DRAFT

AIA® Document G701™ – 2001

Change Order

PROJECT *(Name and address)*:
Radcliff Elementary School Renovation - Phase 3
1145 S. Dixie Boulevard
Radcliff, Kentucky 40160

CHANGE ORDER NUMBER: 010
DATE: August 18, 2011

TO CONTRACTOR *(Name and address)*:
Morel Construction Co., Inc.
627 West Main Street
Louisville, Kentucky 40202

ARCHITECT'S PROJECT NUMBER: 1004
CONTRACT DATE: January 10, 2011
CONTRACT FOR: General Construction

OWNER: ☒
ARCHITECT: ☒
CONTRACTOR: ☒
FIELD: ☐
KENTUCKY DEPARTMENT OF EDUCATION: ☒

THE CONTRACT IS CHANGED AS FOLLOWS:
(Include, where applicable, any undisputed amount attributable to previously executed Construction Change Directives)

Per recent reports (see attached) made by American Engineers, Inc., the special inspections testing agency, 2,033.47 cubic yards of undercutting was required at numerous areas on site due to unsuitable soil conditions. The areas were undercut between 24"-30" and geotextile fabric was placed prior to stabilizing with imported concrete rubble fill material. All measures taken to stabilize these areas of the site were per the recommendations of American Engineers. Due to the significant amount of undercutting required, the cut material had to be hauled off and spoiled off-site. Final unit prices established by Morel Construction were utilized in the pricing for this change order request. The additional unit price for hauling cut material off-site was reviewed and deemed acceptable by Sherman Carter Barnhart.

The original Contract Sum was	$	5,088,000.00
The net change by previously authorized Change Orders	$	30,678.00
The Contract Sum prior to this Change Order was	$	5,118,678.00
The Contract Sum will be increased by this Change Order in the amount of	$	89,472.00
The new Contract Sum including this Change Order will be	$	5,208,150.00

The Contract Time will be increased by Zero (0) days.
The date of Substantial Completion as of the date of this Change Order therefore is November 25, 2011.

NOTE: This Change Order does not include changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.

Sherman Carter Barnhart Architects PSC	Morel Construction Co., Inc.	Hardin County Schools
ARCHITECT *(Firm name)*	**CONTRACTOR** *(Firm name)*	**OWNER** *(Firm name)*
100 Mallard Creek Road, Suite 151, Louisville, Kentucky 40207	627 West Main Street, Louisville, Kentucky 40202	65 W.A. Jenkins Road, Elizabethtown, Kentucky 42701
ADDRESS	**ADDRESS**	**ADDRESS**
BY *(Signature)*	**BY** *(Signature)*	**BY** *(Signature)*
Kenny Stanfield AIA	Richard A. Clauson	Nannette Johnston
(Typed name)	*(Typed name)*	*(Typed name)*
DATE	**DATE**	**DATE**

627 West Main Street
Louisville, KY 40202
502-568-6200 Fax 502-568-6234

MOREL CONSTRUCTION CO., LLC

REQUEST FOR CHANGE ORDER

SHERMAN CARTER BARNHART
100 Mallard Creek Rd., Suite 151
Louisville, KY 40207-5133

Attn: Ms. Myra Vaughn

Request No. 11

X-No. 17

Project Radcliff Elementary - Phase 3

Project No. 11-01

We hereby request your formal Change Order to our contract for the following changes in the Scope of Work.

Undercut unsuitable soils per attached American Engineers, Inc. Field Reports. Remove unsuitable soil from site and replace with rubble concrete.

NOTE: This request is for work through July 19, 2011. Undercutting after this date will be addressed in a subsequent Request for Change Order.

Mass Excavation - 2033.47cy @ $7.00/cy	$14,234.00
Remove soils from site - 2033.47cy @ $7.00/cy	$14,234.00
Import rubble fill - 2033.47cy @ $30.00/cy	$61,004.00

RECEIVED
JUL 27 2011
Sherman/Carter/Barnhart
Architects PSC

Total ADDITIONAL amount of this Request for Change Order **$89,472.00**

~~This Request is Valid for~~ _____ ~~Days~~
A Time Extension of 10 Days is Included in this Request

~~A. We are proceeding with this work as per verbal authorization of~~ _____

B. We have completed this work as per verbal authorization of Mr. Gary Milby

~~C. We will proceed with this work only upon receipt of this signed authorization, or formal Change Order.~~

SIGNED: _____ **DATE:** _____

MOREL CONSTRUCTION CO., LLC

By: Richard A. Clauson
Richard A. Clauson - Vice President

July 27, 2011
Date

1. ORIGINAL - Architect
2. COPY - Owner/Architect File
3. COPY - X File

COPY

AMERICAN ENGINEERS, INC
PROFESSIONAL ENGINEERING
85 Aberdeen Drive
Glasgow, KY 42141
(270) 651-7228

Project Name: Radcliff Elementary
AEI Project Number: 211-059
Date: 4/20/11
Contractor: Morel

Weather: Clear/ 60s-70s
Foreman: Mark

Description of Observations/ Testing performed today:

AEI was on site to review footings for small storage room addition at the south end of the building. Bottom of footing excavations were found to have less than 2,000 psf bearing capacity as specified. The entire section of footings were overexcavated an average of 18 inches to more suitable material. The footings were then backfilled with #57 crushed stone to original design bearing elevation.

4.5' w x 1.0' d x 44'L

11 cy

Also while on site, new interior CMU walls under construction were reviewed for placement of vertical and horizontal reinforcement for type, size, spacing, etc. A representative sample of mortar was also obtained today for compressive strength testing.

COPY

AMERICAN ENGINEERS, INC.
PROFESSIONAL ENGINEERING

81 Abercorn Drive
Glasgow, KY 42141
(270) 651-7208

Project Name: Radcliff Elementary
AEI Project Number: 211-059
Foreman: Mark
Date: July 5, 2011
Contractor: Morel

Weather: Partly sunny/ 70

Description of Observations/ Testing performed:

AEI was on site to observe a proofroll for the south parking area and west entrance. The proofroll was conducted using a loaded dump truck weighing greater than 20 tons. No deflection was noted in the parking area, however considerable deflection was noted at the west entrance and radius leading to the west entrance. Recommended undercutting about 2 feet or until more suitable soils are encountered, and backfilling with #3 stone or similar.
Also while on site, I verified existing grade beams at footings mark W54 during excavation of footing trench.

Beginning Time: 10:00 a.m. **Ending Time: 12:00 p.m.**

Inspector: ***Kirby Vance***

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AMERICAN ENGINEERS, INC.
PROFESSIONAL ENGINEERING

Project Name: Radcliff
AEI Project Number: 211-059

Weather: Partly Sunny/90's

Foreman: Mark

Date: 7/11/11
Contractor: Morel

Description of Observations/ Testing performed.

AEI was on site to perform proof-roll at west entrance after undercut and placement of backfill. Proof-roll was acceptable with loaded dump truck of approximately 35 tons.

Proof-rolled from existing pavement (north to southwest radius approximately 75 feet. Deflection was noted and suggested undercutting approximately 2 feet with placement of broken concrete as bridging material similar to west entrance. Geotextile fabric was also recommended to serve as a separator.

Large deflection and rutting was noticed throughout length and width of south roadway running east and west adjacent to north parking area. Recommended undercutting approximately 2 feet. Area was measured with approximate quantities of 270'x35'x2'=700 yd^3

West entrance undercut area = 140'x30'x2' = 311 yd^3. From existing pavement to southwest radius undercut = 100'x30'x1'= 111 yd^3

Beginning Time:10:00 am **Ending Time: 1:00 pm**

Inspector: ***Kirby Vance***

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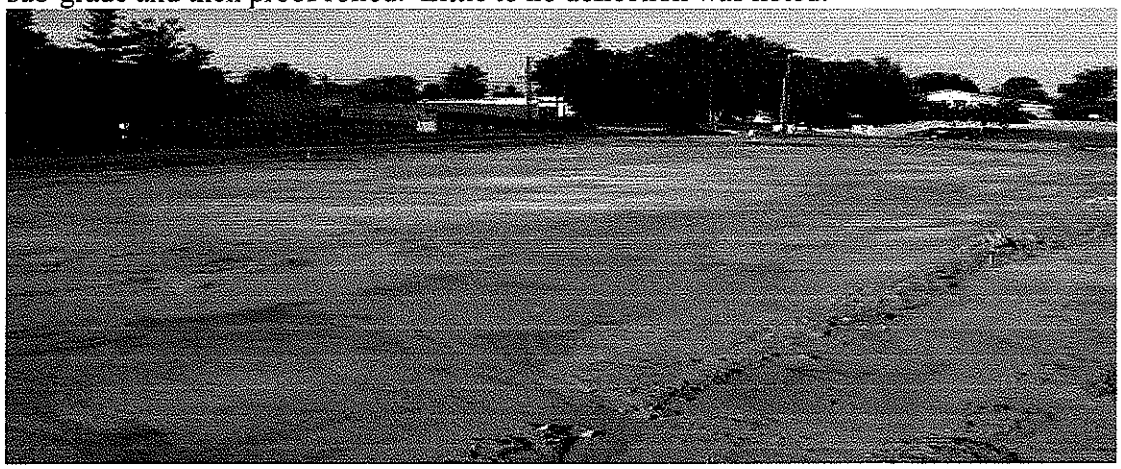
AMERICAN ENGINEERS, INC.
PROFESSIONAL ENGINEERING

81 Aberdeen Drive
Glasgow, KY 42141
(270) 651-7250

Project Name: Radcliff Eel.
Weather: Clear
AEI Project Number: 211-059
Foreman: Mark
Phase Number: Testing- Inspection
Date: 7-14-11
Contractor: Morel

Description of Observations/ Testing performed today:

AEI was on site for undercutting of soils in south parking area. South parking area was deemed too wet for soil removal in the am. Service area roadway was cut 6-8" down to sub-grade and then proof rolled. Little to no deflection was noted.



South parking area with water visible.

Service roadway.

Loading dock wall was formed and reinforced while on site. All reinforcing steel was in place prior to concrete being poured. A sample was obtained at the middle of the load and four samples were molded. Tests are as follows: slump- 5.75, temp- 87F.

*-9 yards total poured. Concrete was consolidated with vibrator.

Reinforcing for wall.

Beginning Time: 5 am **Ending Time: 3 pm**

Inspector: ***Cole Poynter***

**- When AEI left site at 1330 , no attempt had been made to excavate soils in south parking area.*

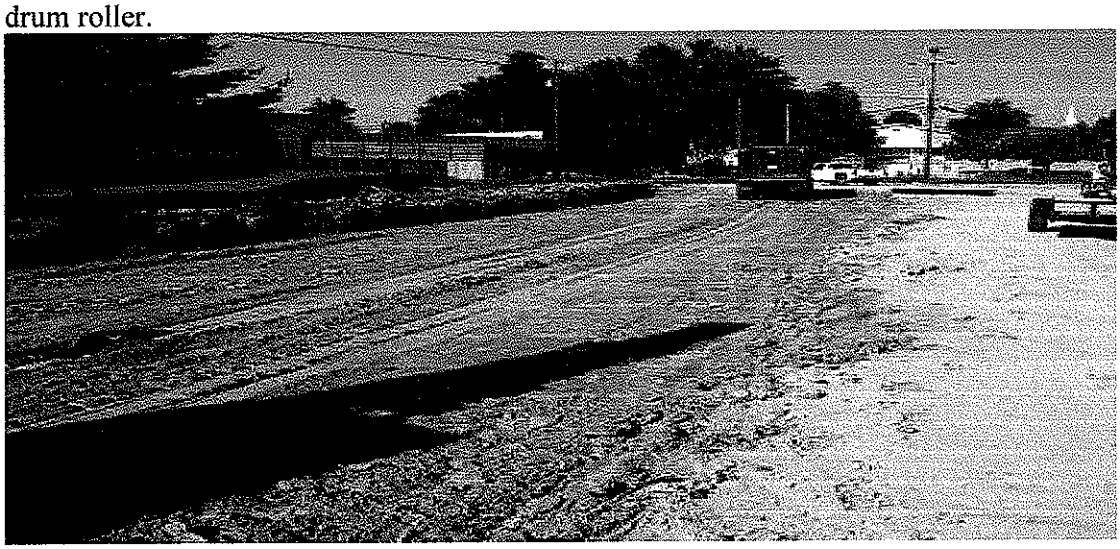
AMERICAN ENGINEERS, INC
PROFESSIONAL ENGINEERING
61 Aberdeen Drive
Glasgow, KY 42141
(270) 651-7220

Project Name: Radcliff Ele.
AEI Project Number: 211-059
Phase Number: Testing-Soils Undercut
Date: 7-15-11
Contractor: Morel

Weather: Clear
Foreman: Mark

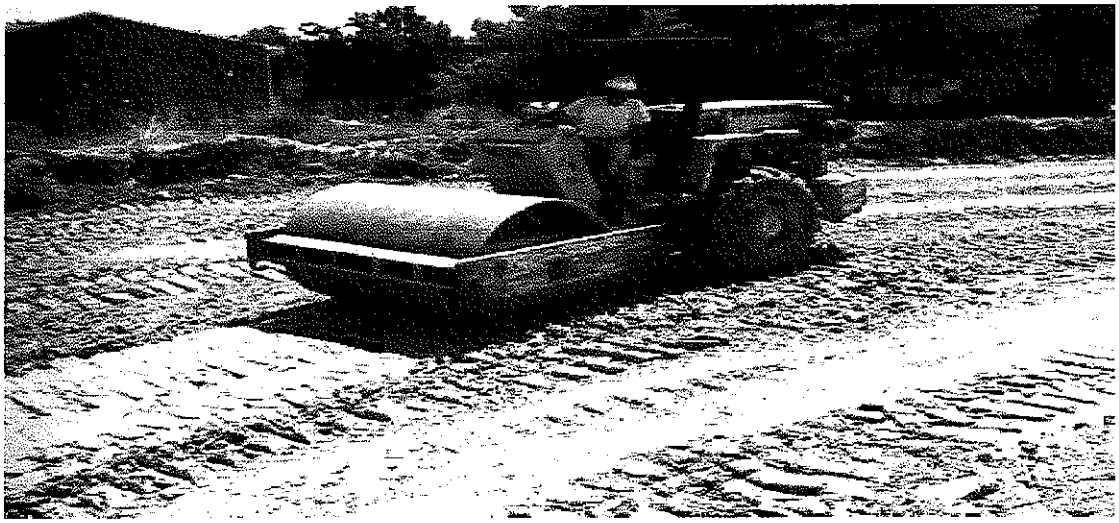
Description of Observations/ Testing performed today:

AEI was on site for undercut observation at Radcliff Elementary School. South parking lot on the extreme south quadrant was undercut approximately 30-37" below original elevation. Undercut area ran the entire length of proposed lot and was roughly 34-39' wide. Suitable was soil was encountered an average of 2.5' below original grade. All topsoil/ unsuitable material was excavated from site. After all soil had been cleared from undercut, further compaction of sub-grade was obtained by passing over it with a smooth drum roller.



Entrance way rear.

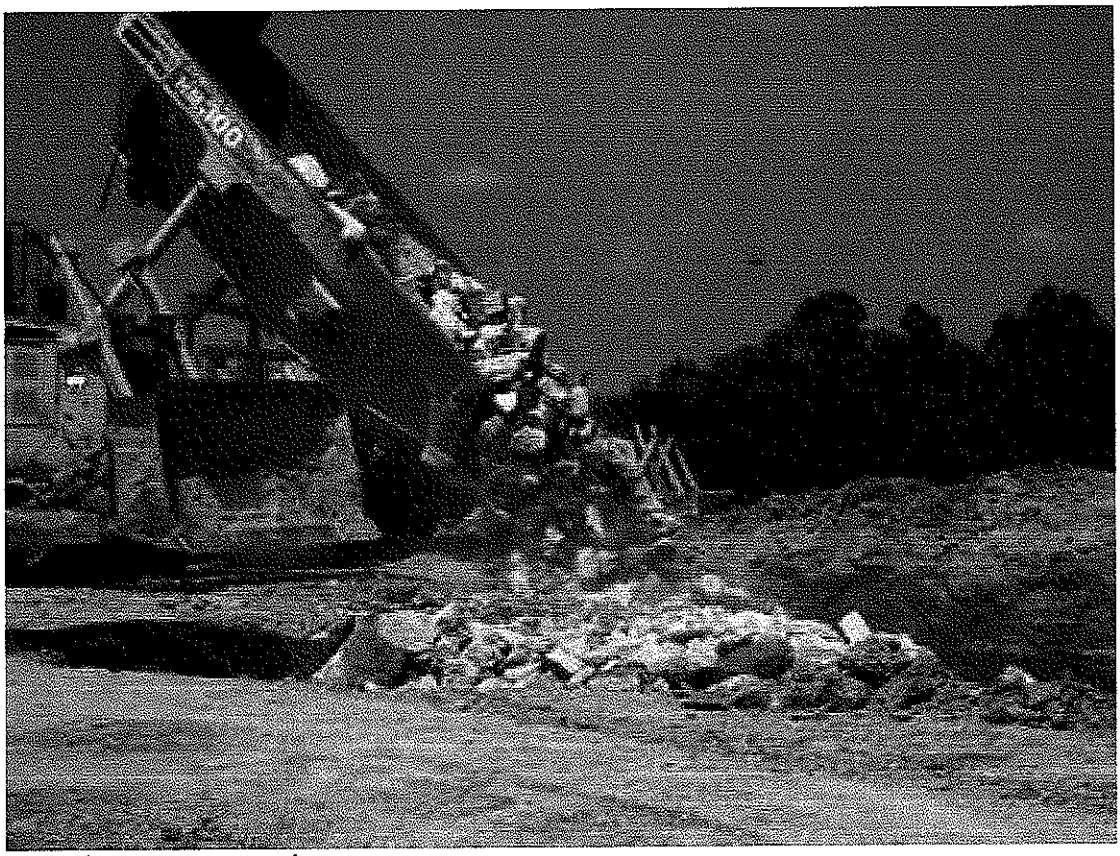
Central portion of undercut.



Roller in action.

After area was compacted with roller, mesh fabric was placed in the bottom of the excavation. Stone/concrete rubble was then trucked in places as backfill material up to original elevation in about 80 % of area.

End of undercut with fabric being placed.



Stone placement on east end.

*-One area in extreme south east corner was undercut approximately 48" due to large pocket of topsoil encountered.

Beginning Time: 430 am cent. **Ending Time: 830 pm cent.**

Inspector: ***Cole Poynter***

Quantities of undercut: depth avg= 2.5', length= 305', width avg= 37'.

CY= 1045.00

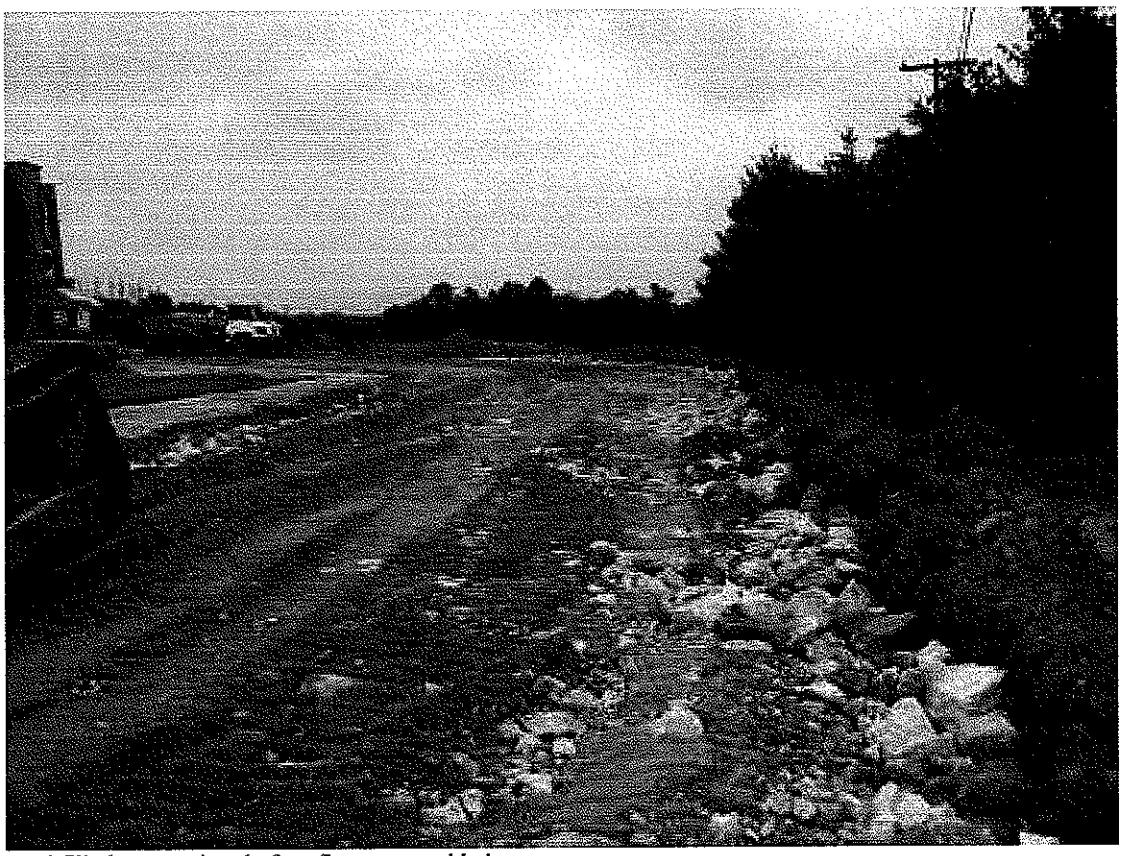
COPY

AMERICAN ENGINEERS, INC
PROFESSIONAL ENGINEERING

Project Name: Radcliff Elementary
Weather: Overcast
AEI Project Number: 211-059
Phase Number: Testing- soils evaluations
Foreman: Mark D.
Date: 7-16-11
Contractor: Morel Construction

Description of Observations/ Testing performed today:

AEI was on site again to document stone backfill in south parking area. Eighty percent of backfill was completed previous night. Rubble rock was again trucked in from off site area and placed in one large lift to original elevation down the length of the excavation. Dozer blade was used for grading along with track rolling for added workability of stone.



Backfilled excavation, before fines were added.

A thin layer of aggregate fines were placed on top of the rubble rock to act as a capping agent. This should reduce infiltration of water as well as provide a working platform for the soil backfill.

Spreading of fines.

Beginning Time: 0630 am **Ending Time: 1500 pm**

Inspector: ***Cole Poynter***

AMERICAN ENGINEERS, INC.
PROFESSIONAL ENGINEERING
www.aei.cc

65 Aberdeen Drive
Glasgow, KY 42141
(270) 651-7220

Project Name: Radcliff Elementary
AEI Project Number: 211-059
Phase Number: Testing/ Soils Evaluation
Date: 7-18-11
Contractor: Morel

Weather: Overcast
Foreman: Mark Deasy

Description of Observations/ Testing performed today:

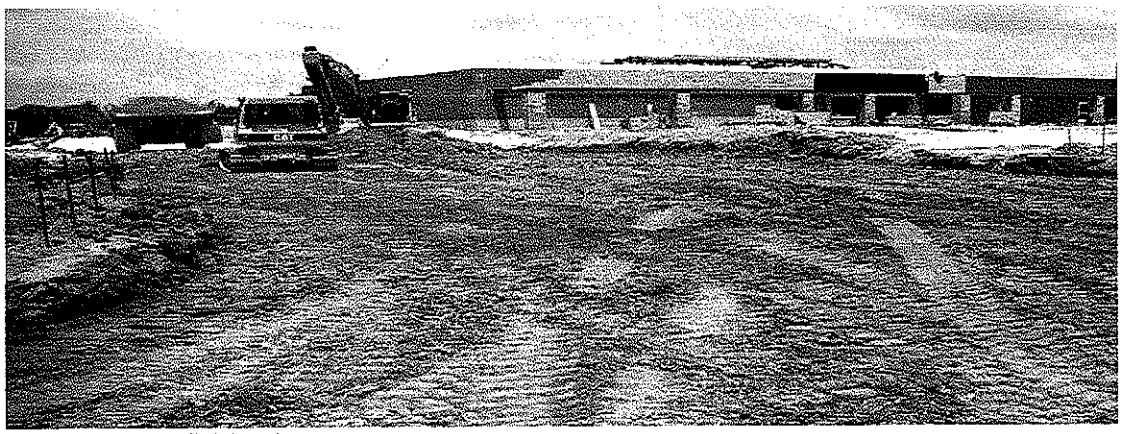
AEI was on site for soil evaluations at Radcliff Elementary at 8 am. At the south parking lot end/ start of rear access road, a proof roll was again conducted to identify unsuitable soils.

A fully loaded tri-axle dump passed over areas in a random fashion from south access road down to south parking lot and back. Moderate to severe pumping/ rutting was observed in proof-rolled areas. A small test cut was excavated with dozer to find suitable soils at 2' below original elevation. Undercutting of area was recommended and began shortly after evaluation.

Test excavation down to suitable soils.

Proposed cut area.

Cut area was approximately 37' wide, by 92' long, with an average depth of 24".


Undercut area at finish point.

After soft areas were excavated, a smooth roller was used for added compaction and removal of any loose material. Another proof roll was conducted on the area and showed little signs of rutting at an average of 2' below original elevation.

Fabric was again placed in bottom of excavation as a bridging aid before stone backfill was trucked in. After fabric was down and secured, backfill was placed in excavation in one large lift and worked in with dozer blade to original elevation. Backfill was completed by the end of the day.

Beginning Time: 0630 am cent. **Ending Time: 0630 pm cent.**

Inspector: ***Cole Poynter***

37'x 92'x 2'

252.14 Cy

COPY

AEI

65 Aberdeen Drive
Glasgow, KY 42141
(270) 651-7220

AMERICAN ENGINEERS, INC.
PROFESSIONAL ENGINEERING
www.aei.cc

Project Name: Radcliff Elementary
AEI Project Number: 211-059
Phase Number: Testing/ Soils Evaluation
Date: 7-19-11
Contractor: Morel

Weather: Clear
Foreman: Mark Deasy

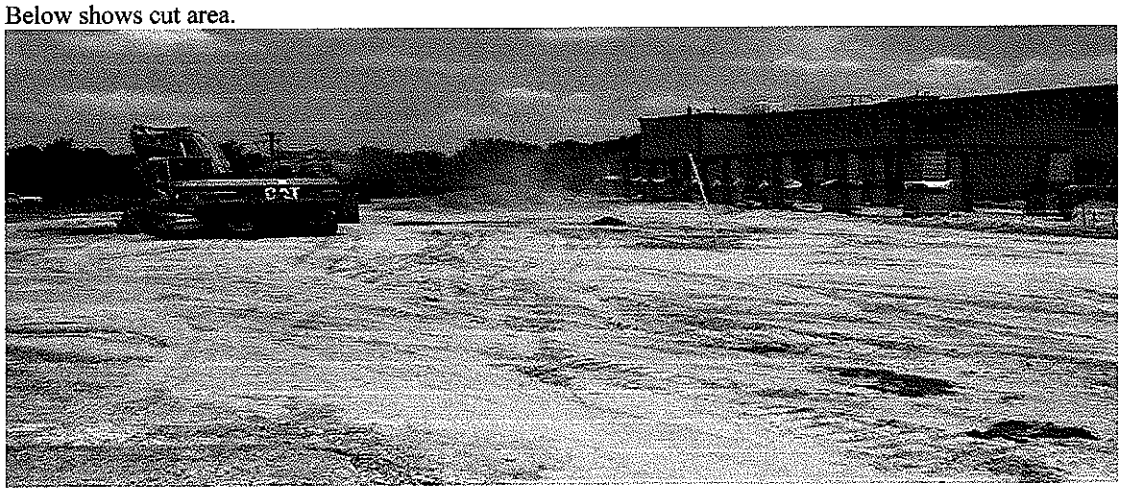
Description of Observations/ Testing performed today:

AEI was on site for soils/ backfill observations at Radcliff Elementary School. South access road in front of existing job trailer and fuel tank was being worked with fines. Fines were placed in a thin lift over entire excavation and compacted with a smooth drum roller. Some of the larger fill rocks were taken out that had worked toward surface of fill as recommended.

* From 9 am to 11 cent. AEI experienced down time on site where no inspections were needed.

Access road down to bus loop was cut to subgrade and proof- rolled to identify any unsuitable material. A fully loaded rear dump passed over the area in a random fashion and showed acute to moderate pumping/ rutting in areas tested. Undercut was again recommended and began shortly thereafter.

Below shows cut area.



Excavation in process

Cut area was approximately: 105' long, an average of 39' wide, and an average depth of 2.0'.

303.33 CY

After all unsuitable soils were removed, the bottom of the excavation was again rolled with smooth drum roller and geotextile fabric was placed before stone backfill was placed.
After fabric was placed and secured, rock was trucked in and spread over the excavated area in one lift and spread with a dozer blade to original elevation.

Beginning Time: 6 am cent. **Ending Time: 7 pm cent.**

Inspector: ***Cole Poynter***

MOREL CONSTRUCTION CO., LLC

July 26, 2011

Sherman Carter Barnhart
100 Mallard Creek Rd., Ste. 151
Louisville, KY 40207

Attn: Ms. Myra Vaughn

RE: ***RENOVATION TO RADCLIFF ELEMENTARY SCHOOL – PHASE 3***

Dear Ms. Vaughn,

This is to address the issue of using rubble concrete in undercut areas in lieu of quarry run shot rock. As you know, during the bid process for the Project, it was established that the portion of the Bus Drive included in Area 1 required completion by April 3, 2011. During the pre-bid meeting, bidders were cautioned that it was very likely that engineered fill or shot rockwould be needed for fill in that area and that they should bid accordingly. Bischoff Brothers Excavating, LLC bid engineered fill in that area, but included rubble concrete instead of shot rock.

Their reasoning for using rubble on this project was that it afforded them total control over the fill process. During the winter months, when the operation was scheduled, there were times when the quarries were closed and/or trucking was not available due to cold and wet conditions. With the rubble site being adjacent to the project site, Bischoff would have direct access to the site with their off-road trucks and be able to continue work when site conditions would not allow for on-road dump trucks. Before starting this process, American Engineers, Inc. was consulted and they agreed to the use of rubble provided that it was produced with a gradation similar to that of shot rock. Bischoff then proceeded with rubble fill at the bus road and produced a very good road base during tough winter conditions.

When the recent bad soil conditions were discovered, the parameters of the work were similar. Site conditions were wet and there was very little time to complete the work. Again, using the rubble fill affords Bischoff total control of the operation. They are able to work from 6:00am until 10:30pm, seven days a week if needed, without being restricted by the availability of trucking or the operation hours of the quarry. As areas requiring undercut are discovered, they can immediately begin moving rubble to the undercut area without waiting for the quarry to open or waiting to schedule trucks. This is a great advantage considering the recent pattern of heavy downpours two or three times each week.

627 WEST MAIN STREET
LOUISVILLE, KENTUCKY 40202
502-568-6200 FAX: 502-568-6234

2801 ALEXANDRIA PIKE
HIGHLAND HEIGHTS, KENTUCKY 41076
859-442-7100 FAX: 859-442-8175

MOREL CONSTRUCTION CO., LLC

As you requested, Bischoff Brothers Excavating, LLC has compiled the costs of using rubble concrete vs. quarry run shot rock. The attached spread sheet shows their costs per hour to break the concrete into rubble. They average making about 50 tons of rubble per hour. The cost per hour of their machines, fuel and service was obtained from the Catapillar Equipment Performance Handbook and from rental schedules. The operator rate reflects prevailing wage, fringes and labor burden. The overtime rate was computed by estimating that ½ of the hours worked would be overtime hours. An overtime rate for refill was not included since that work can be performed at a later date during normal shifts.

As you can see, the cost to make one ton of rubble is about $16.69. The latest quote (July, 2011) from Vulcan for shot rock is $17.00/ton. It should be noted that the unit price they were quoted for shot rock in December, 2010, (when this project was bid) was $12.31/ton. The cost of shot rock has risen dramatically due to higher fuel prices. Of course, higher fuel prices are also reflected in the rubble costs. Considering the above, it is evident that Bischoff is not seeing substantial cost savings when using rubble concrete instead of quarry shot rock.

Should you have further questions, please contact this office.

Very truly yours,

MOREL CONSTRUCTION CO., INC.

Richard A. Clauson

Richard A. Clauson
Vice President

RAC/alh

Cc: Bischoff Brothers – Mr. Phillip Bischoff

Richard Clauson

From: Phillip Bischoff [bbexcavating@yahoo.com]
Sent: Monday, July 25, 2011 12:03 PM
To: Richard Clauson
Subject: Break Down CY TO TONS
Attachments: Break Down CY TO TONS.xls

Here is the break down you requested. If you have any questions please fill free to contact John or myself. Thanks
(The break down is Attached)

Phillip J. Bischoff
Bischoff Brother's Excavating
702 Double Springs Rd
Bardstown KY 40004
502 348 6111
502 827 8584

Radcliff Elementary
Rubble concrete vs shot rock

We are making approximately 50 Tons of rubble concrete per hour

		Cost per hour	Fuel per hour	Service per hour	Operator rate	Overtime Operator rate	Total Cost/Hour
Load Fill	Cat 325	$ 62.50	$ 43.00	$ 5.00	$ 55.68	$ 9.08	$ 175.26
Breakup Fill	Cat 225 hoeram	$ 150.00	$ 38.00	$ 10.00	$ 55.68	$ 9.08	$ 262.76
Haul Fill	Cat DE 300	$ 60.00	$ 30.00	$ 3.00	$ 55.68	$ 9.08	$ 157.76
Foreman					$ 55.68	$ 9.08	60.22
Refill	D6R	$ 75.00	$ 43.00	$ 5.00	$ 55.68	$ -	$ 178.68

	Rubble	
	Cost per 50 Ton	Cost per Ton
Load Fill	$ 175.26	$ 3.51
Breakup Fill	$ 262.76	$ 5.26
Haul Fill	$ 157.76	$ 3.16
Foreman	$ 60.22	$ 1.20
refill site	$ 178.68	$ 3.57
		$ -
		$ -
Total	$ 834.68	$ 16.69 (PER TON)

1.3 Ton of Shot Rock = 1 Cubic Yard Rock

Rubble Concrete Cost per CY $ 21.70

Purchase Price of Shot rock from Vulcan as of July 2011
$ 17.00 Per ton = $ 22.10 Per Cubic Yard

COSTS DO NOT INCLUDE:

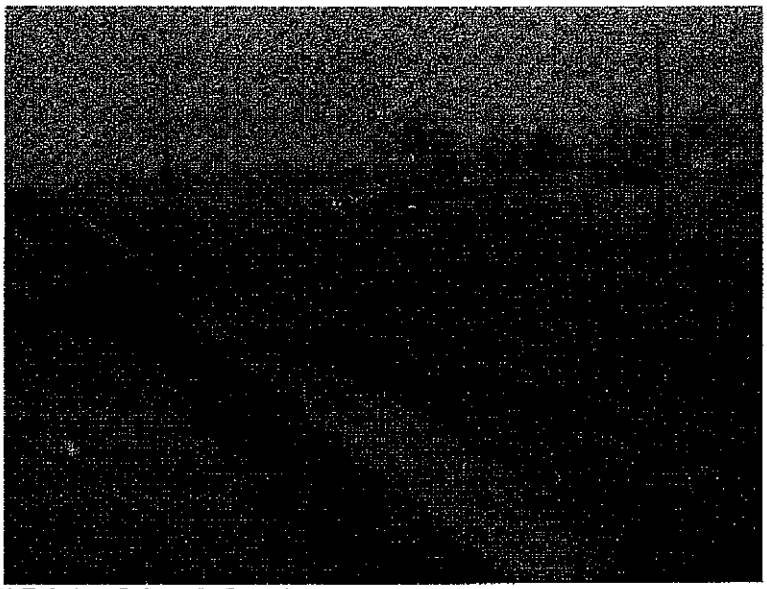
- Installation of Geo-Fabric $2/CY
- Install Fill Material $3/CY

AMERICAN ENGINEERS, INC.
PROFESSIONAL ENGINEERING

Project Name: Radcliff Elementary Phase 3
AEI Project Number:211-059
Phase Number: Special Inspection
Date: 2/7/2011
Contractor: Morel Construction

Weather: Cloudy 33°
Foreman: Mark

Description of Observations/ Testing performed today: AEI representative arrived at 7:45 a.m. to observe soil conditions at proposed bus loop to determine if it was suitable for fill placement. Areas were rutted prior to inspector's arrival and it was agreed that a proof-roll was unnecessary and that the soil would be skimmed off and waste concrete will be placed to help bridge any soft areas the following day. The concrete debris that will be placed was determined between the contactor and AEI to be approximately 6"-8" diameter pieces. The waste concrete should be bladed and tracked with a dozer to densify the material followed by compaction with six to eight passes of a 16-ton pneumatic roller or an 8 ton steel wheel vibratory roller. In areas where the thickness of fill exceeds three feet, the material may be used to bridge soft subgrade soils provided the material is stable upon reaching the proposed subgrade elevation. In areas where less than three feet of fill is required to achieve the proposed subgrade elevation, the sub-grade should be stable when proof-rolled.



1 Existing .Subgrade Overview

Beginning Time: 7:30 a.m. **Ending Time: 12:00 p.m.**

Inspector: ***Danny Stover***

Sherman · Carter · Barnhart PSC
ARCHITECTURE • INTERIORS • LANDSCAPE ARCHITECTURE • ENGINEERING

August 3, 2011

Mr. Gary Milby
Hardin County Public Schools
65 W.A. Jenkins Road
Elizabethtown, Kentucky 42701

Re: Renovation to Radcliff Elementary School – Phase 3
SCB Project No. 1004

Dear Gary:

In order to best summarize and explain the recent construction activity conducted to address the unsuitable soils on site, I wanted to create for you and the board of education a report that outlines the following:

- *Explanation of unsuitable soils encountered on site*
- *Method utilized for soils remediation*
- *Status of work conducted to address the unsuitable soils*
- *Change order requests vs. Kentucky Department of Education project allowances*
- *Performance of site contractor*
- *Unsuitable soils in other school districts across Kentucky*

Explanation of unsuitable soils

During the early stages of a project's design, we recommend that the Owner (the board of education) contract with a geotechnical engineering company to have a subsurface geotechnical investigation of the site performed. This investigation analyzes several boring samples taken in various locations on site to get a "snapshot" of existing subsurface soil conditions. The report generated allows us to determine whether unsuitable soils may be encountered during construction, and if so, to incorporate requirements in the construction documents to remediate such soils.

American Engineers, Inc., was hired by the Hardin County Board of Education to investigate the site and generate such a report. A total of fourteen (14) borings were tested, mostly around the existing building, at the proposed Kitchen/Cafeteria addition, and some within new parking areas. Although the majority of the borings indicated "lean clay" material below grade, some indicated "trace organic" soil conditions. Lean clay material (when dry) is typically a suitable soil material for construction. Organic soils, however, are defined as "highly compressible soils considered generally undesirable for construction because of its inability to bear sizable loads." Radcliff Elementary was originally constructed in 1956, with subsequent building additions in 1959, 1976 and 1990. It is quite possible that during earthwork for these additions, the topsoil removed during construction was dispersed on the site, raising the finish grade elevations, and therefore creating depths of organic soils 24" – 36" in some areas on site.

Method utilized for soils remediation

At the recommendation of American Engineers, the vast majority of undercutting on site was due to exposure of the subgrade – i.e. lean clay material – to significant rainfall during construction, as well as highly organic soil material. The wet clay material was cut and removed, and an approved fill material was put in place of the cut material. Site demolition and construction started during severe winter conditions, bridging into extremely wet spring and summer months. There were also areas of significant highly organic soil material on site that also required cut and fill material. Wet or dry, soil with high organic content is never suitable for construction due to its inability to bear sizable loads. American Engineers, along with Bischoff Brothers (the site contractor), have been diligent in documenting existing soil conditions and quantities required for cutting and filling in order to address the unsuitable soils encountered during site construction.

Lime stabilization is also a common method for remediating unsuitable soils; it is, however, an ineffective method for remediating soils with high organic content. Lime stabilization is most effective when remediating high-plasticity clay material or "fatty clay" as was encountered at the North Middle School site. Unfortunately, lime stabilization was not a feasible option for addressing the wet lean clay material at Radcliff Elementary due to its low clay content. Lime stabilization also requires a specialized contractor to conduct the stabilization, and the amount of time required to conduct the stabilization can pose a threat to the construction schedule. However, American Engineers and Morel Construction have agreed to consider lime stabilization for remediation in areas of unknown soil composition should these areas contain high-plasticity clay material.

Bischoff Brothers utilized concrete rubble material from the adjacent IMI plant for the fill material in lieu of imported shot rock, as approved by American Engineers at the start of construction. Morel has submitted a letter (copy enclosed) that outlines why Bischoff elected to utilize the concrete rubble material, as well as breakdown of unit costs for the rubble concrete vs. imported shot rock.

Status of work conducted to address the unsuitable soils

Please refer to the following site plan that indicates all areas of unsuitable soils encountered on site, as well as areas of anticipated unsuitable soils. According to Bischoff, in all areas of cut and fill, approximately 50% of unsuitable soils encountered were wet lean clay material and 50% highly organic soils.

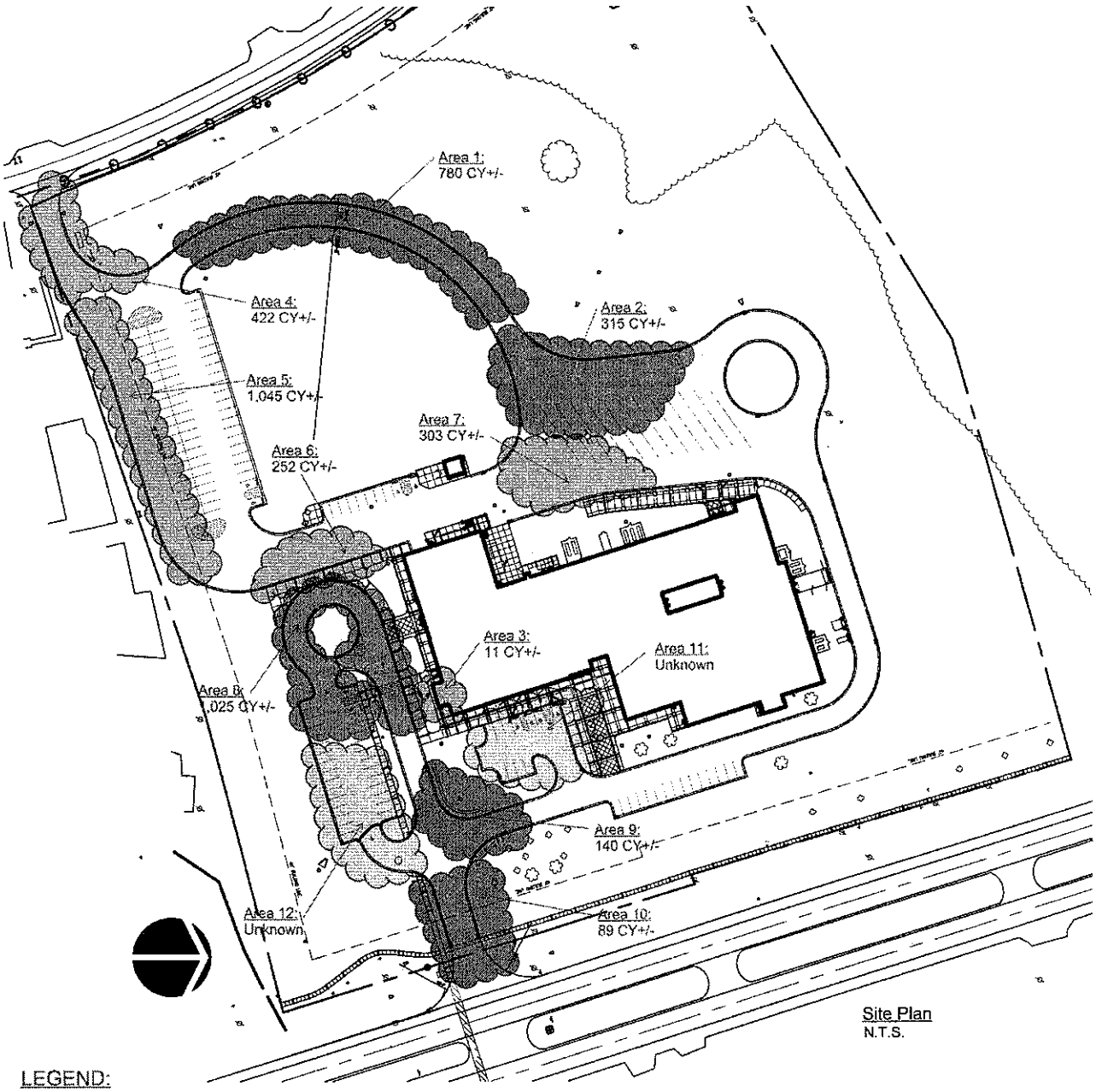
Area 1: (February 2011) - Contains approximately 780 cubic yards that was undercut due to unsuitable soils and replaced with rubble concrete fill material. The site contractor installed geotextile fabric below the fill material. The site contractor, at no additional cost to the Owner, conducted this work in order to stay on the aggressive construction schedule, as well as to have the bus loop usable by buses per the construction phasing schedule.

Area 2: (April 2011) – Contains approximately 315 cubic yards of undercut unsuitable soil material and replaced with rubble concrete fill material. The site contractor installed geotextile fabric below the fill material. The school board approved the additional cost associated with this work, via Change Order No. 4.

Areas 3 through 7: (July 19, 2011) – Contains approximately 2,033 cubic yards of undercut unsuitable soils material and replaced with rubble concrete fill material. The site contractor has agreed to install geotextile fabric below the fill material. The additional cost associated with this work will be submitted to the school board via Change Order No. 10.

Areas 8 through 10: (After July 29, 2011) – Contains approximately 1,254 cubic yards of undercut unsuitable soils material that will be replaced with rubble concrete fill material. The site contractor has agreed to install geotextile fabric below the fill material. The additional cost associated with this work will be submitted to the school board as a future change order request once final quantities have been identified.

Areas 11 and 12: Potential undercutting and fill material may be required in these areas. When site excavation begins in these areas, it will be determined whether unsuitable soils are present. Should the unsuitable soils contain higher clay content, lime stabilization may be considered as method for remediation. The site contractor has also agreed to dig test holes in order to estimate depth of any unsuitable soils prior to site construction in these areas.



Site Plan
N.T.S.

LEGEND:

- Area 1: Undercutting and import fill required (February 2011). Work conducted by Site Contractor at no additional cost to Owner in order to stay on construction schedule.
- Aree 2: Undercutting and import fill required (April 2011). Approved by school board as Change Order No. 4.
- Areas 3-7; Undercutting and import fill required through July 19, 2011. These areas as outlined in Change Order No. 10 request to school board.
- Areas 8-10: Undercutting and import fill required after July 19, 2011. These areas will be submitted as Change Order request after final quantities have been determined by American Engineers.
- Areas 11 and 12: Potential undercutting and import fill may be required in these areas. When site excavation begins in these areas, it will be determined if unsuitable soils are present.

Change order requests vs. Kentucky Department of Education project allowances

When geotechnical reports are initially conducted on sites, the subsurface investigations usually give us an indication if unsuitable soil material will be encountered during construction. However, the borings indicate existing soil conditions at particular locations and do not indicate how far-reaching the subsurface conditions extend.

Until only recently – and as permitted by the Kentucky Department of Education (KDE) – it was common to anticipate an estimated quantity of unsuitable soils on site that would require remediation. An unsuitable soil allowance was then incorporated into the construction documents, requiring contractors to include in their bids a cost associated with remediating a specific quantity of unsuitable soil material. During construction, the contractor would utilize the allowance to address unsuitable soils. At the end of construction, any unused allowance would be returned to the Owner.

KDE, however, now permits allowances only for brick; they no longer permit allowances for unsuitable soils. Therefore, every time unsuitable soils are encountered, which require undercutting and replacement of fill material, the area in question is documented, and the additional costs associated with remediation result in change order requests. This causes concern especially during renovation projects with aggressive construction schedules, as the change order approval process threatens to delay construction progress. The geotechnical testing agency is always required to document and report quantities of soils remediation; and unit prices pertaining to addressing unsuitable soils are required from the contractor at the start of construction.

KDE's current stance on not permitting allowances, particularly for unsuitable soil conditions, has resulted in more change order requests to boards of education. At North Middle School, high-plasticity soils or "fatty clay" material was anticipated on site. These soils would require remediation. An unsuitable soil allowance was incorporated in the construction documents totaling $84,000.00. When Alliance Corporation encountered unsuitable soils they utilized the allowance to proceed with remediation, and no change order requests were necessary. At the end of construction, the geotechnical testing agency documented that only a portion of the allowance was utilized and the remainder was returned to the board of education as a credit in the amount of $80,800.00. An additional allowance was incorporated into the project to provide steel casing at geothermal wells should unsuitable soil material also be encountered at much lower depths during the well field installation. This allowance totaled $150,000.00, of which all was utilized by the contractor due to poor soil conditions.

Performance of site contractor

When Morel Construction originally bid the project, Louisville Paving was the original site contractor. Immediately after the bidding process, however, Louisville Paving backed out of the project. Morel was then required to obtain another site contractor at no additional cost to the board of education, and subsequently hired Bischoff Brothers Excavating of Bardstown, Kentucky. Bischoff Brothers has proven to be a highly effective and proactive site contractor, successfully dealing with the unsuitable soil conditions by working closely with American Engineers. At the beginning of construction, Bischoff immediately began site work on the new bus loop at the west side of the site. Unsuitable soils were

encountered during construction. Bischoff, however, went ahead and cut approximately 780 cubic yards of unsuitable soils and installed fill material – at no additional cost to the school district – in order to stay on schedule. Bischoff also suggested utilizing rubble concrete material from the adjacent IMI concrete plant in order to work effectively and quickly, to successfully complete areas of site construction per the construction phasing plan.

Bischoff has gone above and beyond in order to stay as close as possible to the construction schedule. However, the significant amount of unsuitable soil material on site has caused delays. In order reduce import fill material and save the school district money, Bischoff piled approximately 1,000 cubic yards of cut lean clay material on site in order for it to dry and be used for future fill material. They have also installed geotextile fabric beneath import fill material at all cut unsuitable soil areas as an extra measure taken to further ensure successful final paving.

The accelerated construction schedule has also put a tremendous strain on site grading due to construction vehicular traffic. However, Bischoff has proof-rolled various areas on site six, sometimes seven, times in a row in order to provide additional compaction and minimize as much cutting as possible. Bischoff has been diligently working overtime and on weekends to move quickly with their work while also providing quality construction service.

Unsuitable soils in other school districts across Kentucky

Radcliff Elementary is not the only construction project that has experienced additional costs associated with unsuitable soils. In Lincoln County, two school projects have experienced significant amounts of unsuitable soil undercutting and replacement of structural fill material: Crab Orchard Elementary and Waynesburg Elementary sites both contained lean clay material that was too wet at depths too great to allow time for drying. Both projects had accelerated construction schedules that required undercutting of soils and fill material replacement. Because unsuitable soil allowances were not permitted on these projects by KDE, change order requests were submitted to address the additional costs of remediation. The costs of remediation have, in some cases, forced school districts to reduce the scope of site development work.

I hope that the information outlined above successfully explains the unsuitable soil conditions at Radcliff Elementary, the methodology for remediating the soils, the status of work conducted thus far, and the recent change order requests for associated additional costs.

We will be glad to address any further questions or concerns you may have.

Sincerely,

Myra Vaughn AIA, LEED® AP
Project Architect

c: Kenny Stanfield, Phil Gayhart, Ben Sorrell, Mike Bashikhes

KENTUCKY DEPARTMENT OF EDUCATION
DIVISION OF FACILITIES MANAGEMENT

CHANGE ORDER SUPPLEMENTAL INFORMATION FORM
702 KAR 4:160
(Supplement to AIA G701 and G701/CMa Change Order Forms)

District: Hardin County | District Code: 231 | Facility Name: Radcliff Elementary School | School Code:

BG #: 11-074 Project: Radcliff Elementary School Renovation – Phase 3 Contract/Bid Package:

Original Contract Sum: $5,088,000.00 Change Order Number: 10

Requested Change Order Amount $ 89,472.00 Time Extension Required: ☐ Yes ☒ No

NOTE: All change orders shall be submitted with complete cost breakdown including materials, labor, overhead and profit, and any other descriptive drawings and information.

Contract change requested by:

- ☐ Local Board of Education
- ☐ Architect/Engineer
- ☐ Code Enforcement Official
- ☐ General Contractor
- ☐ Construction Manager
- ☒ Other: Found condition

Change Order Description and Justification:
Per recent reports made by American Engineers, Inc., the special inspections testing agency, 2,033.47 cubic yards of undercutting was required at numerous areas on site due to unsuitable soil conditions. The areas were undercut between 24"-30" and geotextile fabric was placed prior to stabilizing with imported concrete rubble fill material. All measures taken to stabilize these areas of the site were per the recommendations of American Engineers. Due to the significant amount of undercutting required, the cut material had to be hauled off and spoiled off-site. Final unit prices established by Morel Construction were utilized in the pricing for this change order request. The additional unit price for hauling cut material off-site was reviewed and deemed acceptable by Sherman Carter Barnhart.

Cost Benefit to Owner:
Stabilization of unsuitable soils at various areas on site per American Engineers, Inc., required to obtain successful compaction prior to final paving.

Have contract unit prices been utilized to support the cost associated with this change order?

☒ Yes ☐ No

Is the cost for this change order supported by an alternate bid or competitive price quote(s)?

☐ Yes ☒ No

Does this change order affect the total Architect/Engineer design fee for this project? ☐ Yes ☒ No

Current A/E Contract Amount: $

Fee Amount for this change +/-: $

New A/E Contract Amount: $

Board of Education Designee Signature Date

Attach additional pages if necessary