SCHLAGEL

ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

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☐ REVISE AND RESUBMIT

☐ REJECTED

☐ FOR INFORMATION ONLY

BY rmcginnis DATE 5/27/2021

Ideker, Inc.

Design Summary

Mix Type: Type 5-01 Date: April 29, 2020

Project: Various Mix Design No.: M0501M

Material Description	Percent	Source
Greenwood 3/4" (#754)	29.0	Greenwood, MO
Greenwood Dry 3/8" (#932)	20.0	Greenwood, MO
Greenwood MS (#952)	20.0	Greenwood, MO
Bingham Drag Sand	5.0	Picher, OK
Holliday Nat Sand	15.0	Randolph, MO
Greenwood Screens (#965)	11.0	Greenwood, MO
Baghouse Fines	(Designed w/ 0.5%)	Asphalt Plant
Phillips 66 PG64-22	4.6	Phillips 66 - Kansas City, MO

Sieve Size (Sieve No.)	Job Mix Formula	Master Grading Limits % Passing		JMF Tolerance	Sieve Gap
37.5 mm (1-1/2")	100.0			±5	
25.0 mm (1")	100.0		100.0	±5	
19.0 mm (3/4")	100.0	95.0	100.0	±5	
12.5 mm (1/2")	89.5			±5	
9.5 mm (3/8")	84.3			±5	
4.75 mm (#4)	61.7			±5	
2.36 mm (#8)	39.9	28.0		±4	
1.18 mm (#16)	23.7			±4	
600 mm (#30)	14.9			±4	
300 mm (#50)	10.6			±4	
150 mm (#100)	7.1				
75 um (#200)	5.5	2.0	6.0	±2	

Mixture Property	Design Value	Spec. Min.	Spec. Max.
Optimum Binder Content, %	4.6	-----	-----
Air Voids (V_A), %	4.0	3	5
Voids in Mineral Aggregate (VMA), %	13.1	13	-----
Virgin AC Added %	4.60	-----	-----
Voids Filled with Asphalt (VFA), %	70	65	75
Dust Proportion (Based on Effective Binder Content)	1.3	0.6	1.4
$\%G_{mm}$ @ N_{ini}	89.5	-----	90.5
$\%G_{mm}$ @ N_{max}	97.8	-----	98.0
TSR	83.1	80.0	-----
Fractured Faces (% with 1 face / % with 2 faces)	100 / 96	85 /	-----
Flat & Elongated (F&E) (5:1), %	2	-----	20.0
Unit Weight, pcf	147.6		
Mixing Temperature, °F	300 - 315		
Compaction Temperature, °F	282 - 292		
Combined Bulk Specific Gravity of Aggregate, G_{sb}	2.596		
Combined Apparent Specific Gravity of Aggregate, G_{sa}	2.698		
Effective Specific Gravity of Aggregate, G_{se}	2.641		
Binder Specific Gravity (@ 77 °F), G_b	1.030		

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Project Information

Mix Type:	**Type 5-01**	Date:	**April 29, 2020**
Project No:	**Various**	County:	**Various**
Route:	**Various**	Mix Design No:	**M0501M**
Compaction Type:	**Superpave Gyratory**	Number of Gyrations:	**75 Gyros (Nmax)**

Virgin Aggregates

Description	Material ID	Quarry Location	Ledge	% Absorption	% Chert	P.I.	Gsb	Gsa	C142	C131	C88	Org. Content
Greenwood 3/4" (#754)	----	Greenwood, MO	BF 1-4	1.5	0	-----	2.610	2.717	0.1	24	Na - 7	
Greenwood Dry 3/8" (#932)	----	Greenwood, MO	BF 1-4	1.6	0	-----	2.609	2.723	0.1	24	Na - 7	
Greenwood MS (#952)	----	Greenwood, MO	BF 1-4	1.7	0	1	2.575	2.693	0.1	24	Na - 7	0.01
Bingham Drag Sand	----	Picher, OK	Chat	1.4	0	-----	2.558	2.652				0.05
Holliday Nat Sand	----	Randolph, MO	Sand	0.7	0	-----	2.623	2.670				0.10
Greenwood Screens (#965)	----	Greenwood, MO	BF 1-4	1.7	0	2	2.557	2.677				0.01
Baghouse Fines	----	Asphalt Plant	----		0	-----	2.550	2.550				

Recycled Materials

Description	Material ID	Producer	Source	AC Content	Gmm	Gse

Asphaltic Cement

Description	Material ID	Producer	PG Grade	Sp. Gr.	Mixing Temp	Compaction Temp
Phillips 66 PG64-22	----	Phillips 66 - Kansas City, MO	PG64-22	1.030	300 - 315	282 - 292

Chemical Additives / Mineral Fillers

Description	Material ID	Producer / Location	Sp. Gr.	Percent / Dosage

Additional Comments

Gradation without Bag House Fines

Sieve Size	Greenwood 3/4" (#754)	Greenwood Dry 3/8" (#932)	Greenwood MS (#952)	Bingham Drag Sand	Holliday Nat Sand	Greenwood Screens (#965)	Baghouse Fines				Cold Feed	Blend	JMF	
	29.0	**20.0**	**20.0**	**5.0**	**15.0**	**11.0**	**(Designed w/ 0.5%)**				100.0	100.0	Master Limits	
37.5 mm (1-1/2")	100.0	100.0	100.0	100.0	100.0	100.0	100.0				100.0	100.0		
25.0 mm (1")	100.0	100.0	100.0	100.0	100.0	100.0	100.0				100.0	100.0		100
19.0 mm (3/4")	100.0	100.0	100.0	100.0	100.0	100.0	100.0				100.0	100.0	95	100
12.5 mm (1/2")	58.0	100.0	100.0	100.0	100.0	100.0	100.0				87.8	87.8		
9.5 mm (3/8")	25.0	99.0	100.0	100.0	100.0	100.0	100.0				78.1	78.1		
4.75 mm (#4)	6.0	50.0	94.0	98.0	99.0	99.0	100.0				61.2	61.2		
2.36 mm (#8)	4.0	15.0	48.0	69.0	85.0	86.0	100.0				39.4	39.4	28	
1.18 mm (#16)	4.0	8.0	24.0	41.0	51.0	55.0	100.0				23.3	23.3		
600 mm (#30)	3.0	7.0	11.0	24.0	28.0	42.0	100.0				14.5	14.5		
300 mm (#50)	3.0	6.0	7.0	16.0	16.0	32.0	97.0				10.2	10.2		
150 mm (#100)	3.0	5.0	5.0	7.4	4.0	26.0	95.0				6.7	6.7		
75 um (#200)	2.4	4.2	4.2	3.2	0.7	23.4	93.0				5.2	5.2	2	6
Gsb	2.610	2.609	2.575	2.558	2.623	2.557	2.550					2.596		
Gsa	2.717	2.723	2.693	2.652	2.670	2.677	2.550					2.698		
Pb														

Gradation with Bag House Fines

Sieve Size	Greenwood 3/4" (#754)	Greenwood Dry 3/8" (#932)	Greenwood MS (#952)	Bingham Drag Sand	Holliday Nat Sand	Greenwood Screens (#965)	Baghouse Fines				Cold Feed	Blend	JMF	
	25.0	**24.0**	**20.0**	**5.0**	**15.0**	**10.5**	**0.5**				100.0	100.0	Master Limits	
37.5 mm (1-1/2")	100.0	100.0	100.0	100.0	100.0	100.0	100.0				100.0	100.0		
25.0 mm (1")	100.0	100.0	100.0	100.0	100.0	100.0	100.0				100.0	100.0		100
19.0 mm (3/4")	100.0	100.0	100.0	100.0	100.0	100.0	100.0				100.0	100.0	95	100
12.5 mm (1/2")	58.0	100.0	100.0	100.0	100.0	100.0	100.0				89.5	89.5		
9.5 mm (3/8")	38.0	99.0	100.0	100.0	100.0	100.0	100.0				84.3	84.3		
4.75 mm (#4)	6.0	45.0	94.0	98.0	99.0	99.0	100.0				61.7	61.7		
2.36 mm (#8)	4.0	15.0	48.0	69.0	85.0	86.0	100.0				39.9	39.9	28	
1.18 mm (#16)	4.0	8.0	24.0	41.0	51.0	55.0	100.0				23.7	23.7		
600 mm (#30)	3.0	7.0	11.0	24.0	28.0	42.0	100.0				14.9	14.9		
300 mm (#50)	3.0	6.0	7.0	16.0	16.0	32.0	97.0				10.6	10.6		
150 mm (#100)	3.0	5.0	5.0	7.4	4.0	26.0	95.0				7.1	7.1		
75 um (#200)	2.4	4.0	4.0	3.2	0.7	23.4	93.0				5.5	5.5	2	6
Gsb	2.610	2.609	2.575	2.558	2.623	2.557	2.550					2.596		
Gsa	2.717	2.723	2.693	2.652	2.670	2.677	2.550					2.698		
Pb														

HOT MIXED ASPHALT PROPERTIES

Location: Mosby, MO

Compaction: Superpave Gyratory

Grade AC: Phillips 66 PG64-22 Number of Gyrations: 75 Gyros (Nmax)

AC Specific Gravity (G_b)= 1.030

Effective Specific Gravity of Aggregate (G_{se})= 2.641

Bulk Specific Gravity of Aggregate (G_{sb})= 2.596

General			Weights			Mix Volume	Specific Gravities		Volumes		Unit Weight	Voids			Marshall Info					
Specimen Number	Asphalt Content (%)	Average Height (in.)	In Air (g)	In Water (g)	SSD (g)	Volume (cc)	Bulk G_{mb}	TMD G_{mm}	Aggregate Volume (cc)	AC by Volume (%)	Unit Weight (pcf)	V_A (%)	VMA (%)	VFA (%)	Measured (lb)	Flow (in.)	Ht @ N_{ini} (mm)	Ht @ N_{max} (mm)	%G_{mm} @ N_{ini} (%)	%G_{mm} @ N_{max} (%)
1A	4.1		1207.1	697.8	1215.6	517.8	2.331				145.5						125.1	112.9	88.5	97.1
1B	4.1		1200.4	695.7	1209.7	514.0	2.335				145.7						124.9	112.9	88.6	97.2
1C	4.1		1201.5	696.5	1211.0	514.5	2.335				145.7									
Average							**2.334**	**2.490**	86.2	9.3	**145.6**	**6.3**	**13.8**	**54.5**					88.6	97.2
2A	4.6		1200.3	697.8	1204.3	506.5	2.370				147.9						124.1	112.4	89.4	97.8
2B	4.6		1199.8	696.8	1204.1	507.3	2.365				147.6						124.6	112.3	89.6	97.7
2C	4.6		1199.7	696.4	1204.7	508.3	2.360				147.3									
Average							**2.365**	**2.463**	86.9	10.6	**147.6**	**4.0**	**13.1**	**69.5**					89.5	97.75
3A	5.1		1196.7	695.0	1198.7	503.7	2.376				148.3						122.8	111.4	90.5	98.4
3B	5.1		1203.4	697.4	1206.1	508.7	2.366				147.6						122.6	111.2	90.6	98.5
3C	5.1		1201.4	696.4	1202.7	506.3	2.373				148.1									
Average							**2.371**	**2.441**	86.7	11.7	**148.0**	**2.8**	**13.3**	**78.6**					90.6	98.5
4A	5.6																			
4B	5.6																			
4C	5.6																			
Average													**100.0**	**100.0**						

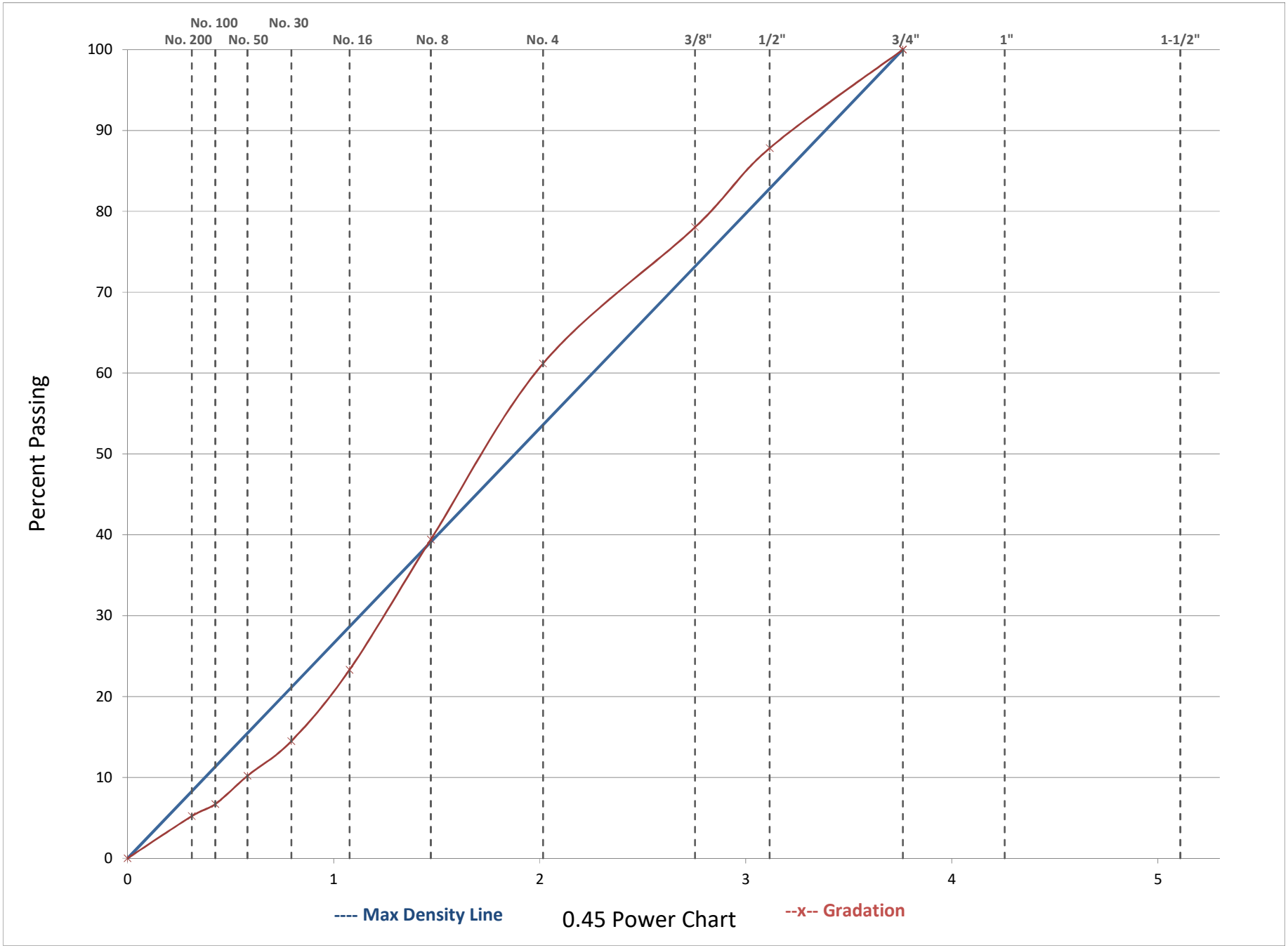
Binder Content, %	Effective Binder, %	Dust Proportion
4.1	3.5	1.5
4.6	4.0	1.3
5.1	4.5	1.2
5.6	5.0	1.0

Mix Type: Type 5-01 Date: 04/29/20

Project: Various

Theoretical Maximum Specific Gravity
(AASHTO T209 / ASTM D 2041)

AC Content	4.1	4.1	4.6	4.6	5.1	5.1	5.6	5.6
	Bowl #1	Bowl #2	Bowl #1	Bowl #2	Bowl #1	Bowl #2	Bowl #1	Bowl #2
Weight of Sample	1564.2		1645.8		1605.4			
Weight of Sample (dry back)								
Weight of flask (Calibration)	1591.7		1591.7		1591.7			
Weight of flask filled with water and sample	2527.8		2569.4		2539.4			
G_{mm}	2.490		2.463		2.441			
Average G_{mm}	**2.490**		**2.463**		**2.441**			
G_{mm} (dry back)								
Average G_{mm} (dry back)								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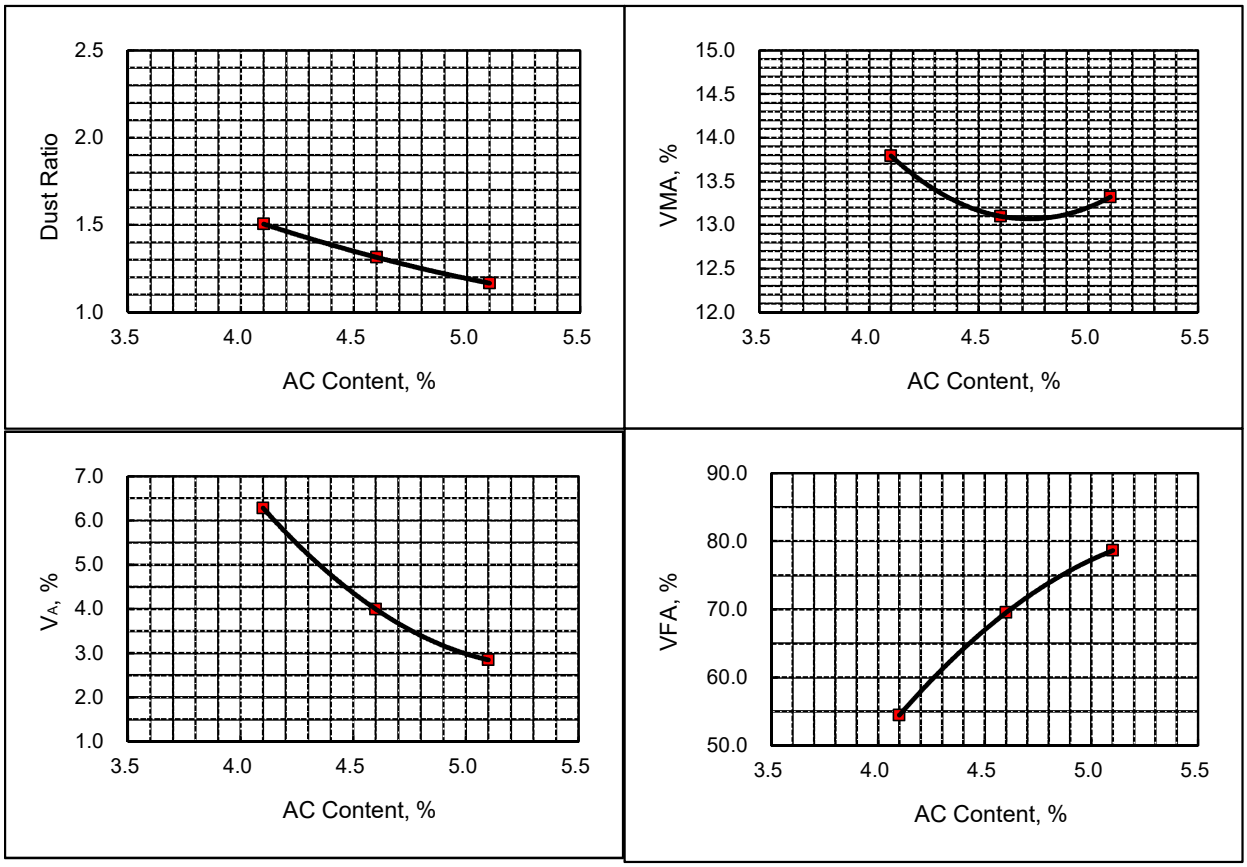
No. 30
No. 200
No. 50
No. 16
No. 8
No. 4
3/8"
1/2"
3/4"
1"
1-1/2"
100
90
80
70
60
50
40
30
20
10
0
Percent Passing
0
1
2
3
4
5
---- Max Density Line
0.45 Power Chart
--x-- Gradation

HOT MIXED ASPHALT PROPERTY CURVES

Mix Type: Type 5-01

Project: Various



AC Content (%)	Dust Ratio	Stability (lb)	Flow (0.01 in.)	VMA (%)	VFA (%)	V_A (%)
4.1	1.5			13.8	54.5	6.3
4.6	1.3			13.1	69.5	4.0
5.1	1.2			13.3	78.6	2.8

Ideker, Inc.

Design Summary

Mix Type: RC Type 5-01 Date: March 14, 2020

Project: Various Mix Design No.: K0503G

Material Description	Percent	Source
Greenwood 3/4" (#754)	19.0	Greenwood, MO
Greenwood Dry 3/8" (#932)	11.0	Greenwood, MO
Greenwood MS (#952)	20.0	Greenwood, MO
Bingham Drag Sand	5.0	Picher, OK
Holliday Nat Sand	15.0	Randolph, MO
Baghouse Fines	(Designed w/ 0.5%)	Asphalt Plant
KC Fine RAP	25.0	Ideker Asphalt Plant
KC Coarse RAP	5.0	Ideker Asphalt Plant
Phillips 66 PG58-28	4.6	Phillips 66 - Kansas City, MO

Sieve Size (Sieve No.)	Job Mix Formula	Master Grading Limits % Passing		JMF Tolerance	Sieve Gap
37.5 mm (1-1/2")	100.0			±5	
25.0 mm (1")	100.0		100.0	±5	
19.0 mm (3/4")	100.0	95.0	100.0	±5	
12.5 mm (1/2")	89.8			±5	
9.5 mm (3/8")	82.0			±5	
4.75 mm (#4)	62.6			±5	
2.36 mm (#8)	38.9	28.0		±4	
1.18 mm (#16)	25.3			±4	
600 mm (#30)	15.9			±4	
300 mm (#50)	11.4			±4	
150 mm (#100)	6.9				
75 um (#200)	5.0	2.0	6.0	±2	

Mixture Property	Design Value	Spec. Min.	Spec. Max.
Optimum Binder Content, %	4.6	-----	-----
Air Voids (V_A), %	3.8	3	5
Voids in Mineral Aggregate (VMA), %	14.0	13	-----
Virgin AC Added %	3.03	-----	-----
AC From RAP	1.57	-----	-----
AC From Shingles		-----	-----
Voids Filled with Asphalt (VFA), %	73.0	65	75
Stability (pounds)		-----	-----
Flow (in.)		-----	-----
Dust Proportion (Based on Effective Binder Content)	1.0	0.6	1.2
$\%G_{mm}$ @ N_{ini}	87.6%	-----	90.5
$\%G_{mm}$ @ N_{max}	97.2%	-----	98.0
TSR	82.5	75.0	-----
Fractured Faces (% with 1 face / % with 2 faces)	100 / 96	85 /	-----
		-----	-----
Flat & Elongated (F&E) (5:1), %	2	-----	20.0
		-----	-----
Unit Weight, pcf	148.3		
Mixing Temperature, °F	300 - 315		
Compaction Temperature, °F	282 - 292		
Combined Bulk Specific Gravity of Aggregate, G_{sb}	2.636		
Combined Apparent Specific Gravity of Aggregate, G_{sa}	2.712		
Effective Specific Gravity of Aggregate, G_{se}	2.648		
Binder Specific Gravity (@ 77 °F), G_b	1.030		

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Project Information

Mix Type:	**RC Type 5-01**	Date:	**April 18, 2020**
Project No:	**Various**	County:	**Various**
Route:	**Various**	Mix Design No:	**K0503G**
Compaction Type:	**Superpave Gyratory**	Number of Gyrations:	**75 Gyros (Nmax)**

Virgin Aggregates

Description	Material ID	Quarry Location	Ledge	% Absorption	% Chert	P.I.	Gsb	Gsa	C142	C131	C88	Org. Content
Greenwood 3/4" (#754)	----	Greenwood, MO	BF 1-4	1.6	0	-----	2.597	2.713	0.1	24	Na - 7	
Greenwood Dry 3/8" (#932)	----	Greenwood, MO	BF 1-4	1.8	0	-----	2.591	2.717	0.1	24	Na - 7	
Greenwood MS (#952)	----	Greenwood, MO	BF 1-4	1.8	0	1	2.562	2.689	0.1	24	Na - 7	0.01
Bingham Drag Sand	----	Picher, OK	Chat	1.5	0	-----	2.543	2.647				0.05
Holliday Nat Sand	----	Randolph, MO	Sand	0.7	0	-----	2.623	2.670				0.10
Baghouse Fines	----	Asphalt Plant	----		0	-----	2.550	2.550				

Recycled Materials

Description	Material ID	Producer	Source	AC Content	Gmm	Gse
KC Fine RAP	----	Ideker Asphalt Plant	MoDot Projects	5.5	2.526	2.757
KC Coarse RAP	----	Ideker Asphalt Plant	MoDot Projects	4.1	2.584	2.761

Asphaltic Cement

Description	Material ID	Producer	PG Grade	Sp. Gr.	Mixing Temp	Compaction Temp
Phillips 66 PG58-28	----	Phillips 66 - Kansas City, MO	PG58-28	1.030	300 - 315	282 - 292

Chemical Additives / Mineral Fillers

Description	Material ID	Producer / Location	Sp. Gr.	Percent / Dosage

Additional Comments

Gradation without Bag House Fines

Sieve Size	Greenwood 3/4" (#754)	Greenwood Dry 3/8" (#932)	Greenwood MS (#952)	Bingham Drag Sand	Holliday Nat Sand		Baghouse Fines	KC Fine RAP	KC Coarse RAP		Cold Feed	Blend	JMF	
	19.0	**11.0**	**20.0**	**5.0**	**15.0**		**(Designed w/ 0.5%)**	**25.0**	**5.0**		100.0	100.0	Master Limits	
37.5 mm (1-1/2")	100.0	100.0	100.0	100.0	100.0		100.0	100.0	100.0		70.0	100.0		
25.0 mm (1")	100.0	100.0	100.0	100.0	100.0		100.0	100.0	100.0		70.0	100.0		100
19.0 mm (3/4")	100.0	100.0	100.0	100.0	100.0		100.0	100.0	100.0		70.0	100.0	95	100
12.5 mm (1/2")	58.0	100.0	100.0	100.0	100.0		100.0	91.0	100.0		62.0	89.8		
9.5 mm (3/8")	40.0	99.0	100.0	100.0	100.0		100.0	74.0	99.0		58.5	81.9		
4.75 mm (#4)	15.0	65.0	94.0	98.0	99.0		100.0	38.0	88.0		48.6	62.5		
2.36 mm (#8)	4.0	15.0	42.0	69.0	85.0		100.0	35.0	57.0		27.0	38.6	28	
1.18 mm (#16)	4.0	8.0	24.0	41.0	51.0		100.0	26.0	45.0		16.1	24.9		
600 mm (#30)	3.0	7.0	11.0	24.0	28.0		100.0	20.0	31.0		8.9	15.5		
300 mm (#50)	3.0	6.0	7.0	16.0	16.0		97.0	15.0	28.0		5.8	11.0		
150 mm (#100)	3.0	5.0	5.0	7.4	4.0		95.0	10.0	18.0		3.1	6.5		
75 um (#200)	2.4	4.2	4.2	3.2	0.7		93.0	7.5	12.9		2.0	4.5	2	6
Gsb	2.597	2.591	2.562	2.543	2.623		2.550	2.757	2.761			2.636		
Gsa	2.713	2.717	2.689	2.647	2.670		2.550	2.757	2.761			2.712		
Pb								5.47	4.08					

Gradation with Bag House Fines

Sieve Size	Greenwood 3/4" (#754)	Greenwood Dry 3/8" (#932)	Greenwood MS (#952)	Bingham Drag Sand	Holliday Nat Sand		Baghouse Fines	KC Fine RAP	KC Coarse RAP		Cold Feed	Blend	JMF	
	18.9	**10.9**	**19.9**	**4.9**	**14.9**		**0.5**	**25.0**	**5.0**		100.0	100.0	Master Limits	
37.5 mm (1-1/2")	100.0	100.0	100.0	100.0	100.0		100.0	100.0	100.0		70.0	100.0		
25.0 mm (1")	100.0	100.0	100.0	100.0	100.0		100.0	100.0	100.0		70.0	100.0		100
19.0 mm (3/4")	100.0	100.0	100.0	100.0	100.0		100.0	100.0	100.0		70.0	100.0	95	100
12.5 mm (1/2")	58.0	100.0	100.0	100.0	100.0		100.0	91.0	100.0		62.1	89.8		
9.5 mm (3/8")	40.0	99.0	100.0	100.0	100.0		100.0	74.0	99.0		58.6	82.0		
4.75 mm (#4)	15.0	65.0	94.0	98.0	99.0		100.0	38.0	88.0		48.7	62.6		
2.36 mm (#8)	4.0	15.0	42.0	69.0	85.0		100.0	35.0	57.0		27.3	38.9	28	
1.18 mm (#16)	4.0	8.0	24.0	41.0	51.0		100.0	26.0	45.0		16.5	25.3		
600 mm (#30)	3.0	7.0	11.0	24.0	28.0		100.0	20.0	31.0		9.4	15.9		
300 mm (#50)	3.0	6.0	7.0	16.0	16.0		97.0	15.0	28.0		6.3	11.4		
150 mm (#100)	3.0	5.0	5.0	7.4	4.0		95.0	10.0	18.0		3.5	6.9		
75 um (#200)	2.4	4.2	4.2	3.2	0.7		93.0	7.5	12.9		2.5	5.0	2	6
Gsb	2.597	2.591	2.562	2.543	2.623		2.550	2.757	2.761			2.636		
Gsa	2.713	2.717	2.689	2.647	2.670		2.550	2.757	2.761			2.711		
Pb								5.47	4.08					

HOT MIXED ASPHALT PROPERTIES

Location: Mosby, MO

Compaction: Superpave Gyratory

Grade AC: Phillips 66 PG58-28

Number of Gyrations: 75 Gyros (Nmax)

AC Specific Gravity (G_b)= 1.030

Effective Specific Gravity of Aggregate (G_{se})= 2.648

Bulk Specific Gravity of Aggregate (G_{sb})= 2.636

General			Weights			Mix Volume	Specific Gravities		Volumes		Unit Weight	Voids			Marshall Info					
Specimen Number	Asphalt Content (%)	Average Height (in.)	In Air (g)	In Water (g)	SSD (g)	Volume (cc)	Bulk G_{mb}	TMD G_{mm}	Aggregate Volume (cc)	AC by Volume (%)	Unit Weight (pcf)	V_A (%)	VMA (%)	VFA (%)	Measured (lb)	Flow (in.)	Ht @ N_{ini} (mm)	Ht @ N_{max} (mm)	%G_{mm} @ N_{ini} (%)	%G_{mm} @ N_{max} (%)
1A	4.1	115.40	4703.0	2726.7	4720.3	1993.6	2.359				147.2						126.6	113.8	85.8%	95.5%
1B	4.1	115.30	4703.4	2723.6	4721.7	1998.1	2.354				146.9						126.5	113.8	85.8%	95.4%
1C	4.1																			
Average							**2.356**	**2.503**	85.7	9.4	**147.0**	**5.8**	**14.3**	**59.1**						
2A	4.6	114.10	4701.6	2733.8	4711.2	1977.4	2.378				148.4						125.3	112.9	87.6%	97.2%
2B	4.6	114.00	4700.1	2731.5	4710.8	1979.3	2.375				148.2						125.2	112.8	87.6%	97.2%
2C	4.6																			
Average							**2.376**	**2.470**	86.0	10.6	**148.3**	**3.8**	**14.0**	**73.0**					**87.6%**	**97.2%**
3A	5.1	112.80	4701.8	2736.5	4706.3	1969.8	2.387				148.9						124.4	111.1	88.4%	99.0%
3B	5.1	112.60	4697.5	2741.1	4702.0	1960.9	2.396				149.5						124.1	110.9	88.5%	99.0%
3C	5.1																			
Average							**2.391**	**2.452**	86.1	11.8	**149.2**	**2.5**	**13.9**	**82.1**						
4A	5.6																			
4B	5.6																			
4C	5.6																			
Average																				

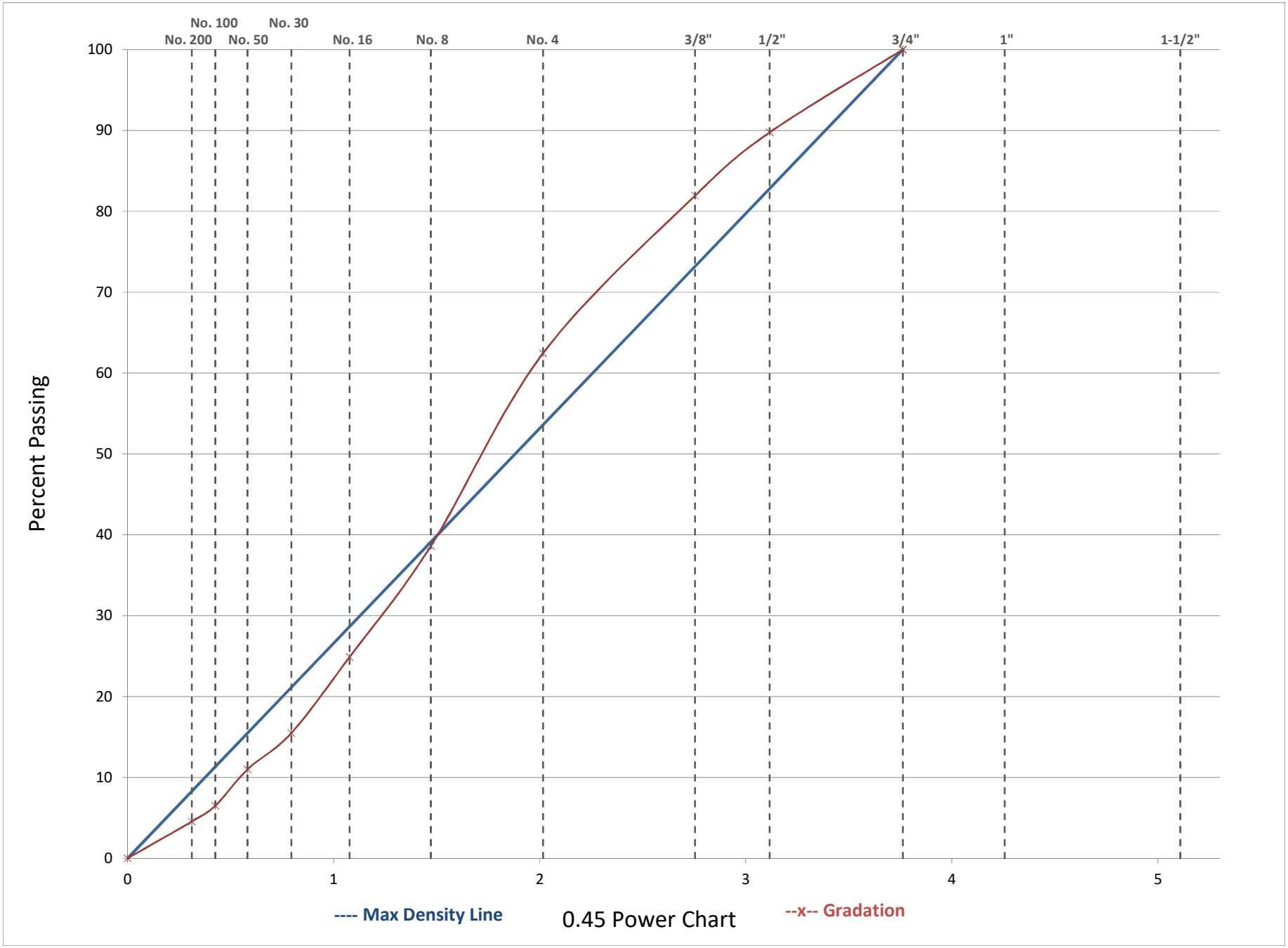
Binder Content, %	Effective Binder, %	Dust Proportion
4.1	3.9	1.2
4.6	4.4	1.0
5.1	4.9	0.9
5.6	5.4	0.8

Mix Type: RC Type 5-01 Date: 03/14/20

Project: Various

Theoretical Maximum Specific Gravity
(AASHTO T209 / ASTM D 2041)

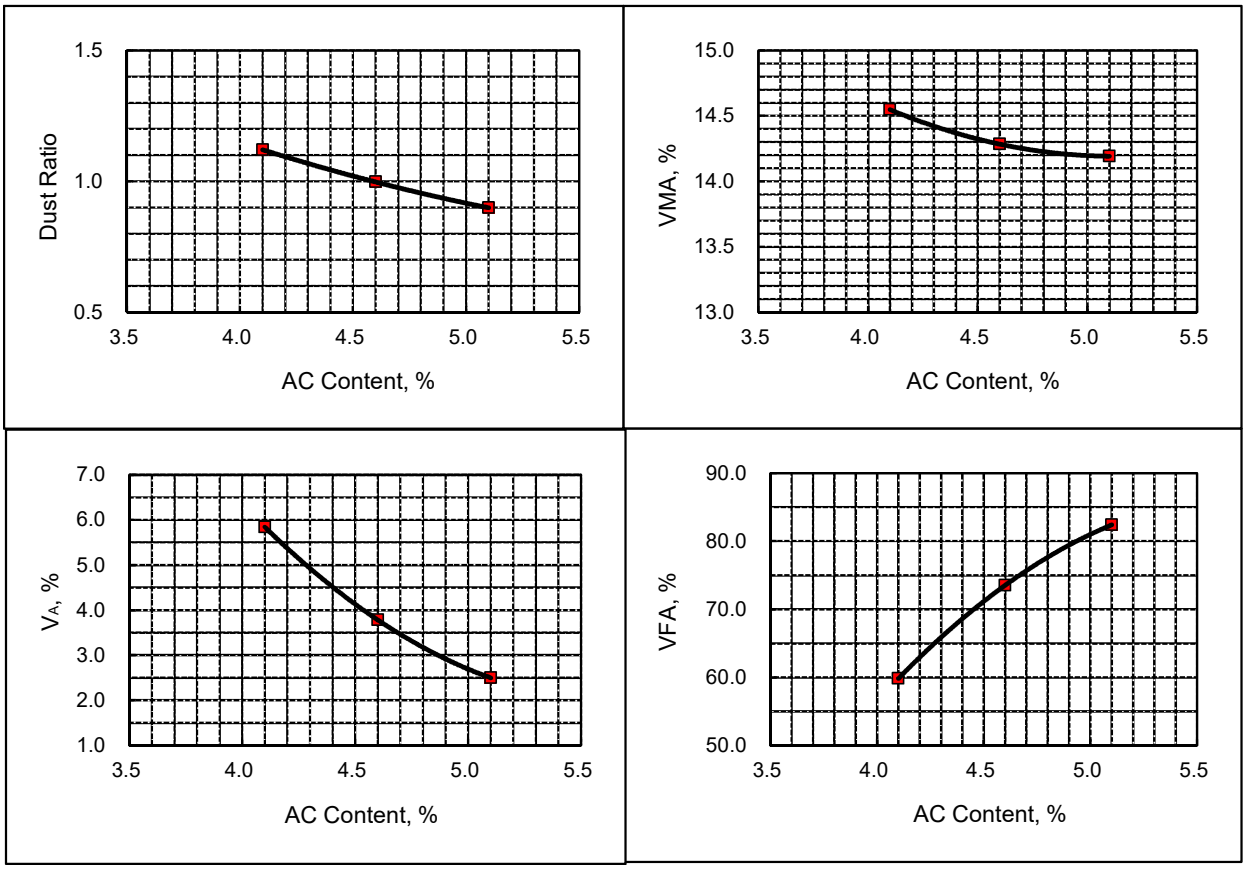
AC Content	4.1	4.1	4.6	4.6	5.1	5.1	5.6	5.6
	Bowl #1	Bowl #2	Bowl #1	Bowl #2	Bowl #1	Bowl #2	Bowl #1	Bowl #2
Weight of Sample	1563.2		1709.9		1682.4			
Weight of Sample (dry back)	1563.2		1709.9		1682.4			
Weight of flask (Calibration)	1347.8		1347.8		1347.8			
Weight of flask filled with water and sample	2286.4		2365.3		2344.2			
G_{mm}	2.503		2.470		2.452			
Average G_{mm}	**2.503**		**2.470**		**2.452**			
G_{mm} (dry back)	2.503		2.470		2.452			
Average G_{mm} (dry back)	**2.503**		**2.470**		**2.452**			


No. 100
No. 30
No. 200
No. 50
No. 16
No. 8
No. 4
3/8"
1/2"
3/4"
1"
1-1/2"
100
90
80
70
60
50
40
30
20
10
0
Percent Passing
0
1
2
3
4
5
---- Max Density Line
0.45 Power Chart
--x-- Gradation

HOT MIXED ASPHALT PROPERTY CURVES

Mix Type: RC Type 5-01

Project: Various



AC Content (%)	Dust Ratio	Stability (lb)	Flow (0.01 in.)	VMA (%)	VFA (%)	V_A
4.1	1.1			14.5	59.8	5.8
4.6	1.0			14.3	73.5	3.8
5.1	0.9			14.2	82.4	2.5