June 27, 2024

Ms. Sharon Bloom
City of Lee's Summit
220 SE Green Street
Lee's Summit, Missouri 64063

RE: Final Special Inspection Report
Lee's Summit Fire Station No. 4
801 Missouri Highway 150
Lee's Summit, Missouri
Report Period: February 21, 2023 to March 6, 2024
Geotechnology, Inc. Project No.: J040917.04

Dear Ms. Bloom:

This letter with attachments will constitute our Final Special Inspection transmittal for the above referenced project. Representatives of Geotechnology, LLC have provided field observation and testing services for building and pavement subgrades, structural fill, foundation bearing materials, reinforced concrete, drilled and epoxy-grouted reinforcing steel, drilled and epoxy-grouted anchors, structural masonry, and structural steel during the report period.

Summary of Activities

Building and Pavement Subgrade

Following the removal of the vegetation and topsoil, the subgrade for the building pad and pavement area was observed on March 28, 2023. The south building area was observed on March 30 for stability of the LVC placed on March 30, 2023. The exposed grades were observed with respect to stability and moisture content prior to fill placement. The exposed grades were also proofrolled with a fully-loaded tandem-axle dump truck to aid in evaluating the stability of the underlying soils.

Structural Fill

Field density tests and visual observations were performed in the limestone screenings placed as low-volume-change (LVC) material within the upper 24 inches of the proposed building pad between March 29 and March 30, 2023. The LVC was placed in approximately 8-inch lifts and compacted with a self-propelled smooth drum vibratory roller. On March 30, the second and third lifts in the south half of the building pad appeared unstable due to high moisture content. On April 3, 2023, after drying and recompacting, LVC was proofrolled with a fully-loaded tandem axle dump and appeared stable.

Field density and visual observations were performed on storm sewer and water line utility line backfill for water and storm on February 21, March 14, and March 15, 2023.

To evaluate the field density test results, a sample of the quarried material was obtained for moisture-density (standard Proctor) relationship testing. Results of the standard Proctor and field density tests are enclosed.

Foundation Bearing Materials

The bearing materials in the bases of the foundation excavations were observed in the following locations:

April 6	-	Line F, 1 to 10; and Line 2, A to K
April 7	-	Line A, 2 to 9
April 13	-	Line J, 1 to 11; Line 1, E.3 to K; Line 9, A.2 to D; and Line 10, F to K - Grids E/11, F/11, G/11, and J/11 - Elevator pit base slab
August 18	-	Pedestal footings at Grid E/11, F/11, G/11, and J/11
November 10	-	Trash enclosure footings
November 14	-	Monument sign and flag pole footings

The bearing materials, consisting of native clay, were evaluated with respect to the 2,000 pounds per square foot (psf) design bearing pressure. The excavations were generally dry and free of loose material.

Reinforced Concrete

Placement of the reinforcing steel, anchor bolts, and concrete was observed for the above referenced footings and at the following locations:

May 9	-	Storm shelter slab-on-grade at Line F to E, 4.5 to 8.5
May 22	-	Storm shelter lid at Line F to E, 4.5 to 8.5
May 26	-	Slab-on-grade at Line F to J, 1 to 10
July 28	-	Level 2 Slab-on-deck at Line E to F, 8.5 to 11; Line E to F, 1 to 4.5; and Line F to J, 1 to 11
August 14	-	Generator and Transformer exterior equipment pads
August 31	-	Slab-on-grade only for the Apparatus Bay at Line, A to D, 2 to 9 (reinforcing steel only)
September 13	-	Slab-on-grade at Line A to B, 2 to 9 and C to D, 2 to 9
September 14	-	Slab-on-grade at Line B to C, 2 to 9
November 16	-	Patio stem wall at southeast building corner
December 6	-	Trash enclosure stairs
January 3	-	Pavement for the trash enclosure

Exterior concrete for sidewalks, pavements, and curbs and gutter were placed between November 13, 2023 and February 1, 2024. Field tests were performed and compressive strength test specimens cast with samples of the concrete placed at the referenced locations. The concrete compressive strength test results are enclosed.

Drilled and Epoxy-Grouted Reinforcing Steel

Installation of the drilled and epoxy-grouted reinforcing steel dowels into the existing concrete was observed at the following locations:

April 21	-	Masonry wall dowels in the Apparatus Bay, Line A, 2 to 9
April 26	-	Masonry wall dowels in the Storm Shelter, Line E to F, 4.5 to 8.5
May 15	-	Masonry wall dowels for Rooms 120 and 121
May 22	-	Slab dowel-to-footing reinforcing steel at Line J, 6 to 6.5
August 25	-	Slab dowel-to-footing reinforcing steel at various locations Lines A, D, 2, and 9
October 26	-	Footing reinforcing steel at Grids A/2, A/9, B/2, B/9, C/2, C/9, D/2, D/9, E/1, E/11, F,11, G/11 per RFI #102
November 15	-	Patio stem wall reinforcing steel per RFI #13

The drilled holes were observed for the required spacing, depth, diameter, and cleaning procedures. Installation of the reinforcing steel dowels was observed with respect to the project documents and referenced RFI's for the specified reinforcing steel diameter, grade, embedment, projection, and type of epoxy used.

Drilled and Epoxy-Grouted Anchor Bolts

Installation of the drilled and epoxy-grouted anchor bolts into the existing concrete was observed at the following locations:

May 9	-	Column anchor bolts at on Lines 2 and 9, at A, B, and C
May 30	-	Column anchor bolts at Grid K/3
June 26	-	Elevator shaft Level 2 deck edge angle anchors on Lines 4 and E.5
July 27	-	Column anchor bolts at Grids B/2 and C/2

The drilled holes were observed for the required spacing, depth, diameter, and cleaning procedures. Installation of the all-thread dowels was observed with respect to the project documents for the specified bolt diameter, grade, embedment, projection, and type of epoxy used.

Structural Masonry

Placement of the reinforcing steel and grout for the CMU walls was observed at the following locations:

April 21	-	Elevator shaft walls Lines E.5 to F, 4 to 4.5, elevation 98.7 to 103.0 and 103.0 to 107.0 - Line A, 2 to 9; Rooms 120, 121, and 122 exterior walls, elevation 98.7 to 103.0

April 24	-	Elevator shaft walls Lines E.5 to F, 4 to 4.5, elevation 107.0 to 111.0, 111.0 to 115.0, 115.0 to 119.0, and 119.0 to 123.0
April 25	-	Line A, 2 to 9; Rooms 120, 121, and 122 exterior walls, elevation 103.0 to 107.0
April 26	-	Line A, 2 to 9; Rooms 120, 121, and 122 exterior walls, elevation 107.0 to 111.0
April 27	-	Line A, 2 to 9; Rooms 120, 121, and 122 exterior walls, elevation 111.0 to 115.0 - Storm Shelter wall Lines E to F, 4.5 to 8.5, elevation 98.8 to 103.0
April 28	-	Line A, 2 to 9; Rooms 120, 121, and 122 exterior walls, elevation 115.0 to 118.3 and 118.3 to 121.3
May 1	-	Storm Shelter walls Line 4.5, E to F; Line 8.5, E to F; and Line E, 4.5 to 8.5, elevation 103.0 to 107.0, 107.0 to 111.0, and 111.00 to 112.7
May 2	-	Storm Shelter wall Line F, 4.5 to 8.5, elevation 107.0 to 111.0
June 1	-	Line F, 4.5 to 8. Elevation 112.7 to 116.7, 116.7 to 120.7, 120.7 to 123.7

Field tests were performed and test specimens cast with the grout used in the construction of the referenced walls. The recent compressive strength test results are enclosed.

Structural Steel

The structural steel framing, welded connections, and decking were observed at the following locations:

May 30	-	Welded reinforcing steel to embed plates at Line F, 4.4 to 8
July 13	-	Level 2 framing and deck edge angle to joist connections at Line J, 1 to 10 and Line F.5, 8 to 10
July 25	-	Column anchor bolts observed for tightness at Line J, 1 to 10; Line 2, A to K; Line 9, A to K; and Line 11, E to K
July 28	-	Framing and welded tube to beam connections for the low roof, high roof, and canopy connections at Line 2, A to D and Line 9, A to D - Welded connections for beam to embed plates, brick support angle, and Level 2 and roof framing at Line 1, F to J; Line 3, J to K; Line 5, E to F; and Line 9, G to J - High-strength bolted connections for low and high roof framing at Line 9, A to B; and Level 2 Line 1, E to J; Line 11, E to F; Line E, 9 to 11; and Line K, 1 to 3 - Roof metal deck at: Line A to E, 2 to 9; A to D, 2 to 9; and E to K, 1 to 11
November 1	-	MEP shroud pipe to exterior flange welded connections for storm shelter penetrations
November 29	-	MEP shroud pipe to interior flange welded connections for storm shelter penetrations

The structural steel framing was observed for the required grade, size, erection, and anchor bolts. The welded connections were observed with respect to the project documents and AWS D1.1 for the required size, length, number, spacing, appearance, and electrode.

The ASTM A325 high-strength bolted connections were observed with regard to the grade, number, diameter, and length indicated in the project documents. The installation methods were observed for compliance with the snug-tight or fully-pretensioned requirements, as indicated by the project documents.

Structural steel to light gauge metal truss and metal deck nailed and screwed connections were observed for the required size, number and spacing.

Sample lots of the ¾-inch diameter ASTM A325 bolts were calibrated on June 19. A model MS Skidmore Wilhelm was used to calibrate bolts of 1 ¾ and 2 ¼ inches in length using the AISC tension control and calibrated wrench methods. The calibration results are enclosed.

Final Inspection

To the best of our knowledge, this report covers our final observations of the materials placed during the construction of the proposed building, as specified by the City of Lee's Summit, Missouri. The items monitored included building and pavement subgrades, structural fill, foundation bearing materials, reinforced concrete, drilled and epoxy-grouted reinforcing steel, drilled and epoxy-grouted anchor bolts, structural masonry, and structural steel. The known discrepancies with the project documents were reported and have been either corrected or the as-built conditions accepted by the project engineer. Our services were provided on a part-time basis as scheduled by representatives of McCownGordan Construction. The compliance of any materials or work not observed by our personnel cannot be determined by our firm and is not addressed, or implied, by this or any previous report. In our opinion, the materials observed by our personnel were in general compliance with the project documents or the project engineer's recommendations.

Closure

The results of our field observations and testing were reported to authorized personnel during our site visits. If you have any questions regarding this report, or if we may be of further service, please contact us.

Respectfully submitted,

GEOTECHNOLOGY, LLC

Steve Biritz
Project Manager

Peter F. Brull, P.E.
Senior Engineer

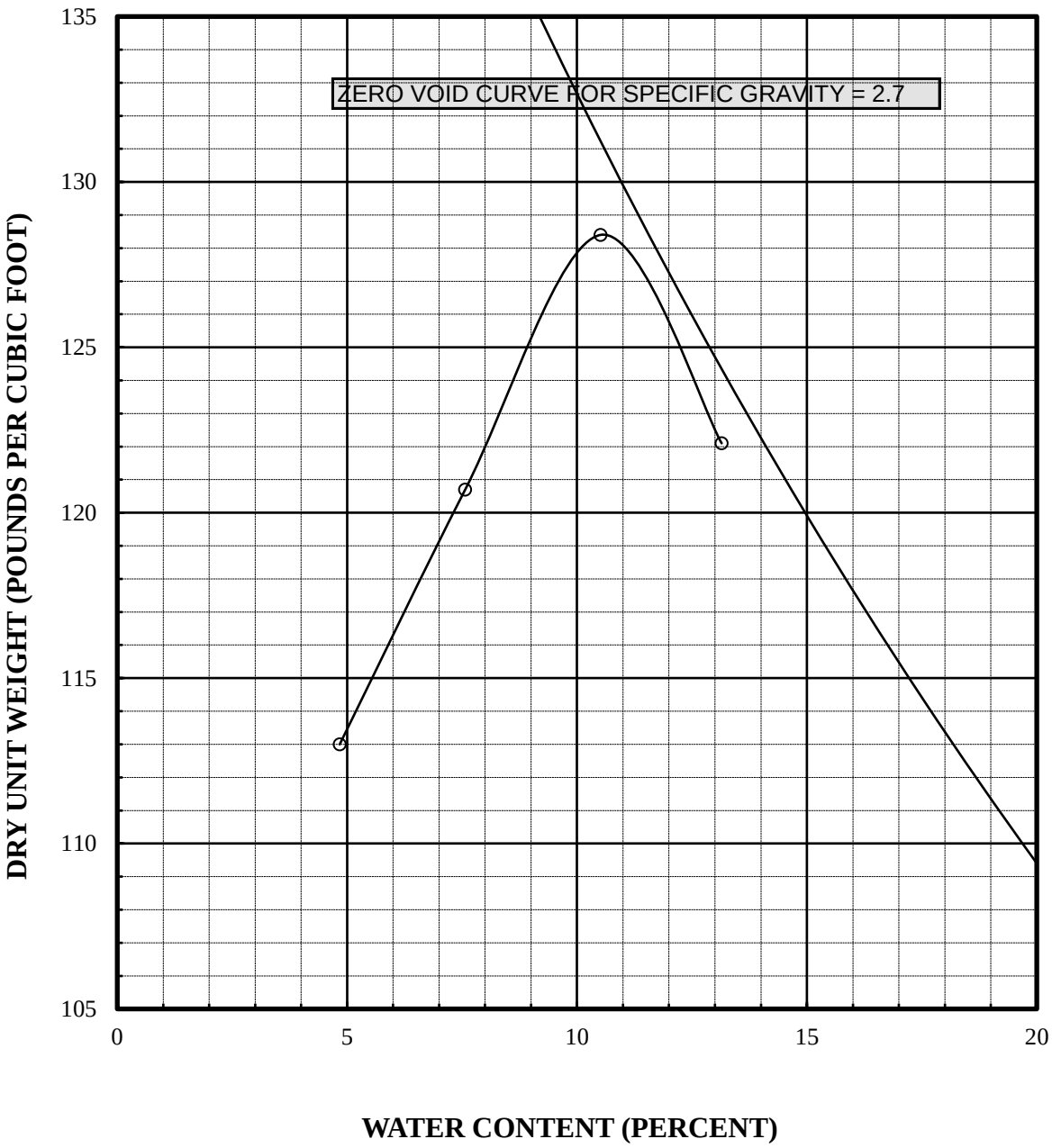
Attachments: Variance/Discrepancy List
Moisture-Density Relationship Curves
Field Density Test Results
Concrete Cylinder Test Results
Grout Prism Test Result
Compressive Strength of Masonry Block Prism
Bolt Calibration Report
RFI #29

cc: Mr. Chad Bard – GLMV Architecture
Mr. Andrew Calderwood – McCownGordon Construction Company, LLC
Ms. Chloe Huxol – McCownGordon Construction Company, LLC
Mr. Nate Henson – McCownGordon Construction Company, LLC
Geotechnology S.I. File

Lee's Summit Fire Station No. 4
Variance/Discrepancy List

NOTE: Items resolved during the report period are shaded

Variance Number	Date Opened	Date Closed	Description
1	11/01/23	11/1/23	The contractor installed welded pipr to flange fittings in the oversized penetration holes in the storm shelter walls. The shop welds were visually tested prior to placement. A copy of RFI-029 is attached. **Discrepancy Resolved.**.



PROJECT NAME

Lee's Summit Fire Station No.4

SPECIFICATIONS

Standard Proctor
ASTM D 698 Method A

PROCTOR TEST RESULTS

Max. Dry Density	Optimum Water Content
128.4 pcf	10.5%

ATTERBERG LIMITS (ASTM D-4318)

Liquid Limit	Plastic Limit	Plasticity Index

DESCRIPTION

Limestone Screenings

SAMPLE LOCATION

Quarry stockpile
(Hamm's Quarry- Lee's Summit, MO)

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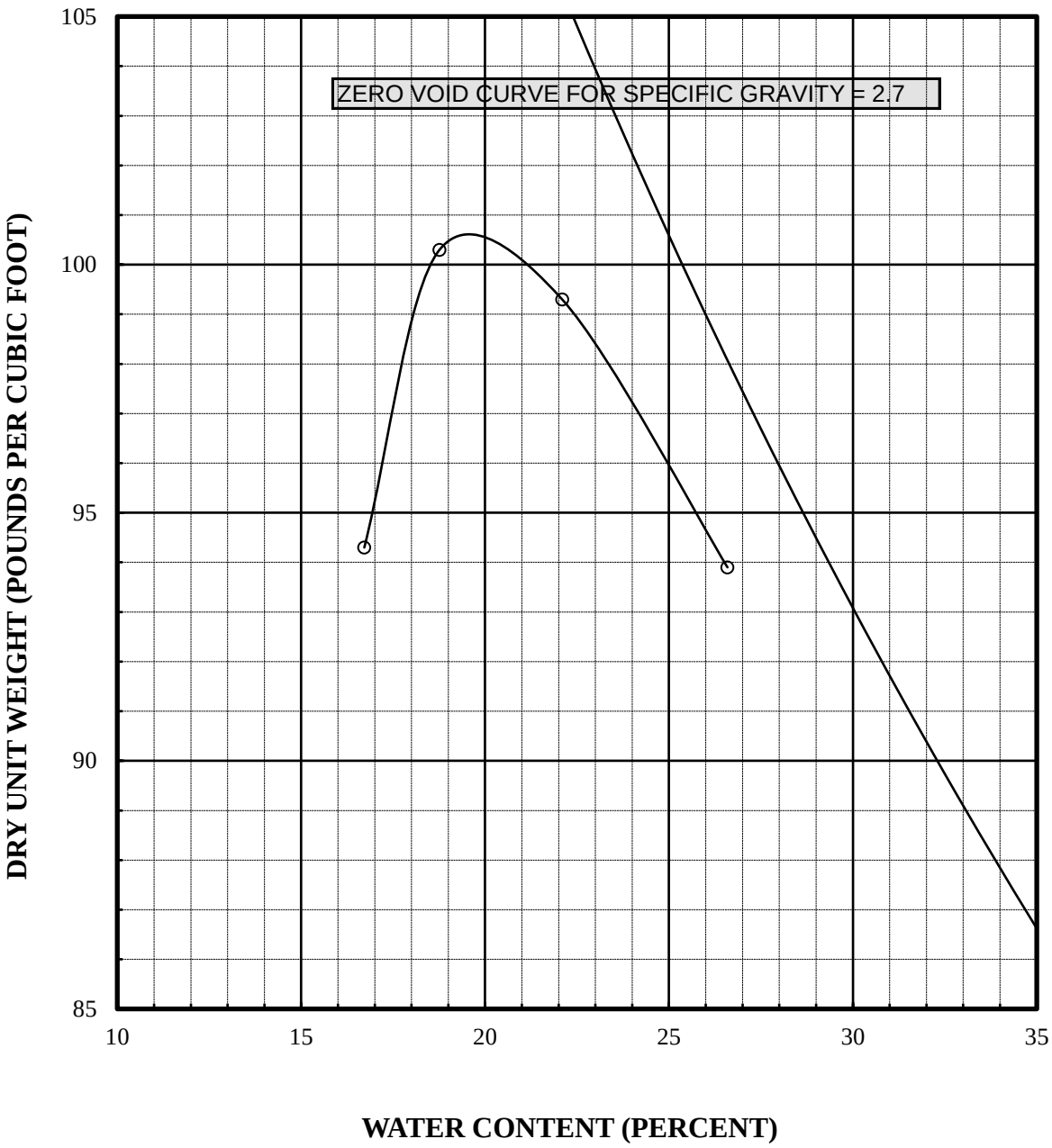
MOISTURE - DENSITY CURVE

Job No.	J040917.04	**Test Date**	1/13/2023
Sampled By	LAS	**Tested By**	DDW
Sample Date	1/12/2023	**Calc. By**	ADC
Proctor No.	3318	**Ch'd By**	SCD



PROJECT NAME

Lee's Summit Fire Station No.4

SPECIFICATIONS

Standard Proctor
ASTM D 698 Method A

PROCTOR TEST RESULTS

Max. Dry Density	Optimum Water Content
100.5 pcf	19.5%

ATTERBERG LIMITS (ASTM D-4318)

Liquid Limit	Plastic Limit	Plasticity Index
52	14	38

DESCRIPTION

Brown Fat CLAY - (CL)

SAMPLE LOCATION

Storm sewer excavation, east of building

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MOISTURE - DENSITY CURVE

Job No.	J040917.04	**Test Date**	2/27/2023
Sampled By	GAS	**Tested By**	DNG
Sample Date	2/21/2023	**Calc. By**	ADC
Proctor No.	3331	**Ch'd By**	SCD

Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Field Density Test Results

Report Date: 02/21/2023

Area Being Filled: Storm sewer trench backfill between 1000.MH and 1002.CI

Description of Fill Material: (2) Brown Fat Clay

TABULATION OF FIELD DENSITY TEST RESULTS (ASTM D6938)

Test No.	Test Location	Elevation (feet) -/+	Max. Dry Den. @ Optimum Moisture (pcf @ %)	In Place Dry Density (pcf)	In Place Moisture (%)	Probe Depth	Percent Compaction	Moisture Tolerance (-/+)	Min. Comp. Spec. (%)	Result
1	Station 0+80	908	100.5@19.5 (2)	100.90	21.90	8"	100.4	0.0/4.0	95	Pass
2	Station 0+80	905	100.5@19.5 (2)	100.60	21.80	8"	100.1	0.0/4.0	95	Pass
3	Station 0+20	909	100.5@19.5 (2)	100.60	21.70	8"	100.1	0.0/4.0	95	Pass
4	Station 0+20	906	100.5@19.5 (2)	100.60	21.40	8"	100.1	0.0/4.0	95	Pass

Remarks: Ref. = Storm sewer stationing

UES Representative: Grant A. Swift

Report Date: 03/15/2023

Area Being Filled:

Description of Fill Material: (2) Brown Fat Clay

TABULATION OF FIELD DENSITY TEST RESULTS (ASTM D6938)

Test No.	Test Location	Elevation (feet) -/+	Max. Dry Den. @ Optimum Moisture (pcf @ %)	In Place Dry Density (pcf)	In Place Moisture (%)	Probe Depth	Percent Compaction	Moisture Tolerance (-/+)	Min. Comp. Spec. (%)	Result
1	160' W of manhole for new water line	-5'	100.5@19.5 (2)	101.00	19.80	12"	100.5	3.0/3.0	95	Pass
2	140' W of manhole for new water line	-4'	100.5@19.5 (2)	97.20	20.40	12"	96.7	3.0/3.0	95	Pass
3	120' W of manhole for new water line	-3'	100.5@19.5 (2)	97.80	18.50	12"	97.3	3.0/3.0	95	Pass
4	100' W of manhole for new water line	-2'	100.5@19.5 (2)	99.20	21.60	12"	98.7	3.0/3.0	95	Pass
5	80' W of manhole for new water line	-1'	100.5@19.5 (2)	99.80	20.60	12"	99.3	3.0/3.0	95	Pass
6	60' W of manhole for new water line	0	100.5@19.5 (2)	100.40	20.30	12"	99.9	3.0/3.0	95	Pass

Remarks:

UES Representative: Linda A. Souder

Report Date: 03/29/2023

Area Being Filled: Building Pad LVC

Description of Fill Material: (1) Limestone Screenings

Report Date: 03/29/2023

Area Being Filled: Building Pad LVC

Description of Fill Material: (1) Limestone Screenings

TABULATION OF FIELD DENSITY TEST RESULTS (ASTM D6938)

Test No.	Test Location	Elevation (feet) -/+	Max. Dry Den. @ Optimum Moisture (pcf @ %)	In Place Dry Density (pcf)	In Place Moisture (%)	Probe Depth	Percent Compaction	Moisture Tolerance (-/+)	Min. Comp. Spec. (%)	Result
1	South wing from NWC 100'E 25'S	-1.0	128.4@10.5 (1)	128.50	6.10	6"	100.1	--/--	95	Pass
2	South wing from NWC 0	-1.0	128.4@10.5 (1)	122.80	5.30	6"	95.6	--/--	95	Pass
3	South wing from NWC 50'S	-1.0	128.4@10.5 (1)	129.50	6.60	6"	100.9	--/--	95	Pass
4	South wing from NWC 100'E 50'S	-1.0	128.4@10.5 (1)	130.20	6.80	6"	101.4	--/--	95	Pass

Remarks:

UES Representative: Kenneth Troy

Report Date: 03/30/2023

Area Being Filled: Building Pad LVC

Description of Fill Material: (1) Limestone Screenings

TABULATION OF FIELD DENSITY TEST RESULTS (ASTM D6938)

Test No.	Test Location	Elevation (feet) -/+	Max. Dry Den. @ Optimum Moisture (pcf @ %)	In Place Dry Density (pcf)	In Place Moisture (%)	Probe Depth	Percent Compaction	Moisture Tolerance (-/+)	Min. Comp. Spec. (%)	Result
1	Grid H/2	Finish scree	128.4@10.5 (1)	129.80	9.80	8"	101.1	--/--	95	Pass
2	Grid E.5/8	Finish scree	128.4@10.5 (1)	129.20	8.80	8"	100.6	--/--	95	Pass
3	Grid A.5/4	Finish scree	128.4@10.5 (1)	125.10	5.80	8"	97.4	--/--	95	Pass
4	Grid C.5/6	Finish scree	128.4@10.5 (1)	126.30	5.00	8"	98.4	--/--	95	Pass
5	Grid B/8	Finish scree	128.4@10.5 (1)	128.80	5.20	8"	100.3	--/--	95	Pass

Remarks:

UES Representative: Stephen A. Biritz

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Report Date: 05/05/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 57°F Sunny
Report No.: 113763

Contractor: Precision Cutting and Coring
Sample Location: Footing at Line F, 1 to 10 and Line 2, A to K
Set No.: 1
Cast Date: 04/06/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	4.00	**Supplier:**	Penny's Concrete
Air Content, ASTM C231 (%):	--	**Mix Design:**	40-A564L
Conc. Temp., ASTM C1064 (°F):	63	**Truck/Ticket No.:**	239/3179711
Ambient Temp. (°F):	54	**Batch Time:**	13:00:00
Unit Weight, ASTM C138 (p.c.f.):	143.4	**Sample Time:**	13:30:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	30
Truck/Accum. Quantity ($yd.^3$):	10/100	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	John D. Hootman
Specified Strength (psi):	**4,000**	**Received in Lab:**	04/07/2023
Average Strength (psi):	**5,533**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
113763-1-1	--	12.57	4.00	47660	3790	2/N	04/09/2023	3
113763-1-2	--	12.32	3.96	52600	4270	2/N	04/13/2023	7
113763-1-3	--	12.50	3.99	67600	5410	2/N	05/04/2023	28
113763-1-4	--	12.50	3.99	71210	5700	2/N	05/04/2023	28
113763-1-5	--	12.50	3.99	68630	5490	2/N	05/04/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Angela D. Coates (4/9/2023)
Angela D. Coates (4/13/2023)
Angela D. Coates (5/4/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Hudson, Rodney (City of Lee"s Summit) (e)

GEOTECHNOLOGY
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Report Date: 05/08/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 57°F Ptl. Cloudy
Report No.: 113777

Contractor: Precision Cutting and Coring
Sample Location: Footings at Line A, 2 to 4
Set No.: 1
Cast Date: 04/07/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	6.00	**Supplier:**	Penny's Concrete
Air Content, ASTM C231 (%):	5.4	**Mix Design:**	4000 PSI AE
Conc. Temp., ASTM C1064 (°F):	63	**Truck/Ticket No.:**	215/6176584
Ambient Temp. (°F):	78	**Batch Time:**	15:00:00
Unit Weight, ASTM C138 (p.c.f.):	146.8	**Sample Time:**	15:30:00
Yield, ASTM C138 (ft.³):	--	**Mixing Time (min.):**	30
Truck/Accum. Quantity (yd.³):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Linda A. Souder
Specified Strength (psi):	**4,000**	**Received in Lab:**	04/08/2023
Average Strength (psi):	**4,553**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
113777-1-1	--	12.57	4.00	37750	3000	2/N	04/11/2023	4
113777-1-2	--	12.50	3.99	43180	3450	2/N	04/14/2023	7
113777-1-3	--	12.50	3.99	56710	4540	2/N	05/05/2023	28
113777-1-4	--	12.50	3.99	56740	4540	2/N	05/05/2023	28
113777-1-5	--	12.50	3.99	57240	4580	2/N	05/05/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Angela D. Coates (4/11/2023)
Angela D. Coates (4/14/2023)
Angela D. Coates (5/5/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Hudson, Rodney (City of Lee"s Summit) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 05/15/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather:
Report No.: 114427

Contractor: Precision Cutting and Coring
Sample Location: Footings at LIne 10, E.5 to K
Set No.: 1
Cast Date: 04/13/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	4.75	**Supplier:**	Penny's Concrete
Air Content, ASTM C231 (%):	1.5	**Mix Design:**	40-590L
Conc. Temp., ASTM C1064 (°F):	64	**Truck/Ticket No.:**	184/317994
Ambient Temp. (°F):	55	**Batch Time:**	09:03:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	09:32:00
Yield, ASTM C138 (ft.³):	--	**Mixing Time (min.):**	29
Truck/Accum. Quantity (yd.³):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Ryan Davidson
Specified Strength (psi):	**4,000**	**Received in Lab:**	04/14/2023
Average Strength (psi):	**5,343**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
114427-1-1	--	12.38	3.97	48670	3930	2/N	04/20/2023	7
114427-1-2	--	12.50	3.99	65910	5270	2/N	05/11/2023	28
114427-1-3	--	12.50	3.99	68160	5450	2/N	05/11/2023	28
114427-1-4	--	12.50	3.99	66340	5310	2/N	05/11/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Angela D. Coates (4/20/2023)
Angela D. Coates (5/11/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Hudson, Rodney (City of Lee"s Summit) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 06/07/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 66°F Ptl. Cloudy
Report No.: 116373

Contractor: Precision Cutting and Coring
Sample Location: Slab-on-grade at Line E to F, 4.8 to 9
Set No.: 1
Cast Date: 05/09/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	3.00	**Supplier:**	Penny's Concrete
Air Content, ASTM C231 (%):	6.1	**Mix Design:**	4000 PSI NO AE 540 LBS
Conc. Temp., ASTM C1064 (°F):	64	**Truck/Ticket No.:**	149/3180681
Ambient Temp. (°F):	76	**Batch Time:**	07:27:00
Unit Weight, ASTM C138 (p.c.f.):	143.1	**Sample Time:**	08:15:00
Yield, ASTM C138 (ft.³):	--	**Mixing Time (min.):**	48
Truck/Accum. Quantity (yd.³):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Linda A. Souder
Specified Strength (psi):	**4,000**	**Received in Lab:**	05/10/2023
Average Strength (psi):	**4,920**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
116373-1-1	--	12.44	3.98	40020	3220	5/N	05/12/2023	3
116373-1-2	--	12.57	4.00	46810	3730	2/N	05/16/2023	7
116373-1-3	--	12.50	3.99	62600	5010	2/N	06/06/2023	28
116373-1-4	--	12.50	3.99	57620	4610	2/N	06/06/2023	28
116373-1-5	--	12.50	3.99	64260	5140	2/N	06/06/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Angela D. Coates (5/12/2023)
Angela D. Coates (5/16/2023)
Angela D. Coates (6/6/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Hudson, Rodney (City of Lee"s Summit) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 06/21/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 63°F Sunny
Report No.: 117390

Contractor: Precision Cutting and Coring
Sample Location: Structural slab at Line E to F, 6 to 7
Set No.: 1
Cast Date: 05/22/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	6.00	**Supplier:**	Penny's Concrete
Air Content, ASTM C231 (%):	--	**Mix Design:**	40-540L
Conc. Temp., ASTM C1064 (°F):	70	**Truck/Ticket No.:**	160/3180980
Ambient Temp. (°F):	62	**Batch Time:**	10:50:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	11:10:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	20
Truck/Accum. Quantity ($yd.^3$):	10/20	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Kenneth Troy
Specified Strength (psi):	**4,000**	**Received in Lab:**	05/23/2023
Average Strength (psi):	**5,763**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
117390-1-1	--	12.50	3.99	48170	3850	2/N	05/25/2023	3
117390-1-2	--	12.50	3.99	56930	4550	2/N	05/29/2023	7
117390-1-3	--	12.50	3.99	67980	5440	2/N	06/19/2023	28
117390-1-4	--	12.50	3.99	73550	5880	2/N	06/19/2023	28
117390-1-5	--	12.50	3.99	74610	5970	2/N	06/19/2023	28
117390-1-6	--	--	--	--	--	--	01/01/1900	HOLD

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Angela D. Coates (5/25/2023)
Angela D. Coates (5/29/2023)
Angela D. Coates (6/19/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Hudson, Rodney (City of Lee"s Summit) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 06/26/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 77°F Sunny
Report No.: 117815

Contractor: Precision Cutting and Coring
Sample Location: Slab-on-grade at Line F to G, 1 to 1.5
Set No.: 1
Cast Date: 05/26/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	6.25	**Supplier:**	Penny's Concrete
Air Content, ASTM C231 (%):	2.4	**Mix Design:**	40-540L
Conc. Temp., ASTM C1064 (°F):	81	**Truck/Ticket No.:**	211/6177976
Ambient Temp. (°F):	77	**Batch Time:**	10:00:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	10:55:00
Yield, ASTM C138 (ft.³):	--	**Mixing Time (min.):**	55
Truck/Accum. Quantity (yd.³):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Ryan A. White
Specified Strength (psi):	**4,000**	**Received in Lab:**	05/27/2023
Average Strength (psi):	**5,267**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
117815-1-1	--	12.57	4.00	52390	4170	2/N	06/02/2023	7
117815-1-2	--	12.63	4.01	67770	5370	2/N	06/23/2023	28
117815-1-3	--	12.63	4.01	65140	5160	2/N	06/23/2023	28
117815-1-4	--	12.63	4.01	66600	5270	2/N	06/23/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks: Added Super plasticizer and concrete retarders. Added super plasticizer on site.

Tested By: Angela D. Coates (6/2/2023)
Angela D. Coates (6/23/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Hudson, Rodney (City of Lee"s Summit) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 08/10/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 90°F Ptl. Cloudy
Report No.: 121556

Contractor: JD Bishop Construction LLC
Sample Location: Entrance Pavement, 0' to 10' N of SW corner of pavement
Set No.: 1
Cast Date: 07/11/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	1.50	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	5.8	**Mix Design:**	KCMMB4K
Conc. Temp., ASTM C1064 (°F):	88	**Truck/Ticket No.:**	109/35267871
Ambient Temp. (°F):	93	**Batch Time:**	11:36:00
Unit Weight, ASTM C138 (p.c.f.):	143.8	**Sample Time:**	12:15:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	39
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Linda A. Souder
Specified Strength (psi):	**4,000**	**Received in Lab:**	07/12/2023
Average Strength (psi):	**6,563**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
121556-1-1	--	12.50	3.99	48250	3860	2/N	07/14/2023	3
121556-1-2	--	12.57	4.00	56950	4530	5/N	07/18/2023	7
121556-1-3	--	12.63	4.01	77630	6150	2/N	08/08/2023	28
121556-1-4	--	12.63	4.01	88950	7040	2/N	08/08/2023	28
121556-1-5	--	12.63	4.01	82150	6500	2/N	08/08/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Angela D. Coates (7/14/2023)
Angela D. Coates (7/18/2023)
Angela D. Coates (8/8/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Hudson, Rodney (City of Lee"s Summit) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 08/28/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 95°F Ptl. Cloudy
Report No.: 123311

Contractor: Precision Cutting and Coring LLC
Sample Location: Slab-on-deck for the mezzanine at Line H to J, 1 to 2
Set No.: 1
Cast Date: 07/28/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	5.00	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	4.8	**Mix Design:**	4000 PL STR HR 0.48-AI Crete
Conc. Temp., ASTM C1064 (°F):	86	**Truck/Ticket No.:**	145/35268586
Ambient Temp. (°F):	95	**Batch Time:**	07:49:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	08:15:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	26
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Point of Placement	**Cylinders Cast By:**	Linda A. Souder
Specified Strength (psi):	**4,000**	**Received in Lab:**	07/29/2023
Average Strength (psi):	**4,963**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
123311-1-1	--	12.69	4.02	52230	4120	2/N	08/04/2023	7
123311-1-2	--	12.57	4.00	61800	4920	2/N	08/25/2023	28
123311-1-3	--	12.57	4.00	62890	5000	2/N	08/25/2023	28
123311-1-4	--	12.57	4.00	62490	4970	2/N	08/25/2023	28
123311-1-5	--	--	--	--	--	--	01/01/1900	HOLD

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Angela D. Coates (8/4/2023)
Angela D. Coates (8/25/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Hudson, Rodney (City of Lee"s Summit) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 09/15/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 81°F Ptl. Cloudy
Report No.: 124755

Contractor: Precision Cutting and Coring
Sample Location: Utility pad
Set No.: 1
Cast Date: 08/14/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	5.00	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	5.7	**Mix Design:**	KCMMB4K
Conc. Temp., ASTM C1064 (°F):	83	**Truck/Ticket No.:**	163/35269313
Ambient Temp. (°F):	79	**Batch Time:**	11:23:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	12:30:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	67
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Linda A. Souder
Specified Strength (psi):	**4,000**	**Received in Lab:**	08/15/2023
Average Strength (psi):	**6,103**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
124755-1-1	--	12.63	4.01	57240	4530	2/N	08/21/2023	7
124755-1-2	--	12.63	4.01	76920	6090	3/N	09/11/2023	28
124755-1-3	--	12.63	4.01	75400	5970	2/N	09/11/2023	28
124755-1-4	--	12.63	4.01	78890	6250	2/N	09/11/2023	28
124755-1-5	--	--	--	--	--	--	01/01/1900	HOLD

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Angela D. Coates (8/21/2023)
Robert B. Anderson (9/11/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Hudson, Rodney (City of Lee"s Summit) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 09/18/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 71°F Sunny
Report No.: 124959

Contractor: Precision Cutting and Coring
Sample Location: Footings at Grids E/11, F/11, G/11, and J/11
Set No.: 1
Cast Date: 08/18/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	7.00	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	7.0	**Mix Design:**	AE FAC-15 HR 0.45
Conc. Temp., ASTM C1064 (°F):	75	**Truck/Ticket No.:**	128/35269597
Ambient Temp. (°F):	68	**Batch Time:**	08:48:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	09:31:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	43
Truck/Accum. Quantity ($yd.^3$):	6/6	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Mohammed Anees
Specified Strength (psi):	**4,000**	**Received in Lab:**	08/19/2023
Average Strength (psi):	**4,330**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
124959-1-1	--	12.57	4.00	43970	3500	2/N	08/25/2023	7
124959-1-2	--	12.63	4.01	55330	4380	5/N	09/15/2023	28
124959-1-3	--	12.63	4.01	54740	4330	5/N	09/15/2023	28
124959-1-4	--	12.63	4.01	54100	4280	5/N	09/15/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Angela D. Coates (8/25/2023)
Robert B. Anderson (9/15/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 10/12/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: Precision Cutting and Coring
Ave. Temperature/Weather: 66°F Ptl. Cloudy
Site Contact: Nate Henson
Report No.: 127683

Contractor: George J. Shaw Construction Company
Set No.: 1
Sample Location: Slab-on-grade at LIne A to B, 2 to 2.5
Cast Date: 09/13/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	2.00	**Supplier:**	Penny's Concrete
Air Content, ASTM C231 (%):	2.5	**Mix Design:**	4000 PSI NO AE 540
Conc. Temp., ASTM C1064 (°F):	78	**Truck/Ticket No.:**	206/3183786
Ambient Temp. (°F):	75	**Batch Time:**	06:53:00
Unit Weight, ASTM C138 (p.c.f.):	146.8	**Sample Time:**	07:45:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	52
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Linda A. Souder
Specified Strength (psi):	**4,000**	**Received in Lab:**	09/14/2023
Average Strength (psi):	**5,600**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
127683-1-1	--	12.63	4.01	51150	4050	3/N	09/20/2023	7
127683-1-2	--	12.63	4.01	69740	5520	5/N	10/11/2023	28
127683-1-3	--	12.63	4.01	72810	5770	5/N	10/11/2023	28
127683-1-4	--	12.63	4.01	69630	5510	5/N	10/11/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (9/20/2023)
Robert B. Anderson (10/11/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 10/16/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 60°F Sunny
Report No.: 127308

Contractor: McCownGordon
Sample Location: Slab-on-grade at Line B to C, 2 to 5
Set No.: 1
Cast Date: 09/14/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	5.00	**Supplier:**	Penny's Concrete
Air Content, ASTM C231 (%):	2.0	**Mix Design:**	4000 PSI NO AE 540 LBS
Conc. Temp., ASTM C1064 (°F):	75	**Truck/Ticket No.:**	196/3183826
Ambient Temp. (°F):	60	**Batch Time:**	07:05:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	07:55:00
Yield, ASTM C138 (ft.³):	--	**Mixing Time (min.):**	50
Truck/Accum. Quantity (yd.³):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Caleb A. Cooke
Specified Strength (psi):	**4,000**	**Received in Lab:**	09/15/2023
Average Strength (psi):	**5,317**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
127308-1-1	--	12.63	4.01	50940	4030	5/N	09/21/2023	7
127308-1-2	--	12.63	4.01	69660	5520	5/N	10/12/2023	28
127308-1-3	--	12.63	4.01	67360	5330	5/N	10/12/2023	28
127308-1-4	--	12.63	4.01	64360	5100	5/N	10/12/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks: Super P and 6 gallons of water added

Tested By: Robert B. Anderson (9/21/2023)
Robert B. Anderson (10/12/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 10/24/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCown Gordon
Ave. Temperature/Weather:
Site Contact: Nate Henson
Report No.: 128552

Contractor: JD Bishop
Set No.: 1
Sample Location: Pavement for approach to Lakewood Drive, 60 to 65 feet west of apparatus bay doo
Cast Date: 09/25/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	3.50	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	5.4	**Mix Design:**	KCMMB
Conc. Temp., ASTM C1064 (°F):	76	**Truck/Ticket No.:**	132/35271393
Ambient Temp. (°F):	82	**Batch Time:**	10:51:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	11:36:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	45
Truck/Accum. Quantity ($yd.^3$):	10/20	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Ryan Davidson
Specified Strength (psi):	**4,000**	**Received in Lab:**	
Average Strength (psi):	**4,987**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
128552-1-1	--	12.69	4.02	40120	3160	5/N	10/02/2023	7
128552-1-2	--	12.63	4.01	62000	4910	5/N	10/23/2023	28
128552-1-3	--	12.63	4.01	62030	4910	5/N	10/23/2023	28
128552-1-4	--	12.63	4.01	64900	5140	5/N	10/23/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (10/2/2023)
Robert B. Anderson (10/23/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 10/25/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: JD Bishop Construction LLC
Ave. Temperature/Weather:
Site Contact:
Report No.: 128410

Contractor: JD Bishop Construction LLC
Set No.: 1

Sample Location: Pavement at the west driveway, 0 to 15 feet south, 15 to 23 feet west of the building northwest corner
Cast Date: 09/26/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	4.00	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	6.0	**Mix Design:**	KCMMB 4K GR S 4"
Conc. Temp., ASTM C1064 (°F):	74	**Truck/Ticket No.:**	154/35271434
Ambient Temp. (°F):	63	**Batch Time:**	07:54:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	08:31:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	37
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Seth T. Littlestone
Specified Strength (psi):	**4,000**	**Received in Lab:**	09/27/2023
Average Strength (psi):	**6,700**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
128410-1-1	--	12.63	4.01	66450	5260	5/N	10/03/2023	7
128410-1-2	--	12.63	4.01	87000	6890	5/N	10/24/2023	28
128410-1-3	--	12.63	4.01	74870	5930	5/N	10/24/2023	28
128410-1-4	--	12.63	4.01	91890	7280	5/N	10/24/2023	28
128410-1-5	--	--	--	--	--	--	01/01/1900	HOLD

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (10/3/2023)
Robert B. Anderson (10/24/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 12/11/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather:
Report No.: 132480

Contractor: Precision Cutting and Coring
Sample Location: Footing at the trash enclosure
Set No.: 1
Cast Date: 11/10/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	3.50	**Supplier:**	Century Concrete, Inc.
Air Content, ASTM C231 (%):	6.3	**Mix Design:**	340A2C25
Conc. Temp., ASTM C1064 (°F):	70	**Truck/Ticket No.:**	293/37226021
Ambient Temp. (°F):	63	**Batch Time:**	11:55:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	12:15:00
Yield, ASTM C138 (ft.³):	--	**Mixing Time (min.):**	20
Truck/Accum. Quantity (yd.³):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Ryan Davidson
Specified Strength (psi):	**4,000**	**Received in Lab:**	11/11/2023
Average Strength (psi):	**6,783**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
132480-1-1	--	12.63	4.01	66630	5280	5/N	11/17/2023	7
132480-1-2	--	12.63	4.01	83930	6650	5/N	12/08/2023	28
132480-1-3	--	12.63	4.01	86390	6840	5/N	12/08/2023	28
132480-1-4	--	12.63	4.01	86660	6860	5/N	12/08/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (11/17/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 12/12/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather:
Report No.: 132588

Contractor: Precision Cutting and Coring
Set No.: 1
Sample Location: Curb and gutter at 0 to 35 feet north, 0 to 40 feet east and 50 feet south, 10 to 20 feet east of the building northeast corner
Cast Date: 11/13/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	0.75	**Supplier:**	Century Concrete, Inc.
Air Content, ASTM C231 (%):	5.0	**Mix Design:**	KCMMB GR 4K
Conc. Temp., ASTM C1064 (°F):	52	**Truck/Ticket No.:**	301/37226049
Ambient Temp. (°F):	55	**Batch Time:**	08:31:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	09:13:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	42
Truck/Accum. Quantity ($yd.^3$):	5/5	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Caleb A. Cooke
Specified Strength (psi):	**4,000**	**Received in Lab:**	11/14/2023
Average Strength (psi):	**6,643**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
132588-1-1	--	12.63	4.01	64610	5120	5/N	11/20/2023	7
132588-1-2	--	12.63	4.01	82540	6540	3/N	12/11/2023	28
132588-1-3	--	12.63	4.01	84930	6720	5/N	12/11/2023	28
132588-1-4	--	12.63	4.01	84190	6670	5/N	12/11/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (11/20/2023)
Robert B. Anderson (12/11/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 12/13/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Ave. Temperature/Weather:
Site Contact: Nate Henson
Report No.: 132818

Contractor: Precision Cutting and Coring
Set No.: 2

Sample Location: Pavement at 80 to 90 feet north, 5 feet west to 12 feet east of the building southwest corner
Cast Date: 11/14/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	5.00	**Supplier:**	Century Concrete, Inc.
Air Content, ASTM C231 (%):	7.2	**Mix Design:**	KCMMB GR 4K
Conc. Temp., ASTM C1064 (°F):	50	**Truck/Ticket No.:**	302/37226062
Ambient Temp. (°F):	52	**Batch Time:**	07:59:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	08:49:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	50
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Caleb A. Cooke
Specified Strength (psi):	**4,000**	**Received in Lab:**	11/15/2023
Average Strength (psi):	**5,450**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
132818-1-1	--	12.63	4.01	53620	4250	5/N	11/21/2023	7
132818-1-2	--	12.63	4.01	71890	5690	5/N	12/12/2023	28
132818-1-3	--	12.63	4.01	67560	5350	5/N	12/12/2023	28
132818-1-4	--	12.63	4.01	67000	5310	5/N	12/12/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks: included fiber

Tested By: Robert B. Anderson (11/21/2023)
Robert B. Anderson (12/12/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 12/15/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Ave. Temperature/Weather:
Site Contact: Nate Henson
Report No.: 132930

Contractor: Precision Cutting and Coring
Set No.: 1
Sample Location: Stem wall at 5 feet south to 15 feet north, 6 to 8 feet east and 4 to 5 feet south, 6 to 12 feet west of the building southeast corner
Cast Date: 11/16/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	4.50	**Supplier:**	Penny's Concrete
Air Content, ASTM C231 (%):	2.5	**Mix Design:**	4000 PSI NO AE .44
Conc. Temp., ASTM C1064 (°F):	53	**Truck/Ticket No.:**	190/3185050
Ambient Temp. (°F):	58	**Batch Time:**	12:30:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	13:47:00
Yield, ASTM C138 (ft.³):	--	**Mixing Time (min.):**	77
Truck/Accum. Quantity (yd.³):	5/5	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Caleb A. Cooke
Specified Strength (psi):	**4,000**	**Received in Lab:**	11/17/2023
Average Strength (psi):	**5,983**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
132930-1-1	--	12.63	4.01	57760	4570	5/N	11/23/2023	7
132930-1-2	--	12.63	4.01	76160	6030	3/N	12/14/2023	28
132930-1-3	--	12.63	4.01	77150	6110	5/N	12/14/2023	28
132930-1-4	--	12.63	4.01	73350	5810	5/N	12/14/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks: 28 gal of water added

Tested By: Robert B. Anderson (11/23/2023)
Robert B. Anderson (12/14/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

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Report Date: 01/09/2024
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: Precision Cutting and Coring
Site Contact:

Ave. Temperature/Weather: 50°F Sunny
Report No.: 154254

Contractor: Precision Cutting and Coring
Sample Location: Steps at trash enclosure

Set No.: 1
Cast Date: 12/06/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	4.50	**Supplier:**	Geiger Ready-Mix
Air Content, ASTM C231 (%):	5.5	**Mix Design:**	KCMMB GR
Conc. Temp., ASTM C1064 (°F):	60	**Truck/Ticket No.:**	287/37226295
Ambient Temp. (°F):	50	**Batch Time:**	14:38:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	15:17:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	39
Truck/Accum. Quantity ($yd.^3$):	6/6	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Mohammed Anees
Specified Strength (psi):	**4,000**	**Received in Lab:**	12/07/2023
Average Strength (psi):	**6,553**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
154254-1-1	--	12.63	4.01	64000	5070	5/N	12/13/2023	7
154254-1-2	--	12.63	4.01	85580	6780	5/N	01/03/2024	28
154254-1-3	--	12.63	4.01	83060	6580	5/N	01/03/2024	28
154254-1-4	--	12.63	4.01	79586	6300	5/N	01/03/2024	28
154254-1-5	--	--	--	--	--	--	01/01/1900	HOLD

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (12/13/2023)
Robert B. Anderson (1/3/2024)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

Report Date: 01/17/2024
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McConnell & Associates
Site Contact: Nate
Ave. Temperature/Weather:
Report No.: 155521

Contractor: Precision Cutting & Coring LLC
Sample Location: Sidewalk at 15 feet south, 80 feet west of the building southeast corner
Set No.: 1
Cast Date: 12/20/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	6.00	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	7.0	**Mix Design:**	KCMMB GR 4K S 7"
Conc. Temp., ASTM C1064 (°F):	53	**Truck/Ticket No.:**	140/35275759
Ambient Temp. (°F):	53	**Batch Time:**	12:45:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	12:53:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	8
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed/Curing Box
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Seth T. Littlestone
Specified Strength (psi):	**4,000**	**Received in Lab:**	12/21/2023
Average Strength (psi):	**7,173**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
155521-1-1	--	12.63	4.01	57570	4560	5/N	12/27/2023	7
155521-1-2	--	12.57	4.00	94010	7480	5/N	01/17/2024	28
155521-1-3	--	12.57	4.00	85020	6770	5/N	01/17/2024	28
155521-1-4	--	12.57	4.00	91310	7270	5/N	01/17/2024	28
155521-1-5	--	--	--	--	--	--	01/01/1900	HOLD

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (12/27/2023)
Robert B. Anderson (1/17/2024)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

Report Date: 01/17/2024
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McConnell & Associates
Site Contact: Nate
Ave. Temperature/Weather:
Report No.: 155521

Contractor: Precision Cutting & Coring LLC
Sample Location: Sidewalk at 25 feet south, 50 feet west of the building southeast corner
Set No.: 2
Cast Date: 12/20/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	8.25	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	8.1	**Mix Design:**	KCMMB GR 4K S 7"
Conc. Temp., ASTM C1064 (°F):	58	**Truck/Ticket No.:**	140/35275773
Ambient Temp. (°F):	52	**Batch Time:**	14:22:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	15:02:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	40
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed/Curing Box
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Seth T. Littlestone
Specified Strength (psi):	**4,000**	**Received in Lab:**	12/21/2023
Average Strength (psi):	**6,640**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
155521-2-1	--	12.63	4.01	64940	5140	5/N	12/27/2023	7
155521-2-2	--	12.57	4.00	85000	6760	5/N	01/17/2024	28
155521-2-3	--	12.57	4.00	85980	6840	5/N	01/17/2024	28
155521-2-4	--	12.57	4.00	79420	6320	5/N	01/17/2024	28
155521-2-5	--	--	--	--	--	--	01/01/1900	HOLD

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (12/27/2023)
Robert B. Anderson (1/17/2024)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

UES™

Report Date: 01/18/2024
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Sharon Broom
Ave. Temperature/Weather: 58°F Ptl. Cloudy
Report No.: 155601

Contractor: McCownGordon
Sample Location: Curb and gutter at south side of south parking lot
Set No.: 1
Cast Date: 12/21/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	2.00	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	5.0	**Mix Design:**	KCUMMB 4K
Conc. Temp., ASTM C1064 (°F):	65	**Truck/Ticket No.:**	128/35402236
Ambient Temp. (°F):	55	**Batch Time:**	10:01:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	10:46:00
Yield, ASTM C138 (ft.³):	--	**Mixing Time (min.):**	45
Truck/Accum. Quantity (yd.³):	6/6	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Grant A. Swift
Specified Strength (psi):	**4,000**	**Received in Lab:**	12/22/2023
Average Strength (psi):	**7,663**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
155601-1-1	--	12.63	4.01	72060	5710	5/N	12/28/2023	7
155601-1-2	--	12.57	4.00	94300	7500	5/N	01/18/2024	28
155601-1-3	--	12.57	4.00	98720	7860	5/N	01/18/2024	28
155601-1-4	--	12.57	4.00	95870	7630	5/N	01/18/2024	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (12/28/2023)
Robert B. Anderson (1/18/2024)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

UES™

Report Date: 01/18/2024
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Sharon Broom
Ave. Temperature/Weather: 58°F Ptl. Cloudy
Report No.: 155601

Contractor: McCownGordon
Set No.: 2
Sample Location: Pavement at 10 to 20 feet north, 55 to 75 feet east of the building southeast corner
Cast Date: 12/21/2023

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	7.00	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	5.5	**Mix Design:**	KCUMMB 4K
Conc. Temp., ASTM C1064 (°F):	67	**Truck/Ticket No.:**	143/35275843
Ambient Temp. (°F):	58	**Batch Time:**	14:20:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	15:04:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	44
Truck/Accum. Quantity ($yd.^3$):	10/80	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Grant A. Swift
Specified Strength (psi):	**4,000**	**Received in Lab:**	12/22/2023
Average Strength (psi):	**7,017**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
155601-2-1	--	12.63	4.01	60320	4780	5/N	12/28/2023	7
155601-2-2	--	12.57	4.00	88300	7030	5/N	01/18/2024	28
155601-2-3	--	12.57	4.00	85870	6830	5/N	01/18/2024	28
155601-2-4	--	12.57	4.00	90410	7190	5/N	01/18/2024	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (12/28/2023)
Robert B. Anderson (1/18/2024)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

Report Date: 01/31/2024
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather:
Report No.: 156176

Contractor: Precision Cutting & Coring
Sample Location: Trash dumpster pad
Set No.: 1
Cast Date: 01/03/2024

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	4.75	**Supplier:**	Century Concrete, Inc.
Air Content, ASTM C231 (%):	5.3	**Mix Design:**	KCMMB GR 4K S 4"
Conc. Temp., ASTM C1064 (°F):	51	**Truck/Ticket No.:**	293/37226505
Ambient Temp. (°F):	37	**Batch Time:**	12:58:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	13:30:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	32
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed/Curing Box
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Seth T. Littlestone
Specified Strength (psi):	**4,000**	**Received in Lab:**	01/04/2024
Average Strength (psi):	**6,947**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
156176-1-1	--	12.57	4.00	60870	4840	5/N	01/10/2024	7
156176-1-2	--	12.57	4.00	86780	6910	5/N	01/31/2024	28
156176-1-3	--	12.57	4.00	82280	6550	5/N	01/31/2024	28
156176-1-4	--	12.57	4.00	92780	7380	5/N	01/31/2024	28
156176-1-5	--	--	--	--	--	--	01/01/1900	HOLD

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks: 340D7E04

Tested By: Robert B. Anderson (1/10/2024)
Robert B. Anderson (1/31/2024)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

UES™

Report Date: 02/01/2024
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 37°F Ptl. Cloudy
Report No.: 156288

Contractor: Precision Concrete
Sample Location: Pavement for east driveway
Set No.: 1
Cast Date: 01/04/2024

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	4.00	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	5.0	**Mix Design:**	KCMMB GR 4K S
Conc. Temp., ASTM C1064 (°F):	64	**Truck/Ticket No.:**	155/35002663
Ambient Temp. (°F):	37	**Batch Time:**	13:38:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	13:38:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	0
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Augustus P. Spano
Specified Strength (psi):	**4,000**	**Received in Lab:**	01/05/2024
Average Strength (psi):	**6,117**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
156288-1-1	--	12.57	4.00	55210	4390	5/N	01/11/2024	7
156288-1-2	--	12.50	3.99	76150	6090	5/N	02/01/2024	28
156288-1-3	--	12.50	3.99	76310	6100	5/N	02/01/2024	28
156288-1-4	--	12.50	3.99	77010	6160	5/N	02/01/2024	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (1/11/2024)
Robert B. Anderson (2/1/2024)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

UES™

Report Date: 02/02/2024
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 32°F Cloudy
Report No.: 156289

Contractor: Precision Cutting and Coring
Sample Location: Pavement for east driveway approach
Set No.: 1
Cast Date: 01/05/2024

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	3.75	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	6.2	**Mix Design:**	KCMMB GR 4K S
Conc. Temp., ASTM C1064 (°F):	64	**Truck/Ticket No.:**	110/35002675
Ambient Temp. (°F):	33	**Batch Time:**	09:57:00
Unit Weight, ASTM C138 (p.c.f.):	--	**Sample Time:**	10:50:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	53
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Augustus P. Spano
Specified Strength (psi):	**4,000**	**Received in Lab:**	01/06/2024
Average Strength (psi):	**7,020**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory	--	--

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
156289-1-1	--	12.38	3.97	69230	5590	2/N	01/12/2024	7
156289-1-2	--	12.57	4.00	86460	6880	5/N	02/02/2024	28
156289-1-3	--	12.57	4.00	89890	7150	5/N	02/02/2024	28
156289-1-4	--	12.57	4.00	88370	7030	5/N	02/02/2024	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Robert B. Anderson (1/12/2024)
Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

Report Date: 04/03/2024
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Concrete Cylinder Test Results

General Contractor: McCownGordon
Site Contact: Nate Henson
Ave. Temperature/Weather: 36°F Ptl. Cloudy
Report No.: 159677

Contractor: Precision Cutting and Coring
Sample Location: Pavement repair panels
Set No.: 1
Cast Date: 03/05/2024

FIELD DATA (ASTM C31)

Slump, ASTM C143 (in.):	2.00	**Supplier:**	Fordyce Concrete Company, Inc.
Air Content, ASTM C231 (%):	5.0	**Mix Design:**	KCMMB4K
Conc. Temp., ASTM C1064 (°F):	68	**Truck/Ticket No.:**	300/37226990
Ambient Temp. (°F):	45	**Batch Time:**	08:24:00
Unit Weight, ASTM C138 (p.c.f.):	143.6	**Sample Time:**	09:15:00
Yield, ASTM C138 ($ft.^3$):	--	**Mixing Time (min.):**	51
Truck/Accum. Quantity ($yd.^3$):	10/10	**Initial Curing Method:**	Sealed
Sampled From, ASTM C172:	Truck Chute	**Cylinders Cast By:**	Linda A. Souder
Specified Strength (psi):	**4,000**	**Received in Lab:**	03/06/2024
Average Strength (psi):	**6,650**	**Condition Received:**	Satisfactory
Field Condition:	Satisfactory		

Laboratory Data (ASTM C39 / C1231 / C617)

Cylinder ID/ Report No.	Cylinder Weight (lbs.)	Cross Sec. Area (sq.in.)	Cylinder Diameter (in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/ Capping Type *	Test Date	Cylinder Test Age (day)
159677-1-1	--	12.50	3.99	47510	3800	2/N	03/08/2024	3
159677-1-2	--	12.57	4.00	65790	5240	2/N	03/12/2024	7
159677-1-3	--	12.57	4.00	79830	6350	2/N	04/02/2024	28
159677-1-4	--	12.57	4.00	85880	6830	2/N	04/02/2024	28
159677-1-5	--	12.57	4.00	85110	6770	2/N	04/02/2024	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Ground

Remarks:

Tested By: Matthew Earl. Brown (3/8/2024)
Robert B. Anderson (3/12/2024)
Angela D. Coates (4/2/2024)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)
Bloom, Sharon (City of Lee"s Summit) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)

GEOTECHNOLOGY
A Universal Engineering Sciences Company

Report Date: 05/25/2023
Client: City of Lee's Summit
Project: J040917.04
Lee'Summit Fire Sta. No. 4
Lee's Summit, MO

Grout Prism Test Results

General Contractor: Five Star
Site Contact: Nate with McCown Gordon
Avg. Temperature/Weather:
Report No.: 115848

Contractor: Five Star Masonry, LLC
Sample Location: Wall at Line A, 2 to 6, elevation 108.0 to 112.0
Set No.: 1
Cast Date: 04/26/2023

FIELD DATA

Slump, ASTM C143 (in.):	--	**Supplier:**	Onsite mixing
Air Content, ASTM C231 (%):	--	**Mix Design:**	--
Mix Temp., ASTM C1064 (°F):	--	**Truck/Ticket No.:**	--/--
Ambient Temp. (°F):	--	**Batch Time:**	00:00:00
Truck/Accum. Quantity (yd.³):	--/--	**Sample Time:**	00:00:00
Sampled From:	Mixed On-Site	**Mixing Time (min.):**	0
Fabrication Mold:	--	**Initial Curing Method:**	Sealed
Specified Strength (psi):	**2,000**	**Cast By:**	Leo A. Riggs
Average Strength (psi):	**6,300**	**Received in Lab:**	04/27/2023
Field Condition:	Satisfactory	**Condition Received:**	Satisfactory

LABORATORY DATA FOR 3" X 3" X 6" SPECIMEN (ASTM C1019 / C1231 / C617)

Sample ID/ Report No.	Prism Weight (lbs.)	Cross Sec. Area (sq.in.)	Maximum Load (lbs.)	Compressive Strength (psi)	Fracture/Capping Type *	Test Date	Prism Test Age
115848-1-1	--	9.76	59110	6060	--	05/17/2023	21
115848-1-2	--	9.61	60960	6340	--	05/24/2023	28
115848-1-3	--	9.61	60150	6260	--	05/24/2023	28

* Fracture type as shown in Figure 2, ASTM C39 / Capping type: N - Neoprene Pads (C1231); B - Bonded (C617); G - Gypsum

Remarks:

Tested By: Angela D. Coates (5/17/2023)
Angela D. Coates (5/24/2023)

Reviewed by: Peter F. Brull (Senior Engineer)

CC: Huxol, Chloe (McCownGordon Construction, LLC) (e)
Henson, Nate (McCownGordon Construction, LLC) (e)
Hudson, Rodney (City of Lee"s Summit) (e)
Calderwood, Andrew (McCownGordon Construction, LLC) (e)
Bard, Chad (GLMVArchitecture) (e)

GEOTECHNOLOGY
A UES Company

Compressive Strength of Masonry Block Prisms
ASTM C 1314

Client:	City of Lee's Summit, Missouri	**Sample No:**	23-007
Project Name:	Lee's Summit Fire Station #4	**Project Number:**	J040917.04
Contractor:	McCownGordon	**Report Date:**	6/5/2023
Sample Location:	Line F, 5 to 8	**Elevation:**	108.0 to 112.0

Field Data

Subcontractor:		**Date Sampled:**	4/26/2023
Technician:	T. Riggs	**Max/Min Temperature (°F):**	
Weather:		**Specified Strength - f'm (psi):**	1,500
Temperature (°F):		**Block Width (6-, 8-, or 12-inch):**	8
Mortar Type:	S	**Number of Mortar Beds:**	1
Grout Type:	N/A	**Construction Type[1]:**	hollow cell

Laboratory Data

Specimen Dimensions

Unit Number	Average Height (in.)	Average Length (in.)	Average Width (in.)	Height to Width Ratio	Correction Factor
23-007A	15.60	15.55	7.65	2.04	1.00
23-007B	15.80	15.60	7.64	2.07	1.00
23-007C	15.75	15.60	7.65	2.06	1.00

Net Block Prism Area - ASTM C 140 (in^2): 59.00

Compressive Strength Test Result

Unit Number	Age (days)	Break Date	Compressive Load (lbs.)	Compressive Strength (psi)	Corrected Strength (psi)	Fail Mode
23-007A	7	5/3/2023	158,280	2,680	2,680	2A
23-007B	28	5/24/2023	159,330	2,700	2,700	3A
23-007C	28	5/24/2023	124,440	2,110	2,110	2A
				Average 28-day Strength (psi):	2,410	

Reviewed by: Peter F. Brull, P.E.

Comments:

[1]Hollow cell or fully grouted

McCownGordon
850 Main Street
Kansas City, Missouri 64105
P: (816) 960-1111
F: (816) 960-1182

Project: 1-07-1512 Lee's Summit Fire Stations 4 & 5
#4 - 5031 Northeast Lakewood Way/ #5 - 801 Missouri HWY 150
Lee's Summit, Missouri 64082

RFI #29: LS FS4 & FS5 - Storm Shelter Clarifications

Status	Open		
To	Ken Kasper (GLMV Architecture) Chad Bard (GLMV Architecture)	**From**	Andrew Calderwood (McCownGordon Construction, LLC) 850 Main Street Kansas City, Missouri 64105
Date Initiated	Feb 13, 2023	**Due Date**	Feb 16, 2023
Location		**Project Stage**	
Cost Impact		**Schedule Impact**	
Spec Section		**Cost Code**	
Drawing Number		**Reference**	
Linked Drawings			
Received From		**Sub Job**	
Copies To	Andrew Calderwood (McCownGordon Construction, LLC), Nate Henson, STSC (McCownGordon Construction, LLC), Chloe Huxol (McCownGordon Construction, LLC), Michael Morgan (McCownGordon Construction, LLC)		

Activity

Question

Question from Andrew Calderwood McCownGordon Construction, LLC *on Monday, Feb 13, 2023 at 04:11 PM CST*

1. Please confirm that no expansion joints are required around the storm shelter.
2. Please see attached proposed CMU control joint layout and confirm it is acceptable.
    1. Please confirm there is not additional reinforcing required at CMU control joints at the storm shelter.
3. Per email from H&B (attached), all electrical conduit and devices are to be surface mounted on both sides of storm shelter walls. Please confirm.
    1. Please provide any additional details (reinforcing, insulation, spacing, etc.) required for in-wall plumbing
4. Please confirm there are no additional reinforcing requirements for MEPF penetrations through storm shelter walls and lid as long as the diameter is 2" or smaller per email from H&B attached.
    1. Please provide minimum spacing requirements between MEPF penetrations
5. Please provide direction regarding any fire-wall or storm shelter labeling that may be required on the walls.
6. Please confirm it is acceptable for MEP pipe/conduit to rest on top of the footing in the slab on grade.

Attachments
LSFS 4&5 - RFI-029 HB email.pdf, LSFS 4&5 - RFI-029 CMU Control Joint Layout.pdf

Awaiting an Official Response

1. Confirmed. Layout appears to be acceptable.

2. Reference our typical details sheets for typical masonry details. Control joint is detail E4.

3. Any shrouds/attachments needed for mep pipes/duct is per MEP. Storm shelter is fully grouted so all cells will have grout. Any large openings will follow our “grate” detail shown on S-307, detail C2 (this is the sheet/detail for FS 4. Sim. For FS 5)

4.

A) 2” or smaller is acceptable per ICC. Storm shelter lid reinforcement must not be affected.

B) 3x diameter pipe minimum, 6x diameter of the pipe is preferred.

5. Per architect. *See Section 504 "Signage for Community Storm Shelters" as outlined on sheet G-004 of the FS4 and FS5 construction Documents. - Chad Bard / GLMV 02/14/2023*

6. Structurally it is acceptable as long as the conduits miss the slab dowels. However, running conduit in the slab turn down can make it difficult to access & repair if something happens to that pipe in the future.

Jordan Bennett, Leigh + O'Kane. 02-14-2023

Andrew Calderwood

From: Kenneth Kasper <kenneth.kasper@glmv.com>
Sent: Wednesday, January 11, 2023 5:04 PM
To: Andrew Calderwood
Cc: Chad Bard; Chloe Huxol
Subject: FW: LSFS 4&5 Storm Shelter

Categories: RFI's

Andrew,

Please see Jim's answers below.

Thanks,

Ken Kasper
Associate AIA
GLMVArchitecture
9229 Ward Parkway, Suite 210 | Kansas City, MO 64114
Office 816-444-4200

Website | Facebook | Instagram | Twitter | LinkedIn

From: Jim Lord <JLord@h-be.com>
Sent: Wednesday, January 11, 2023 4:52 PM
To: Kenneth Kasper <kenneth.kasper@glmv.com>
Cc: Chad Bard <chad.bard@glmv.com>
Subject: RE: LSFS 4&5 Storm Shelter

⚐ Sent from external sender ⚐

Ken,
See responses below in RED. I am not sure about question #2. ICC-500 chapter 7?

Jim Lord PE | Senior Project Manager
Hoss & Brown Engineers, Inc.
O 913.362.9090 | D 913.802.6206

From: Andrew Calderwood <acalderwood@mccowngordon.com>
Sent: Wednesday, January 11, 2023 2:56 PM
To: Chad Bard <chad.bard@glmv.com>

Cc: Kenneth Kasper <kenneth.kasper@glmv.com>; Chloe Huxol <chuxol@mccowngordon.com>
Subject: LSFS 4&5 Storm Shelter

Chad,

I gave you a call just now, sounds like you're out of the office today. Give me a call when you get a chance, please. We are meeting tomorrow with our trade partners who are involved in the storm shelter (mason, concrete, MEP, etc.) to coordinate this work but had a few questions. I will submit a confirming RFI but wanted to get a quick response if possible.

1. We have noticed a few special storm shelter requirements on the drawings for penetrations like the dryer vent, HVAC louvers, etc. but have not found any notes or callouts for requirements at all MEP penetrations. Am I just overlooking some notes on the drawings, and if so, can you point me in the right direction? For the Dryer vent, refer to note #15 on sheet M101 (ASI-01). Refer to sheet M101 note #6 for the HVAC duct penetrations, they should be coordinated with structural. The damper will likely be required to not have a sleeve to facilitate the installation of the structural bars. All plumbing penetrations through the walls and ceiling are 2" or smaller and do not require any additional protection.
2. Does this shelter have a specific FEMA rating that we could refer to for penetrations?
3. I noticed that the receptacles inside the storm shelter are called out to be surface mounted with surface mounted raceway (note 18 E201), but I don't see that callout on the light switches inside or any of the receptacles or boxes on the outside of these storm shelter walls. Is it acceptable to have conduit and boxes in the CMU at the storm shelter walls? All electrical items should be surface mounted raceway since recessing conduits in the wall would affect the structural integrity of the wall/ceiling. Plumbing will be necessary in some of the walls but it should be kept to a minimum.

Thanks,

ANDREW CALDERWOOD
Project Engineer

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