Agenda

Board of Trustees
Regular Meeting
Location: Dutch Fork High School Cafeteria
Video Livestream: https://lexrich5.rev.vbrick.com/#/webcasts/boardmeeting

September 28, 2020

1. Call to order at 5:00 p.m.

2. Approval of the agenda

3. Enter Executive Session to consider the following:
    a. Evaluation of Superintendent for 2019-2020 (*Exhibit A*)
    b. Selected employment items (*Exhibit B*) (Action)
    c. Selected employment items (*Exhibit C*) (Information Only)

4. Call to order at 7:00 p.m.

5. Welcoming remarks – Michael Cates, Chairman, Board of Trustees

6. Invocation – Robert Gantt, Secretary, Board of Trustees

7. Pledge of Allegiance – Robert Gantt, Secretary, Board of Trustees

8. Superintendent's Report (Action as necessary)
    - Piney Woods Elementary School Mascot Report
    - 2020-2021 School Reentry Overview: Part VI

9. Approval of the minutes of the September 14, 2020 board meeting

10. Public Participation*

ACTION AGENDA

11. Action as Necessary or Appropriate on Matters Discussed in Executive Session

12. Evaluation of Superintendent for 2019-2020

DISCUSSION AGENDA

13. Legal Services

14. District Construction (Carryover item that does not include Piney Woods Elementary School which was a separate item on the September 14, 2020 agenda that was completed.)

15. Continuation of Public Participation*

16. Adjourn

INFORMATION AGENDA

17. The next regular scheduled board meeting will be October 12, 2020. Location to be determined.

**The Board welcomes and encourages public participation. We respectfully ask that you adhere to the procedures and the decorum provided in board policy BEDH "Public Participation at Meetings". Your comments should be limited to three minutes. Questions asked during public participation will be handled in accordance with board policy BEDH.*

COVID-19 NOTICE: Due to federal and state social distancing guidelines, seating capacity at our school board meeting will be limited. The district will live stream board meetings to provide virtual viewing options. Masks will be required in accordance with a Richland County ordinance.

Minutes
Board Meeting – September 14, 2020

The Board of Trustees of School District Five of Lexington and Richland Counties conducted an in-person meeting at Irmo High School with the following members present:

Mr. Michael Cates, Chairman
Ms. Beth Hutchison, Vice Chairman
Mr. Robert Gantt, Secretary (via video/phone conference call)
Mrs. Nikki Gardner
Mrs. Jan Hammond
Mr. Ken Loveless
Mr. Ed White
Dr. Christina Melton, District Superintendent

The following staff members attended in person or virtually via video/phone conference call:

Mrs. Katrina Goggins, Director, Office of Communications
Mr. Michael Guliano, Chief Instructional Officer
Dr. Michael Harris, Chief Planning and Administrative Officer
Dr. Allison Jacques, Chief Human Resources Officer
Mr. Len Richardson, Chief Finance Officer

A livestream video link was provided to the public for the meeting.

Chairman Cates called the meeting to order at 7:03 p.m. and offered welcoming remarks. Mr. Cates also gave the invocation and led the Pledge of Allegiance.

During the Superintendent's Report, Dr. Christina Melton provided an update entitled: *2020-2021 School Reentry Overview: Part V*, which highlighted reentry for the 2020-2021 school year.

During public participation, the following people spoke regarding the school reentry plan: Trey Hodges, Matt Hogan, Jennifer Weed, Cali Foxworth, Amye Hawkins, Lisa Harris, Todd Howell, Kim Stutts, Jessica Loudermilk, Shannon Boyd, Susan Snyder, Brian Bilbro, Jason Valek, Brittney Conrad, Rebecca Blackburn Hines, Deana Berley, Chad Stefaniak, Catherine Huddle, James Ryan and Kevin Scully. In addition, Jondy Loveless spoke regarding construction policy, and Danny Brabham spoke regarding land purchases.

At the conclusion of public participation, a short recess (approximately 10 minutes) was called by Chairman Cates.

ACTION AGENDA

Action was taken as necessary or appropriate on matters discussed in Executive Session: Selected employment items shown in Exhibit A, for Action; and, selected employment items shown in Exhibit B, for Information Only.

By acclamation, Nikki Gardner was elected as the delegate, and Ken Loveless was elected as the alternate, for the 2020 SCSBA Delegate Assembly as shown in Exhibit C. The certification of the delegates was approved unanimously.

DISCUSSION AGENDA

An update on the construction of Piney Woods Elementary School was given by Dan Neal, consultant, and Greg Hughes, of Contract Construction. A discussion regarding concrete testing took place between board members and included questions directed to Mr. Neal, Mr. Hughes, Mr. (Doug) Quackenbush, of Quackenbush Architects, and Mr. (Mike) Montgomery, of Montgomery Willard, LLC.

Following the Piney Woods Elementary School discussion, Chairman Cates tabled the final two agenda items, District Construction and Legal Services, due to the late hour.

The meeting was adjourned at 11:22 p.m.

INFORMATION AGENDA

The next regular scheduled board meeting will be September 28, 2020. Location to be determined.

Record of Voting

School District Five
of
Lexington and Richland Counties

Meeting of September 14, 2020

	Cates	Gantt	Gardner	Hammond	Hutchison	Loveless	White
1. M. Hammond S. Hutchison Approve the agenda	X	X	X	X	X	X	X
2. M. Hutchison S. Hammond Enter Executive Session to consider selected employment items, Exhibit A, Action, and Exhibit B, Information	X	X	X	X	X	X	X

A = Absent
AB = Abstain
N = No
X = Yes
R = Recuse

	Cates	Gantt	Gardner	Hammond	Hutchison	Loveless	White
3. M. Hammond S. Loveless I move we direct the Superintendent to move forward with the re-entry plan presented on July 23rd which provided for face to face 5 days a week on October 8th. Furthermore, if there is evidence of an increase in COVID numbers within Lexington County that may cause greater safety issues, a revision can be made to the board but only after the evidence is presented, discussed and approved by the entire board.	N	N	X	X	N	X	N
M. White S. Hammond Support moving to 5 day face to face as soon as possible and we encourage the Superintendent to work towards 5 day face to face on the target date of October 8 or such other date as Superintendent deems safe to do so.	X	X	N	N	X	N	X
M. Gardner S. Hammond Amend Mr. White's motion to add "with board approval"	N	N	X	X	N	X	N
4. M. Hutchison S. Loveless Approval of the minutes from the August 24, 2020 board meeting	X	X	X	X	X	X	X
5. M. Loveless S. Hammond Action as necessary on appropriate matters discussed in Executive Session to approve selected employment items as shown in Exhibit A	X	X	X	X	X	X	X
6. M. Hammond S. Hutchison By acclamation, elect Nikki Gardner as delegate, and Ken Loveless as alternate, for the 2020 SCSBA Delegate Assembly as shown in Exhibit C	X	X	X	X	X	X	X

A = Absent
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	Cates	Gantt	Gardner	Hammond	Hutchison	Loveless	White
7. M. Hutchison S. Hammond Adjourn at 11:22 p.m.	X	X	X	X	X	X	X

A = Absent
AB = Abstain
N = No
X = Yes
R = Recuse

Ed White

From: Edward White <ewhite@lexrich5.org>
Sent: Monday, June 15, 2020 12:46 PM
To: Ed White
Subject: Fwd: Concrete Inspection ans Testing Related matter December 6, 2019

◄External Email► - From: ewhite@lexrich5.org

Attachment #1, #1 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Ed White pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

---------- Forwarded message ---------
From: **Kenneth Loveless** <kloveless@lexrich5.org>
Date: Thu, Feb 13, 2020 at 6:08 PM
Subject: Concrete Inspection ans Testing Related matter December 6, 2019
To: Robert Gantt <RGantt@lexrich5.org>, Beth Hutchison <bhutchison@lexrich5.org>, Michael Cates <michaelcates@lexrich5.org>, Jan Hammond <jhammond@lexrich5.org>, Nikki Gardner <ngardner@lexrich5.org>, Board Member Ed White <EWhite@lexrich5.org>, Dr. Christina Melton <csmelton@lexrich5.org>

Mr, Gantt,

When Dr.Melton, Dan Neal and I met on December 9,2019, she asked that I call Mr.Neal directly about observations and questions. Dr. Melton requested Mr.Neal to give me his business card with contact information, which he did. Last year we were instructed to contact administrative staff members directly to ask questions and make observations in their respective areas of expertise.I have been doing that. In the email dated February 12, 2020 from you, I am now being required to submit questions directly to you and Dr. Melton.

I spoke to Mr.Neal yesterday. He stated to me that he could not give me answers to my requests.I called Mr.Neal to find the times and dates he could possibly to meet on site to review documents and review the work related to the matter. Mr.Neal said to me that he was under orders from you, the board chair and the superintendent not to meet with me or to provide documents without a directive from the two of you.I believe that neither of you has the power to do as Mr.Neal says.

First, I was elected by the public, am peer to you. Further, I am not an employee and as such, do not take orders from Dr. Melton.

Second, the requests for documents are targeted to specific items and timeframes and are not overly burdensome. They are not attorney work product and are not the product of any executive session since the causative event was brought to the entire board's attention during the public participation session of the December 9,2019 board meeting. The documents requested are all items which are required in the Project Manual or contract documents.If the documents have been submitted and maintained as the Project Manual and contract documents require, all can be sent to me with as little as two hours clerical effort.

Additionally, since we are paying one half million dollars for testing, I do not believe we would would be putting any imposition upon the consultants to answer the legitimate concerns of the public.

In as far as Mr. Neal is concerned,for December 9,2019, I was attempting to arrange a meeting with Mr.Neal to ask questions prior to the board meeting that night.I wanted to meet with Dan Neal without the architect and construction manager present because I had concerns which an owner might want to keep confidential. In a December 5,2019 email to me from you, Robert Gantt it was stated:" As you know, Mr. Neal is a Mechanical Engineer and a Professional Engineer.He is the District 5 representative looking out for our interest He is not however an architect nor the Prime Contractor for D5 on the new elementary school. He may not have the have all the detail for design and construction you may be seeking."

In your February 12,2020 email you state " Our consultant Mr. Dan Neal is a professional engineer with advanced degrees and a career with vast experiences that benefit the district in the pursuit of excellence in this construction". It appears to me that you want it both ways. I don't fathom the reversal in your opinion of him.

I, too,have experience and degrees.The longer it takes to gain the answers to my questions and obtain the documents requested, the more costs and the long term safety could be jeopardised.

And, here's the kicker, Mr. Gantt, I was elected to bring oversight so that we will not have projects such as the Chapin High School Renovations where the experts were aware that work was not per specification and it ended up costing the taxpayers millions to correct defects.

And, I am a bargain. It is not costing you anything for an extra set of eyes. My intent ,regardless of Ed White's ascertains, is to have an exceptionally well built project. I believe that all of us have the same goal. I come with my own insurance so there is no liability. I will not give directives.

Please provide me the documents that I have requested.

Respectfully submitted,

Kenneth B. Loveless

All Board Members have the same rights and responsibilities,

Mr. Loveless is not credentialled to sign off on this project.

This is incorrect. Mr. Loveless was not on the Board during the Settlement. Total deficiencies at Chapin High School less than #25,000, Settlement discussion to be on subsequent meeting,

See and listen to September 14, 2020 Board recording.

Attachment #1, pg 2 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Ed White pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

For the Record - 9/14/2020
Beth Hutchison

District Five OF LEXINGTON & RICHLAND COUNTIES

Attachment #2, p31 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Fwd: familyneals@aol.com has sent you a file from the Terracon CDW

1 message

Kenneth Loveless <kloveless@lexrich5.org> Thu, Jul 16, 2020 at 5:17 PM
To: Michael Cates <michaelcates@lexrich5.org>, Beth Hutchison <bhutchison@lexrich5.org>, Robert Gantt <RGantt@lexrich5.org>, Nikki Gardner <ngardner@lexrich5.org>, Christina Melton <csmelton@lexrich5.org>, Janis Hammond <jhammond@lexrich5.org>, Edward White <EWhite@lexrich5.org>

All,

After receiving Terracon Report # 37, I offer the following:

Please review the attached photos above from the letter from Dan Neal to Dr.Melton dated 4:45 PM 7/13/2020. The letter contains Terracon report # 37 of which the photos are a part. The electrical code, NFPA 70 article 352.30 (B) requires 2' PVC conduit to be supported at no greater than 5'0" O.C. Look at the second photo. Do you see anything supporting the conduit off the earth? There is nothing there.

Both photos show the conduit is penned down to the floor of the ditch with piles of dirt,not on PVC conduit spacer racks with restraints as required. Those dirt piles are still there right now separating the conduit from the concrete. The concrete is not homogeneous because the concrete has dirt mixed in with it.The conduit is on the ditch bottom held down by the dirt following the contour of the excavation, not suspended in the concrete as required. The conduit can be punctured by the mass of the concrete and backfilled earth above the concrete bearing on it. This mass can force the conduit into sharp rocks or other objects in the ditch bottom.That is why the NFPA 70 calls for such conduit to be Schedule 80 rather than schedule 40 as constructed.Had the duct bank been constructed properly, the schedule 40 PVC conduit would have been acceptable. Did Mr. Sims,the electrical engineer, know the full story when he wrote his letter in defense of Mr. Hughes? Why was Mr.Sims prompted to write the letter without full knowledge? Whether or not Mr. Sims agrees or not, best practices were not installed with the conduit on the ditch bottom. It's a simple concept.

Article 352.44 requires expansion fittings where there will be temperature changes. I don't see any.

Mr. Hughes says in his letter of 4/20/20 that all has been signed off by Terracon. Mr. Hughes knows that Terracon is not the deciding entity. Terracon works for the district to insure the district testing protocols are followed. As such, Terracon does not take on the role of interpreting the specifications for the contractor. Only the Architect can do that and the Architect must be informed before the work can continue or the contract is responsible for his actions.

I invite everyone to read this: The Project Manual Section 14000 1.8 B.states :"Project quality-control manager may also serve as Project superintendent."There is a built-in conflict of interest. The fox is guarding the hen house. Does anyone seriously believe that the same person who is paid to push production and schedule is going to also demand quality when that would mean slowing the schedule and production? Can you imagine any homeowner building a house who would cede to his builder the owner's right to control quality? Would any of you? Yet, the district did just that.

I have studied the Terracon reports that were provided to date.There are a minimum of 238 reports which are supposed to have been posted through 7/6/2020. 76 are actually posted. Of those 76, ten reports show deviations from the specifications. You can read them. They show that there are more than just a few instances where Terracon indicated discrepancies but the quality-control manager/ Project superintendent proceeded on without stopping.

See other side →

July 16, 2020 email

Mr.Gantt sent me Terracon reports 1-35 when he was chairman. Of those 35 reports only 1-18,23 and 31A are shown on the website. I have the remainder and can prove that they came from the district. Contrary to the Director of Communications,the district has reports that it is not sharing with the public. Will they be shared today? What's in the remaining more than 162 reports? Why are they not being shared? You should ask that.

I have asked for all the missing reports through 7/6/2020. My wife has sent a FOIA request for the same. Other parties have sent FOIA requests for the same.To date, the website does not list the full complement of reports.

A package of concrete delivery tickets came anonymously in the mail. I have reviewed those and found serious problems which I forward in a letter to Mr. Cates and Dr. Melton on 7/14/2020. My letter of March 24,2020 to Dr. Melton asked for other important information which has apparently been ignored. You should ask why I cannot see the things for which I have asked.

Please review and act accordingly by understanding that quality construction takes a group effort. I am trying to help the group.

Ken Loveless

---------- Forwarded message ----------
From: **Christina Melton** <csmelton@lexrich5.org>
Date: Tue, Jul 14, 2020 at 9:06 AM
Subject: Fwd: familyneals@aol.com has sent you a file from the Terracon CDW
To: Katrina Goggins <kgoggins@lexrich5.org>

This message is being blindcopied to all Board of Trustees. An attachment is included for your information.

Christina S. Melton, Ed.D.
Superintendent
School District Five of Lexington & Richland Counties
office: 803.476.8169 or 803.476-8116
www.lexrich5.org

Pursuing Excellence for Tomorrow's Challenges

Attachment #2, pg 2 is included with the minutes of the 9/14/2020 meeting at the request of Board member BOBBY KITZMILLER pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

---------- Forwarded message ----------
From: **Dan Neal** <familyneals@aol.com>
Date: Mon, Jul 13, 2020 at 4:45 PM
Subject: Fwd: familyneals@aol.com has sent you a file from the Terracon CDW
To: csmelton@lexrich5.org <csmelton@lexrich5.org>

Here is the requested report 37.

P.O Box 3408
Summerville, SC 29484-3408

Office (843) 821-7600
Fax (843) 821-7627

September 14, 2020

Mr. Greg Hughes
Contract Construction
P.O. Box 269
Ballentine, SC 29002

Re: Amick's Ferry Elementary School Project

Dear Greg:

On or around April 17, 2020 Ken Loveless requested copies of concrete delivery tickets as it pertains to curb & gutter concrete supplied to Coogler Concrete for the above referenced project. At Mr. Loveless's request the delivery tickets were mailed to his attention.

Please contact me should you have any questions or if you need any additional information.

Respectfully,

Pete Knight
President

Attachment #2, pg 3 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

For the Record of school board meeting on 9/14/2020.
by Beth Hutchison

Attachment #2, pg 4 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Source: SC State Ethics Commission, Advisory Opinions
Topic 3, Conflicts of Interests/Economic Interests
Economic Interests 2002-003(PDF)

SEC AO2002-003 November 14, 2001

SUBJECT: ECONOMIC INTEREST

SUMMARY: The economic interest of an immediate family member, an individual with whom associated and a business with which associated is imputed to the public official, public member, and public employee for purposes of Section 8-13-700, etal.

QUESTION: Having noted the inconsistencies between Section 8-13-100(11) and Section 8-13-700 and Section 8-13-725 the Commission issues an Advisory Opinion on whether the economic interest of an immediate family, an individual with whom associated and a business with which associated is imputed to the public official, public member, and public employee for purposes of Section 8-13-700, etal.

DISCUSSION: The State Ethics Commission's jurisdiction is limited to the applicability of the Ethics, Government Accountability, and Campaign Reform Act of 1991 (Act no. 248 of 1991; Section 2-17-5 et seq. and Section 8-13-100 et seq., as amended, 1976 Code of Laws of South Carolina). This opinion does not supersede any other statutory or regulatory restrictions or procedures which may apply to this situation. Failure to disclose relevant information may void the opinion.

Section 8-13-700 provides in part:

(A) No public official, public member, or public employee may knowingly use his official office, membership, or employment to obtain an economic interest for himself, a member of his immediate family, an individual with whom he is associated, or a business with which he is associated. This prohibition does not extend to the incidental use of public materials, personnel, or equipment, subject to or available for a public official's, public

Attachment #2, pg 5 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

member's, or public employee's use which does not result in additional public expense.

(B) No public official, public member, or public employee may make, participate in making, or in any way attempt to use his office, membership, or employment to influence a governmental decision in which he, a member of his immediate family, an individual with whom he is associated, or a business with which he is associated has an economic interest. A public official, public member, or public employee who, in the discharge of his official responsibilities, is required to take an action or make a decision which affects an economic interest of himself, a member of his immediate family, an individual with whom he is associated, or a business with which he is associated shall:

(1) prepare a written statement describing the matter requiring action or decisions and the nature of his potential conflict of interest with respect to the action or decision;

Section 8-13-725 provides in part:

(A)No public official, public member, or public employee may use or disclose confidential information gained in the course of or by reason of his official responsibilities in any way that would affect an economic interest held by himself, a member of his immediate family, an individual with whom he is associated, or a business with which he is associated.

A public official, public member, or public employee (hereinafter "public official") may not knowingly use his office to obtain an economic interest for himself, a member of his immediate family, an individual with whom he is associated or a business with which he is associated. Additionally, a public official may not make, participate in making, or in any way attempt to use his office to influence a governmental decision in which he, a member of his immediate family, an individual with whom he is associated or a business with which he is associated has an economic interest. Finally, a public official may not use or disclose confidential information that would affect the economic interest of himself, a member of his immediate family, an individual with whom he is associated or a business with which he is associated. However, the definition of economic interest found at Section 8-13-100(11)(a) states it is "an interest distinct from that of the general public in a purchase, sale, lease contract, option or other transaction or arrangement involving property or services in which a *public official, public member, or public employee* may gain an economic benefit of fifty dollars or more." (emphasis added). The definition does not include any reference to an immediate family member, an individual with whom associated or a business with which associated.

Attachment #2, pg 6 is included with the minutes of the 4/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

The practice of the Commission, as well as the legislative ethics committees, has been to impute the economic interest of "a member of his immediate family, an individual with whom he is associated, or a business with which he is associated" to the public official. If the economic interest of those covered relationships is not imputed to the public official, then the inclusion of those individuals and entities in Sections 8-13-700 (A), 700(B) and 725 would be meaningless.

CONCLUSION: The economic interest of an immediate family member, an individual with whom associated and a business with which associated is imputed to the public official, public member, and public employee for purposes of Section 8-13-700, etal.

KEY WORDS:	economic interest, immediate family member, individual with whom associated, business with which associated

ANNOTATIONS:	8-13-100(11), 8-13-700(A), 8-13-700(B) and 8-13-725

DEVIATION LOG

Report Date: 9/14/2020

Attachment #2, pg 7 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Terracon
521 Clemson Rd
Columbia, SC 29229-4307
803-741-9000

Client

School District Five of Lexington & Richland Counties
Attn: A. Len Richardson
1020 Dutch Fork Road
Irmo, SC 29063

Project

ES No. 13
814 Amicks Ferry Road
Chapin, SC

Project Number: 73191119

Deviation No.	Report No.	Service	Service Date	Description/Comments	How Resolved	Date Resolved	Status
D000001	0019	Field Density Testing	10/24/19	Moisture content and % compaction don't comply, Test 1	Re-test passed	10/25/19	Closed
D000002	0019	Field Density Testing	10/24/19	Moisture content and % compaction don't comply, Test 2	Re-tests passed	10/25/19	Closed
D000003	0052D	Concrete Compressive Strength Test	01/10/20	Slump does not comply, Set 1	Specified strength achieved at 28d	02/10/20	Closed
D000004	0072A	Concrete Compressive Strength Test	01/30/20	Slump does not comply, Set 1	28d strength achieved at 7d	02/10/20	Closed
D000005	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 1	Accepted per RFI#9	02/21/20	Closed
D000006	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 3	re test passed	02/11/20	Closed
D000007	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 4	re test passed	02/11/20	Closed
D000008	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 9	re test passed	02/11/20	Closed
D000009	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 10	re test passed	02/11/20	Closed
D000010	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 11	Accepted per RFI#9	02/21/20	Closed
D000011	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 12	Accepted per RFI#9	02/21/20	Closed
D000012	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 13	re test passed	02/11/20	Closed
D000013	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 14	Accepted per RFI#9	02/21/20	Closed

DEVIATION LOG

Report Date: 9/14/2020

Attachment #2, pg 8 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Fritzlusen pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Terracon
521 Clemson Rd
Columbia, SC 29229-4307
803-741-9000

Client

School District Five of Lexington & Richland Counties
Attn: A. Len Richardson
1020 Dutch Fork Road
Irmo, SC 29063

Project

ES No. 13
814 Amicks Ferry Road
Chapin, SC

Project Number: 73191119

Deviation No.	Report No.	Service	Service Date	Description/Comments	How Resolved	Date Resolved	Status
D000014	0072B	Field Density Testing	01/30/20	Percent compaction does not comply, Test 15	Accepted per RFI #9	02/21/20	Closed
D000015	0076A	Masonry Observations	02/04/20	Deficient vertical lap for rebar coming out of footing under opening at West wall of Multi-purpose room B-125 (Contractor got verbal approval to drop in rebar to continue to FF, but not written approval) See also this days report for addtl information (second item)	Lap length and placement methods approved for this location by EOR	02/06/20	Closed
D000016	0077A	Concrete Compressive Strength Test	02/05/20	Slump does not comply, Set 1	Specified strength achieved at 28d	03/04/20	Closed
D000017	0077A	Concrete Compressive Strength Test	02/05/20	Slump does not comply, Set 2	Specified strength achieved at 28d	03/04/20	Closed
D000018	0081	Field Density Testing	02/10/20	Percent compaction does not comply, Test 1	Retest passed	03/19/20	Closed
D000019	0108	Field Density Testing	03/19/20	Moisture content and % compaction don't comply, Test 5	Retest passed	03/20/20	Closed
D000020	0108	Field Density Testing	03/19/20	Percent compaction does not comply, Test 6	Retest passed	03/20/20	Closed
D000021	0118B	Masonry Observations	04/02/20	Grout mix not approved per submittal. W/C ratio of mix exceeded.	Grout mix approved 4/3/20. 7d strength exceeded specified 28d strength	04/10/20	Closed
D000022	0123	Masonry Observations	04/08/20	Approved W/C ratio exceeded for grout. See report for details.	7d strength exceeded specified 28d strength	04/15/20	Closed
D000023	0148D	Concrete Compressive Strength Test	05/08/20	Slump does not comply, Set 1	28d strength met specified requirements.	06/05/20	Closed

DEVIATION LOG

Report Date: 9/14/2020

Attachment #2, Pg 9 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Terracon
521 Clemson Rd
Columbia, SC 29229-4307
803-741-9000

Client

School District Five of Lexington & Richland Counties
Attn: A. Len Richardson
1020 Dutch Fork Road
Irmo, SC 29063

Project

ES No. 13
814 Amicks Ferry Road
Chapin, SC

Project Number: 73191119

Deviation No.	Report No.	Service	Service Date	Description/Comments	How Resolved	Date Resolved	Status
D000024	0176	Structural Steel Observations	06/10/20	Shear studs Area A 2nd floor do not mee requirements	Contractor repaired non-compliant items	06/11/20	Closed
D000025	0189A	Concrete Compressive Strength Test	06/19/20	Slump does not comply, Set 1	Specified strength achieved at 28d	07/20/20	Closed
D000026	0189	Concrete Observation	06/19/20	Slump for set 1 exceeded specificaiton requirements	Specified strength achieved at 28d	07/20/20	Closed
D000027	0201A	Concrete Observation	07/01/20	Concrete mix for generator pad was not from approved mix list	Specified strenght achieved at 28d	07/29/20	Closed
D000028	0214B	Masonry Observations	07/17/20	Control joint/ bond beam conflict room A204	See RFI 048	07/24/20	Closed
D000029	0216C	Concrete Compressive Strength Test	07/21/20	Average compressive strength does not comply, Set 1 Age 28	Dev. #29 based on 4,000 PSI @28d. Per sheet E-602, specified strength @28d is 3,000 PSI. Specified strength achieved at 28d.	09/14/20	Closed
D000030	0248A	Structural Steel Observations	09/08/20	Nuts on the anchor bolts on south side of column M-7 do not meet project requirements	Repaired /re-worked, see report .0250	09/09/20	Closed

Philoma Skipper

From: Greg Hughes
Sent: Monday, September 14, 2020 7:52 AM
To: Philoma Skipper
Cc: Kyle Farley
Subject: Fwd: Response to Ken Loveless concerns regarding electrical duct bank, Ryan Drafts, and Curb and Gutter Concrete
Attachments: Dennis Core Results (1).pdf; CC&I ES 13 Electrical Service Letter.pdf; Letter from Knights.pdf; Rebound Hammer Test Amicks Ferry.pdf; Curb Concrete Submittal.pdf

Philoma,

Please print me 4 copies of this (including attachments), paperclip, and put in a folder for Kyle to bring to the board meeting tonight. Thanks.

Greg Hughes, President
Contract Construction, Inc.
803.781.7058 o
803.513.8090 c
P.O. Box 269, Ballentine, SC 29002
www.contractconstruction.net

Attachment #2, pg 10 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

CONTRACT CONSTRUCTION

Begin forwarded message:

From: Dan Neal <familyneals@aol.com>
Subject: Fwd: Response to Ken Loveless concerns regarding electrical duct bank, Ryan Drafts, and Curb and Gutter Concrete
Date: August 2, 2020 at 8:35:42 AM EDT
To: "csmelton@lexrich5.org" <csmelton@lexrich5.org>, "lrichard@lexrich5.org" <lrichard@lexrich5.org>, "michaelcates@lexrich5.org" <michaelcates@lexrich5.org>
Cc: "ghughes@contractconstruction.net" <ghughes@contractconstruction.net>, "dquackenbush@quackenbusharchitects.com" <dquackenbush@quackenbusharchitects.com>, "mhm@montgomerywillard.com" <mhm@montgomerywillard.com>
Reply-To: Dan Neal <familyneals@aol.com>

Dr. Melton,
Please see attached Mr. Hughes' comments on Mr. Loveless' concerns in recent emails. I absolutely agree with everything in Mr. Hughes' email and especially his comments about Ryan Drafts and as the email states, the concrete strengths speak for themselves. I do not yet have the comments from Mr. Quackenbush on the electrical duct band, but I expect them before we have our meeting on Tuesday.

Dan Neal

Attachment #2, Pg 11 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

-----Original Message-----
From: Greg Hughes <ghughes@contractconstruction.net>
To: Dan Neal <familyneals@aol.com>
Sent: Thu, Jul 30, 2020 9:32 am
Subject: Response to Ken Loveless concerns regarding electrical duct bank, Ryan Drafts, and Curb and Gutter Concrete

Dan,

In response to emails from Ken Loveless that have been forwarded to me I offer the following responses:

1. Regarding the electrical duct bank installation, see attached letter from CC&I, special inspection subcontractor to Terracon, explaining why Mr. Loveless' assertions are incorrectly applied to this installation. You will note that this is not just the opinion of the inspection agency, but also the opinion of Mid Carolina Electric Cooperative (the ultimate authority for this installation) and the Electrical Engineer of record. You may also want to get Quackenbush Architects and Planners to weigh in on this issue with their "interpretation" of their specifications, as Mr. Loveless points out as protocol.
2. Now I will address Mr. Loveless' attack on our Project Superintendent, Ryan Drafts. Ryan takes his job very seriously and is arguably one of the best school builders in this state. His attention to quality assurance is apparent by the speed at which he corrects discrepancies identified and his level of quality control is illustrated by the small number of discrepancies noted by Terracon. This is a testament to how he personally identifies issues and has them corrected prior to scheduled inspections. Mr. Loveless seems to think it is impossible to be exemplary in both quality and schedule but I can assure you that Ryan is nearly perfect at both. What is most disturbing is that on June 18, Mr. Loveless visited the jobsite with other board members and Dr. Melton and was very complimentary of Ryan's management of the jobsite and the flow at which he has constructed the facility. If Mr. Loveless still doubts Ryan's capabilities, I will be happy to provide a number of reference letters on Ryan's behalf that will be testimonials to Ryan's unique abilities to push a schedule without sacrificing quality.
3. Lastly, Mr. Loveless refers to an anonymous package of concrete tickets that came in the mail. These were not at all anonymous. Mr. Loveless used his recent re-established relationship with Pete Knight, Owner of Knight's Redi-Mix, as well as his position on the Board of Trustees to have Pete provide him with Coogler Construction's concrete delivery tickets for the curb and gutter. He went on to specifically request that they not be emailed, but mailed to him. Pete Knight is our preferred concrete supplier and has done business with us for many years and Mr Loveless manipulated him under the guise that "as a board member he was trying to help put an issue to bed related to the concrete used for curb and gutter on Elementary School 13". Now that the manner in which these tickets were received has been cleared up, let's talk about the concrete itself. Mr. Loveless points out a number of tickets that have water added or have time limit issues. We decided to simply let the concrete speak for itself and did so using two different testing methods (you will note that we also tested the "identifying concrete" poured over the electrical duct bank since this was also a concern of Mr. Loveless in previous correspondences). Attached are the results of 20 concrete cores taken by Dennis Corporation, 17 of which were from curb and gutter and 3 of which were from the electrical duct bank. The average of the 17 cores in the curb and gutter was 4478 psi compared to the specified requirement of 3000 psi. The three cores taken at the electrical duct bank averaged 3780 psi, for concrete that had no specified strength requirements. As a second level of verification, Coogler Construction requested that Knights Redi-Mix perform non-destructive testing at 8 other locations and those results averaged 4686, which is very consistent with the destructive testing performed by Dennis Corporation. We utilized two different companies to perform testing so there would be no "fox watching the hen house" accusations. Knights goes further to explain the reason they were not concerned with the placement of concrete from trucks that had exceeded the normal time limitations for concrete.

In closing, we feel that we have gone above and beyond to address the issues that Mr. Loveless felt were detrimental to the project, and hope that we have provided information that proves, beyond a shadow of a doubt, that the work in place meets and exceeds the project requirements.

Feel free to contact me if there are any further questions regarding these matters.

Greg Hughes, President
Contract Construction, Inc.
803.781.7058 o
803.513.8090 c
P.O. Box 269, Ballentine, SC 29002
www.contractconstruction.net

Attachment #2 Pg 12 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

CONTRACT CONSTRUCTION

On Jul 21, 2020, at 9:15 PM, Dan Neal <familyneals@aol.com> wrote:

Greg, please research these issues and let me know when you can provide a full report to me so that I can brief Dr. Melton. Thanks.

Dan

-----Original Message-----
From: Christina Melton <csmelton@lexrich5.org>
To: familyneals@aol.com
Sent: Tue, Jul 21, 2020 8:35 pm
Subject: Fwd: familyneals@aol.com has sent you a file from the Terracon CDW

Dan ,
Upon your review , reach out to Erin for us to schedule a time to discuss this information.

Christina S. Melton , Ed.D.
Superintendent of School District 5 of Lexington & Richland Counties

Sent from my iPhone

Begin forwarded message:

> **From:** Michael Cates <michaelcates@lexrich5.org>
> **Date:** July 16, 2020 at 6:21:54 PM EDT
> **To:** Ken Loveless <kloveless@lexrich5.org>
> **Cc:** Beth Hutchison <bhutchison@lexrich5.org>, Robert Gantt <RGantt@lexrich5.org>, Nikki Gardner <ngardner@lexrich5.org>, Christina Melton <csmelton@lexrich5.org>, Jan Hammond <jhammond@lexrich5.org>, Ed White <EWhite@lexrich5.org>
> **Subject: Re: familyneals@aol.com has sent you a file from the Terracon CDW**

Mr. Loveless,

All Terracon reports are on the district website. The reports are listed by month some months have multiple pages and the district has been maintaining the site for some time. I am not sure how many

because I have not taken the time to count them. I see reports I-200 with some numbers having multiple reports (a,b,c) are listed. If you need help accessing them please let me know. They can be found at https://www.lexrich5.org/Page/24735

If, and I say if, what you are describing is so, what remedy are you sugesting?

Michael Cates
School Board Trustee, Board Chair
District Five of Lexington & Richland Counties
803 518-4567
michaelcates@lexrich5.org

Attachment #2, #913 is included with the minutes of the 7/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

On Jul 16, 2020, at 5:17 PM, Kenneth Loveless <kloveless@lexrich5.org> wrote:

All,

After receiving Terracon Report # 37, I offer the following:

Please review the attached photos above from the letter from Dan Neal to Dr.Melton dated 4:45 PM 7/13/2020. The letter contains Terracon report # 37 of which the photos are a part. The electrical code, NFPA 70 article 352.30 (B) requires 2' PVC conduit to be supported at no greater than 5'0" O.C. Look at the second photo. Do you see anything supporting the conduit off the earth? There is nothing there.

Both photos show the conduit is penned down to the floor of the ditch with piles of dirt,not on PVC conduit spacer racks with restraints as required. Those dirt piles are still there right now separating the conduit from the concrete. The concrete is not homogeneous because the concrete has dirt mixed in with it.The conduit is on the ditch bottom held down by the dirt following the contour of the excavation, not suspended in the concrete as required. The conduit can be punctured by the mass of the concrete and backfilled earth above the concrete bearing on it. This mass can force the conduit into sharp rocks or other objects in the ditch bottom.That is why the NFPA 70 calls for such conduit to be Schedule 80 rather than schedule 40 as constructed.Had the duct bank been constructed properly, the schedule 40 PVC conduit would have been acceptable. Did Mr. Sims,the electrical engineer, know the full story when he wrote his letter in defense of Mr. Hughes? Why was Mr.Sims prompted to write the letter without full knowledge? Whether or not Mr. Sims agrees or not, best practices were not installed with the conduit on the ditch bottom. It's a simple concept.

Article 352.44 requires expansion fittings where there will be temperature changes. I don't see any.

Mr. Hughes says in his letter of 4/20/20 that all has been signed off by Terracon. Mr. Hughes knows that Terracon is not the deciding entity. Terracon works for the district to insure the district testing protocols are followed. As such, Terracon does not take on the role of interpreting the specifications for the contractor. Only the Architect can do that and the Architect must be informed before the work can continue or the contract is responsible for his actions.

I invite everyone to read this: The Project Manual Section 14000 1.8 B.states :"Project quality-control manager may also serve as Project superintendent."There is a built-in conflict of interest. The fox is guarding the hen house. Does anyone seriously believe that the same person who is paid to push production and schedule is going to also demand quality when that would mean slowing the schedule and production? Can you imagine any homeowner building a house who would cede to his builder the owner's right to control quality? Would any of you? Yet, the district did just that.

I have studied the Terracon reports that were provided to date.There are a minimum of 238 reports which are supposed to have been posted through 7/6/2020. 76 are actually posted. Of those 76, ten reports show deviations from the specifications. You can read them. They show that there are more than just a few instances where Terracon indicated discrepancies but the quality-control manager/ Project superintendent proceeded on without stopping.

Mr.Gantt sent me Terracon reports 1-35 when he was chairman. Of those 35 reports only 1-18,23 and 31A are shown on the website. I have the remainder and can prove that they came from the district. Contrary to the Director of Communications,the district has reports that it is not sharing with the public. Will they be shared today? What's in the remaining more than 162 reports? Why are they not being shared? You should ask that.

I have asked for all the missing reports through 7/6/2020. My wife has sent a FOIA request for the same. Other parties have sent FOIA requests for the same.To date, the website does not list the full complement of reports.

A package of concrete delivery tickets came anonymously in the mail. I have reviewed those and found serious problems which I forward in a letter to Mr. Cates and Dr. Melton on 7/14/2020. My letter of March 24,2020 to Dr. Melton asked for other important information which has apparently been ignored. You should ask why I cannot see the things for which I have asked.

Please review and act accordingly by understanding that quality construction takes a group effort. I am trying to help the group.

Ken Loveless

Attachment #2, Pg 14 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

---------- Forwarded message ---------
From: **Christina Melton** <csmelton@lexrich5.org>
Date: Tue, Jul 14, 2020 at 9:06 AM
Subject: Fwd: familyneals@aol.com has sent you a file from the Terracon CDW
To: Katrina Goggins <kgoggins@lexrich5.org>

This message is being blindcopied to all Board of Trustees. An attachment is included for your information.

Christina S. Melton, Ed.D.
Superintendent
School District Five of Lexington & Richland Counties
office: 803.476.8169 or 803.476-8116
www.lexrich5.org

Pursuing Excellence for Tomorrow's Challenges

---------- Forwarded message ---------
From: **Dan Neal** <familyneals@aol.com>
Date: Mon, Jul 13, 2020 at 4:45 PM
Subject: Fwd: familyneals@aol.com has sent you a file from the Terracon CDW
To: csmelton@lexrich5.org <csmelton@lexrich5.org>

Here is the requested report 37.

Dan Neal, PE (ret)

<Rpt.0037_General Observation_ES No. 13_2019-12-06.pdf>

Attachment #2, pg 15 is included with the minutes of the 7.14.2020 meeting, at the request of Board member Beth Hutto pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

DENNIS CORPORATION

Attachment #2, 7/9/16 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

www.denniscorporation.com

Client:	Contract Construction	Date:	7/16/2020
Inspector:	Tommy Stabler – Matthew Goethe	Project Name:	Amicks Ferry Rd Elementary
Weather:	Clear		
Temp:	85 deg. F	Contractor(s):	Contract Construction
Mileage:	NA	Location:	Chapin, SC
		Time:	

Construction Activities:

By request, Dennis inspector Tommy Stabler and Matthew Goethe were on site to core duct bank for testing of compressive strength. Three test cores were collected from random chosen location in duct bank. While onsite inspectors also cored and collected 17 cores from previous poured curb/gutter. Please see attached map noting approx locations for collected samples. Break results will be forth coming.

Test Performed and Results:

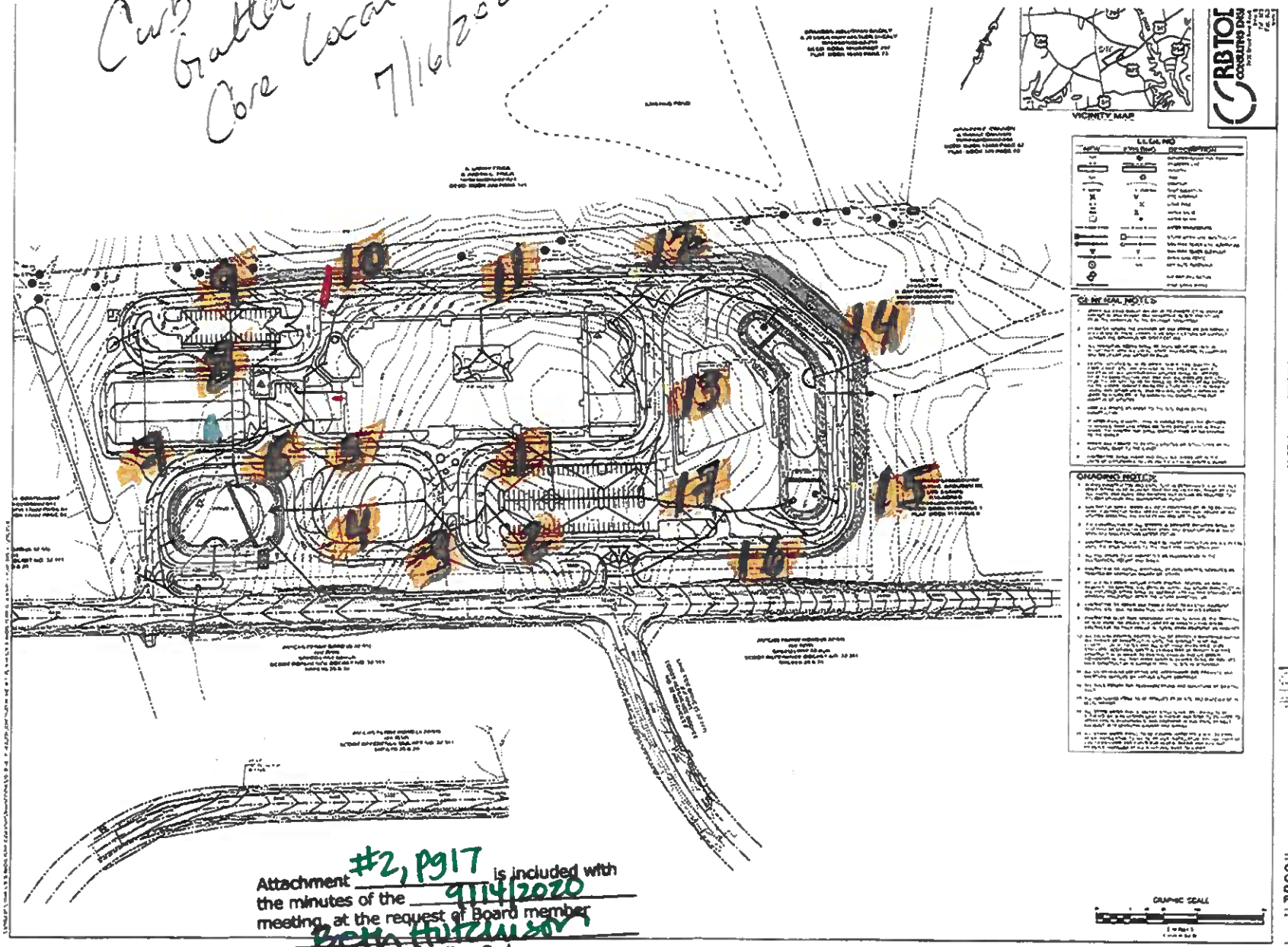
Discussion with On-Site Personnel (Include Name):
Superintendant-Ryan Drafts

Signature of Approved Report by Contractor _____ Print Name _____

Signature: Tommy Stabler

SITE REPORT

Curb & Gutter Core Locations 7/16/2020



CRBTOF CONSULTING ENGINEERS

QUACKENBUSH ARCHITECTS + PLANNERS

ELEMENTARY SCHOOL NO. 13

DISTRICT FIVE OF LEXINGTON & RICHLAND COUNTIES

OVERALL GRADING AND DRAINAGE PLAN

C-300

Attachment #2, Pg17 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchinson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Attachment #2, pg 18 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

F&ME
CONSULTANTS
3112 Devine Street
Columbia, South Carolina 29205
GEOTECHNICAL / ENVIRONMENTAL / MATERIALS

CONCRETE CORE COMPRESSION TEST
ASTM C-42

Job Name: Amicks Ferry Road Elementary

Job Number: C7131 Date Cored: 7/16/2020

Required Strength: 3000 psi @ 28 days Batch Strength:

Contractor: Concrete Supplier:

Location of Core: Curb And Gutter

Specimen Marking	20-1870D C-1	20-1870E C-2	20-1870F C-3	20-1870G C-4	20-1870H C-5	20-1870I C-6
Date Tested	07/27/20	07/27/20	07/27/20	07/27/20	07/27/20	07/27/20
Age (Days)						
Concrete Thickness (in.)	6.600	3.500	5.450	5.250	6.000	5.850
Tested Length (in.)	3.851	3.445	3.832	3.852	3.827	3.828
Diameter (in.)	1.768	1.749	1.762	1.766	1.766	1.765
Radius (in.)	0.884	0.875	0.881	0.883	0.883	0.883
Cross Sectional Area (in^2)	2.46	2.41	2.44	2.45	2.45	2.45
Unit Weight (lb/cf)	139	144	138	137	139	137
Load (lbs.)	8,122	9,881	11,700	10,480	15,491	7,375
Unit Load (Psi)	3310.00	4100.00	4800.00	4280.00	6320.00	3015.00
Correction Factor						
Initials	MJ	MJ	MJ	MJ	MJ	MJ

Signature: Jerry P. Davis

NOTES:

Attachment #2, pg 19 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

F&ME
CONSULTANTS
3112 Devine Street
Columbia, South Carolina 29205
GEOTECHNICAL / ENVIRONMENTAL / MATERIALS

CONCRETE CORE COMPRESSION TEST
ASTM C-42

Job Name: Amicks Ferry Road Elementary

Job Number: C7131 Date Cored: 7/16/2020

Required Strength: 3000 psi @ 28 days Batch Strength:

Contractor: Concrete Supplier:

Location of Core:

Specimen Marking	20-1870J C-7	20-1870K C-8	20-1870L C-9	20-1870M C-10	20-1870N C-11	20-1870O C-12
Date Tested	07/27/20	07/27/20	07/27/20	07/27/20	07/27/20	07/27/20
Age (Days)						
Concrete Thickness (in.)	6.400	5.900	6.050	5.400	7.750	5.500
Tested Length (in.)	3.720	3.711	3.788	3.817	3.906	3.700
Diameter (in.)	1.766	1.768	1.765	1.733	1.730	1.733
Radius (in.)	0.883	0.884	0.883	0.867	0.865	0.867
Cross Sectional Area (in^2)	2.45	2.46	2.45	2.36	2.35	2.36
Unit Weight (lb/cf)	143	143	145	140	144	135
Load (lbs.)	10,866	13,891	12,645	13,140	11,645	9,362
Unit Load (Psi)	4435.00	5660.00	5170.00	5570.00	4955.00	3970.00
Correction Factor						
Initials	MJ	MJ	MJ	MJ	MJ	MJ

Signature:

NOTES:

Attachment #2 (Pg 20) is included with the minutes of the 8/11/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

F&ME

CONSULTANTS

3112 Devine Street
Columbia, South Carolina 29205
GEOTECHNICAL / ENVIRONMENTAL / MATERIALS

CONCRETE CORE COMPRESSION TEST

ASTM C-42

Job Name: Amicks Ferry Road Elementary

Job Number: C7131 Date Cored: 7/16/2020

Required Strength: 3000 psi @ 28 days Batch Strength:

Contractor: Concrete Supplier:

Location of Core: Curb And Gutter

Specimen Marking	20-1870P C-13	20-1870Q C-14	20-1870R C-15	20-1870S C-16	20-1870T C-17	
Date Tested	07/27/20	07/27/20	07/27/20	07/27/20	07/27/20	
Age (Days)						
Concrete Thickness (in.)	5.200	3.500	5.800	7.000	7.400	
Tested Length (in.)	3.692	3.665	3.802	3.778	3.754	
Diameter (in.)	1.766	1.736	1.756	1.758	1.759	
Radius (in.)	0.883	0.868	0.878	0.879	0.880	
Cross Sectional Area (in^2)	2.45	2.37	2.42	2.43	2.43	
Unit Weight (lb/cf)	136	142	140	144	140	
Load (lbs.)	10,591	9,982	7,616	9,679	11,830	
Unit Load (Psi)	4325.00	4215.00	3145.00	3985.00	4870.00	
Correction Factor						
Initials	MJ	MJ	MJ	MJ	MJ	

Signature: Jerry P. Harris

NOTES:

Attachment #2, pg 21 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

F&ME

CONSULTANTS

3112 Devine Street
Columbia, South Carolina 29205
GEOTECHNICAL / ENVIRONMENTAL / MATERIALS

CONCRETE CORE COMPRESSION TEST

ASTM C-42

Job Name: Amicks Ferry Road Elementary

Job Number: C7131 Date Cored: 7/16/2020

Required Strength: 3000 psi @ 28 days Batch Strength:

Contractor: Concrete Supplier:

Location of Core: Duct Bank

Specimen Marking	20-1870A DB-1	20-1870B DB-2	20-1870C DB-3			
Date Tested	07/27/20	07/27/20	07/27/20			
Age (Days)						
Concrete Thickness (in.)	7.760	8.400	8.000			
Tested Length (in.)	3.861	3.881	3.867			
Diameter (in.)	1.734	1.742	1.736			
Radius (in.)	0.867	0.871	0.868			
Cross Sectional Area (in^2)	2.36	2.38	2.37			
Unit Weight (lb/cf)	143	144	144			
Load (lbs.)	6,979	9,216	10,701			
Unit Load (Psi)	2955	3865	4520			
Correction Factor						
Initials	MJ	MJ	MJ			

Signature: Jerry P. Davis

NOTES: Core Numbers Assigned By F&ME

CC&I Services LLC

Helping Ensure a Safe Built Environment

July 22, 2020

Mr. Clay Cannon
Director of Facilities Operations
1020 Dutch Fork Rd.
Irmo, SC 29063

Attachment #2, Pg 22 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Subject: Primary Electrical Service Raceways
Reference: Amicks Ferry Elementary School #13

Mr. Cannon,

As requested, we have reviewed concerns relating to the primary conduit provided for the utility company to the utility transformer for the New Elementary School #13. These concerns were presented in an email to Mr. Dan Neal dated 7/20/20. This question appears to have derived from photos within Terracon Report #37 conducted by our firm. We have made contact with each of the parties involved, I hope that the findings below help to relieve any concerns that may be present within the report.

The 2014 National Electrical Code referenced in the Form F3 Approved Code Analysis for the project on Sheet LS100 would not be the applicable installation standard to reference. Compliance for this installation is to be in accordance with the direction provided from the utility company Mid-Carolina Electric Cooperative, INC. Power companies do not typically include requirements for spacers/ supports for direct burial conduit on sub grade or thermal expansion fittings for constant temperature locations.

Correspondence was also requested from Mid-Carolina Electric Cooperative, INC by the Project Manager Mr. Ott of Contract Construction to ensure their guidelines are adhered to. That correspondence is included below and Mid-Carolina Electric Cooperative, INC comments are in italics and blue font.

> Good Morning Jim,
>
> Below are the answers to your questions of request. Feel free to reach out to me or Brian with any further questions!
>
> Thanks
> Allan – MCEC Engineering Services

CC&I Services, LLC
4795 S. Church St. Ext. Roebuck, SC 29376
864-426-1295

CC&I Services LLC
Helping Ensure a Safe Built Environment

Attachment #2, 1923 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Thank you for taking the time to talk to me today. As discussed on the phone I have a couple of questions;

1. Does MCEC Require the use of spacers for their conduit or can the conduit be direct buried? *"No. We do not require the use of spacers for our conduits for underground primary conductor. Conduits are direct buried with one medium voltage cable installed per conduit. No separation is required unless there is a different in voltage or there is a different utility using the same trench."*
2. Can you review the email below and let me know if MCEC falls under the NFPA code sited? I have also attached the report that is being referenced for you reference. *"NFPA nor NEC has no jurisdiction or authority over the installation of MCEC's electrical primary system. MCEC is required to follow the NESC (National Electrical Safety Code) for proper installation and clearances above and below ground. The installation of MCEC's conduits are installed within the guidelines of NESC Section 32 – Underground conduit systems."*
3. Are expansion fittings required for this? *"No, they are not"*

We have contacted the electrical engineer of record for this project and requested his professional opinion as well. This review was to ensure compliance was achieved with contract documents for the installation in question and to verify the required standard for this specific installation. His response to this is as follows:

"Josh, in response to your question on what governs the installation of the primary service lateral conductors/conduit, here is my professional opinion.

The drawings state that the Contractor is to install the primary conduit "*PER POWER COMPANY SPECS.*" (Detail 1 on E-602).

NEC 90.2(A) list what is covered by NEC, and (3) of this paragraph states, "*Installations of conductors and equipment that connect to the supply of electricity.*" This would be up to the pad mounted transformer. NEC 90.2(B) list what is not covered by NEC, and (5)(a) of this paragraph states, "*Installations under the exclusive control of an electric utility where such installations (a) Consist of service drops or service laterals, and associated metering,*". Utility-owned conductors before the service point (pad mounted

Attachment #2, Pg 24 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

CC&I Services LLC
Helping Ensure a Safe Built Environment

transformer in this case) are outside of the scope of the NEC per 90.2(A)(3) and NEC 90.2(B)(5)(a).

The installation of the primary conduit and conductors from the pad mounted transformer to the power company pole are not covered by the NEC, they are to be installed per the Power Company specifications/requirements." (Mr. Patrich, Sims Group)

We hope that this information is found to be helpful to the district. It is always our goal as an inspection firm to provide the best possible service to help the community in which you serve have a safe building with the quality you have come to expect.

Sincerely,
Josh Christian, CBO, FCS
ICC Master Code Professional
Chief Operations Officer

Josh Christian

CC&I Services, LLC
CC: Terracon Consultants, Inc.

P.O Box 3408
Summerville, SC 29484-3408

Office (843) 821-7600
Fax (843) 821-7627

Mr. Coogler,

I have attached the submittals for the Amick's Ferry Elementary School project for Coogler Construction, and the rebound hammer test and locations for your review. The mix design submitted for curb is F30CCSFM. This mix design has Delvo, a hydration stabilizer, built into the mix to provide additional placement time. In addition to Delvo, the customer requested a dose of retarder on several of the pours. The retarder gives concrete an extended time of plasticity, while the Delvo will stop hydration for a period of time. Knights was confident that with these products and the ambient temperatures being what they were, that the performance of the concrete would be fine with an extended delivery time.

The results from the Rebound Hammer show that the in place concrete exceeds the design strength. The results also show that the concrete strength is very consistent between the locations tested.

Feel free to contact me if you need any other information, or have any questions on the test results.

Rick Barfield
Quality Control Manager
Cell (843)200-0767

Attachment #2 pg 25 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Knight's REDI-MIX

Rebound Hammer Test
ASTM C805

	7/24/2020 9:35
Customer:	**Coogler Construction LLC.**
Project:	Amicks Ferry Elementary
Weather Conditions:	Sunny
Technicians:	Andrew Cirulis

Date of Testing:	7/22/2020		Design Strength Tested:	3000 Psi.
Mix Design:	F30CCSFM			
Orientation:	V	V	V	V
Surface Condition	Broom Rough	Broom Rough	Broom Ground	Broom Ground
Location	#1	#2	#3	#4
Test Number	1	2	3	4
1	40	44	40	42
2	40	42	38	44
3	40	43	38	44
4	40	44	44	38
5	42	40	42	38
6	42	38	40	46
7	44	40	40	42
8	40	38	38	44
9	38	44	38	46
10	40	42	40	42
11	40	40	38	44
12	40	41	40	42
Average	40	42.5	40	42
Adjusted Average	40	43	40	42
Compressive PSI	**4600**	**4945**	**4600**	**4830**

Discard readings differing from average of 14 readings by more that 6 units and determine the average of the remaining readings.Discard the Lowest and Highest reading and average the remainder 12 tests

Swiss Hammer tested using Steel Anvil Callibration.(Rebound reading between 95-100). Concrete samples made with 6x12 cylinders tested for compression verses rebound testing on the specimen at point of failure.

Attachment #2 Pg 26 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Rebound Hammer Test
ASTM C805

	7/24/2020 9:35
Customer:	**Coogler Construction LLC.**
Project:	Amicks Ferry Elementary
Weather Conditions:	Sunny
Technicians:	Andrew Cirulis

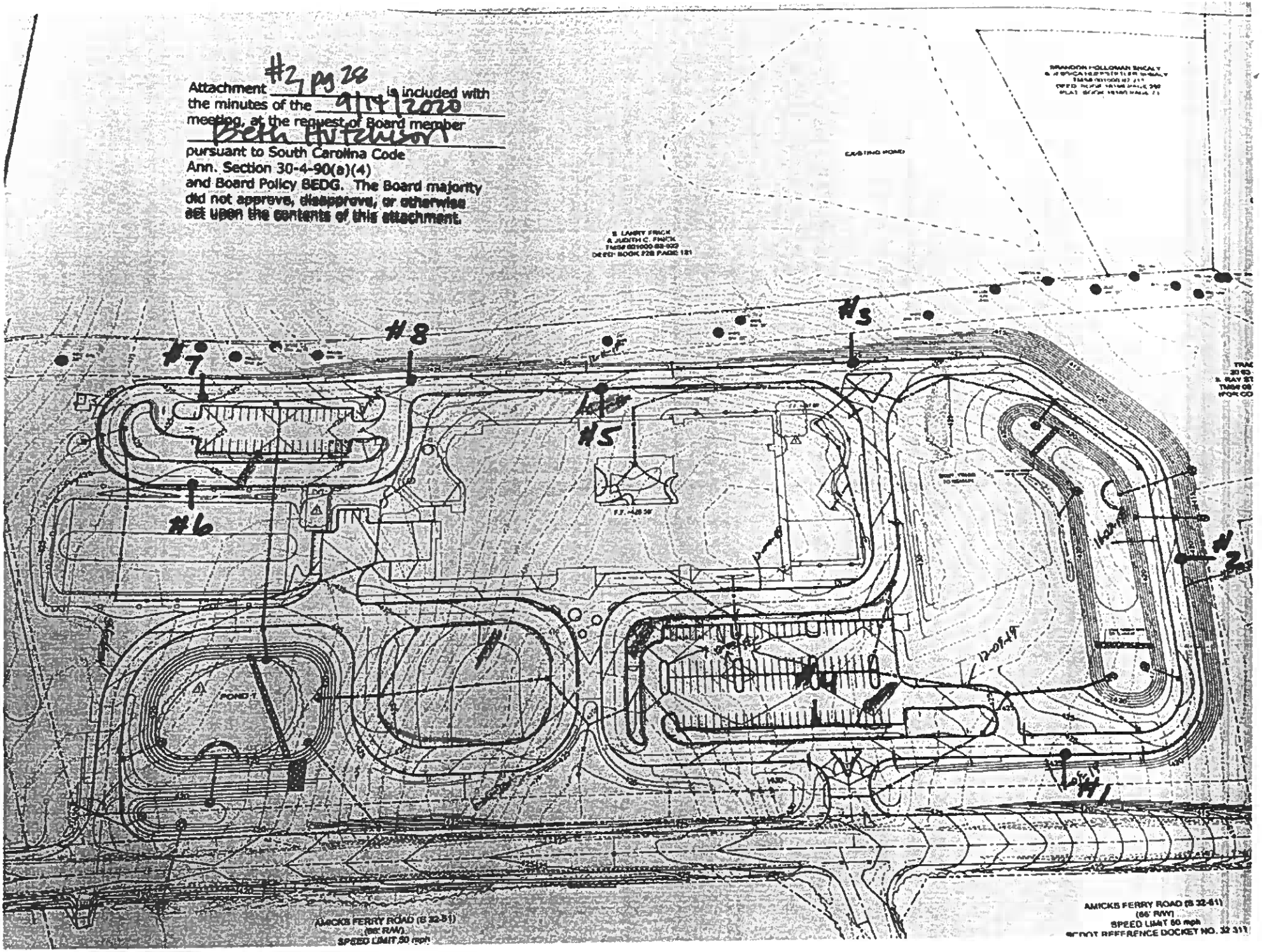
Date of Testing:	7/23/2020		Design Strength Tested:	3000 Psi.
Mix Design:	F30CCSFM			
Orientation:	V	V	V	V
Surface Condition	Broom Rough	Broom Rough	Broom Ground	Broom Ground
Location	#5	#6	#7	#8
Test Number	5	6	7	8
1	38	42	40	44
2	38	40	40	40
3	38	40	38	40
4	38	44	38	42
5	38	40	40	40
6	40	42	38	40
7	36	42	40	40
8	38	40	42	40
9	38	42	40	42
10	38	40	40	38
11	36	40	38	38
12	38	40	40	40
Average	38	41	40	42
Adjusted Average	38	41	40	42
Compressive PSI	**4370**	**4715**	**4600**	**4830**

Discard readings differing from average of 14 readings by more that 6 units and determine the average of the remaining readings.Discard the Lowest and Highest reading and average the remainder 12 tests

Swiss Hammer tested using Steel Anvil Callibration,(Rebound reading between 95-100). Concrete samples made with 6x12 cylinders tested for compression verses rebound testing on the specimen at point of failure.

Attachment #2, P927 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutcheson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Attachment #2 pg 28 is included with the minutes of the 9/17/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.



CELEBRATING 50 YEARS 1969 - 2019

Knight's COMPANIES

October 29, 2019

Coogler Construction

Amicks Ferry Elementary School

Attachment #2, pg 29 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

CELEBRATING 50 YEARS 1969 - 2019

Knight's COMPANIES

#2 Pg 30
Attachment ____ is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Project: Amicks Ferry Elementary School

Thank you for letting Knight's Redi-Mix submit the following mix designs for the project noted above.

Mix Code	Description	Use
F30CM	3000 PSI	Sidewalks
F30CCSFM	3000 PSI	Slipform Curb & Gutter
F40M	4000 PSI	Heavy Duty Pavement

Please use mix codes above when placing orders.

Due to unexpected or unavoidable shortages in the supply of raw materials, Knight's Redi-Mix shall not be held liable for delay damages, or other claims because of an inability to fulfill concrete orders.

Should the purchaser choose not to purchase temperature control measures, the purchaser shall resume liability for any rejected loads due to temperature.

Knight's Redi-Mix warrants that all concrete delivered to the above-mentioned project will meet or exceed all strength requirements when tested in accordance with ASTM standards.

All concrete batch plants operated by Knight's Redi-Mix are S.C.D.O.T. certified.

In accordance with ASTM C-94, please sign and return copy of this letter to our office authorizing Knight's Redi-Mix to receive copies of concrete break reports from the independent engineering testing firm.

_____ Signature _____ Date

_____ Print Name _____ Title

MIX DESIGN

Attachment #2 pg 31 is included with the minutes of the 11/4/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

SEE MIX III Mix Report
F30CM-3000 PSI [0]
Strength Compressive: 3000 psi
10/29/2019

Customer : Coogler Construction	
Project : Amicks Ferry Elementary School	

Compressive Strength :	3000 psi at 28 days
Aggregate size :	1" -- 25 mm
Air :	4.5 ± 1.5 %
Water/Cement ratio :	0.487
Slump :	4.00 ± 1.00 in
Slump after SP:	6.00 to 8.00 in

Source of Concrete : Knights Redi-Mix
Construction type :
Placement :
Unit Weight : 143.56 pcf
Design Date : 05/25/2017

Constituents :	Quantity	Density	Volume
Type I/II (Argos)	430 lb	3.150	2.19
Type F (Sefa McMeekin)	120 lb	2.250	0.85
City Water ()	268 lb	1.000	4.29
57 granite (Vulcan (Dreyfus))	1800 lb	2.660	10.84
FA-10 Sand (Blue Grass (Edmund))	1258 lb	2.650	7.61
MB AE 90 (BASF)	1.30 floz (US)/yd³	1.000	0.00
POLYHEED 997 (BASF)	22.00 floz (US)/yd³	1.000	0.00
Air	4.5 %.		1.22
Total :	3876		27.00

Remarks :

Reported by : Brian Sheffler	Approval by : _____
Date : 08/23/2019	Date : / /

Knight's REDI-MIX

Statistical Analysis -- 3000 PSI AE

Str. Req'd: 3000 psi at 28 Days

	Date Molded	Ticket #	Slump, in	Air, %	F'c, psi (7days)	psi (28d	Avg of 3
1	03/11/2017	460925	4.75	4.2	3250	4300	4352
2	03/11/2017	460925	5.00	3.9	3180	4180	4140
3	04/01/2017	461670	3.00	3.7	2960	4150	4210
4	04/01/2017	461670	6.00	3.8	2490	3430	3920
5	04/29/2017	465630	6.00	4.0	3550	4350	3977
6	04/29/2017	465630	4.50	3.5	3890	4700	4160
7	05/13/2017	466018	5.50	4.0	3580	4350	4467
8	05/13/2017	466018	6.00	4.0	3420	4160	4403
9	06/04/2017	467018	5.50	4.5	3750	4280	4263
10	06/04/2017	467018	4.50	3.8	3550	4120	4187
11	06/24/2017	467633	4.25	4.5	3550	4220	4207
12	06/24/2017	467633	5.00	5.0	3770	4600	4313
13	08/15/2017	468532	5.00	4.3	3650	4515	4445
14	01/09/2018				3640	4950	4688
15	02/20/2018				3550	4840	4768
16	06/20/2018				4010	5190	4993
17	06/27/2018				3870	4830	4953
18	07/10/2018				3540	4710	4910
19	08/23/2018				4370	5280	4940
20	10/31/2018				3300	4850	4947
21	01/15/2019	406342	3.00	3.8	3550	4805	4978
22	02/06/2019	408124	6.00	4.0	2930	4070	4575
23	03/07/2019	408130	7.25	5.0	2840	3740	4205
24	03/15/2019	408503	6.00	3.5	3860	4050	3953
25	03/26/2019	408964	6.00	4.0	3660	5050	4280
26	03/26/2019	408982	6.00	4.1	3900	4370	4490
27	03/26/2019	408995	5.00	3.4	4820	5240	4887
28	03/26/2019	409016	4.00	3.5	4580	5260	4957
29	04/26/2019	410216	5.00	3.9	3600	4560	5020
30	05/23/2019	411413	5.00	3.6	3580	4530	4783

Average:	5.14	4.00	3606	4523	4512
Stnd. Dev.:	1.01	0.43	480.25	457.19	359.15
C. of V.:	19.55	10.84	13.32	10.11	7.96
ACI 318 F'cr:				**3613**	
ACI 318 F'cr:				**3565**	

Attachment #2.1.9.3.2 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchinson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

MIX DESIGN

Attachment #2, Pg 33 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

SEE MIX III Mix Report
F30CCSFM-Hand Placed Curb and slip form [-1]
Strength Compressive: 3000 psi
10/29/2019

Customer : Coogler Construction	Contractor : Coogler Construction
Project : Amicks Ferry Elementary School	

Compressive Strength :	3000 psi at 28 days	Source of Concrete : Knights Redi-Mix	
Aggregate size :	1" -- 25 mm	Construction type : CURB	
Air :	5.0 ± 1.0 %	Placement : exterior	
Water/Cement ratio :	0.404	Unit Weight : 142.43 pcf	
Slump :	1.50 to 5.00 in	Design Date : 11/25/2013	

Constituents :	Quantity	Density	Volume
Type I/II (Argos)	500 lb	3.150	2.54
SEFA-WINYAH STATION-CLASS F	170 lb	2.250	1.21
Water	271 lb	1.000	4.34
57 granite (Vulcan (Dreyfus))	400 lb	2.660	2.41
789 granite (Vulcan (Dreyfus))	800 lb	2.660	4.82
FA-10 Sand (Blue Grass (Edmund))	1703 lb	2.650	10.30
Delvo	42.00 floz (US)/yd³	1.000	0.00
Pozz 700N	25.00 floz (US)/yd³	1.000	0.03
Air	5.0 %.		1.35
Total :	3846		27.00

Remarks :

Reported by : Brian Sheffler	Approval by :
Date : 08/23/2019	Date : / /

Attachment #2, Pg 34 is included with the minutes of the 3/19/2020 meeting, at the request of Board member Beth Hutchinson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Knight's REDI-MIX

Statistical Analysis -- 3000 PSI MC

Str. Req'd: 3000 psi at 28 Days

	Date Molded	Ticket #	Slump, in	Air, %	'c, psi (7day	'c, psi (28days	Avg of 3
1	04/28/2017	328089	1.50	3.0	3980	5020	
2	05/23/2017	330968	1.00	1.4	4300	6050	
3	07/15/2017	330588	1.00	2.5	3780	5820	5630
4	07/15/2017	330575	1.00	3.5	3260	5880	5917
5	07/15/2017	330566	1.25	5.0	3740	5330	5677
1	07/15/2017	330598	1.00	3.2	3460	5145	5452
2	07/17/2017	330717			3900	5215	5230
3	07/19/2017	330897	1.00	2.8	4380	6950	5770
4	07/19/2017	330842	1.00	3.0	3620	5475	5880
5	07/19/2017	330842	1.00	3.0	3620	4280	5568
6	07/19/2017	330897	1.00	2.8	4380	4700	4818
7	08/08/2017	331350	1.50	3.7	4470	4950	4643
8	08/08/2017	331330	1.50	3.5	3760	4970	4873
9	08/08/2017	331320	1.50	3.0	3810	5235	5052
10	08/08/2017	331350	1.50	3.7	4470	6460	5555
11	01/30/2018	335384	1.00	3.9	3370	4665	5453
12	01/30/2018	335399	1.00	4.2	3500	4765	5297
13	01/30/2018	335406	1.00	4.2	3920	4495	4642
14	01/31/2018	335424	3.00	3.9	3690	4865	4708
15	01/31/2018	335426	1.50	3.7	3960	4855	4738
16	01/31/2018	335428	1.50	3.8	3930	4745	4822
17	02/10/2018	337049	1.50	2.0	4680	5925	5175
18	02/12/2018	335664	2.50	3.0	3450	4205	4958
19	03/04/2018	347851	3.00	4.0	3470	5000	5043
20	03/10/2018	348012	3.00	4.0	3510	3890	4365
21	03/18/2018	348312	2.50	4.5	2900	4810	4567
22	03/24/2018	348458	2.50	3.8	3720	4430	4377
23	04/08/2018	348062	2.00	4.5	3140	4080	4440
24	04/08/2018	348049	2.00	5.0	3340	4170	4227
25	04/11/2018	348106	2.00	4.3	3140	4420	4223
26	03/21/2019	512624	2.00	4.4	3610	4920	4503
27	03/21/2019	13587	2.50	4.2	3870	5045	4795
28	03/25/2019	13688	1.50	4.5	4080	5364	5110
29	03/25/2019	13705	2.50	3.7	3490	4780	5063
30	03/25/2019	13712	3.00	3.8	3500	4980	5041
							4880
							4980
Average:			1.7	3.6	3749	5025	5019
Stnd. Dev.:			0.70	0.80	416.10	668.60	486.06
C. of V.:			40.98	21.99	11.10	13.30	9.69
ACI 318 F'cr:						3896	
ACI 318 F'cr:						**4058**	

Knight's REDI-MIX

MIX DESIGN

Attachment #2, pg 35 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

SEE MIX III Mix Report
F40M-4000 PSI [0]
Strength Compressive: 4000 psi
10/29/2019

Customer : Coogler Construction	
Project : Amicks Ferry Elementary School	

Compressive Strength :	4000 psi at 28 days	Source of Concrete : Knights Redi-Mix	
Aggregate size :	1" -- 25 mm	Construction type :	
Air :	4.5 ± 1.5 %	Placement :	
Water/Cement ratio :	0.443	Unit Weight : 143.70 pcf	
Slump :	5.00 ± 1.00 in	Design Date : 07/24/2017	

Constituents :	Quantity	Density	Volume
Type I/II (Argos)	475 lb	3.150	2.42
Type F (Sefa McMeekin)	130 lb	2.250	0.93
City Water ()	268 lb	1.000	4.29
57 granite (Vulcan (Dreyfus))	1800 lb	2.660	10.84
FA-10 Sand (Blue Grass (Edmund))	1207 lb	2.650	7.30
MB AE 90 (BASF)	1.50 floz (US)/yd³	1.000	0.00
POLYHEED 997 (BASF)	24.20 floz (US)/yd³	1.000	0.00
Air	4.5 %.		1.21
Total :	3880		27.00

Remarks :

Reported by : Brian Sheffler	Approval by : _____
Date : 08/23/2019	Date : / /

Attachment #2 | P936 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Knight's REDI-MIX

Statistical Analysis -- 4000 PSI AE

Str. Req'd: 4000 psi at 28 Days

	Date Molded	Ticket #	Slump, in	Air, %	F'c, psi (7days)	F'c, psi (28days)	Avg of 3
1	3/24/2018	464210	6.00	4.3	4020	5240	5267
2	3/25/2018	464220	5.75	4.2	3860	5190	5247
3	8/17/2018	167823	5.50	4.9	3650	5150	5228
4	8/17/2018	167833	5.00	4.0	4160	5780	5320
5	8/17/2018	167841	5.50	4.4	3560	5910	5613
6	9/5/2018	8081	5.00	4.5	3450	4950	5547
7	9/5/2018	168001	5.00	4.3	3590	5290	5383
8	9/5/2018	168011	5.00	4.1	3610	5460	5233
9	10/3/2018	168162	5.00	4.1	3720	4990	5247
10	10/15/2018	404049	5.00	4.2	3750	5050	5050
11	10/16/2018	404104	5.50	4.0	3530	5225	5138
12	11/06/2018	168484	5.25	4.2	3900	5090	5122
13	11/06/2018	404744	5.50	3.2	3840	5230	5182
14	11/07/2018		4.00	3.8	3590	5160	5160
15	11/09/2018	141343	2.25	4.8	3990	5210	5200
16	11/12/2018		3.75	3.3	4230	5530	5300
17	11/16/2018		3.75	4.5	3890	5250	5330
18	11/21/2018	141577	2.50	5.2	3780	5360	5380
19	11/30/2018	405405	2.00	5.2	4470	5440	5350
20	12/06/2018	168632	7.25	4.5	4410	5920	5573
21	01/15/2019	168853	2.50	3.6	4860	6180	5847
22	01/22/2019	168294	2.50	4.2	4760	5230	5777
23	02/06/2019		4.50	4.4	4395	5370	5593
24	02/08/2019	169027	3.00	3.8	4400	5865	5488
25	04/03/2019	198684	6.50	4.3	3900	4920	5385
26	04/16/2019	169489	6.25	4.4	4340	5290	5358
27	04/23/2019	169040	6.50	4.0	3720	5010	5073
28	05/10/2019	169901	6.25	3.5	3780	4990	5097
29	05/13/2019	169911	6.00	3.9	3660	4930	4977
30	05/16/2019	169924	6.50	4.2	3860	5040	4987
							4985

Average:	4.86	4.21	3957.0	5306.6	5311.9
Stnd. Dev.:	1.41	0.46	360.01	317.59	211.27
C. of V.:	29.07	10.93	9.10	5.98	3.98
ACI 318 F'cr:				4426	
ACI 318 F'cr:				**4240**	

ARGOS

Argos Cement USA
Carolinas District
P.O. Box 326
Harleyville, SC 29448
803-238-7705
803-782-7048

February 1, 2019

Brian Sheffler
Knight's Redi-Mix Concrete
480 Hodge Road
Summerville, SC 29484

Dear Brian:

This letter certifies that Argos' Type I/II (HE) cement, produced at our Harleyville Plant, Harleyville, South Carolina has been manufactured under strict quality control standards and will meet "Specifications of Portland Cement" designations:

- ASTM C150-18 Standard Specifications for Type I & Type II low alkali and moderate sulfate resistant cement which **will not exceed** 0.60% expressed as Na_2O equivalent.

- AASHTO M85-18 Standard Specifications for Portland Cement Type I & Type II low alkali and moderate sulfate resistant cement which **will not exceed** 0.60% expressed as Na_2O equivalent.

This product supplied to Knight's Redi-Mix is shipped from our Harleyville terminal and is approved by the South Carolina Department of Transportation.

If you have any questions, please call me with any concerns.

Respectfully,

Bruce Walker

Bruce Walker
Sr. Technical Sales Representative
Argos Cement
bwalker@argos-us.com
803-238-7705

Attachment #2, pg 37 is included with the minutes of the 4/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Attachment #2, 1938 is included with the minutes of the 9/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

ARGOS

Cement Mill Test Report

Month of Issue: August 2019

Plant:	**Harleyville, South Carolina**
Product:	**Portland Cement Type I and Type I/II(MH)**
Silo:	**1, 2, 4, 5, 7, 9**
Manufactured:	**July 2019**

ASTM C150 and AASHTO M 85 Standard Requirements

CHEMICAL ANALYSIS

Item	Spec limit	Test Result
Rapid Method, X-Ray *(C114)*		
SiO2 (%)	---	20.1
Al2O3 (%)	6.0 max	4.9
Fe2O3 (%)	6.0 max	3.3
CaO (%)	---	63.6
MgO (%)	6.0 max	1.3
SO3 (%)	3.0 max †	2.9
Loss on Ignition (%)	3.5 max	2.9
Insoluble residue (%)	1.5 max	0.21
NaEq (%)	--- §	0.48
CO2 (%)	---	1.6
Limestone (%)	5.0 max	2.3
CaCO3 in Limestone (%)	70 min	92
Inorganic Processing Addition (%) (Baghouse Dust)	5.0 max	2.0
Adjusted Potential Phase Composition *(C150)*		
C3S (%)	---	54
C2S (%)	---	16
C3A (%)	8 max	7
C4AF (%)	---	10
C3S+4.75*C3A (%)	100 max	85
ASTM C150 and AASHTO M 85 Optional Chemical Requirements:		
Chloride (%) (for information only)		0.02

PHYSICAL ANALYSIS

Item	Spec limit	Test Result
Air content of mortar (%) *(C185)*	12 max	8
Blaine Fineness (m2/kg) *(C204)*	260 - 430	407
-325 (%) *(C-430)*	---	97.3
Autoclave expansion (%) *(C151)*	0.80 max	0.00
Compressive strength (MPa, [PSI]) *(C109)*		
1 day	---	14.3 [2070]
3 days	12.0 [1740] min	25.8 [3740]
7 days	19.0 [2760] min	31.7 [4600]
28 days (Reflects previous month's data)	---	41.2 [5970]
Time of setting (minutes)		
Vicat Initial *(C191)*	45 - 375	112
Heat of Hydration (kJ/kg) *(C1702)*		
3 days (for information only) ‡	---	309
Mortar Bar Expansion (%) *(C1038)* ‡	0.020 max	0.004
Density (g/cm3)		3.15

* Dashes in the spec limit mean Not Applicable

† May exceed 3.0% SO3 maximum based on our C1038 results of < 0.020% expansion at 14 days.

‡ Current production run not available - most recent provided.

§ Please refer to ASTM C1778 for guidance; on reducing the risk of alkali aggregate reaction in concrete.

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of applicable GDOT, TDOT, MDOT, SCDOT, NCDOT, VDOT, and MDDOT Specifications for Type I and Type I/II(MH) ; and FDOT 921 Specifications for Type I and Type I/II(MH);
ASTM C150 & AASHTO M 85 STANDARD SPECIFICATIONS FOR TYPE I AND TYPE I/II(MH) CEMENT;

Certified By:

Sean J. Makens

Sean J. Makens - Quality Manager
Report created: 8/7/2019

Argos USA
Harleyville Plant
463 Judge Street, Harleyville, South Carolina 29448
Phone: 843-462-7651

Attachment #2 Pg 39 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

January 2, 2019

Attention: SEFA Customer

Re: 2019 Certification

The SEFA Group certifies through this letter that the fly ash from McMeekin Station located in Columbia, SC complies with the requirements set forth in ASTM C 618, Class F, when sampled and tested in accordance with ASTM C 311. Unless you receive written notification regarding a change in status from The SEFA Group, this certification will apply to any and all phases on construction projects.

Fly ash is a 100% recycled material, made in the USA. It is the by-product of burning pulverized coal in an electrical generating station. The Environmental Protection Agency (EPA) under Section 6002 (e) of the Resource Conservation and Recovery Act (RCRA) of 1976 targeted a number of recovered materials, including fly ash. The EPA recognizes that fly ash can be used in concrete to lessen the solid waste problem and that fly ash has technical advantages in cementitious materials. Fly ash is considered a Post- Industrial, Pre-Consumer recycled product.

The SEFA Group offers full field service with the purchases of our product. Our technical representatives are available to aid you with field-testing and quality control.

Thank you for your interest in our product. If you need further assistance, please call our administrative office at (888) 339-7332.

Sincerely,

Bert Nunn
Vice President, Sales

Attachment #2, Pg 40 is included with the minutes of the 11/4/2020 meeting, at the request of Board member Beth Hutchinson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

TEC Services
Testing • Engineering • Consulting

Client: Mr. Tom Hendrix
The SEFA Group
P.O. Box 6
Moncks Corner, SC 29461

Date: December 7, 2017
TEC Services I.D.: TEC 06-0509
Lab No.: 17-998-MC

REPORT OF FLY ASH TESTS

Sample I.D. No.: MC093017
Manufacturer: McMeekin Station (Thermally Beneficiated)
Date Sampled: September 30, 2017
Date Received: October 3, 2017

Chemical Analysis	Results (wt%)	Specification (Class F) ASTM C618-15	Specification (Class F) AASHTO M295-11
Silicon Dioxide (SiO_2)	49.9	----	----
Aluminum Oxide (Al_2O_3)	27.2	---	----
Iron Oxide (Fe_2O_3)	12.41	----	----
Sum of Silicon Dioxide, Iron Oxide & Aluminum Oxide (SiO_2+Al_2O_3+Fe_2O_3)	89.4	70 % min.	70 % min.
Calcium Oxide (CaO)	2.7	----	----
Magnesium Oxide (MgO)	1.1	----	----
Sodium Oxide (Na_2O)	0.42	----	----
Potassium Oxide (K_2O)	2.46	---	----
"Sodium Oxide Equivalent (Na_2O+0.658K_2O)"	2.03	----	----
Sulfur Trioxide (SO_3)	0.20	5 % max.	5 % max.
Loss on Ignition	1.0	6 % max.	5 % max.
Moisture Content	0.1	3 % max.	3 % max.
Available Alkalies			
Sodium Oxide (Na_2O) as Available Alkalies	0.26	----	----
Potassium Oxide (K_2O) as Available Alkalies	1.56	----	----
Available Alkalies as "Sodium Oxide Equivalent (Na_2O+0.658K_2O)"	1.29	----	1.5 % max.*

Physical Analysis	Test Date	Results	Specification (Class F) ASTM C618-15	Specification (Class F) AASHTO M295-11
Fineness (Amount Retained on #325 Sieve)	10/19/17	13.2%	34 % max.	34 % max.
Strength Activity Index with Portland Cement				
At 7 Days: Control Average, psi: 5050 / Test Average, psi: 4310	10/24/17	85%	75 % min.† (of control)	75 % min.† (of control)
At 28 Days: Control Average, psi: 6040 / Test Average, psi: 5600	11/14/17	93%	75 % min.† (of control)	75 % min.† (of control)
Water Requirements (Test H_2O/Control H_2O) Control, mls: 242 / Test, mls: 237	10/17/17	98%	105% max.† (of control)	105% max.† (of control)
Autoclave Expansion:	10/17/17	-0.04%	± 0.8 % max.	± 0.8 % max.

Uniformity Requirements				Test Date	Variation		
Specific Gravity:	2.43	Average:	2.36	10/18/17	3.0%	5 % max. from average	5 % max. from average
% Retained #325 Sieve:	13.2	Average:	13.1	10/19/17	0.1%	5 % max. from average	5 % max. from average

† Meeting the 7 day or 28 day strength activity index will indicate specification compliance
* Optional
**Chemical Analysis performed on December 6, 2017

The results of our testing indicate that this sample complies with ASTM C618-15 and AASHTO M295-11 specifications for Class F pozzolans.

Respectfully Submitted,
Testing, Engineering & Consulting Services, Inc.

Dean Roosa
Project Manager

Shawn McConnick
Laboratory Principal

Vulcan
Materials Company

Rick Barfield
Knight's Companies

February 2, 2018

RE: Aggregate Certification

This letter is in reference to a request for certification of No. 57, No. 67 and No. 789 produced at our Dreyfus and Columbia quarries. The Dreyfus and Columbia quarries are SCDOT certified and in good standing with all appropriate certifications. The No. 57, No. 67 and No. 789 are in compliance with the applicable product requirements as set forth in the *SCDOT 2007 Standard Specifications for Highway Construction*. Average gradations are attached.

Please contact me if you have any questions or concerns.

Sincerely,

Preston Gosnell

Preston Gosnell
Vulcan Materials Company
Supervisor - Technical Services
864-327-6248 (Cell)
gosnellp@vmcmail.com

MyVulcan.

Attachment #2, Pg 41 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Vulcan Materials Company

Basic Quality Statistical Summary Report

Plant 252 (2005)-Dreytus
Product 570-SC No. 57 Stone 25290
Specification ASTM No. 57 Stone
Period 11/02/2017 - 02/02/2018

Sieve/Test	Tests	Average	St Dev	Target	Specification
1 1/2"(37.5mm)	51	100.0	0.00	100-100	100-100
1"(25mm)	52	98.4	0.84	98-100	95-100
3/4"(19mm)	52	[illegible]	4.94	80-95	
1/2"(12.5mm)	52	36.2	6.35	28-48	25-60
3/8"(9.5mm)	52	19.1	5.61	8-20	
#4 (4.75mm)	52	5.0	2.12	2-7	0-10
#8 (2.36mm)	52	2.1	0.76	0-3	0-5
Pan	52	0.00	0.000		

Vulcan Materials Company

Basic Quality Statistical Summary Report

Plant 251 (2004)-Columbia
Product 570-SC No. 57 Stone 25290
Specification ASTM No. 57 Stone
Period 11/02/2017 - 02/02/2018

Sieve/Test	Tests	Average	St Dev	Target	Specification
1 1/2"(37.5mm)	64	100.0	0.00	100-100	100-100
1"(25mm)	64	97.4	1.33	95-99	95-100
3/4"(19mm)	64	78.4	5.89	75-90	
1/2"(12.5mm)	64	32.6	7.42	30-50	25-60
3/8"(9.5mm)	64	17.3	5.75	10-25	
#4 (4.75mm)	64	5.0	2.29	3-8	0-10
#8 (2.36mm)	64	2.0	0.80	1-3	0-5
Pan	64	0.00	0.000		

Attachment #2, pg 42 is included with the minutes of the 9th/2020 meeting at the request of Board member Beth Hutchinson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Martin Marietta

Charlie Bagley
SC QC Manager

February 7, 2019

Attachment #2 pg 43 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Mr. Brian Sheffler
Knight's Companies
480 Hodge Road
Summerville, SC 29484

Material Certification

Dear Mr. Sheffler:

The purpose of the letter is to certify that the C-33 sand produced at our Edmund Sand Plant will meet all requirements of the SCDOT's *Standard Specifications for Roads and Structures* for aggregate for Portland Cement Concrete and also meet all requirements of ASTM C-33 "Standard Specification for Concrete Aggregate", except as noted below. Also, Edmund Sand is listed on SCDOT's Approved Source List and is active participant in the SCDOT's QC/QA Program.
Aggregate may naturally contain materials that are deleteriously reactive with alkalis. In accordance with ASTM C33-03 paragraphs 7.3 and 11.2, for concrete exposed to given conditions, cement used with siliceous aggregate should contain less than 0.60% alkalis calculated as sodium oxide equivalent (NaO +0.658K2O) or material should be added that has been shown to prevent harmful expansion due to the alkali-aggregate reaction.

Sincerely,

Charlie Bagley

Charlie Bagley
South Carolina QC Manager

Martin Marietta Materials is providing these test results for information purposes only. There are a variety of tests that can be used in connection with determining suitability of aggregates in specific applications and a variety of methods to mitigate potential degradation and deterioration depending upon the end use of the product and other circumstances. Nothing in this letter or report represents or warrants (1) the reliability of the tests used herein (2) whether other tests would be more appropriate or reliable, and/or (3) whether any mitigation factors referenced in this letter or report are effective or the most appropriate, all of which you would determine based on the end use and other factors. MARTIN MARIETTA MATERIALS AND ITS AFFILIATES HEREBY EXCLUDES ANY AND ALL WARRANTIES OF MERCHANTABILITY AND ALL WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AS TO THE PERFORMANCE OF ITS AGGREGATES

Carolina South District
8701 Red Oak Blvd, Suite 540, Charlotte, NC28217
t. (843) 753-4205 m. (843) 509-9838 e. charlesb@martinmarietta.com
www.martinmarietta.com

Martin Marietta

Basic Quality Statistical Summary Report

Plant Edmund Sand-51103
Product C33 Concrete Sand-4528
Specification C33 Concrete
Period 01/01/2019 - 02/07/2019

Sieve/Test	Tests	Average	St Dev	Target	Specification
3/8" (9.5mm)	55	100	0.0		100-100
#4 (4.75mm)	55	100	0.2		95-100
#8 (2.36mm)	55	97	0.5		80-100
#16 (1.18mm)	55	79	1.9		50-85
#30 (0.6mm)	55	35	1.9		25-60
#50 (0.3mm)	55	13	1.7		5-30
#100 (0.15mm)	55	3.21	0.430		0-10
#200 (75µm)	55	0.88	0.215		0-3
Pan	55	0.00	0.000		

Query
Query Selections
Date Created 02/07/2019
Date Range 01/01/2019 - 02/07/2019
Plant Edmund Sand
Sample Type Shipping

Attachment #3 pg 44 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

BASF

The Chemical Company

Product Data
Cast-in-Place Concrete
Precast Concrete
Mass Concrete

03 00 00
03 40 00
03 30 00

MB-AE™ 90

Air-Entraining Admixture

Description

MB-AE 90 air-entraining admixture is for use in concrete mixtures. It meets the requirements of ASTM C 260, AASHTO M 154 and CRD-C 13.

Applications

Recommended for use in:

- Concrete exposed to cyclic freezing and thawing
- Production of high-quality normal or lightweight concrete (heavyweight concrete normally does not contain entrained air)

Features

- Ready-to-use in the proper concentration for rapid, accurate dispensing

Benefits

- Improved resistance to damage from cyclic freezing and thawing
- Improved resistance to scaling from deicing salts
- Improved plasticity and workability
- Reduced permeability – increased watertightness
- Reduced segregation and bleeding

Performance Characteristics

Concrete durability research has established that the best protection for concrete from the adverse effects of freezing and thawing cycles and deicing salts results from: proper air content in the hardened concrete, a suitable air-void system in terms of bubble size and spacing, and adequate concrete strength, assuming the use of sound aggregates and proper mixing, transporting, placing, consolidation, finishing and curing techniques. MB-AE 90 admixture can be used to obtain adequate freeze-thaw durability in a properly proportioned concrete mixture, if standard industry practices are followed.

Air Content Determination: The total air content of normal weight concrete should be measured in strict accordance with ASTM C 231, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method" or ASTM C 173/C 173M, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method." The air content of lightweight concrete should only be determined using the Volumetric Method. The air content should be verified by calculating the gravimetric air content in accordance with ASTM C 138/C 138M, "Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete." If the total air content, as measured by the Pressure Method or Volumetric Method and as verified by the Gravimetric Method, deviates by more than 1-1/2%, the cause should be determined and corrected through equipment calibration or by whatever process is deemed necessary.

Guidelines for Use

Dosage: There is no standard dosage for MB-AE 90 admixture. The exact quantity of air-entraining admixture needed for a given air content of concrete varies because of differences in concrete-making materials and ambient conditions. Typical factors that might influence the amount of air entrained include: temperature, cementitious materials, sand gradation, sand-aggregate ratio, mixture proportions, slump, means of conveying and placement, consolidation and finishing technique.

Attachment #2, pg 45 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Master Builders

Attachment #2, pg 46 is included with the minutes of the 4/14/2020 meeting at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise [illegible] on the contents of this attachment.

Product Data: MB-AE™ 90

The amount of MB-AE 90 admixture used will depend upon the amount of entrained air required under actual job conditions. In a trial mixture, use 1/4 to 4 fl oz/cwt (16-260 mL/100 kg) of cementitious material. Measure the air content of the trial mixture, and, if needed, either increase or decrease the quantity of MB-AE 90 admixture to obtain the desired air content.

In mixtures containing water-reducing or set-control admixtures, the amount of MB-AE 90 admixture needed may be somewhat less than the amount required in plain concrete.

Due to possible changes in the factors that can affect the dosage of MB-AE 90 admixture, frequent air content checks should be made during the course of the work. Adjustments to the dosage should be based on the amount of entrained air required in the mixture at the point of placement.

If an unusually high or low dosage of MB-AE 90 admixture is required to obtain the desired air content, consult your BASF Construction Chemicals representative. In such cases, it may be necessary to determine that, in addition to a proper air content in the fresh concrete, a suitable air-void system is achieved in the hardened concrete.

Dispensing and Mixing: Add MB-AE 90 admixture to the concrete mixture using a dispenser designed for air-entraining admixtures, or add manually using a suitable measuring device that ensures accuracy within plus or minus 3% of the required amount.

For optimum, consistent performance, the air-entraining admixture should be dispensed on damp, fine aggregate. If the concrete mixture contains fine lightweight aggregate, field evaluations should be conducted to determine the best method to dispense the air-entraining admixture.

Precaution

In a 2005 publication from the Portland Cement Association (PCA R&D Serial No. 2789), it was reported that problematic air-void clustering that can potentially lead to above normal decreases in strength was found to coincide with late additions of water to air-entrained concretes. Late additions of water include the conventional practice of holding back water during batching for addition at the jobsite. Therefore, caution should be exercised with delayed additions of water to air-entrained concrete. Furthermore, an air content check should be performed after any post-batching addition to an air-entrained concrete mixture.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MB-AE 90 admixture will neither initiate nor promote corrosion of reinforcing and prestressing steel embedded in concrete, or of galvanized floor and roof systems. No calcium chloride or other chloride-based ingredients are used in the manufacture of this admixture.

Compatibility: MB-AE 90 admixture may be used in combination with any BASF Construction Chemicals admixture, unless stated otherwise on the data sheet for the other product. When used in conjunction with other admixtures, each admixture must be dispensed separately into the concrete mixture.

Storage and Handling

Storage Temperature: MB-AE 90 admixture should be stored and dispensed at 31 °F (-0.5 °C) or higher. Although freezing does not harm this product, precautions should be taken to protect it from freezing. If MB-AE 90 admixture freezes, thaw at 35 °F (2 °C) or above and completely reconstitute by mild mechanical agitation. ***Do not use pressurized air for agitation.***

Shelf Life: MB-AE 90 admixture has a minimum shelf life of 18 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your BASF Construction Chemicals representative regarding suitability for use and dosage recommendations if the shelf life of MB-AE 90 admixture has been exceeded.

Safety: Chemical goggles and gloves are recommended when transferring or handling this material.

Packaging

MB-AE 90 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Material Safety Data Sheets: MB-AE 90 admixture.

Additional Information

For additional information on MB-AE 90 admixture, or its use in developing a concrete mixture with special peformance characteristics, contact your BASF Construction Chemicals representative.

The Admixture Systems business of BASF Construction Chemicals is a leading provider of innovative additives for specialty concrete used in the ready mix, precast, manufactured concrete products, underground construction and paving markets throughout the NAFTA region. The Company's respected Master Builders brand products are used to improve the placing, pumping, finishing, appearance and performance characteristics of concrete.

BASF Construction Chemicals, LLC
Admixture Systems
www.masterbuilders.com
United States 23700 Chagrin Boulevard, Cleveland, Ohio 44122-5544 Tel: 800 628-9990 Fax: 216 839-8821
Canada 1800 Clark Boulevard, Brampton, Ontario L6T 4M7 Tel: 800 387-5862 Fax: 905 792-0651

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Master Builders

BASF

The Chemical Company

3 | 03 30 00 Cast-in-Place Concrete | 03 40 00 Precast Concrete | 03 70 00 Mass Concrete

Product Data

Description

PolyHeed 997 admixture is a patented multi-component, non-chloride, mid-range water-reducing admixture. PolyHeed 997 admixture meets ASTM C 494/C 494M requirements for Type A, water-reducing, and Type F, high-range water-reducing, admixtures.

Applications

Recommended for use in:

- Conventionally placed concrete mixes containing a wide range of cements, slag cement, Class C and F fly ashes, silica fume and aggregates
- Reinforced, precast, prestressed, lightweight or normal weight concrete and pumped concrete
- Residential/commercial flatwork and formed surfaces
- Rheodynamic® Self-Consolidating Concrete
- 4x4™ Concrete
- Pervious Concrete

POLYHEED® 997

Mid-Range Water-Reducing Admixture

Features

- True mid-range water reduction (5-15%) and excellent performance across a wide concrete slump range, especially the difficult slump range of 5-8 in. (125-200 mm)
- Superior workability, pumpability and finishability qualities even in concrete mixes containing low amounts of cementitious materials
- Compressive and flexural strength performance increased at all ages
- Strength performance comparable to chloride-bearing, water-reducing admixtures at all ages
- Superior finishing characteristics for residential/commercial flatwork and formed surfaces

Benefits

- Significantly reduced placement and finishing time resulting in lower in-place concrete costs
- Improved concrete durability to damage from freezing and thawing
- Increased service life of concrete structures

Performance Characteristics

Mixture Data: 500 lb/yd³ (295 kg/m³) of Type I cement; slump, 6-7 in. (150-180 mm); 5-6% air; concrete temperature 70 °F (21 °C); ambient temperature, 70 °F (21 ° C).

Setting Time Performance[1]

Mixture	Initial Set h:min	Difference h:min
Plain	6:01	–
PolyHeed 997 admixture @		
5 fl oz/cwt (325 mL/100 kg)	6:22	+0:21
10 fl oz/cwt (650 mL/100 kg)	6:57	+0:56
15 fl oz/cwt (980 mL/100 kg)	7:31	+1:30

Compressive Strength Performance

Mixture	7-Day psi	7-Day MPa	7-Day %	28-Day psi	28-Day MPa	28-Day %
Plain	2360	16.3	100	3320	22.9	100
PolyHeed 997 admixture @						
5 fl oz/cwt (325 mL/100 kg)	3060	21.1	129	3930	27.1	118
10 fl oz/cwt (650 mL/100 kg)	3740	25.8	158	4610	31.8	136
15 fl oz/cwt (980 mL/100 kg)	4620	31.9	196	5460	37.7	165

[1]*Note: The data shown are based on controlled laboratory tests. Reasonable variations from the results shown here may be experienced as a result of differences in concrete making materials and jobsite conditions.*

Attachment #2, 1947 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

Master Builders

Product Data: POLYHEED® 997

Guidelines for Use

Dosage: PolyHeed 997 admixture has a recommended dosage range of 3-15 fl oz /cwt (195-980 mL/100 kg) of cementitious material for most concrete mixes.

As the dosage of PolyHeed 997 admixture increases to 15 fl oz/cwt (980 mL/100 kg) of cementitious materials, normal concrete setting characteristics are maintained and early and ultimate compressive strengths increase.

BASF Construction Chemicals does not recommend the use of dosages outside the recommended range without trial testing. Consult your local BASF Construction Chemicals sales representative for assistance in determining the dosage for optimum performance.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: PolyHeed 997 admixture will neither initiate nor promote corrosion of reinforcing or prestressing steel embedded in concrete, or of galvanized steel floor and roof systems. PolyHeed 997 admixture does not contain intentionally added calcium chloride or other chloride-based ingredients.

Compatibility: PolyHeed 997 admixture may be used in combination with any BASF Construction Chemicals admixtures. When used in conjunction with other admixtures, each admixture must be dispensed separately into the concrete mixture.

Storage and Handling

Storage Temperature: If PolyHeed 997 admixture freezes, thaw at 35 °F (2 °C) or above and completely reconstitute by mild mechanical agitation. ***Do not use pressurized air for agitation.***

Shelf Life: PolyHeed 997 admixture has a minimum shelf life of 18 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your BASF Construction Chemicals representative regarding suitability for use and dosage recommendations if the shelf life of PolyHeed 997 admixture has been exceeded.

Packaging

PolyHeed 997 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Material Safety Data Sheets: PolyHeed 997 admixture.

Additional Information

For additional information on PolyHeed 997 admixture or its use in developing concrete mixtures with special performance characteristics, contact your BASF Construction Chemicals representative.

The Admixture Systems business of BASF Construction Chemicals is a leading provider of innovative additives for specialty concrete used in the ready mix, precast, manufactured concrete products, underground construction and paving markets throughout the NAFTA region. The Company's respected Master Builders brand products are used to improve the placing, pumping, finishing, appearance and performance characteristics of concrete.

Attachment #2, pg 48 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchinson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

BASF Construction Chemicals, LLC
Admixture Systems
www.masterbuilders.com
United States 23700 Chagrin Boulevard, Cleveland, Ohio 44122-5544 Tel: 800 628-9990 Fax: 216 839-8821
Canada 1800 Clark Boulevard, Brampton, Ontario L6T 4M7 Tel: 800 387-5862 Fax: 905 792-0651

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Master Builders

Attachment #2 pg 49 is included with the minutes of the 4/11/2019 meeting, at the request of Board member Beth Hurst.

pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

National Ready Mixed Concrete Association

NRMCA

Certificate of Conformance For Concrete Production Facilities

THIS IS TO CERTIFY THAT

Columbia Plant 3, Columbia, SC

Knights Redi Mix, Inc.

"Facility does not meet all requirements for furnishing concrete in subfreezing weather"

has been inspected by the undersigned licensed professional engineer for conformance with the requirements of the *Check List for Ready Mixed Concrete Production Facilities.* As of the inspection date, the facilities met the requirements for production by

Truck Mixing with Automatic Batching and Recordings of Cementitious Materials, Aggregate, Water, and Chemical Admixtures

WM. KENNETH JOHNSON, JR. REGISTERED No. 0139 SOUTH CAROLINA PROFESSIONAL GEOLOGIST

(Seal)

Wm. Kenneth Johnson Jr. P.G.

Signature of Licensed Professional ~~Engineer~~ Geologist

January 08, 2019

Inspection Date

January 15, 2021

Certification Expiration Date

This company will maintain these facilities in compliance with the *Check List* requirements and will correct promptly any deficiencies which develop.

Signature of Company Official

Regional OPS Manager

Title of Company Official

NOTICE: The Check List indicates only that plant facilities are satisfactory for the production of concrete when properly operated. Conformance of the concrete itself with specification requirements must be verified by usual inspection methods in accordance with sales agreements.

This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Certification of Ready Mixed Concrete Production Facilities, QC3. Unauthorized reproduction or misuse of this certificate may result in legal action.

Plant ID #: 805527

Certification ID #: 23831

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National Ready Mixed Concrete Association

Attachment #2 to 9950 is included with the minutes of the 11/4/2020 meeting, at the request of Board Member Beth Hutchinson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

NRMCA

Certificate of Conformance For Concrete Production Facilities

THIS IS TO CERTIFY THAT

Blythwood Plant 6, Blythewood, SC

Knights Redi Mix, Inc.

"Facility does not meet all requirements for furnishing concrete in subfreezing weather"

has been inspected by the undersigned licensed professional engineer for conformance with the requirements of the *Check List for Ready Mixed Concrete Production Facilities.* As of the inspection date, the facilities met the requirements for production by

Truck Mixing with Automatic Batching and Recordings of Cementitious Materials, Aggregate, Water, and Chemical Admixtures

WM. KENNETH JOHNSON, JR. REGISTERED No. 0139 SOUTH CAROLINA PROFESSIONAL GEOLOGIST

(Seal)

Wm. Kenneth Johnson Jr., PE

Signature of Licensed Professional Engineer ~~Geologist~~

January 08, 2019	*January 08, 2021*
Inspection Date	Certification Expiration Date

This company will maintain these facilities in compliance with the *Check List* requirements and will correct promptly any deficiencies which develop.

Ruth Barfield

Signature of Company Official

Regional Ops. Manager

Title of Company Official

NOTICE: The Check List indicates only that plant facilities are satisfactory for the production of concrete when properly operated. Conformance of the concrete itself with specification requirements must be verified by usual inspection methods in accordance with sales agreements.

This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Certification of Ready Mixed Concrete Production Facilities, QC3. Unauthorized reproduction or misuse of this certificate may result in legal action.

Plant ID #: 845670

Certification ID #: 23830

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National Ready Mixed Concrete Association

#2,095
Attachment is included with the minutes of the 9/19/2023 meeting at the request of Board member Ben Thomson

pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

NRMCA

Certificate of Conformance For Concrete Production Facilities

THIS IS TO CERTIFY THAT

Irmo Plant 7, Irmo, SC

Knights Redi Mix, Inc.

"Facility does not meet all requirements for furnishing concrete in subfreezing weather"

has been inspected by the undersigned licensed professional engineer for conformance with the requirements of the *Check List for Ready Mixed Concrete Production Facilities.* As of the inspection date, the facilities met the requirements for production by

Truck Mixing with Automatic Batching and Recordings of Cementitious Materials, Aggregate, Water, and Chemical Admixtures

WM. KENNETH JOHNSON, JR. REGISTERED No. 0139 SOUTH CAROLINA PROFESSIONAL GEOLOGIST

(Seal)

Wm. Kenneth Johnson Jr. P.G.

Signature of Licensed Professional ~~Engineer~~ Geologist

January 08, 2019
Inspection Date

January 08, 2021
Certification Expiration Date

This company will maintain these facilities in compliance with the *Check List* requirements and will correct promptly any deficiencies which develop.

Rich Barfield
Signature of Company Official

Regional Ops. Manager
Title of Company Official

NOTICE: The Check List indicates only that plant facilities are satisfactory for the production of concrete when properly operated. Conformance of the concrete itself with specification requirements must be verified by usual inspection methods in accordance with sales agreements.

This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Certification of Ready Mixed Concrete Production Facilities, QC3. Unauthorized reproduction or misuse of this certificate may result in legal action.

Plant ID #: 845671

Certification ID #: 23832

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National Ready Mixed Concrete Association

Attachment #2 M52 is included with the minutes of the 9/19/2020 meeting at the request of Board member Beth Hutchinson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4)

The Board majority and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

NRMCA

Certificate of Conformance For Concrete Production Facilities

THIS IS TO CERTIFY THAT

Lugoff Plant 8, Lugoff, SC

KRM Midlands, LLC

"Facility does not meet all requirements for furnishing concrete in subfreezing weather"

has been inspected by the undersigned licensed professional engineer for conformance with the requirements of the *Check List for Ready Mixed Concrete Production Facilities.* As of the inspection date, the facilities met the requirements for production by

Truck Mixing with Automatic Batching and Recordings of Cementitious Materials, Aggregate, Water, and Chemical Admixtures

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 25934 June 19, 18 H. ANDREW WHITFIELD (Seal)

H Andrew Whitfield, PE

Signature of Licensed Professional Engineer

September 20, 2017	*September 20, 2019*
Inspection Date	Certification Expiration Date

This company will maintain these facilities in compliance with the *Check List* requirements and will correct promptly any deficiencies which develop.

Rick Barfield — Signature of Company Official

Q.C Manager — Title of Company Official

NOTICE: The Check List indicates only that plant facilities are satisfactory for the production of concrete when properly operated. Conformance of the concrete itself with specification requirements must be verified by usual inspection methods in accordance with sales agreements.

This certificate is issued by the National Ready Mixed Concrete Association on verification that the production facility conforms to the requirements of the NRMCA Certification of Ready Mixed Concrete Production Facilities, QC3. Unauthorized reproduction or misuse of this certificate may result in legal action.

Plant ID #: 848995

Certification ID #: 23109

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Knight's REDI - MIX

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Phone :(843) 821-7600
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P.O. Box 3408
Summerville, SC 29484-3408

Dispatch
Phone :(843) 873-2300
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Hot Weather Plan

1. Maintain Concrete Plant in good operating order so as to minimize equipment breakdowns especially during hot weather concrete placements.
2. Schedule Concrete Placements during early morning hours which ambient temperatures are more conducive to concreting operations.
3. Provide water sprinklers on course aggregate stockpiles to keep aggregates cool.
4. Keep Mixer Drums painted white as to reflect sunlight.
5. Under Section 701.4.4.3, All Concrete temperatures must be maintained such that the Concrete temperature does not exceed 90 degrees. The use of ice or chilled water will be used as requested by the contractor.
6. Under Hot Weather Conditions, the amount of mixing speed of the mixer should be held to a minimum. As soon as the concrete is mixed, all further drum rotation will be at the lowest agitating speed recommended by the mixer manufacturer.
7. The dispatching and delivery of the concrete shall be coordinated in a manner so as to avoid delays in arrival or waiting periods until concrete discharge.
8. Use of chemical admixtures to lower water demand and the use of Retarding Admixtures meeting ASTM C 494 Type D shall be utilized to offset hot weather effects on concrete.

Attachment #2, 19953 is included with the minutes of the 7/14/2020 meeting, at the request of Board member Beth Hutchinson pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.

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Summerville, SC 29484-3408

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Fax: (843) 873-3279

Cold Weather Plan

1. In accordance with SCDOT 701.4.4.2, paragraph A. "No concrete shall be batched when the ambient temperature is below 35 degrees".
2. All aggregate piles shall be maintained to be free of frozen particles.
3. Use of ASTM C-494 Type C and Type E, non –chloride based admixtures shall be utilized as per request of customer
4. Winterized concrete plants shall be kept from freezing.
5. Use of municipal water supplies shall be utilized

Attachment #2, p954 is included with the minutes of the 9/14/2020 meeting, at the request of Board member Beth Hutchison pursuant to South Carolina Code Ann. Section 30-4-90(a)(4) and Board Policy BEDG. The Board majority did not approve, disapprove, or otherwise act upon the contents of this attachment.