inspection and acceptance by the Architect and/or Owner. The Subcontractor shall take necessary precaution to properly protect the finished work of other trades.
6. Keep the building and premises clean at all times of debris arising out of the operation of this Subcontract. The Subcontractor shall keep the construction area, including storage areas used by him, at all times free from his rubbish, waste material and debris, and prior to completion of work shall remove from the site any such rubbish, waste materials, and debris, as well as any tools, scaffolding, equipment and materials used by him and not incorporated into the completed work, leaving his work "broom clean" and free and clear of all obstructions and hindrance. In the event of the Subcontractor's failure to so remove such rubbish, waste materials, etc., after twenty-four (24) hours notice the Contractor shall have the right to remove same and charge the cost thereof against moneys due or to become due the Subcontractor. The Subcontractor shall not be held responsible for unclean conditions caused by other contractors or subcontractors, unless otherwise required by the Contract Documents.
7. Comply with all statutory and/or contractual safety requirements applying to his work and/or initiated by the Contractor.
8. Assume responsibility for and shall verify all measurements, lines, grades, dimensions, layouts, colors, qualities, etc., insofar as same are pertinent to the work to be performed by him hereunder. If the Contractor shall furnish any basic reference lines and bench marks to the Subcontractor, such basic reference lines and bench marks must be used by the Subcontractor and the finished work shall agree therewith.
9. Not assign this Subcontract or any amounts due or to become due thereunder without the written consent of the Contractor, nor subcontract the whole of this Subcontract without the written consent of the Contractor, nor further subcontract portions of this Subcontract without written consent of the Contractor.
10. Guarantee his work against all defects of materials and/or workmanship as called for in the Contract Documents, including the plans, specifications and addenda, or if no guarantee is called for, then for a period of one (1) year from the date of final acceptance of the Subcontractor's work by the Owner.
11. Man the job and keep the job adequately supplied with materials and equipment at all times to the complete satisfaction of the Contractor. In that regard the Subcontractor shall furnish sufficient labor and supervisory forces, construction plant, and suitable materials and equipment and shall work such hours as directed by the Contractor, including night shifts, overtime, Saturdays, Sundays, and Holidays as may be necessary to insure prosecution and completion of the work in a skillful and expeditious manner within the time limitations of the Contract Documents, as modified by work directives of the Contractor. The Contractor, from time to time, may request the Subcontractor to provide additional men or increase the supply of materials at the job, and in either event the Subcontractor agrees to comply with any such request within twenty-four (24) hours thereafter or with respect to materials, as soon thereafter as is possible, and the Subcontractor's failure to comply shall constitute a default. In the event the Contractor deems an employee of the Subcontractor incompetent, careless, insubordinate, or otherwise objectionable, the Subcontractor shall remove such employee from the Project. Should the Subcontractor at any time fail to supply a sufficient number of skilled workmen or equipment, or a sufficient quantity of materials of proper quality or fail in any respect to prosecute the work covered by this Subcontract, with promptness and diligence, or fail in the performance of any of the agreements contained in this Subcontract, or should any workmen performing work covered by this Subcontract engage in a strike or other work stoppage, or cease to work due to picketing or other such activity, the Contractor may in any of such events at its option, after twenty-four (24) hours written notice to the Subcontractor, and without prejudice to any other remedy it may have, provide any such labor, equipment, and materials, and deduct the cost thereof from any money then due or thereafter to become due the Subcontractor, or in any of such events, the Contractor may, at its option, and without prejudice to any other remedy it may have, terminate the employment of the Subcontractor for the work under this Subcontract, and shall have the right to enter upon the premises and take possession, for the purpose of completing the work hereunder, of all the materials, tools, and equipment thereon, and to finish the work and provide the materials therefore, either with its own employees or other subcontractors. In case of such discontinuance of the employment by the Contractor, the Subcontractor shall not be entitled to receive any further payments under this Subcontract or otherwise, but shall nevertheless remain liable for any damages which the Contractor incurs. If the expenses incurred by the Contractor in completing the work exceed the unpaid balance, the Subcontractor shall pay the difference to the Contractor along with any other damages incurred by the Contractor as a result of the Subcontractor's default. The Contractor shall have a lien upon all materials, tools, equipment, and appliances taken possession of to secure the payment thereof. The Subcontractor shall be liable to the Contractor for all costs and damages incurred by the Contractor due to the failure of performance by the Subcontractor, the failure of the Subcontractor to keep the progress of its work up to that of the Contractor or other trades, the failure to execute its work as directed by the Contractor, or the failure to perform any of the agreements contained in this Subcontract.
12. Furnish periodic progress reports of the work as mutually agreed including the progress of materials or equipment under this Subcontract that may be in the course of preparation or manufacture.
13. Make any and all changes or deviations from the original plans and specifications without nullifying this Subcontract when specifically ordered to do so in writing by the Contractor. Prior to the commencement of this revised work, the Subcontractor shall submit promptly to the Contractor written copies of the cost or credit proposal for such revised work in a manner consistent with the Contract Documents.
14. Cooperate with the Contractor and other subcontractors whose work might interfere with the Subcontractor's work and to participate in the preparation of coordinated drawings in areas of congestion as required by the Contract Documents, specifically noting and advising the Contractor of any such interference. Before proceeding with the work under this Subcontract, the Subcontractor agrees to accurately check all previous and surrounding work done by other trades insofar as same affects the work subcontracted hereunder and to determine the correctness of same. The Subcontractor's failure to detect or report discrepancies, before proceeding with his own work, will relieve the Contractor of any and all claims by the Subcontractor to recover cost, expense or damage resulting therefrom. Such cost, expense or damage shall be the sole responsibility of the Subcontractor.

411/08/SC

4 of 7

ROA000440

15. Cooperate with the Contractor in scheduling his work so as not to conflict or interfere with the work of others.

16. Promptly submit shop drawings, submittals, and samples, as required in order to carry on said work efficiently and at the speed that will not cause delay in the progress of the Contractor's work or other branches of the work carried on by other subcontractors.

17. In the event the Subcontractor sustains damage or loss through any delay, default, act or omission of any other subcontractor and/or other contractors, their servants, agents or employees, the Subcontractor understands and agrees that the Contractor shall not be liable therefore inasmuch as the Contractor does not assume any responsibility for actions or omissions of other subcontractors and/or contractors; but nothing herein contained shall be construed to limit the Subcontractor from pursuing his legal remedies against any such offending party. In that regard, the Subcontractor shall have no claim against the Contractor for such damage, but shall have the right to recover such damage from the offending party under the provision similar to this provision which has been or will be inserted in contracts with other subcontractors of the Contractor. If the Subcontractor hinders or delays or damages the work of any other subcontractor and/or other contractor, the Subcontractor agrees to be directly responsible to such others for any damages they may suffer as a result of the manner in which the Subcontractor executes the work.

18. Comply with all Federal, State, and local laws and ordinances applying to the building or structure and to comply with and give adequate notices relating to the work to proper authorities and to secure and pay for all necessary licenses or permits to carry on the work as described in the Contract Documents as applicable to this Subcontract.

19. Comply with Federal, State, and local tax laws, Social Security laws, and Unemployment Compensation laws, and any other laws insofar as applicable to the performance of this Subcontract.

20. Be responsible for all cutting, removal, patching, and clearing, openings, channels, chases, fines, sleeves, inserts, hangers, guards, rails, night lights, barricades, pumping, temporary heat, water, electricity, hoists, scaffolds, runways, and clean up which may be necessary in performance of the work hereunder.

21. Agree that all work shall be done subject to the final approval of the Architect and/or Owner's authorized agent, and the Owner's and/or Architect's decision in matters relating to artistic effect shall be final, if within the terms of the Contract Documents.

22. To the fullest extent permitted by law, indemnify and hold harmless the Contractor, the Owner, the Project Architect, the Architect's consultants, any and all other parties the Contractor is required to indemnify and hold harmless under the Contract Documents, and all of these entities' officers, directors, shareholders, employees, agents, affiliates, heirs, successors and assigns (referred to individually as an "Indemnified Party"), from and against any and all claims, damages, injuries, losses and expenses, including but not limited to attorneys' fees, consultant/expert fees, and other defense costs, arising from or in any way related to the Subcontractor's work on the Project. The Subcontractor's indemnification obligation shall arise regardless of whether or not such claim, damage, injury, loss and expense is caused in part by an Indemnified Party; provided, however, the Subcontractor shall not be required to indemnify any one Indemnified Party for damages proximately caused by or resulting from the sole negligence of that Indemnified Party. In any and all claims against an Indemnified Party by any employee of the Subcontractor, anyone directly or indirectly employed by the Subcontractor, or anyone for whose acts the Subcontractor may be liable, the indemnification obligation hereunder shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Subcontractor under Workmen's Compensation acts, disability acts or other employee benefit acts. The Subcontractor's obligations hereunder shall not negate, abridge, or otherwise reduce other rights or obligations of indemnity which would otherwise exist as to any Indemnified Party. The foregoing indemnification obligations shall survive the completion or abandonment of the Project or the termination of this Subcontract.

23. Comply with all conditions of Department of Labor's SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION as outlined in Federal Register Volume 36, No. 75, dated April 17, 1971, or as may be thereafter amended. If a citation is given due to negligence, this Subcontractor will be fully responsible for all costs.

THE CONTRACTOR SHALL:

24. Be bound to the Subcontractor by all the obligations that the Owner assumes to the Contractor under the Contract Documents and by all the provisions thereof affording remedies and redress to the Contractor from the Owner insofar as applicable to this Subcontract.

25. Pay the Subcontractor within seven (7) days after the payment by the Owner of certificates issued under the Contractor's schedule of values, or as described in Article IV herein. The amount of the payment shall be equal to the percentage of completion certified by the Owner or his authorized agent for the work of this Subcontractor applied to the amount set forth under Article IV and allowed to the Contractor on account of the Subcontractor's work to the extent of the Subcontractor's interest therein. The Contractor reserves the right to establish percentage of completion for work to date.

26. Agree that upon the failure to make payments to the Subcontractor as herein provided for any cause not the fault of the Subcontractor within seven (7) days from the Contractor's receipt of payment, then the Subcontractor may upon seven (7) days written notice to the Contractor stop work without prejudice to any other remedy the Subcontractor may have.

27. Not issue or give any instructions, orders or directions directly to employees or workmen of the Subcontractor other than to the persons designated as the authorized representative(s) of the Subcontractor.

28. Make no demand for liquidated damages in any sum in excess of such amount as may be specifically provided in this Subcontract and/or the Contract Documents, provided, however, no liquidated damages shall be assessed against the Subcontractor for delays or causes attributable to other subcontractors for whom the Subcontractor is not responsible.

THE CONTRACTOR AND THE SUBCONTRACTOR AGREE:
511/08/SC

5 of 7

ROA000441

29. To the extent permitted or required by law, Subcontractor agrees to participate in and be bound by the dispute resolution procedure for resolving disputes between the Contractor and the Owner that is established by the Prime Contract. Claims, disputes or other matters in question between the Contractor and the Subcontractor that do not involve the Owner, and arise out of or relate to this Subcontract or breach thereof shall be subject to and decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect. Demand for arbitration shall be filed in writing with the other party to this Subcontract and with the American Arbitration Association. A demand for arbitration shall be made within a reasonable time after the claim, dispute or other matter in question has arisen. In no event shall the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statutes of limitations. No arbitration arising out of or relating to this Subcontract shall include, by consolidation, joinder or in any other manner, an additional person or entity not a party to this Subcontract, except by written consent containing a specific reference to this Subcontract signed by the Contractor and the Subcontractor and any other person or entity sought to be joined. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent or with a person or entity not named or described therein. If, however, in the Contractor's sole judgment, any dispute between the Contractor and the Subcontractor is related to claims by or against any third party, including subcontractors or suppliers of the Subcontractor and/or the Contractor, the Contractor may, at its sole option, join that third party in the Contractor's arbitration with the Subcontractor for adjudication of the related claims.

30. Should any dispute between the Contractor and the Subcontractor be arbitrated, the decision rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

31. This Subcontract is solely for the benefit of the signatories hereto and shall be binding upon and inure to the benefit of the Contractor and the Subcontractor, their successors and permitted assigns.

32. This Subcontract is subject to the right of the Owner to terminate the Prime Contract between the Owner and the Contractor as provided therein in which event the provisions of the termination article of the Prime Contract shall become operative as if set forth herein at length and the Contractor shall have the same rights, remedies and privileges with respect to the Subcontractor as the Owner possesses under the Prime Contract with respect to the Contractor. The Subcontractor hereby expressly agrees to comply with all of the obligations with respect to the termination that the Contractor is required to comply with under the terms of the Prime Contract. In the event of such termination, the Contractor's liability to the Subcontractor under this Subcontract shall not exceed the termination allowance which shall be made by the Owner to the Contractor for the work covered herein less such part of said sum as represents the Contractor's overhead and profit allocable thereto.

33. Failure by the Contractor in any instance to insist upon strict observance or performance by the Subcontractor of the terms, conditions or provisions of this Subcontract shall not be deemed a waiver by the Contractor to insist upon strict observance or performance of other terms, conditions, and provisions hereof; waiver of any one breach shall not be deemed a waiver of any other breach; and payment of any sum by the Contractor to the Subcontractor with knowledge of any breach shall not be deemed to be a waiver of any such breach or any other breach.

34. If the Subcontractor's performance of the Work is delayed or otherwise hindered by (1) any unforeseeable causes beyond the control and without any fault or negligence of the Subcontractor, or (2) any other reason recognized by the Contract Documents to be a Force Majeure event, the Subcontractor may request an extension of time for the performance of the Work. Such extension will be granted to the extent permitted under the Contract Documents. An extension of time shall be the Subcontractor's sole and exclusive remedy for any such delay or hindrance. The Subcontractor shall not be entitled to any increase in the Subcontract Amount, or damages of any type, or additional compensation as a consequence of such delay or hindrance. If the delay or hindrance is due in whole or in part to (1) a cause reasonably foreseeable by the Subcontractor, or (2) a cause within the control of the Subcontractor, or (3) the fault or negligence of the Subcontractor or those for whom the Subcontractor is responsible, the Subcontractor shall not be entitled to any extension of time, damages, additional compensation, or any other remedy for the delay or hindrance.

The Subcontractor agrees that it will not be entitled to nor claim any cost reimbursement, compensation or damages for any delay, obstruction or interference to the work except to the extent the Contractor actually recovers such reimbursement, compensation or damages from the Owner under the Contract Documents for that delay, obstruction, or interference. To the extent permitted by law, the Subcontractor waives any and all other claims for reimbursement, compensation or damages due to such delay, obstruction, or interference, however caused.

If the Subcontractor maintains it has been delayed by any cause justifying an extension of time or other remedy permitted by the Contract Documents, the Subcontractor shall provide the Contractor with written notice of that claim within forty-eight (48) hours of the commencement of such delay. The Subcontractor agrees such notice is a condition precedent to the Subcontractor's right to claim an extension of time or other remedy, and the Subcontractor's failure to comply with this notice requirement shall constitute a waiver of any claims, rights or other remedy otherwise available to the Subcontractor for such delay, obstruction, or interference.

35. Each provision of this Subcontract shall be interpreted in a manner as to be effective and valid under applicable law. If, however, any provision of this Subcontract, or portion thereof, is prohibited by law or found invalid under any law, only such invalid provision or portion thereof shall be rendered ineffective. All remaining provisions of this Agreement and valid portions of the questioned provision (which are hereby deemed severable) shall remain in full force and effect. The offending provision shall be enforced to the extent permitted by law or, if permissible, judicially rewritten to give force and effect to the parties' clear intent.

36. Since both the Subcontractor and the Contractor have reviewed this Subcontract, the normal rule of construction that any ambiguities in this Subcontract are to be resolved against the drafting party shall not be employed in the interpretation of this document.

37. This Subcontract shall be construed and enforced under the laws of the State designated in the Prime Contract. If no State is designated, this Subcontract shall be construed and enforced under the laws of the State of South Carolina, without regard to that State's choice of law rules.

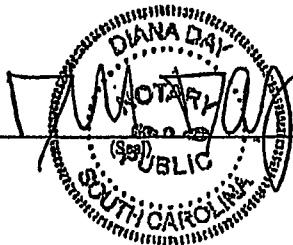
38. This Subcontract may be amended only by the written agreement of the Contractor and the Subcontractor. No waiver of any provision nor consent to any exception to the terms of this Subcontract shall be effective unless in writing and signed by the party to be bound, and then only to the specific purpose, extent and instance so provided.

THIS SUBCONTRACT EXPRESSES THE ENTIRE INTENT AND UNDERSTANDING OF THE PARTIES WITH REFERENCE TO THE SUBJECT MATTER HEREOF, AND THERE IS NO OTHER UNDERSTANDING, AGREEMENT, OR REPRESENTATION DEFINING OR RELATING TO THE PROVISIONS HEREOF.

IN WITNESS WHEREOF, the parties hereto have executed this Subcontract under seal, the day and year first above written.

Attest:

(Seal)



Attest:

TERRATEC INC

Authorized Subcontractor's Signature

CHRIS MARRON

Type or Print Name and Title

M. B. KAHN CONSTRUCTION CO., INC.

SCOTT SPIGENER, Project Manager

NOTICE TO SUBCONTRACTORS/SUPPLIERS

M. B. Kahn Construction Co., Inc. is a federal contractor as defined by 41 CFR 60-4.1, 41 CFR 60-250.1, and 41 CFR 60-741.1. As our Subcontractor/Supplier, you may be subject to these regulations. Accordingly, the notices and provisions required by 41 CFR 60-1 et seq., including but not limited to 41 CFR 60-1.4, 41 CFR 60-250.1(b), and 41 CFR 60-741.5(b), are incorporated herein by reference to the extent required by law.

SECTION 02369**MICROPILES****1. GENERAL****1.1. RELATED DOCUMENTS**

1.1.1. Requirements of the General and Supplemental Conditions apply to all work in this section. Provide all labor, material, equipment, and services indicated on the Drawings, or specified herein, or reasonably necessary for and incidental to a complete job.

1.2. DESCRIPTION OF WORK

1.2.1. GENERAL: The work consists of furnishing all materials, products, accessories, tools, equipment, services, transportation, labor and supervision, design, installation and testing of micropiles and pile top attachments.

1.2.2. GROUND CONDITIONS: The test borings as shown on the boring location plan and logs of borings as described in the Geotechnical Report, located in Appendix A, are believed to be representative of the conditions likely to be encountered on the site, and are to be used as the basis for micropile design in conjunction with the appropriate levels of engineering judgement and experience.

1.2.3. If, during installation of a pile, an obstruction is encountered that prevents the practical advancement of the hole, the hole shall be abandoned and filled with grout. A new pile shall be drilled at a location to be determined by the Engineer, although it must be acknowledged that in certain structures, relocation options may be severely limited, and further attempts at the original location with different methods may be required.

1.2.4. If during drilling, obstructions are encountered of a frequency, composition and location that were not portrayed, inferable, expected and/or notified at the time of preparation of the bid, the additional costs utilized in trying to overcome such obstructions shall be paid for.

1.3. REFERENCED STANDARDS

1.3.1. The following publications form a part of this specification to the extent indicated by the specific citations in other paragraphs of this Specification. In case of conflict, the particular requirements of this specification shall prevail. The latest publication as of the issue of this specification shall govern, unless indicated otherwise.

ASCE 20-96	Standard Guidelines for the Design and Installation of Pile Foundations
ASTM A36	Standard Specification for Structural Steel
ASTM A82	Cold-Drawn Steel Wire for Concrete Reinforcement
ASTM A252	Welded and Seamless Steel Pipe Piles
ASTM A572	High-Strength Low-Alloy Columbium-Vanadium Steels of Structural Quality

JOB NO.: 30615.16
DATE: JANUARY 2011

02369 - 1

ROA000444



ASTM A615	Deformed and Plain Billet Steel Bars for Concrete Reinforcement
ASTM A722	Uncoated High-Strength Steel Bar for Prestressing Concrete
ASTM A775	Electrostatic Epoxy Coating
ASTM C33	Concrete Aggregates
ASTM C109	Compressive Strength of Hydraulic Cement Mortar
ASTM C144	Aggregates for Masonry Mortar
ASTM C150	Portland Cement
ASTM C188	Density of Hydraulic Cement
ASTM C494	Chemical Admixtures for Concrete
ASTM D1143	Method of Testing Piles Under Static Axial Compressive Load
ASTM D1784	Polyvinyl Chloride (PVC) Pipe (Class 13464-B)
ASTM D3350	Polyethylene Corrugated Tubing
ASTM D3689	Method of Testing Individual Piles Under Static Axial Tensile Load
ASTM D3966	Standard Test Method for Piles Under Lateral Load
API 5CT (N80)	Specification for casing and tubing
API RP 138-1	Recommended Practice – Standard Procedure for Field Testing Water Based Drilling Fluids
AWS D1.1	Structural Welding Code – Steel
AWS D1.2	Structural Welding Code – Reinforcing Steel
PTI	Recommendations for Prestressed Rock and Soil Anchors (1996)

JOB NO.: 30615.16
DATE: JANUARY 2011

02369 - 2

ROA000445

1.4. SUBMITTALS

1.4.1. The following shall be submitted to the Owner's Representative by the Micropile Contractor, three weeks prior to the start of the work:

1.4.1.a. A list of at least five previously completed projects of similar scope and purpose for approval by the Owner's Representative. The list shall include a description of the project, relative size, and contact person with phone number.

1.4.1.b. Resumes of the management, supervisory, and key personnel, for approval by the Owner's Representative.

1.4.1.c. Design calculations sealed by an Engineer licensed in the State of South Carolina.

1.4.1.d. A grout mix design for the project indicating sources and types of grout materials, with volumetric proportions, and field test data from previous projects indicating compressive strength. If the Micropile Contractor intends to deviate from the design provided in Section 2.3 of this specification, it shall submit, with the bid, evidence of satisfactory use of the proposed material from past projects with similar soil conditions.

1.4.1.e. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements.

(1) Aggregates

1.4.1.f. Material Certificates: For each of the following, signed by manufacturers:

(1) Cementitious materials.

(2) Admixtures.

1.4.1.g. Work procedures and control criteria (including volumes and pressure for each stage).

1.4.1.h. A general Work Procedures Plan outlining the spacing, location, depth and quantity of grout to achieve the specified criteria detailed in Section 3.2 of this specification. Grout hole locations shall be dimensionally referenced to the structural foundation shown on the contract drawings.

1.4.1.i. A shop drawing for review, indicating the spacing, location, and depth of the Micropiles to achieve the criteria outlined in this specification.

1.4.2. The following shall be submitted to the Owner's representative by the Micropile Contractor during the work:

1.4.2.a. Accurate daily records of all drilling, casing/reinforcement installation, grout quantities, including stage data, volume, pressure and depth for each Micropile location.

1.4.2.b. Any change in the predetermined Micropile program necessitated by a change in the subsurface conditions.

JOB NO.: 30615.16
DATE: JANUARY 2011

02369 - 3

ROA000446

1.4.2.c. Pile Load test results.

1.5. QUALITY ASSURANCE

1.5.1. The Micropile program shall be performed by a specialist grouting contractor with at least five continuous years of documented experience in Micropiling.

1.5.2. The Micropile Contractor shall provide experienced management, supervisory and key personnel as required to implement the Micropile program, as follows:

1.5.2.a. The Project Manager shall have at least five years of continuous experience in Micropiling, with at least the last two years in the full-time employment of the Micropile Contractor.

1.5.2.b. The Superintendent shall have at least two years of experience in Micropiling.

1.5.2.c. As detailed in Section 1.4 of these specifications, the Micropile Contractor shall provide:

- (1) Evidence of previous Micropile project experience.
- (2) Evidence of management, supervisory and key personnel experience.

2. PRODUCTS

2.1. EQUIPMENT

2.1.1. The Contractor shall submit a detailed description of the construction procedures proposed for use to the Owner for review. This shall include a schedule of major equipment resources.

2.1.2. The drilling equipment and methods shall be suitable for drilling through the conditions to be encountered, with minimal disturbance to these conditions or any overlaying or adjacent structure or service. The borehole must be open to the defined nominal diameter, full length, prior to placing grout and reinforcement.

2.2. WATER

2.2.1. Water for mixing grout shall be potable, clean and free from substances which may be in any way deleterious to grout or steel.

2.3. ADMIXTURES

2.3.1. Admixtures shall conform to the requirements of ASTM C494. Admixtures which control bleed, improve flowability, reduce water content, and retard set may be used in the grout subject to the review and acceptance of the Owner. Expansive admixtures shall only be added to the grout used for filling sealed encapsulations. Admixtures shall be compatible with the grout and mixed in accordance with the manufacturer's recommendations. Their use will only be permitted after appropriate field tests on fluid and set grout properties. Admixtures with chlorides shall not be permitted.

JOB NO.: 30615.16
DATE: JANUARY 2011

02369 - 4

ROA000447

2.4. CEMENT

2.4.1. All cement shall be Portland cement conforming to ASTM C150 Type I, Type II, or Type I/II. Use only one brand of cement throughout the project.

2.5. FILLERS

2.5.1. Inert fillers such as sand may be used in the grout in special situations (e.g., presence of large voids in the ground, when grout take and travel are to be limited) as approved by the Owner.

2.6. BAR REINFORCEMENT

2.6.1. Reinforcing steel shall be deformed bars in accordance with ASTM A615 Grade 60 or Grade 75 or ASTM A722 Grade 150.

2.6.2. For cases of tensile loading, bar couplers, if required, shall develop the ultimate tensile stress of the bar, without any evidence of failure. For compressive loading, the coupler shall be compatible with efficient load transfer and overall reinforcement performance requirements.

2.7. PIPE/CASING

2.7.1. If the casing is to be relied upon to carry loads or reduce deflection, the permanent steel casing/pipe:

2.7.1.a. Shall meet the tensile requirements of ASTM A252, Grade 3, except the minimum yield strength shall be used in the design submittal (typically 50,000 psi to 80,000 psi) and minimum elongation shall be 15%.

2.7.1.b. May be new "Structural Grade" (a.k.a. "Mill Secondary") steel pipe meeting above but without Mill Certification, free from defects (dents, cracks, tears) and with two coupon tests per truckload.

2.8. PLATES AND SHAPES

2.8.1. Structural steel plates and shapes for pile top attachments shall conform to ASTM A36 or ASTM A572 Grade 50.

2.9. CENTRALIZERS

2.9.1. Centralizers shall be fabricated from plastic, steel, or material that is non-detrimental to the reinforcing steel. Wood shall not be used.

3. EXECUTION

3.1. DESIGN CRITERIA

3.1.1. The micropiles shall be designed to meet the specified loading as shown on the drawings and sealed by an Engineer licensed in the State of South Carolina. The calculations

JOB NO.: 30615.16
DATE: JANUARY 2011

02369 - 5

ROA000448

and drawings required from the Contractor shall be submitted to the Engineer for review and acceptance.

3.1.2. The allowable working load on the pile shall not exceed the following values:

3.1.2.a. For compression loads:

$$P_{allc} = (0.33 \cdot f_c \cdot A_{grout} + 0.4 \cdot f_{ycasing} \cdot A_{casing} + 0.4 \cdot f_{ybar} \cdot A_{bar})$$

where:

P_{allc}	=	allowable working load (compression)
f_c	=	Unconfined Compressive Strength (UCS) of grout
A_{grout}	=	area of grout
$f_{ycasing}$	=	yield strength of casing up to 80 ksi
A_{casing}	=	area of steel casing (with allowance for corrosion if appropriate)
f_{ybar}	=	yield strength of rebar/core steel up to 80 ksi
A_{bar}	=	area of rebar/core steel

3.1.2.b. For tension loads:

$$P_{allt} = (0.6 \cdot (f_{ycasing} \cdot A_{casingT} + f_{ybar} \cdot A_{bar}))$$

where:

P_{allt}	=	allowable working load (tension)
$f_{ycasing}$	=	yield strength of casing
$A_{casingT}$	=	area of steel casing (at threaded joints if applicable)
f_{ybar}	=	yield strength of rebar/core steel
A_{bar}	=	area of rebar/core steel

3.1.3. The ultimate structural capacity shall be determined as:

3.1.3.a. Compression

$$P_{uc} = (0.85 \cdot f_c \cdot A_{grout} + f_{ycasing} \cdot A_{casing} + f_{ybar} \cdot A_{bar})$$

where:

P_{uc}	=	ultimate structural capacity (compression)
f_c	=	UCS of grout
A_{grout}	=	area of grout
$f_{ycasing}$	=	yield strength of casing up to 80 ksi
A_{casing}	=	area of steel casing (corroded if appropriate)
f_{ybar}	=	yield strength of rebar/core steel up to 80 ksi
A_{bar}	=	area of rebar/core steel

3.1.3.b. Tension

$$P_{ut} = (f_{ycasing} \cdot A_{casing} + f_{ybar} \cdot A_{bar})$$

where:

P_{ut}	=	ultimate structural capacity (tension)
$f_{ycasing}$	=	yield strength of casing
A_{casing}	=	area of steel casing (at threaded joints if applicable)
f_{ybar}	=	yield strength of rebar
A_{bar}	=	area of rebar

JOB NO.: 30615.16
DATE: JANUARY 2011

02369 - 6

ROA000449

3.1.4. The micropile top attachment shall effectively distribute the design load (DL) to the concrete pile cap, such that the concrete bearing stress does not exceed the design bearing strength as specified in ACI 318-05, Building Code Requirements for Structural Concrete and the bending stress in the steel bearing plate does not exceed the design flexural strength as specified in AISC Manual of Steel Construction, Thirteenth Edition.

3.2. INSTALLATION

3.2.1. Drilling: Unless otherwise directed, core drilling, rotary drilling percussion drilling, auger drilling, driven casing or other acceptable means can be used. The micropile must be advanced by the drill. The piles shall not be advanced by hydraulic means.

3.2.2. All soil excavated during the drilling operation shall be removed from the construction site and legally disposed of.

3.2.3. Grouting:

3.2.3.a. The Micropile Contractor shall use a neat cement grout or a sand-cement grout with a minimum 28-day unconfined compressive strength of 4,000 psi. The cement shall not contain lumps or other indications of hydration. Admixtures, if used shall be mixed in accordance with the manufacturer's recommendations.

3.2.3.b. The grouting equipment shall produce a grout free of lumps and undispersed cement. The pump shall be equipped with a pressure gauge to monitor grout pressures. The pressure gauge shall be capable of measuring pressure of at least 150 psi or twice the actual grout pressures used by the Micropile Contractor, whichever is greater. The grouting equipment shall be sized to enable the grout to be pumped in one continuous operation. The mixer shall be capable of continuously agitating the grout.

3.2.3.c. The grout shall be injected from the lowest point of the drill hole. The grout may be pumped through grout tubes, casing, hollow-stem-augers or drill rods. The quantity of the grout and the grout pressures shall be recorded. The grout pressures and grout takes shall be controlled to prevent excessive heave in cohesive soils or fracturing of rock formations. The entire Micropile shall be filled with grout.

3.2.3.d. Upon completion of grouting, the grout tube may remain in the hole but it shall be filled with grout.

3.2.3.e. After grouting, the Micropile shall not be loaded for a minimum of three days.

3.3. ALLOWABLE TOLERANCES

3.3.1. Centerline of piling shall not be more than 3 inches from indicated plan location.

3.3.2. Pile-hole alignment shall be within 2% of design alignment.

3.3.3. Top elevation of pile shall be within +1 inch to -1 inch of the design vertical elevation.

3.3.4. Centerline of core reinforcement shall not be more than 3/4-inch from centerline of piling.

JOB NO.: 30615.16
DATE: JANUARY 2011

02369 - 7

ROA000450

3.4. FIELD QUALITY CONTROL

3.4.1. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to observe test pile installation and pile load tests, observe production pile installation, submit pile load test data and results, and submit production pile records

3.4.1.a. The Contractor's field quality control representative will provide site inspection to insure performance of the Micropile work.

3.4.2. Load Testing: The effectiveness of the Micropile program will be verified as follows:

3.4.2.a. Two static load tests shall be performed on sacrificial non-production piles to confirm production pile length. The load test set-up shall consist of a center test pile and two adjacent piles used as reaction piles. The load tests shall be performed before the installation of any production piles. The load tests shall be evaluated by the Micropile Contractor and Engineer to assure compliance with job performance requirements.

3.4.2.b. The load tests shall be performed in accordance with ASTM D3689-07, Standard Test Methods for Deep Foundations Under Static Axial Tensile Load. A safety evaluation must be completed for the setup prior to loading.

3.4.2.c. The tensile reinforcing steel in the test piles shall be designed so that the resulting stresses from the maximum ultimate test load does not exceed 80 percent of the yield stress of the reinforcing steel.

3.4.2.d. Contractor guarantees that should the test pile fail to give acceptable results, he will modify his design and install and test another pile at his expense. He also guarantees that he will repair or replace at his own expenses all structural damage caused by inability of his piles to support the working loads satisfactorily for a period of two years.

3.4.3. Documentation

3.4.3.a. All quality control and measurement for payment data shall be recorded on specially prepared forms. The forms will contain space for data, QC test results, location of test samples, measurement of pay quantity, pay quantity, other comments as necessary, and signatures.

(End of Section 02369)

JOB NO.: 30615.16
DATE: JANUARY 2011

02369 - 8

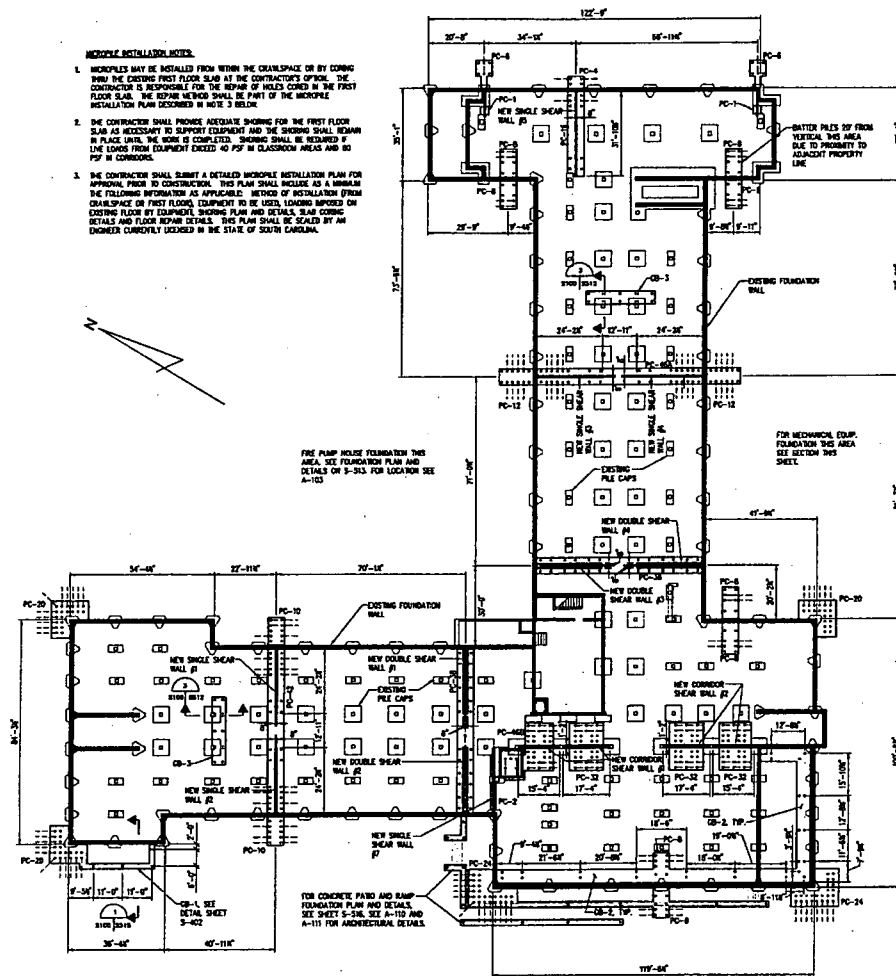
ROA000451

EXHIBIT
CCSD Ex 5

THESE DRAWINGS AND THE DESIGN THEREON ARE THE PROPERTY OF DAVIS & FLOYD, INC. AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN CONSENT OF THE ARCHITECT / ENGINEER AND ANY INFRINGEMENT WILL BE SUBJECT TO LEGAL ACTION.

MICROPILE INSTALLATION NOTES

1. MICROPILES MAY BE INSTALLED FROM WITHIN THE CRANESPACE OR BY COMING THRU THE EXISTING FIRST FLOOR SLAB AT THE CONTRACTOR'S OPTION. THE CONTRACTOR IS RESPONSIBLE FOR THE REPAIR OF HOLES CORED IN THE FIRST FLOOR SLAB. THE REPAIR METHOD SHALL BE PART OF THE MICROPILE INSTALLATION PLAN DESCRIBED IN NOTE 3 BELOW.
2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING FOR THE FIRST FLOOR SLAB AS NECESSARY TO SUPPORT EQUIPMENT AND THE SHORING SHALL REMAIN IN PLACE UNTIL THE WORK IS COMPLETED. SHORING SHALL BE REMOVED 5' LINE LONG FROM EQUIPMENT EXCEED 40 PPF IN CLASSROOM AREAS AND 80 PPF IN CORRIDORS.
3. THE CONTRACTOR SHALL SUBMIT A DETAILED MICROPILE INSTALLATION PLAN FOR APPROVAL PRIOR TO CONSTRUCTION. THIS PLAN SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION AS APPLICABLE: METHOD OF INSTALLATION FROM CRANESPACE OR FIRST FLOOR EQUIPMENT TO BE USED, LOADING IMPROVED ON EXISTING FLOOR BY EQUIPMENT, SHORING PLAN AND DETAILS, SLAB CORING DETAILS AND FLOOR REPAIR DETAILS. THIS PLAN SHALL BE SEALED BY AN ENGINEER CURRENTLY LICENSED IN THE STATE OF SOUTH CAROLINA.



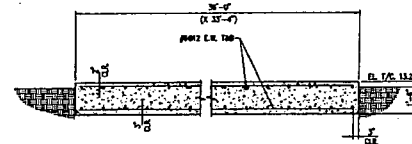
FOUNDATION RETROFIT PLAN
SCALE: 1/4" = 1'-0"

LEGEND

S.O.R. - SOTERITE OVERLAY MILL
L.C. - L.P. OF CONCRETE

NOTES

1. THE INTENT OF THIS DESIGN IS TO HAVE DOUBLE SHEAR WALL #1 AND SINGLE SHEAR WALLS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000).
2. SEE ENLARGED PILE CAP PLANS ON SHEETS S-400 AND S-401.
3. THE SIZES AND LOCATIONS OF EXISTING PILE CAPS SHOWN ARE SCHEMATIC. THERE ARE NO EXISTING DRAWINGS AVAILABLE THAT SHOW THIS INFORMATION. THE CONTRACTOR SHALL VERIFY THAT THE LOCATIONS OF EXISTING PILE CAPS DO NOT CONFLICT WITH THE PROPOSED MICROPILE AND PILE CAP LOCATIONS BEFORE MICROPILE INSTALLATION AND PILE CAP CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS.



Technical drawing of a reinforced concrete slab (Pile Cap - 20) showing dimensions and reinforcement details. The drawing includes a plan view and a cross-section view.

Plan View Dimensions:

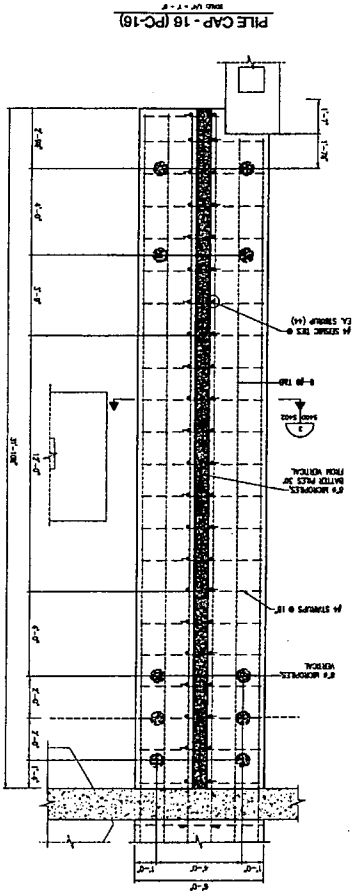
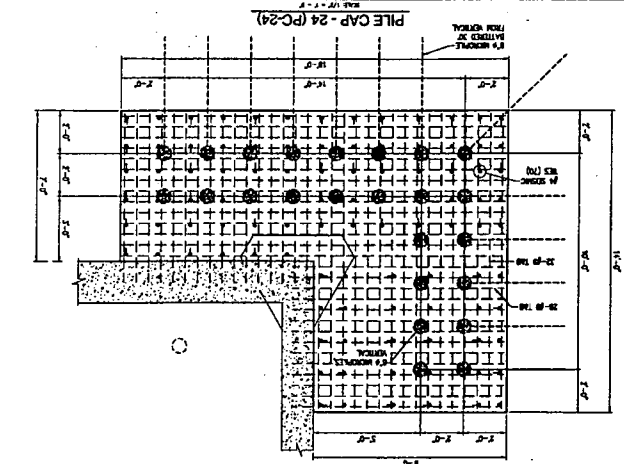
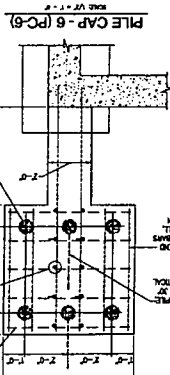
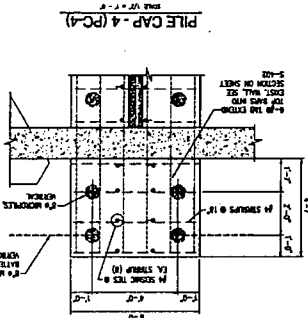
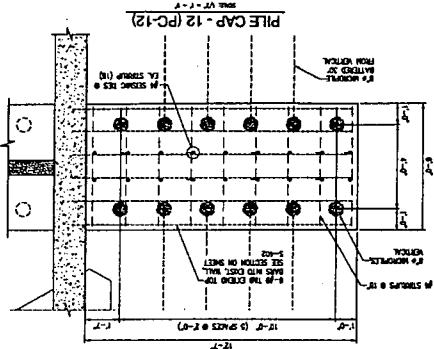
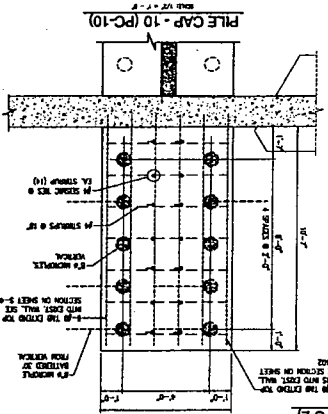
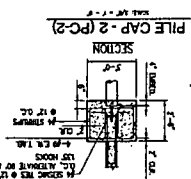
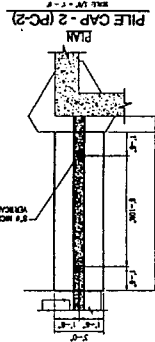
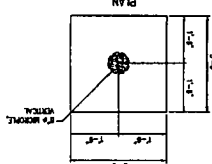
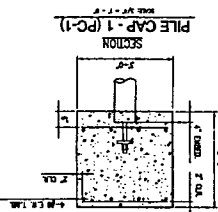
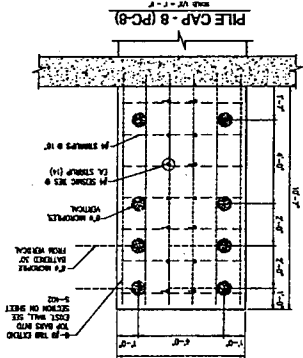
- Overall width: 10'-0"
- Overall depth: 10'-0"
- Grid spacing: 5 SPACES @ 2'-0"
- Reinforcement spacing: 18" ON CENTER

Reinforcement Details:

- Top reinforcement: 2# 10 TOP BAR
- Bottom reinforcement: 2# 10 BOT BAR
- Vertical reinforcement: 2# 10 VERT
- Horizontal reinforcement: 2# 10 HORIZ

Notes:

- 1. 18" ON CENTER
- 2. 2# 10 TOP BAR
- 3. 2# 10 BOT BAR
- 4. 2# 10 VERT
- 5. 2# 10 HORIZ



NOTES

S-400		DATE	
NO.	DATE	NO.	DATE
1	1/1/78	1	1/1/78
2	1/1/78	2	1/1/78
3	1/1/78	3	1/1/78
4	1/1/78	4	1/1/78
5	1/1/78	5	1/1/78
6	1/1/78	6	1/1/78
7	1/1/78	7	1/1/78
8	1/1/78	8	1/1/78
9	1/1/78	9	1/1/78
10	1/1/78	10	1/1/78
11	1/1/78	11	1/1/78
12	1/1/78	12	1/1/78
13	1/1/78	13	1/1/78
14	1/1/78	14	1/1/78
15	1/1/78	15	1/1/78
16	1/1/78	16	1/1/78
17	1/1/78	17	1/1/78
18	1/1/78	18	1/1/78
19	1/1/78	19	1/1/78
20	1/1/78	20	1/1/78
21	1/1/78	21	1/1/78
22	1/1/78	22	1/1/78
23	1/1/78	23	1/1/78
24	1/1/78	24	1/1/78
25	1/1/78	25	1/1/78
26	1/1/78	26	1/1/78
27	1/1/78	27	1/1/78
28	1/1/78	28	1/1/78
29	1/1/78	29	1/1/78
30	1/1/78	30	1/1/78
31	1/1/78	31	1/1/78
32	1/1/78	32	1/1/78
33	1/1/78	33	1/1/78
34	1/1/78	34	1/1/78
35	1/1/78	35	1/1/78
36	1/1/78	36	1/1/78
37	1/1/78	37	1/1/78
38	1/1/78	38	1/1/78
39	1/1/78	39	1/1/78
40	1/1/78	40	1/1/78
41	1/1/78	41	1/1/78
42	1/1/78	42	1/1/78
43	1/1/78	43	1/1/78
44	1/1/78	44	1/1/78
45	1/1/78	45	1/1/78
46	1/1/78	46	1/1/78
47	1/1/78	47	1/1/78
48	1/1/78	48	1/1/78
49	1/1/78	49	1/1/78
50	1/1/78	50	1/1/78
51	1/1/78	51	1/1/78
52	1/1/78	52	1/1/78
53	1/1/78	53	1/1/78
54	1/1/78	54	1/1/78
55	1/1/78	55	1/1/78
56	1/1/78	56	1/1/78
57	1/1/78	57	1/1/78
58	1/1/78	58	1/1/78
59	1/1/78	59	1/1/78
60	1/1/78	60	1/1/78
61	1/1/78	61	1/1/78
62	1/1/78	62	1/1/78
63	1/1/78	63	1/1/78
64	1/1/78	64	1/1/78
65	1/1/78	65	1/1/78
66	1/1/78	66	1/1/78
67	1/1/78	67	1/1/78
68	1/1/78	68	1/1/78
69	1/1/78	69	1/1/78
70	1/1/78	70	1/1/78
71	1/1/78	71	1/1/78
72	1/1/78	72	1/1/78
73	1/1/78	73	1/1/78
74	1/1/78	74	1/1/78
75	1/1/78	75	1/1/78
76	1/1/78	76	1/1/78
77	1/1/78	77	1/1/78
78	1/1/78	78	1/1/78
79	1/1/78	79	1/1/78
80	1/1/78	80	1/1/78
81	1/1/78	81	1/1/78
82	1/1/78	82	1/1/78
83	1/1/78	83	1/1/78
84	1/1/78	84	1/1/78
85	1/1/78	85	1/1/78
86	1/1/78	86	1/1/78

FOUNDATION
RETROFIT ENLARGED PLANS

STRUCTURAL

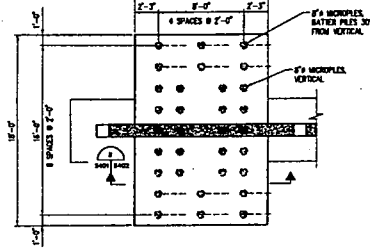
CHARLESTON COUNTY SCHOOL DISTRICT

**RIVERS EDUCATION CENTER
SEISMIC RETROFIT, EXTERIOR RESTORATION
AND COOL TREATMENT**

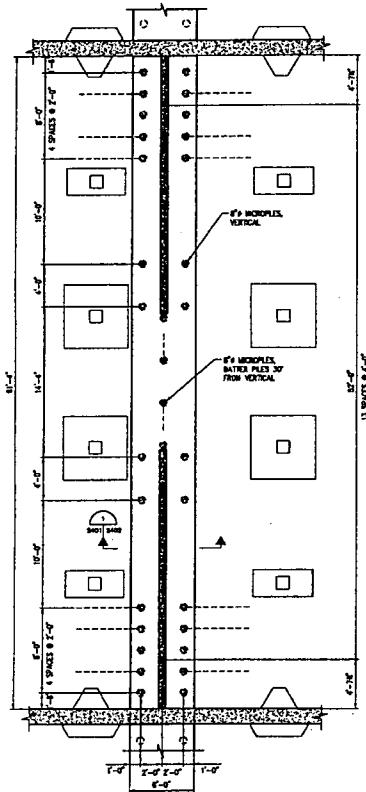
DAVIS Engineering
Architect
FLOYD Environmental & Laboratory Services
SOUTHERN CAROLINA
GREENWOOD • CHALLENGER • COLUMBIA
PO BOX 1100
COLUMBIA, SC 29201
803-763-0861



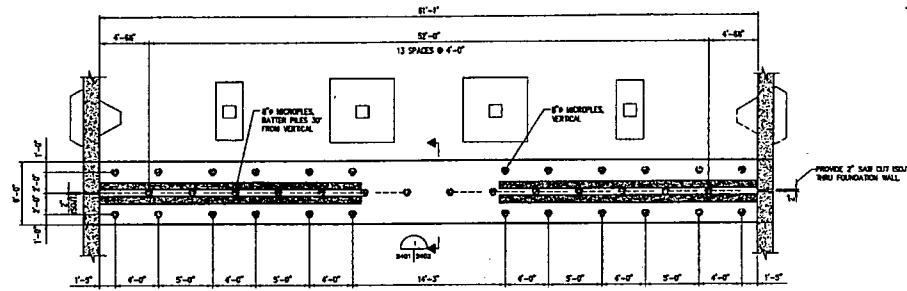
THESE DRAWINGS AND THE DESIGN THEREON ARE THE PROPERTY OF DAVIS & FLOYD, INC. AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN CONSENT OF THE ARCHITECT / ENGINEER AND ANY INFRINGEMENT WILL BE SUBJECT TO LEGAL ACTION.



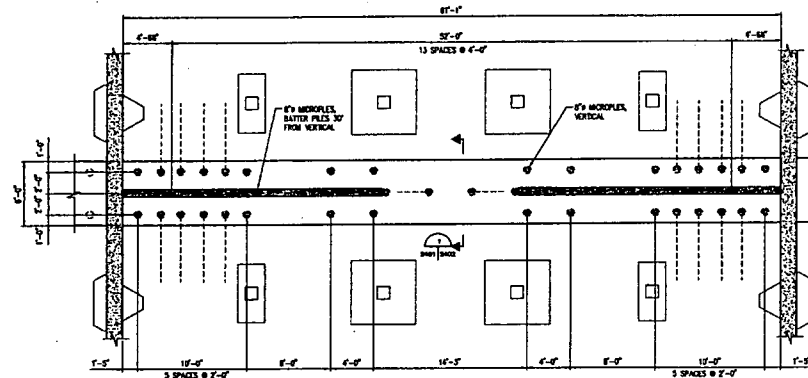
PILE CAP - 32 (PC-32)
SCALE 1/4" = 1'-0"



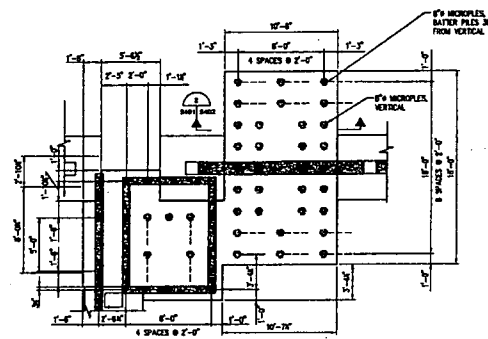
PILE CAP - 42 (PC-42)
SCALE 1/4" = 1'-0"



PILE CAP - 38 (PC-38)
SCALE 1/4" = 1'-0"



PILE CAP - 46A (PC-46A)
SCALE 1/4" = 1'-0"



PILE CAP - 46B (PC-46B)
SCALE 1/4" = 1'-0"

NOTES

1. SEE PILE CAP SECTIONS ON SHEET S42.



DAVIS & FLOYD, INC.
Engineering
Architecture
Environmental & Laboratory Services
10000 NORTH CAROLINA
CHARLOTTE, NC 28217
704.375.1234
FAX 704.375.1235
WWW.DAVISANDFLOYD.COM

CHARLESTON COUNTY SCHOOL DISTRICT
CHARLESTON, SOUTH CAROLINA
PINES EDUCATION CENTER
SENIOR RETIRED, LUTHERAN RESTAURANT
AND BAKERY

STRUCTURAL

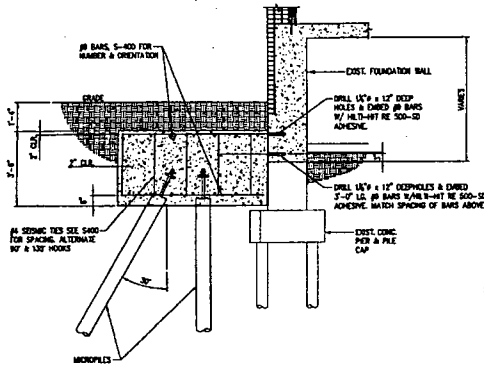
FOUNDATION
RETROFIT ENLARGED PLANS

NO.	DATE	BY	CHKD.	APP'D.	REVISION
1	10/1/01	DF	DF	DF	ISSUED FOR PERMIT
2	10/1/01	DF	DF	DF	ISSUED FOR PERMIT
3	10/1/01	DF	DF	DF	ISSUED FOR PERMIT
4	10/1/01	DF	DF	DF	ISSUED FOR PERMIT
5	10/1/01	DF	DF	DF	ISSUED FOR PERMIT
6	10/1/01	DF	DF	DF	ISSUED FOR PERMIT
7	10/1/01	DF	DF	DF	ISSUED FOR PERMIT
8	10/1/01	DF	DF	DF	ISSUED FOR PERMIT
9	10/1/01	DF	DF	DF	ISSUED FOR PERMIT
10	10/1/01	DF	DF	DF	ISSUED FOR PERMIT

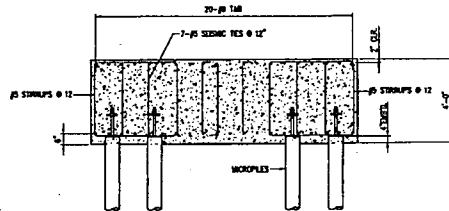
S-401
X X X

ROA000455

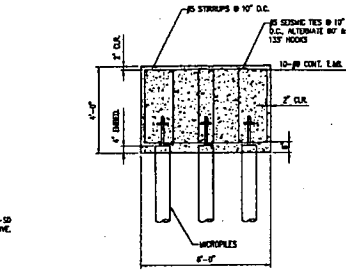
THESE DRAWINGS AND THE DESIGN THEREON ARE THE PROPERTY OF DAVIS & FLOYD, INC. AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN CONSENT OF THE ARCHITECT / ENGINEER AND ANY INFORMATION WILL BE SUBJECT TO LEGAL ACTION.



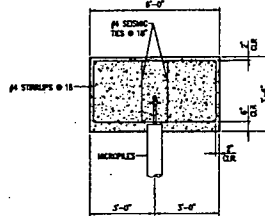
TYPICAL SECTION THRU EXTERIOR PILE CAPS
SCALE: 1/4\"/>



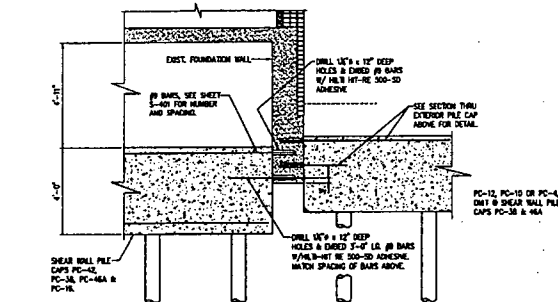
SECTION THRU PILE CAP 32
SCALE: 3/4\"/>



TYPICAL SECTION THRU PILE CAPS 38, 42, & 46A
SCALE: 1/4\"/>

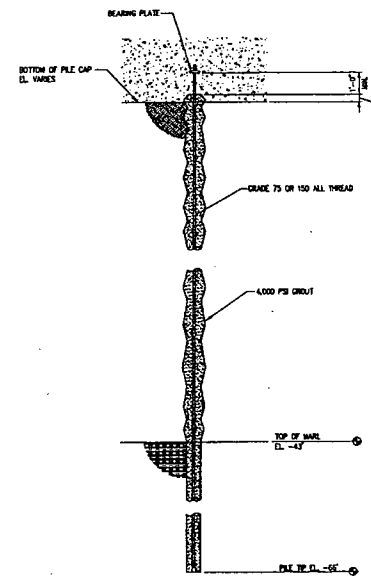


SECTION THRU PILE CAP 16
SCALE: 3/4\"/>

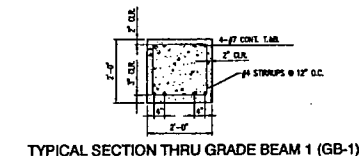


SHEAR WALL PILE CAP CONNECTION TO EXISTING FOUNDATION WALL
SCALE: 1/4\"/>

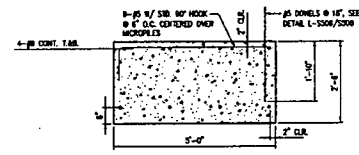
- MICROPILE FOUNDATION NOTES:**
1. NEW DEEP FOUNDATIONS SHALL BE THE DRILLED AND GROUTED VARIETY OF MICROPILES DESIGNED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER OF RECORD. SEE SPECIFICATION SECTION 0520 FOR DESIGN AND LOAD TESTING REQUIREMENTS.
 2. NEW DEEP FOUNDATIONS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 200 KIPS IN COMPRESSION AND TENSION.
 3. NEW DEEP FOUNDATIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER CORRECTLY LICENSED IN THE STATE OF SOUTH CAROLINA. SUBMIT SHOWN AND SEALED CALCULATIONS FOR APPROVAL BY THE ENGINEER OF RECORD.



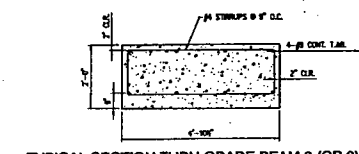
TYPICAL MICROPILE ELEVATION
SCALE: 1/4\"/>



TYPICAL SECTION THRU GRADE BEAM 1 (GB-1)
SCALE: 1/4\"/>



TYPICAL SECTION THRU GRADE BEAM 2 (GB-2)
SCALE: 1/4\"/>



TYPICAL SECTION THRU GRADE BEAM 3 (GB-3)
SCALE: 1/4\"/>



DAVIS Engineering
FLOYD Architecture
Architectural & Laboratory Services
1000 W. 10th St., Suite 100
Charleston, SC 29401
Tel: 771-1234
Fax: 771-5678

CHARLESTON COUNTY SCHOOL DISTRICT
CHARLESTON, SOUTH CAROLINA
BASIS EDUCATION CENTER
REPAIR, RETROFIT, EXTERIOR RESTORATION
AND CURB IMPROVEMENT

STRUCTURAL

FOUNDATION RETROFIT
SECTIONS & DETAILS

DATE	REV	BY	CHK	APP
11/1/01	1	DF	DF	DF
11/1/01	2	DF	DF	DF
11/1/01	3	DF	DF	DF
11/1/01	4	DF	DF	DF
11/1/01	5	DF	DF	DF
11/1/01	6	DF	DF	DF
11/1/01	7	DF	DF	DF
11/1/01	8	DF	DF	DF
11/1/01	9	DF	DF	DF
11/1/01	10	DF	DF	DF

S-402
X X

ROA000456



June 17, 2011

Davis and Floyd, Inc.
3229 West Montague Avenue
Post Office Box 61599
Charleston, South Carolina 29419

Attention: Mr. John Orvin, P.E.

Reference: **ADDENDUM #3 TO GEOTECHNICAL EXPLORATION REPORT
FOR SEISMIC RETROFIT - SUPPLEMENT CPT SOUNDINGS**
Rivers Education Center
Charleston County School District
Charleston, South Carolina
S&ME Project No. 1131-09-615

Dear Mr. Orvin:

Seismic retrofit construction is underway at the Rivers Education Center. In particular, four micropiles have been installed and load tested. Although the required submittals associated with the micropiles have not yet been received, we understand that none of the four test piles were able to provide the required 200 kip resistance. To aid in the interpretation of the load test results, S&ME was asked to explore the subsurface conditions at the load test site. Additionally, S&ME was also asked to explore the subsurface conditions at another location that may be used for future test pile installation.

Subsurface conditions at the two areas of interest, the existing load test site and the potential future load test site, were explored by performing three cone penetrometer test (CPT) soundings (designated CPT-LT, CPT-LT2, and CPT-ALT). The approximate test locations, including the locations of the three CPT soundings performed during the design phase exploration, are shown in Figure 1. Soundings CPT-LT and CPT-LT2 were performed around the perimeter of the existing load test area. Only one sounding was planned for this area but our first attempt at a sounding (CPT-LT) refused at a depth of 63 ft. We relocated to the opposite side of the load test area and were able to push to the target depth of 80 ft (CPT-LT2). The location of CPT-ALT, which also was terminated at the target depth of 80 ft, was selected by MB Kahn.

In a CPT sounding (ASTM D 5778), an electronically instrumented cone penetrometer is hydraulically pushed through the soil to measure point stress, pore water pressure, and sleeve friction. The CPT data is used to determine soil stratigraphy and to estimate soil parameters such as preconsolidation stress, friction angle, and undrained shear strength.

Details of the subsurface conditions encountered by the soundings are shown on the logs in the Appendix. We have included the three new logs as well as the three original design phase logs. The logs represent our interpretation of the subsurface conditions based upon field data. Stratification lines on the sounding logs represent approximate boundaries between soil types and soil behavior types¹; however, the actual

¹ Soil Behavior Type is calculated based on empirical correlations with 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 classification, may define it as a different type traditional basis for soil.



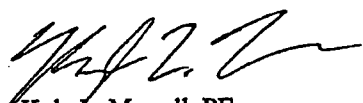
the actual transition may be gradual. The general subsurface conditions and their pertinent characteristics are discussed in the following paragraphs.

In generalized geotechnical terms, all six soundings encountered the same basic profile: an upper Sand, an upper Clay, a lower Sand, a lower Clay, and the Cooper Marl. Of most significance to micropile design, the three design phase soundings and sounding CPT-ALT encountered the Cooper Marl at a depth of about 55 to 57 ft but the soundings at the existing load test site encountered the Cooper Marl at a depth of about 64 ft. The soundings at the existing load test site also encountered a very dense stratum directly above the Cooper Marl, which was absent at all other sounding locations.

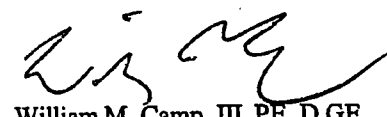
The differences between the profile encountered at the load test site as compared to the profile encountered around the main building can partly explain the low micropile capacities that have been observed so far. However, we do not believe the profile differences are so great that identical piles installed near the building will have the necessary capacity. We understand that the "best" test pile was loaded to 130 kips in compression. We do not think that if this exact same pile was installed near the main building it would have the required 200 kip resistance in compression or uplift. As noted during the on site project meeting on June 15, micropiles are currently being installed in a very similar profile elsewhere in Charleston and load testing has shown that they have capacities of at least 200 kips. In accordance with the contract's performance specification, the micropile design is the responsibility of the contractor. We look forward to the opportunity to review the relevant submittals to see how this low capacity issue will be addressed.

Our services were provided in general accordance with our proposal No. 31-11-154 dated June 15, 2011. We appreciate the opportunity to be of service on this project. If you have any questions concerning this addendum, please call.

Sincerely,
S&ME, Inc.



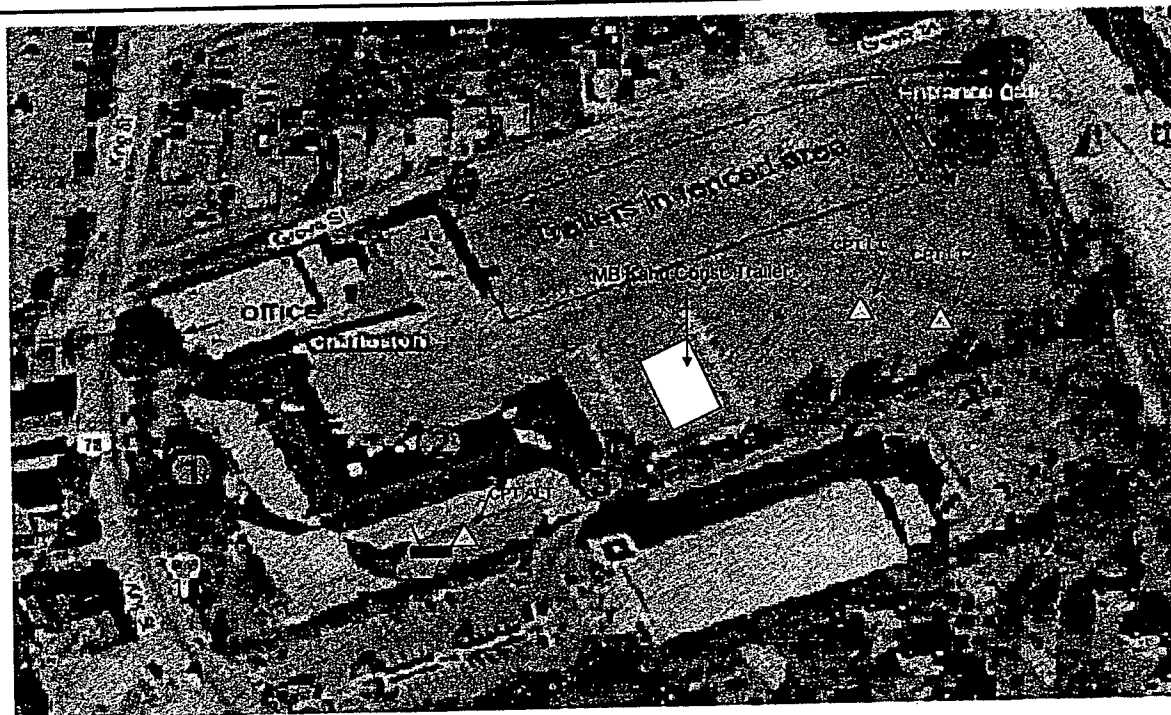
Kyle L. Murrell, PE
Project Engineer



William M. Camp, III, PE, D.GE
Technical Principal/Vice President

Attachments: Figure 1
CPT Logs

ROA000459



North

△ Supplement CPT Sounding

● Design Phase CPT Sounding

NOTES:

- Test locations are shown in general arrangement only.
- Do not use test locations for determination of distances or quantities.

Project No. 1131-09-615

Date: June, 2011



TEST LOCATION PLAN

Rivers Education Center
Charleston, South Carolina

Figure 1



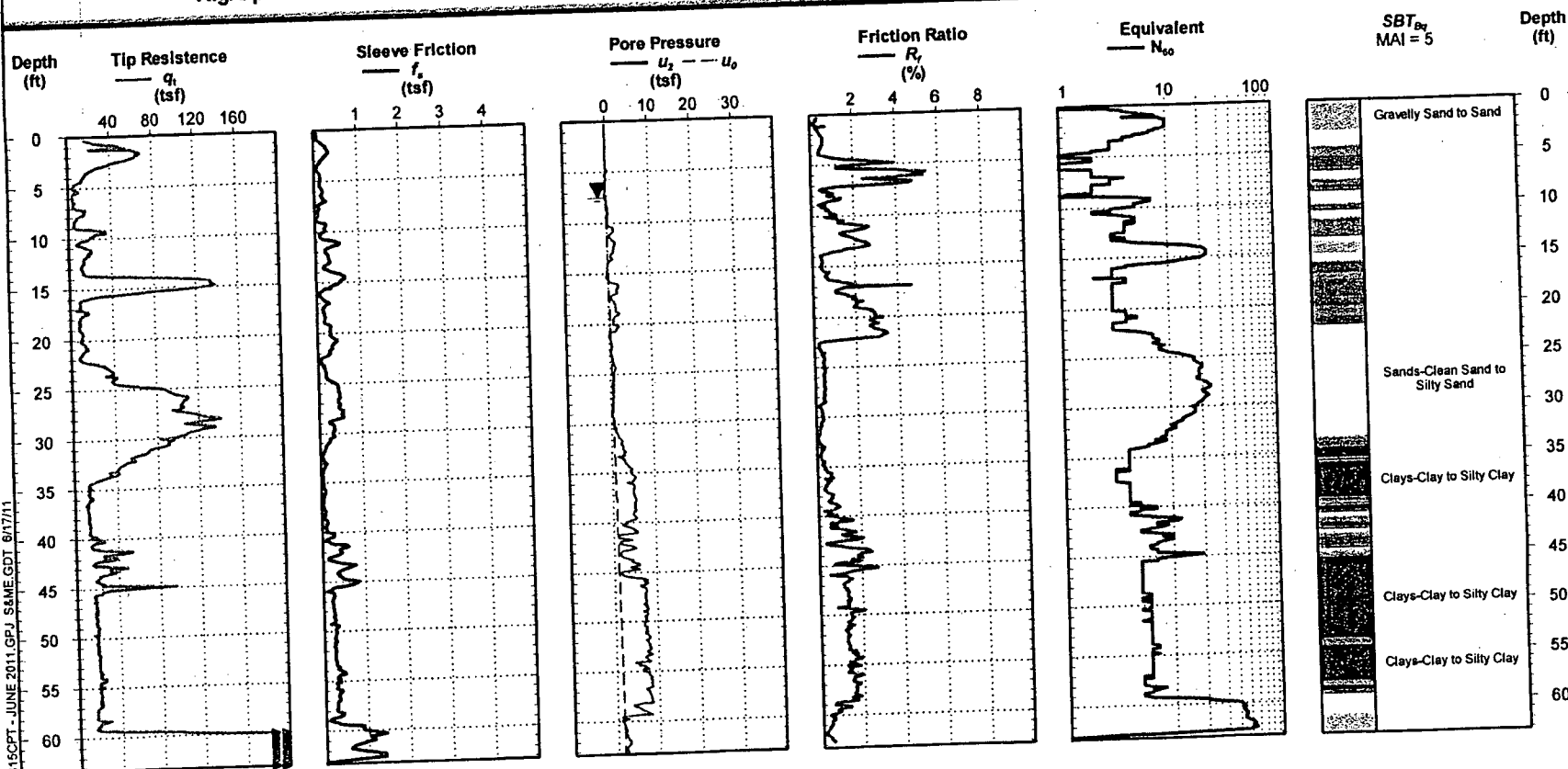
Rivers Education Center
Charleston, SC
S&ME Project No: 1131-09-615

Cone Penetration Test

CPT-LT

Date: Jun. 17, 2011
Estimated Water Depth: 7.5 ft
Rig/Operator: A. Feix | H. Camp

Total Depth: 63.2 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



ROA000460

CPT-LT

Electronic Filename: F17U1101C.DAT



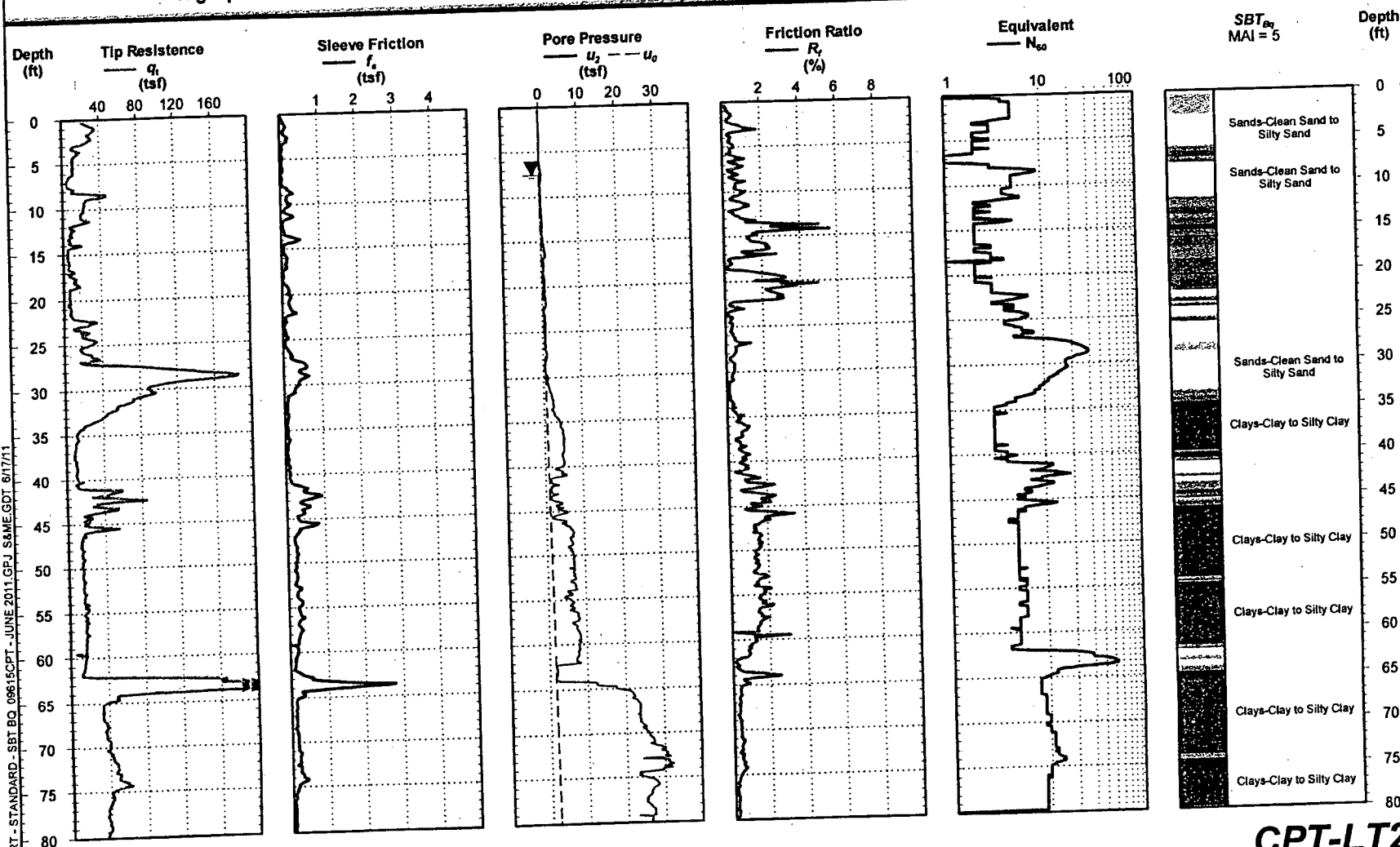
Rivers Education Center
Charleston, SC
S&ME Project No: 1131-09-615

Cone Penetration Test

CPT-LT2

Date: Jun. 17, 2011
Estimated Water Depth: 7.5 ft
Rig/Operator: A. Feix | H. Camp

Total Depth: 80.0 ft
Termination Criteria: Target Depth
Cone Size: 1.75



CPT-LT2

Electronic Filename: F17U1102C.DAT

ROA000461

CPT REPORT - STANDARD - SBT BQ 09615CPT - JUNE 2011.GPJ S&ME.GDT 6/17/11



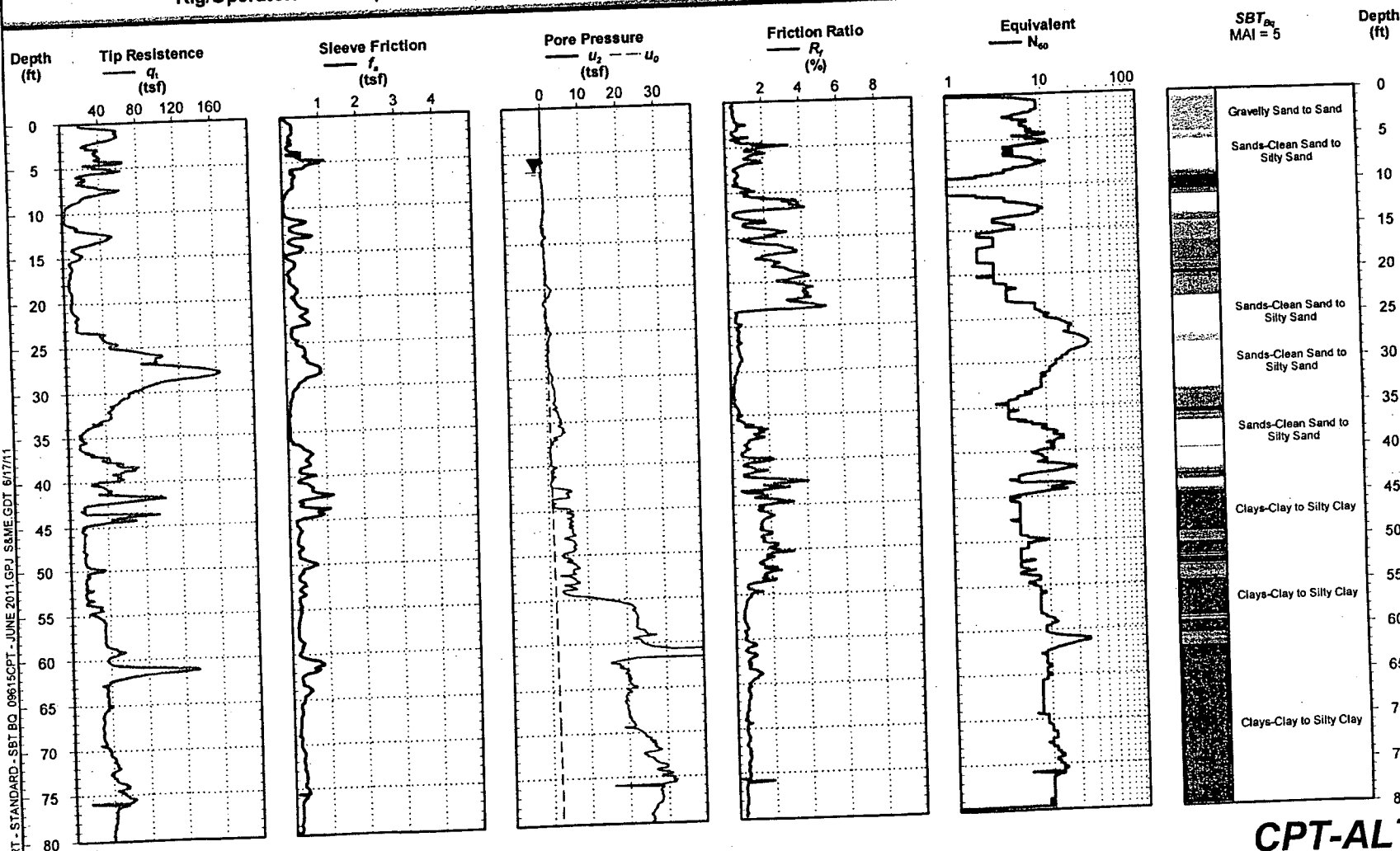
Rivers Education Center
Charleston, SC
S&ME Project No: 1131-09-615

Cone Penetration Test

CPT-ALT

Date: Jun. 17, 2011
Estimated Water Depth: 7 ft
Rig/Operator: A. Feix | H. Camp

Total Depth: 80.0 ft
Termination Criteria: Target Depth
Cone Size: 1.75



CPT-ALT

Electronic Filename: F17U1103C.DAT

ROA000462

CPT REPORT - STANDARD - SST BO 09615CPT - JUNE 2011.GPJ S&ME.GDT 6/17/11



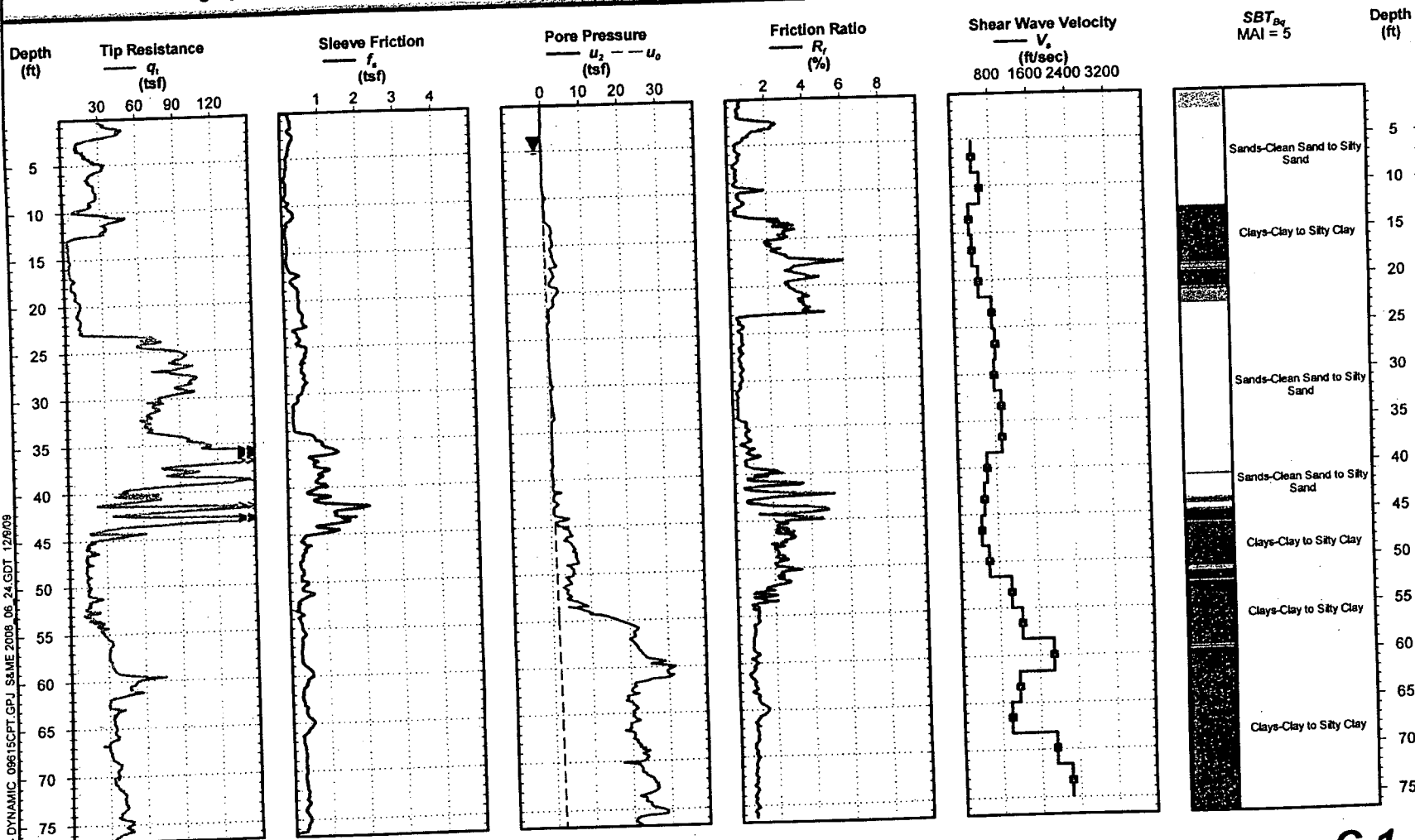
Rivers Middle School
Charleston, SC
S&ME Project No: 1131-09-615

Cone Penetration Test

C-1

Date: Dec. 8, 2009
Estimated Water Depth: 5 ft
Rig/Operator: ATV/ Feix

Total Depth: 76.8 ft
Termination Criteria: Target Depth
Cone Size: 1.75



C-1

Electronic Filename: f08d0902c.ecp



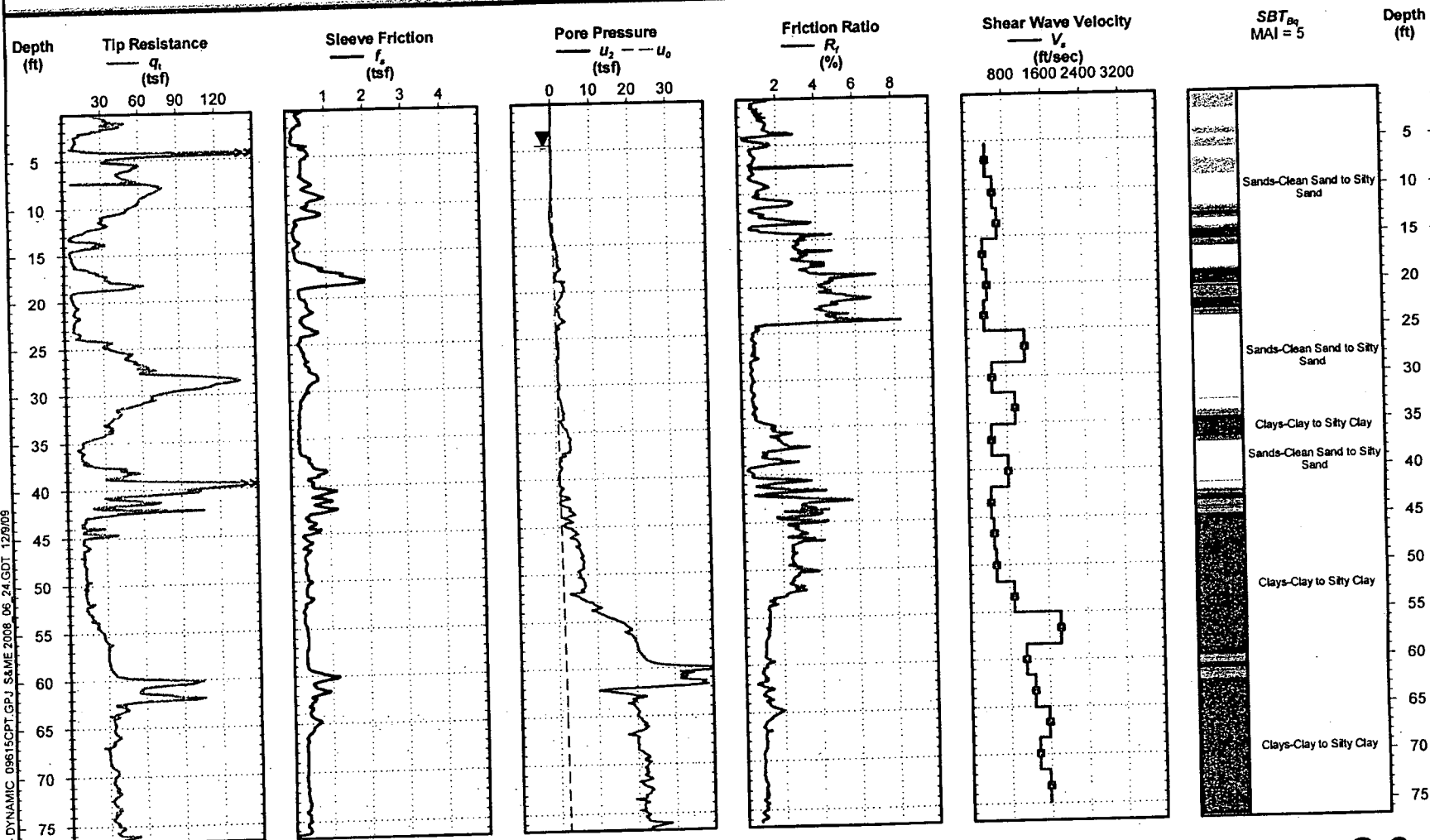
Rivers Middle School
Charleston, SC
S&ME Project No: 1131-09-615

Cone Penetration Test

C-2

Date: Dec. 8, 2009
Estimated Water Depth: 4.5 ft
Rig/Operator: ATV/ Feix

Total Depth: 76.7 ft
Termination Criteria: Target Depth
Cone Size: 1.75



C-2

ROA000464

CPT REPORT - DYNAMIC 09615CPT GPJ S&ME 2008.06.24.GDT 12/8/09



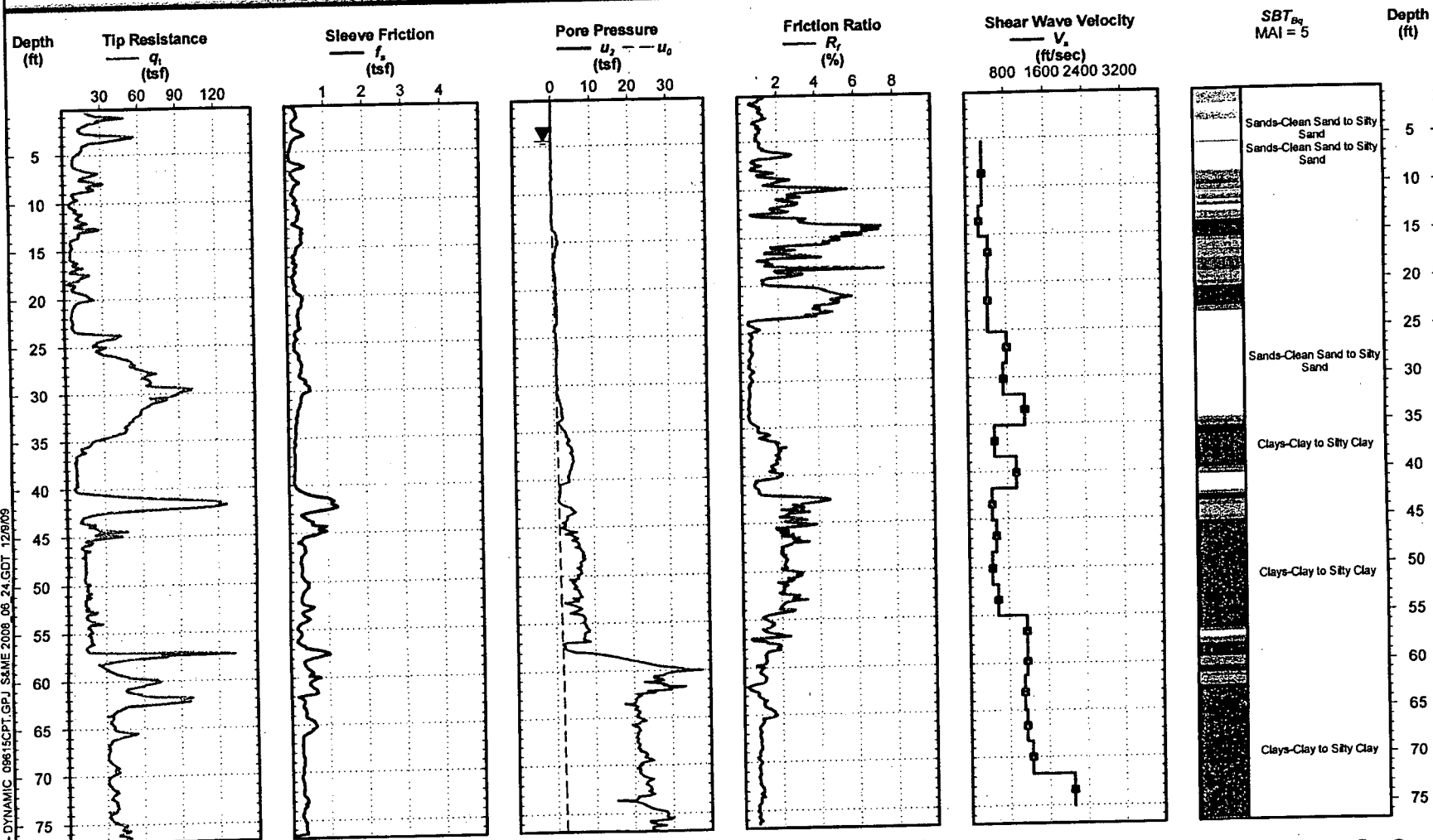
Rivers Middle School
Charleston, SC
S&ME Project No: 1131-09-615

Cone Penetration Test

C-3

Date: Dec. 8, 2009
Estimated Water Depth: 4.5 ft
Rig/Operator: ATV/ Feix

Total Depth: 76.9 ft
Termination Criteria: Target Depth
Cone Size: 1.75



C-3

Electronic Filename: f08d0904c.ecp

FIELD TESTING PROCEDURES

Seismic Cone Penetrometer Test (SCPT) Sounding

The seismic cone penetrometer test soundings (ASTM D 5778) were performed by hydraulically pushing an electronically instrumented cone penetrometer through the soil at a constant rate. As the cone penetrometer tip was advanced through the soil, nearly continuous readings of point stress, sleeve friction and pore water pressure were recorded and stored in the on-site computers. Using theoretical and empirical relationships, CPT data can be used to determine soil stratigraphy and estimate soil properties and parameters such as effective stress, friction angle, Young's Modulus and undrained shear strength.

The cone penetrometer was halted at pre-specified depth increments to measure shear waves. As the probe was stopped, a shear wave was then generated at the ground surface. As the shear waves propagate through the soil, the response of geophones mounted inside the cone penetrometer is recorded with time to create a shear wave record. Several of these records were taken at different depth intervals in the sounding and arrival times for each record were compared to calculate the shear wave velocity of the soil for the given depth interval.

The consistency and relative density designations, which are based on the cone tip resistance, q_t for sands and cohesive soils (silts and clays) are as follows:

SANDS		SILTS AND CLAYS	
Cone Tip Resistance, q_t (tsf)	Relative Density	Cone Tip Resistance, q_t (tsf)	Consistency
<20	Very Loose	<5	Very Soft
20 - 40	Loose	5 - 10	Soft
40 - 120	Medium Dense	10 - 15	Firm
		15 - 30	Stiff
120 - 200	Dense	30 - 60	Very Stiff
>200	Very Dense	>60	Hard

CPT Correlations

References are in parenthesis next to the appropriate equation.

General

p_a = atmospheric pressure (for unit normalization)
 q_t = corrected cone tip resistance (tsf)
 f_s = friction sleeve resistance (tsf)
 $R_f = 100\% * (f_s/q_t)$
 u_2 = pore pressure behind cone tip (tsf)

u_0 = hydrostatic pressure
 $B_q = (u_2 - u_0)/(q_t - \sigma_{v0})$
 $Q_t = (q_t - \sigma_{v0})/\sigma'_{v0}$
 $F_r = 100\% * f_s/(q_t - \sigma_{v0})$
 $I_c = ((3.47 - \log Q_t) + (\log F_r + 1.22)^{2.05})$

N-Value

$$N_{60} = (q_t/p_a)/[8.5(1 - I_c/4.6)] \quad (6)$$

(6) Jefferies, M.G. and Davies, M.P., (1993), "Use of CPTu to estimate equivalent SPT N60", ASTM Geotechnical Testing Journal, Vol. 16, No. 4

CPT Soil Classification Legend

Zone	Q _t /N	Description
1		2 Sensitive, Fine Grained
2		1 Organic Soils-Peats
3		1.5 Clays-Clay to Silty Clay
4		2 Silt Mixtures-Clayey Silt to Silty Clay
5		3 Sand Mixtures-Silty Sand to Sandy Silt
6		4.5 Sands-Clean Sand to Silty Sand
7		6 Gravelly Sand to Sand
8		1 Very Stiff Clay to Clayey Sand*
9		2 Very Stiff, Fine Grained*

(*) Heavily Overconsolidated or Cemented

Robertson's Soil Behavior Type (SBT), 1990			
Group #	Description	I _c	
		Min	Max
1	Sensitive, fine grained	N/A	
2	Organic soils - peats	3.60	N/A
3	Clays - silty clay to clay	2.95	3.60
4	Silt mixtures - clayey silt to silty clay	2.60	2.95
5	Sand mixtures - silty sand to sandy silt	2.05	2.60
6	Sands - clean sand to silty sand	1.31	2.05
7	Gravelly sand to dense sand	N/A	1.31
8	Very stiff sand to clayey sand (High OCR or cemented)	N/A	
9	Very stiff, fine grained (High OCR or cemented)	N/A	

Soil behavior type is based on empirical data and may not be representative of soil classification based on plasticity and grain size distribution.

AIA Document G701/CMa™ – 1992

Change Order - Construction Manager-Adviser Edition

PROJECT (Name and address): Rivers - Seismic Retrofit, Exterior Restoration and Core Utilities 1002 King Street Charleston, South Carolina, 29403	CHANGE ORDER NUMBER: 007 INITIATION DATE: October 25, 2011	OWNER: ☒ CONSTRUCTION MANAGER: ☒ ARCHITECT: ☒ CONTRACTOR: ☒ FIELD: ☐ OTHER: ☐
TO CONTRACTOR (Name and address): M.B. Kahn Construction Company, Inc. 101 Flintlake Road Columbia, SC 29223	PROJECT NUMBERS: CCSD / 5648 CONTRACT DATE: March 28, 2011 CONTRACT FOR: Construction	

THE CONTRACT IS CHANGED AS FOLLOWS:

CW-012 (MB Kahn): Provide and install micro-piles with lengths as required by transmittal #68a. ADD: \$247,874.80
 CW-013 (MB Kahn): Reduce phase I core utilities scope of work per ASI-011. DEDUCT: (-\$177,491.00)
 CW-019 (MB Kahn): Covert NTE-001 (\$1,500) to stipulated sum for clear anodized hand rails. ADD: \$1,383.89
TOTAL ADD: \$71,767.69

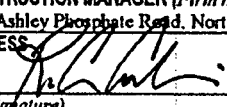
Increase contract time for delays incurred during abatement, forty (40) days and micro pile installation, forty four (44) days. Total increase in time eighty four (84) days.

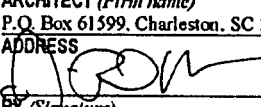
The original Contract Sum was	\$ 9,323,000.00
Net change by previously authorized Change Orders	\$ 200,025.41
The Contract Sum prior to this Change Order was	\$ 9,523,025.41
The Contract Sum will be increased by this Change Order in the amount of	\$ 71,767.69
The new Contract Sum including this Change Order will be	\$ 9,594,793.10

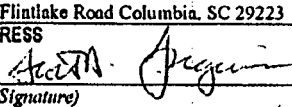
The Contract Time will be increased by eighty four days (84) days.
 The date of Substantial Completion as of the date of this Change Order therefore is February 28, 2012.

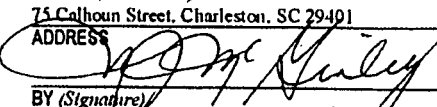
NOTE: This summary does not reflect changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE OWNER, CONSTRUCTION MANAGER, ARCHITECT AND CONTRACTOR.

Heery International
CONSTRUCTION MANAGER (Firm name)
 3125 Ashley Phosphate Road, North Charleston, SC 29418
ADDRESS

BY (Signature)
 Robert Corbin 11-7-11
(Typed name) DATE:

Davis & Floyd
ARCHITECT (Firm name)
 P.O. Box 61599, Charleston, SC 29418
ADDRESS

BY (Signature)
 J. Rhett Reidenbach, PE 11/13/2011
(Typed name) DATE:

M.B. Kahn Construction Company, Inc.
CONTRACTOR (Firm name)
 101 Flintlake Road Columbia, SC 29223
ADDRESS

BY (Signature)
 Scott Spigener 10/27/11
(Typed name) DATE:

Charleston County School District
OWNER (Firm name)
 75 Calhoun Street, Charleston, SC 29401
ADDRESS

BY (Signature)
 Nancy J. McGinley, Ed. D 11-15-11
(Typed name) DATE:

AIA Document G701/CMa™ – 1992. Copyright © 1992 by The American Institute of Architects. All rights reserved. **WARNING:** This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 08:59:24 on 10/26/2011 under Order No.5987107356_1 which expires on 01/22/2012, and is not for resale.

User Notes:

(1265129548)

ROA000468





Change Proposal Review Form

To: Robert Corbin

Project: Rivers Education Center - Main Building

From: Kevin Kelly

Project No.: 5648

Date: September 26, 2011

Proposal No.: CW-012

Contractor: MB Kahn Construction

Contract: General Contractor

(GENERAL CONTRACTOR) (ARCHITECT) (ENGINEER) (OTHER)

Description of work to be performed: Provide and install micro-piles with lengths as required by
transmittal #68a for specification section 02369 (approved as noted)

- A - Customer Requested Change
- B - Code/Regulatory Agency Required Change
- C - Errors and Omissions
- D - Replacing Unsuitable Soils
- E - Soils Related Change Other than De-Mucking

"In Scope"

- ☒ F - Unforeseen Conditions
- ☒ G - Time Related Change

- H - Liquidated Damages
- I - Value Engineering Change
- J - Exercising Pre-Priced Option
- K - Accounting Error

Justification: _____

(Indicate Reason for Change Proposal)

Attachments: ☒ Recommendation Letter from A/E ☐ OSF Approval (life safety & structural related change proposals)
☒ Independent Cost Estimate ☐ Cost Estimate From Atlanta (Cost is Expected to Exceed \$10,000)
☐ Pre-Negotiation Position (PNP) ☒ Change Proposal Request from Contractor with Detailed Backup

Proposal Cost: \$247,874.80

Contingency Status: 11012302
65,957,681.25

Time Extension Requested: 0 Days

Time Extension Recommended: 0 Days

Special Circumstances: _____

IN SCOPE CHANGE WITHIN SUPERINTENDANT
AUTHORITY. SEE ATTACHED LEGAL FINDING.

Consequence of Rejection: _____

Comments by Supervisor: _____

Approved: (NO) (YES) Robert Corbin
(Circle One)

Robert Corbin, Heery International

(NO) (YES) Larry Lurano
(Circle One)

Larry Lurano, Charleston County School District

(NO) (YES) William Lewis
(Circle One)

William Lewis, Charleston County School District

Decision needed by: September 29, 2011

ROA000469

HEERY COST ESTIMATE

Rivers Education Center - Main Building

September 29, 2011

	Qty	UM	UP		Total
Increase micropile length	1	LS	\$ 227,610.00	\$	227,610.00
GC Markup (7%)	1	LS	\$ 15,932.70	\$	15,932.70
Sub Bond (1.2%)	1	LS	\$ 2,731.32	\$	2,731.32
			Subtotal:	\$	246,274.02
				\$	1,600.78
Payment & Performance Bond (0.65%)			Total:	\$	247,874.80

ROA000470

Kelly, Kevin P.

From: Corbin, Robert C.
Sent: Thursday, September 15, 2011 11:57 AM
To: WILLIAM LEWIS
Cc: Corbin, Robert C.; Kelly, Kevin P.; Bright Atrial; Kersey, Gary
Subject: Rivers: Cost Comparison of Auger Cast Piles vs Hollow Bore Piles / D&F White Papers

Bill:

Based on data received from D&F for the total length (calculated from the micropile production pile submittal - approved as noted by D&F on 9-07-11) of the hollow bore piles and auger cast piles, Heery estimators have completed the cost analysis you requested.

A recap of the Heery estimates is as follows:

Hollow Bore Piles:

Approximately 45,000 linear ft x \$67 per linear ft = \$3,015,000

Auger Cast Piles:

Approximately 54,000 linear ft x \$48 per linear ft = \$2,592,000

The difference between these two estimates is \$423,000.

We are awaiting MB Kahn to finalize a change proposal request regarding the piles. Preliminary information from Terratec/MB Kahn is that they will be requesting roughly \$250,000 and 10 days for the additional 5,058 feet of auger cast piles. This additional length of piles is based on the increase in length from 78 feet (not 66 feet).

Heery's recommendation based on current available information is that it is not prudent to continue any further investigation of the hollow bore piles at this time.

D&F White Papers: Heery is still awaiting receipt of these and will forward as soon as they are received.

Robert Corbin LEED^{AP} BD+C | **HEERY**

Vice President | 843-576-2962 office | 843-513-0149 mobile

 Please consider the environment before printing this e-mail

ROSEN, ROSEN & HAGOOD, LLC

ATTORNEYS AND COUNSELLORS AT LAW

134 MEETING STREET, SUITE 200

P.O. Box 893

CHARLESTON, SOUTH CAROLINA 29402

PHONE (843) 577-6726

FAX (843) 724-8036

www.rshlawfirm.com

A. Bright Ariail
bariail@rshlawfirm.com

September 30, 2011

(VIA EMAIL AND US MAIL)

William H. Lewis
COO for Capital Programs
Charleston County School District
3999 Bridgeview
North Charleston, SC 29408

Re: CCSD re: Rivers Education Center

Dear Bill:

As requested, I have reviewed pertinent documents related to the micropiles to be installed at the Rivers Education Center under the contract between Charleston County School District ("CCSD") and M.B. Kahn Construction Company ("M.B. Kahn") and recommend that CCSD approve the change order increasing the pile lengths from 78 linear feet to 86 linear feet for vertical piles and increasing the battered pile lengths accordingly as required to accommodate each specified batter:

My recommendation is based on the following:

- Drawing S-402: Foundation Retrofit Sections and Details includes a detail entitled Typical Micropile Elevation which shows the top of marl at elevation -43' and the pile tip elevation at -66'. (For information, the contractor's initial submittal proposed test piles of 66', 70', 75' and 80' based on the top of marl occurring at -43'.)
- Addendum No. 1 A6. Indicates that "[p]ile bids are to be based on the pile lengths, angles and numbers that are shown on the bid documents."
- Addendum No. 1 to the Geotechnical Exploration Report for Seismic Retrofit (contained in the project manual) includes Fig. 1 Pile Resistance which indicates that a Pile Tip Depth of 78 linear feet corresponds to the Ultimate (Best Estimate) Pile Capacity of 200 kips (design capacity).

ROA000472

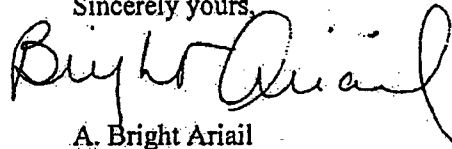
September 30, 2011

Page 2

- The length of pile required may vary based on the type of micropile designed. However, there is no indication in the contract that lengths shown on the contract documents are based on a certain type of micropile, there is no requirement in the contract to use a specific type of micropile, nor is there a prohibition in the contract against using a certain type of micropile. (ex: auger vs. hollow bore)
- Specification Section 02369 para. 3.4.2.a and Note 2 of the Micropile Notes on Drawing S-000 both indicate that a test pile program shall be performed prior to installation of production pile to *confirm* production pile length.

Considering these requirements of the contract, the increase in pile length from 78' to 86' for vertical piles and the related increase for battered piles is a change to the contract for which the contractor should be compensated. The change order should include the additional material cost as well as labor and equipment costs for installation.

Sincerely yours,



A. Bright Ariail

ABA/aba

cc: Lawrence Lutrario, CCSD (via email only)
Robert Corbin, Heery International, Inc. (via email only)
Kevin Kelly, Heery International, Inc. (via email only)

ROA000473

CHANGE PROPOSAL FORM

Project: Charleston County School District Change Proposal Date: 9.15.11
 Contract: Rivers Education Center Proposal #: 12
 Contractor: M. B. Kahn Project #:
 Contractor #: 2229

Description of change:

Modification of pile length from 78' to 86'. See attached subcontractor proposal.

Materials (Attach list with Qty, Item, Unit \$, Unit MH, Total MH, OT MH, Total \$)				SUBTOTALS	
1 Total Direct Cost of Materials			\$0.00		
2 Overhead & Profit on Item 1.			\$0.00		
3 Sales Tax			\$0.00		
4 Shipping & Transportation			\$0.00		\$0.00
Labor					
5 Total Man-hours:		MH @	/hr.	\$0.00	
6 Overhead & Profit on Item 5.				\$0.00	
7 Payroll Taxes & Insurance	31.2%		\$0.00		\$0.00
Equipment Rental (Include quotes)					
8 Equipment Rental			\$0.00		
9 Overhead & Profit on Item 8.			\$0.00		\$0.00
Subcontractors (Include quotes with material & equipment backup)					
10 Subcontractors			\$227,610.00		
11 Overhead & Profit on Item 10.			\$15,932.70		
12 Sub Bond	1.2%		\$2,731.32		\$246,274.02
Subtotal of Proposal					\$246,274.02
13 P&P Bond (% of subtotal of proposal)	0.65%				\$1,600.78
TOTAL OF CHANGE PROPOSAL					\$247,874.80

Time Extension Requests: / day(s) Schedule Activity # Affected:

Contractor's Signature: *M. B. Kahn* Date: 9/15/11
 Approval Recommended by Design Consultant: Date:
 Owner's Representative Approval: Date:

ROA000474

CHANGE PROPOSAL FORM

Project: Rivers Education Center
 Contract: _____
 Contractor: Terratec Inc.

Proposal #: _____
 Project #: _____
 Contractor #: MBK Job No. 2229

Description of change:

This change order is submitted for time and cost increase associated with the addition of pile length from bid to production. The total added auger grouted pile length is 5,058 which includes vertical and battered piles (20 & 30%)

Materials	(Attach list with Qty, Item, Unit \$, Unit mh, Total mh, OT mh, Total \$)				SUBTOTALS
1	Total Direct Cost of Materials				\$63,614.00
2	Overhead & Profit on Item 1.		(15%)	\$9,542.10	
	(15% maximum, includes small tools & consumables)				
3	Sales Tax		(7%)	\$4,452.90	
4	Shipping & Transportation				\$77,609.00
Labor					
5	Total Manhours:	1,411 MH	\$51.32 /hr.	AVG.	\$72,405.00
6	Overhead & Profit on Item 5.			\$10,860.75	
	(15% maximum on straight labor cost, not premium portion)				
	(O & P includes supervisor's time)				
7	Payroll Taxes & Insurance	28%		\$20,273.40	\$103,539.15
Equipment Rental (include quotes)					
8	Equipment Rental				\$22,028.16
9	Overhead & Profit on Item 8.			\$1,321.69	\$23,349.85
	(6% maximum)				
Subcontractors (include quotes with material & equipment backup)					
10	Subcontractors				\$21,600.00
11	Overhead & Profit on Item 10.			\$1,512.00	\$23,112.00
	(7% maximum)				
Subtotal of Proposal					\$227,610.00
12	Bonds (% of subtotal of proposal)		0.0%		
TOTAL OF CHANGE PROPOSAL					\$227,610.00

Time Extension Requests: 10 day(s) Schedule Activity # Affected: _____

The Contractor agrees to perform the work outlined in this change proposal for the amount specified above and in accordance with the Contract documents if the work is authorized by the Owner.

Contractor's Signature: [Signature]

Date: 8/26/11

Approval Recommended by Design Consultant: _____

Date: _____

Owner's Representative Approval: _____

Date: _____