KANSAS CITY
TESTING & ENGINEERING, LLC

Kansas City Testing Engineering, LLC
1308 Adams Street
Kansas City, Kansas 66103
Telephone: (913) 321-8100
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REPORT OF
BITUMINOUS MIXTURE PROPERTIES

CLIENT: SILVERSTONE DEVELOPMENT, LLC

PROJECT NO.: R20-16-061
SAMPLE DATE: 11.17.2016
SAMPLE LOC.: Cul-de-sac @ Pocand Circle Drive
REPORT DATE: 11.23.2016
REPORT NO.: K14690

PROJECT: MONTICELLO SUBDIVISION
BOWLIN ROAD
LEE'S SUMMIT, MO

PROJECT DATA

MIX TYPE: APWA TYPE 2
SUPPLIER: Superior Bowen
Marshall (lb/ft^3): 151.1

PLANT:

	ASTM D5444 Extraction Gradation		
Sieve Size	**% Retained**	**% Passing**	**APWA Spec % Passing**
37.5 mm (1 1/2")	0.0	100.0	
25mm (1")	0.0	100	100
19mm (3/4")	0.0	100	80-100
12.5mm (1/2")	17.0	83	
9.5mm (3/8")	23.9	76	60-80
4.75 mm (No. 4)	42.0	58	48-65
2.36 mm (No. 8)	58.3	42	35-47
1.18mm (No. 16)	67.2	33	25-36
600um (No. 30)	74.1	26	18-30
300um (No. 50)	86.1	14	12-22
150um (No. 100)	92.1	8	6-14
75um (No. 200)	93.7	6.3	3-10

	Test Result	**Spec.**	**Test Designation**
% AC by Ignition	4.8%	4-7	ASTM D6307
Gmm (Field)	2.546		ASTM D2726
Gmb (Field)	2.427		ASTM D2726
Gse (Calculated)	2.751		ASTM D2726
VMA	11.8		ASTM D3203
VTM	4.7	3-5	ASTM D3203
VFA	60.5		ASTM D3203
Stability, lbs	5336.3	1500 min	ASTM D6927
Flow, 1/100 in.	10.9	8-16	ASTM D6927

Reviewed By: _____

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REPORT OF
RELATIVE IN-PLACE DENSITY OF COMPACTED BITUMINOUS CONCRETE

CLIENT: SILVERSTONE DEVELOPMENT, LLC
ATTN: TROY BELLAH
P O BOX 346
LEE'S SUMMIT MO 64063

PROJECT: MONTICELLO SUBDIVISION
BOWLIN ROAD
LEE'S SUMMIT MO

PROJECT NO.: R20-16-061
REPORT NO.: K14691
DATE OF SERVICE: 11/17/2016
AUTHORIZATION: TROY BELLAH
REPORT DATE: 11/30/2016

SERVICES: Perform density determinations on the compacted asphaltic concrete mixture using the nuclear gauge.

PROJECT DATA

CONTRACTOR: Superior Bowen
SUPPLIER: Superior Bowen
MIXTURE TYPE: APWA 2R
METHOD: ASTM D 2726
SPECIFICATIONS: Not provided

AMBIENT TEMPERATURE (deg F): 67 TO: 76
RAW MATERIALS:
SURFACE TEXTURE:
STANDARDIZATION COUNT RATE: 1856
DEPTH OF PROBE: Backscatter

REPORT OF TESTS

TEST NUMBER	LOCATION	COURSE THICKNESS (IN.)	NUCLEAR DENSITY (PCF)	REFERENCE DENSITY (PCF)	IN-PLACE DENSITY (%)
1.	Gateway @ Sta. 3+75, 10' R of CL	4.00	150.4	151.1	99.5
2.	Gateway @ Sta. 29+00	4.00	156.0	151.1	103.2
3.	Goshen @ Sta. 2+60 10' L of CL	4.00	154.2	151.1	102.1
4.	Goshen @ Sta. 3+95	4.00	151.8	151.1	100.5
5.	Goshen @ Sta. 4+45, 12' R of CL	4.00	154.8	151.1	102.4
6.	Goshen @ Sta. 5+50, 7' L of CL	4.00	149.2	151.1	98.7
7.	Goshen @ Sta. 5+00 10' R of CL	4.00	148.9	151.1	98.5
8.	Pocano @ Sta. 2+00, 6' L of CL	4.00	155.1	151.1	102.6
9.	Pocano @ Sta. 3+10, 10' R of CL	4.00	157.2	151.1	104.0
10.	Pocano @ Sta. 4+00	4.00	159.6	151.1	105.6

Note: The density results obtained by this method are relative. If actual density results are required, a conversion factor can be developed to convert nuclear density to actual density by taking nuclear density measurements and core densities at the same randomly selected locations.

ADDITIONAL COMMENTS:

Technician: ERIC HOWARD, CME TECHNICIAN III
Report Distribution:
(1) barton.reese@cityofls.net
(1) TROY@BELLAHHOMES.COM

KANSAS CITY TESTING & ENGINEERING,

JIM BYRNES, R.G.
PROJECT MANAGER

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REPORT OF BITUMINOUS MIXTURE PROPERTIES

CLIENT: SILVERSTONE DEVELOPMENT, LLC

PROJECT NO.: R20-16-061
SAMPLE DATE: 11.23.2016
SAMPLE LOC.: Cul-de-sac @ Pocano Rd.
REPORT DATE: 12.1.2016
REPORT NO.: K14858

PROJECT: MONTICELLO SUBDIVISION
BOWLIN ROAD
LEE'S SUMMIT, MO

PROJECT DATA

MIX TYPE: APWA TYPE 3V
SUPPLIER: Superior Bowen
Marshall (lb/ft^3): 148.2

PLANT: Manchester

	ASTM D5444 Extraction Gradation		
Sieve Size	**% Retained**	**% Passing**	**APWA Spec % Passing**
37.5 mm (1 1/2")	0.0	100.0	
25mm (1")	0.0	100	
19mm (3/4")	0.0	100	100
12.5mm (1/2")	15.0	85	85-100
9.5mm (3/8")	22.5	78	70-90
4.75 mm (No. 4)	35.6	64	50-70
2.36 mm (No. 8)	53.6	46	37-47
1.18mm (No. 16)	65.1	35	26-36
600um (No. 30)	73.7	26	18-30
300um (No. 50)	86.9	13	12-22
150um (No. 100)	93.1	7	6-15
75um (No. 200)	94.0	6.0	4-10

	Test Result	**Spec.**	**Test Designation**
% AC by Ignition	4.8%	4-6	ASTM D6307
Gmm (Field)	2.508		ASTM D2726
Gmb (Field)	2.381		ASTM D2726
Gse (Calculated)	2.704		ASTM D2726
VMA	12.0		ASTM D3203
VTM	5.1	3-5	ASTM D3203
VFA	57.6		ASTM D3203
Stability, lbs	3951.5	1500 min	ASTM D6927
Flow, 1/100 in.	9.5	8-16	ASTM D6927

Reviewed By: _____

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RELATIVE IN-PLACE DENSITY OF COMPACTED BITUMINOUS CONCRETE

CLIENT: SILVERSTONE DEVELOPMENT, LLC
ATTN: TROY BELLAH
P O BOX 346
LEE'S SUMMIT MO 64063

PROJECT NO.: R20-16-061
REPORT NO.: K14859
DATE OF SERVICE: 11/23/2016
AUTHORIZATION: TROY BELLAH
REPORT DATE: 11/30/2016

PROJECT: MONTICELLO SUBDIVISION
BOWLIN ROAD
LEE'S SUMMIT MO

SERVICES: Perform density determinations on the compacted asphaltic concrete mixture using the nuclear gauge.

PROJECT DATA

CONTRACTOR: Superior Bowen
SUPPLIER: Superior Bowen
MIXTURE TYPE: 3V
METHOD: ASTM D 2726
SPECIFICATIONS: Not provided

AMBIENT TEMPERATURE (deg F): 46 TO: 51
RAW MATERIALS:
SURFACE TEXTURE:
STANDARDIZATION COUNT RATE: 1851
DEPTH OF PROBE: Backscatter

REPORT OF TESTS

TEST NUMBER	LOCATION	COURSE THICKNESS (IN.)	NUCLEAR DENSITY (PCF)	REFERENCE DENSITY (PCF)	IN-PLACE DENSITY (%)
1.	Pocano @ Sta. 4+25, 5' L of CL	2.00	158.1	148.2	106.7
2.	Pocano @ Sta. 2+75, 10' L of CL	2.00	155.8	148.2	105.1
3.	Pocano @ Sta. 1+65, 12' L of CL	2.00	158.7	148.2	107.1
4.	Goshen @ Sta. 1+75, 5' R of CL	2.00	158.5	148.2	107.0
5.	Goshen @ Sta. 2+80, 10' L of CL	2.00	156.9	148.2	105.9
6.	Goshen @ Sta. 4+00, 5' R of CL	2.00	154.7	148.2	104.4
7.	Gateway @ Sta. 2+50, 2' L of CL	2.00	150.8	148.2	101.8
8.	Gateway @ Sta. 3+50, 4' R of CL	2.00	150.0	148.2	101.2
9.	Gateway @ Sta. 5+60, 10' L of CL	2.00	152.6	148.2	103.0
10.	Gateway @ Sta. 7+40, 8' R of CL	2.00	151.4	148.2	102.2

Note: The density results obtained by this method are relative. If actual density results are required, a conversion factor can be developed to convert nuclear density to actual density by taking nuclear density measurements and core densities at the same randomly selected locations.

ADDITIONAL COMMENTS:

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CLIENT: SILVERSTONE DEVELOPMENT, LLC
ATTN: TROY BELLAH
P O BOX 346
LEE'S SUMMIT MO 64063

PROJECT: MONTICELLO SUBDIVISION
BOWLIN ROAD
LEE'S SUMMIT MO

PROJECT NO.: R20-16-061
REPORT NO.: K14859
DATE OF SERVICE: 11/23/2016
AUTHORIZATION: TROY BELLAH
REPORT DATE: 11/30/2016

SERVICES: Perform density determinations on the compacted asphaltic concrete mixture using the nuclear gauge.

PROJECT DATA

CONTRACTOR: Superior Bowen
SUPPLIER: Superior Bowen
MIXTURE TYPE: 3V
METHOD: ASTM D 2726
SPECIFICATIONS: Not provided

AMBIENT TEMPERATURE (deg F): 46 TO: 51
RAW MATERIALS:
SURFACE TEXTURE:
STANDARDIZATION COUNT RATE: 1851
DEPTH OF PROBE: Backscatter

REPORT OF TESTS

TEST NUMBER	LOCATION	COURSE THICKNESS (IN.)	NUCLEAR DENSITY (PCF)	REFERENCE DENSITY (PCF)	IN-PLACE DENSITY (%)
1.	Pocano @ Sta. 4+25, 5' L of CL	2.00	158.1	148.2	106.7
2.	Pocano @ Sta. 2+75, 10' L of CL	2.00	155.8	148.2	105.1
3.	Pocano @ Sta. 1+65, 12' L of CL	2.00	158.7	148.2	107.1
4.	Goshen @ Sta. 1+75, 5' R of CL	2.00	158.5	148.2	107.0
5.	Goshen @ Sta. 2+80, 10' L of CL	2.00	156.9	148.2	105.9
6.	Goshen @ Sta. 4+00, 5' R of CL	2.00	154.7	148.2	104.4
7.	Gateway @ Sta. 2+50, 2' L of CL	2.00	150.8	148.2	101.8
8.	Gateway @ Sta. 3+50, 4' R of CL	2.00	150.0	148.2	101.2
9.	Gateway @ Sta. 5+60, 10' L of CL	2.00	152.6	148.2	103.0
10.	Gateway @ Sta. 7+40, 8' R of CL	2.00	151.4	148.2	102.2

Note: The density results obtained by this method are relative. If actual density results are required, a conversion factor can be developed to convert nuclear density to actual density by taking nuclear density measurements and core densities at the same randomly selected locations.

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