



Department of Design and Construction

Thomas Foley
Commissioner

Safety & Site Support Division
Office of Quality Assurance

Alla Ayzenshtat
Deputy Commissioner
Safety & Site Support

Concrete and Asphalt Generic Mix Design Approval 2024 - 004

30-30 Thomson Avenue
Long Island City, NY 11101

Date: 2/21/2024

Tel. 718 / 391-1624
www.nyc.gov/ddc

To: Maxon Thomas
City Asphalt, LLC.

From: Nader Shehata, PE, Deputy Director
Office of Quality Assurance

Date Submitted: 2/7/2024

Plant: City Asphalt, LLC.

NYSDOT Facility Numbers: H0395

Laboratory: N/A

Mix Design Type: 6FRA Top

Generic Mix Design Serial Number: CityAsphalt/6FRA/Top/Generic/NYCDDC/2/24/004

Generic Mix Design Date: 2/5/2024

Generic Mix Design Expiration Date: 2/28/2026

- Comments:**
- 1) This mix design is approved only for the NYSDOT Facility Numbers listed above.
 - 2) Approval is valid only if facilities listed above remain on the DDC OQA Approved list of Concrete and/or Asphalt Plants.
 - 3) Approval is limited to the material sources and aggregate sizes shown on the mix design.
 - 4) Dosage of admixtures may be adjusted by the plant within manufacturer's written guidelines, but admixtures not listed may not be added.

Reviewed & prepared by:

Christopher Vagnone, QA Inspector

Recommended for Acceptance by: Nader Shehata, PE, Deputy Director

QA & CONSTRUCTION SAFETY BUREAU

ASPHALT JOB MIX FORMULA SHEET - 6F RA TOP MIX

PLANT NAME: City Asphalt
 NYSDOT FACILITY #: H0395
 PLANT ADDRESS: 1900 South Ave.
 Staten Island, NY 10314

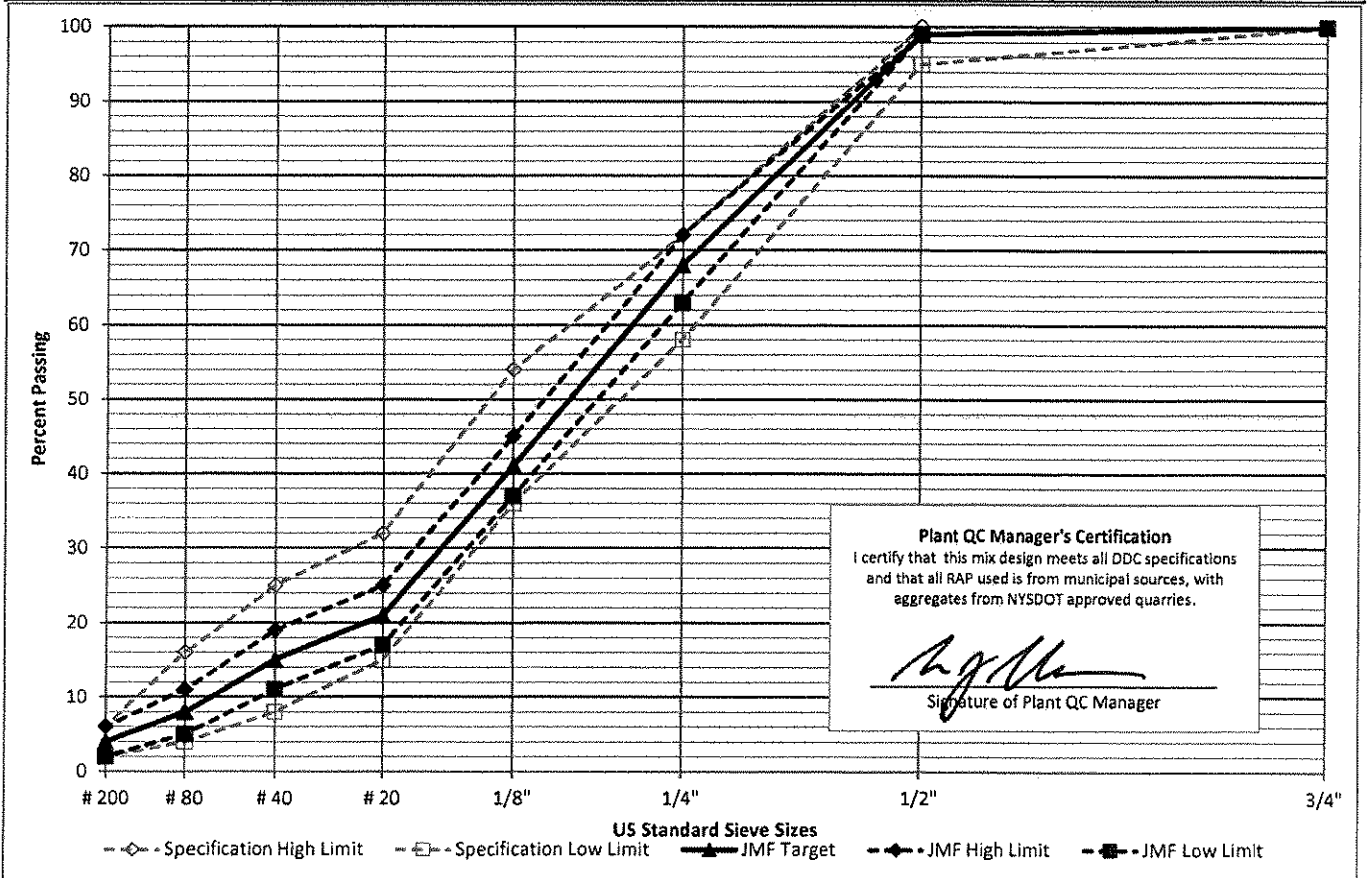
MIX DESIGN DATE: 2/5/2024
 PREPARED BY: Maxon Thomas
 COMPANY: City Asphalt
 PLANT QC MGR: Maxon Thomas

Item	Supplier / Quarry	NYSDOT Source	Friction Agg.	Agg. Blend %	Mix %	Lbs / Ton	
					0.0%	0	
#1 Stone	Tilcon - West Nyack, NY	8-8R	Yes	30.6%	29.5%	591	
#1A Stone	Tilcon - Clinton Point, NY	8-9R	No	11.0%	10.6%	212	
					0.0%	0	
Manufactured Sand	Tilcon - Clinton Point NY	8-9 RFM	N/A	20.5%	19.8%	396	
			N/A		0.0%	0	
Fine RAP	City Asphalt	N/A	Yes	29.8%	28.8%	575	
	RAP % Asphalt: 5.6%			RAP AC	1.6%	32	
All RAP to be from Municipal Sources - Aggregates from State Quarries					RAP Aggregate	27.2%	543
Coarse RAP	City Asphalt	N/A	Yes	8.1%	7.8%	156	
	RAP % Asphalt: 3.0%			RAP AC	0.2%	4	
All RAP to be from Municipal Sources - Aggregates from State Quarries					RAP Aggregate	7.6%	152
Virgin Asphalt	Grade: PG64-22	SG (G _b):	1.036		3.5%	70	
Total Asphalt Content (P _b)					5.3%	106	
					100.0%	2,000	

Project No: Generic
“APPROVED”
 NYC DDC - Office of Quality Assurance
 Date: 2/9/2024 Reviewed By: CA
 LOG No: 2024-004
 QARS APPROVAL STAMP

CityAsphalt/6FRA/Top/Generic/NYCDDC/2/24/004 Expires: 2/28/2026
QARS SERIAL NUMBER & EXPIRATION DATE

Sieve Size	1-1/2"	1"	3/4"	1/2"	1/4"	1/8"	# 20	# 40	# 80	# 200	P ₆
Specification Limits	100-100	100-100	100-100	95-100	58-72	36-54	15-32	8-25	4-16	2-6	5-6.2
JMF Target	100	100	100	99	68	41	21	15	8	4	5.3
JMF Range	100-100	100-100	100-100	99-99	63-72	37-45	17-25	11-19	5-11	2-6	5-6



QA & CONSTRUCTION SAFETY BUREAU
ASPHALT COMBINED GRADATION WORKSHEET - 6F RA TOP MIX

PLANT NAME: City Asphalt

NYSDOT FACILITY #: H0395

MIX DESIGN DATE: 2/5/2024

Average Bin Gradations

Sieve	Not Used		#1 Stone		#1A Stone		Not Used		Manufactured Sand		Not Used		Fine RAP		Coarse RAP		
	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	
1.5"	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
1"	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
3/4"	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
1/2"	100.0	3.6	96.4	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	3.4	96.6
1/4"	100.0	75.9	20.5	22.0	78.0	100.0	0.0	100.0	100.0	0.0	100.0	1.6	98.4	59.6	37.0		
1/8"	100.0	16.6	3.9	70.3	7.7	100.0	9.2	90.8	100.0	33.4	65.0	22.0	15.0				
#20	100.0	2.2	1.7	6.6	1.1	100.0	51.0	39.8	100.0	26.0	39.0	5.0	10.0				
#40	100.0	0.6	1.1	0.2	0.9	100.0	17.2	22.6	100.0	7.3	31.7	3.4	6.6				
#80	100.0	0.4	0.7	0.3	0.6	100.0	12.4	10.2	100.0	12.8	18.9	2.7	3.9				
#200	100.0	0.3	0.4	0.4	0.2	100.0	5.5	4.7	100.0	8.7	10.2	1.4	2.5				
Pan		0.4		0.2			4.7			10.2		2.5					
Totals	0.0		100.0		100.0		0.0		100.0		0.0		100.0		100.0		

Stockpiles Sampled By: Maxon Thomas Date Sampled: 1/18/2024

Gradation Technician: Maxon Thomas Date Tested: 1/18/2024

Coarse Aggregate Specific Gravity per ASTM C127

Discard portion of sample that passes the 1/8" sieve.
 Only Perform this test if aggregate is 10% or more coarse (less than 90% passing the 1/8" sieve)

	Not Used	#1 Stone	#1A Stone	Not Used	Manufactured Sand	Not Used	Fine RAP	Coarse RAP
% Coarse Agg.	---	96.1%	92.3%	---	9.2%	---	35.0%	85.0%
Test Required?	NO	YES	YES	NO	NO	NO	YES	YES
A) Wt. in Air		991.6	909.5				952.2	952.2
B) Wt. SSD		1001.3	917.4				960.2	960.2
C) Wt. in Water		655.0	589.6				615.8	615.8
G _b (A/(B-C))	---	2.863	2.775	---	---	---	2.765	2.765
G _s (A/(A-C))	---	2.946	2.843	---	---	---	2.831	2.831

Fine Aggregate Specific Gravity per ASTM C128

Discard portion of sample that does not pass the #4 sieve.
 Only Perform this test if 10% or more passes the 1/8" sieve.

	Not Used	#1 Stone	#1A Stone	Not Used	Manufactured Sand	Not Used	Fine RAP	Coarse RAP
% Fine Agg.	---	3.9%	7.7%	---	90.8%	---	65.0%	15.0%
Test Required?	NO	NO	NO	NO	YES	NO	YES	YES
A) Wt. in Air					497.5		495.5	495.5
B) Wt. Flask + Water					648.2		648.2	648.2
C) Wt. Flask + Water + Sample					972.3		972.3	972.3
S) Wt. SSD					503.7		500.3	500.3
G _b (A/(B+S-C))	---	---	---	---	2.770	---	2.812	2.812
G _s (A/(B+A-C))	---	---	---	---	2.869	---	2.891	2.891

Combined Aggregate Specific Gravity

	Not Used	#1 Stone	#1A Stone	Not Used	Manufactured Sand	Not Used	Fine RAP	Coarse RAP
Combined G _b	---	2.863	2.775	---	2.770	---	2.795	2.772
Combined G _s	---	2.946	2.843	---	2.869	---	2.869	2.839

S. G. Technician: Maxon Thomas Date Tested: 1/22/2024

Combined Average Gradations, % Passing

Bin	Agg Blend	1.5"	1"	3/4"	1/2"	1/4"	1/8"	#20	#40	#80	#200
Not Used	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
#1 Stone	30.6%	30.6	30.6	30.6	29.5	6.3	1.2	0.5	0.3	0.2	0.1
#1A Stone	11.0%	11.0	11.0	11.0	11.0	8.6	0.8	0.1	0.1	0.1	0.0
Not Used	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manufactured Sand	20.5%	20.5	20.5	20.5	20.5	20.5	18.6	8.2	4.6	2.1	1.0
Not Used	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fine RAP	29.8%	29.8	29.8	29.8	29.8	29.3	19.4	11.6	9.4	5.6	3.0
Coarse RAP	8.1%	8.1	8.1	8.1	7.8	3.0	1.2	0.8	0.5	0.3	0.2
Total	100.0%	100.0	100.0	100.0	98.6	67.7	41.2	21.2	15.0	8.3	4.4
Specification Limits		100-100	100-100	100-100	95-100	58-72	36-54	15-32	8-25	4-16	2-6

QA & CONSTRUCTION SAFETY BUREAU
ASPHALT TRIAL GRADATION WORKSHEET - 6F RA TOP MIX

PLANT NAME: City Asphalt

NYS DOT FACILITY #: H0395

MIX DESIGN DATE: 2/5/2024

BATCH 1		Batch P _g :	4.3%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	5000.0	Bin	Agg. Blend	Mix Blend	Batch Grams	Asph. Grams	1.5"	1"	3/4"	1/2"	1/4"	1/8"	#20	#40	#80	#200	Pan	
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
#1 Stone		30.6%	29.3%	1464.2	0.0	0.0	0.0	0.0	0.0	0.0	52.7	1111.3	243.1	32.2	8.8	5.9	4.4	5.9	1464.2	
#1A Stone		11.0%	10.5%	526.4	0.0	0.0	0.0	0.0	0.0	0.0	115.8	370.0	34.7	1.1	1.6	2.1	1.1	526.4		
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Manufactured Sand		20.5%	19.6%	980.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90.2	500.3	168.7	121.6	54.0	46.1
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fine RAP		29.8%	30.2%	1510.5	84.6	0.0	0.0	0.0	0.0	0.0	24.2	504.5	392.7	110.3	193.3	131.4	69.5	1510.5		
Coarse RAP		8.1%	8.0%	399.6	12.0	0.0	0.0	0.0	0.0	13.6	238.1	87.9	20.0	13.6	10.8	5.6	-2.0	399.6		
Virgin Asphalt			2.4%	118.4	118.4													118.4		
Total Mix		100.0%	100.0%	5000.0	215.0	0.0	0.0	0.0	0.0	66.3	1489.4	1295.7	979.9	302.4	333.2	197.5		5000.0		

BATCH 2		Batch P _g :	4.8%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	5000.0	Bin	Agg. Blend	Mix Blend	Batch Grams	Asph. Grams	1.5"	1"	3/4"	1/2"	1/4"	1/8"	#20	#40	#80	#200	Pan	
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
#1 Stone		30.6%	29.1%	1456.6	0.0	0.0	0.0	0.0	0.0	0.0	52.4	1105.5	241.8	32.0	8.7	5.8	4.4	5.8	1456.6	
#1A Stone		11.0%	10.5%	523.6	0.0	0.0	0.0	0.0	0.0	0.0	115.2	368.1	34.6	1.0	1.6	2.1	1.0	523.6		
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Manufactured Sand		20.5%	19.5%	975.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89.8	497.7	167.8	121.0	53.7	45.9
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fine RAP		29.8%	30.1%	1502.6	84.1	0.0	0.0	0.0	0.0	0.0	24.0	501.9	390.7	109.7	192.3	130.7	69.1	1502.6		
Coarse RAP		8.1%	7.9%	397.5	11.9	0.0	0.0	0.0	0.0	13.5	236.9	87.4	19.9	13.5	10.7	5.6	-2.0	397.5		
Virgin Asphalt			2.9%	143.9	143.9													143.9		
Total Mix		100.0%	100.0%	5000.0	240.0	0.0	0.0	0.0	0.0	66.0	1481.7	1289.0	974.8	300.8	331.5	196.4		5000.0		

BATCH 3		Batch P _g :	5.3%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	5000.0	Bin	Agg. Blend	Mix Blend	Batch Grams	Asph. Grams	1.5"	1"	3/4"	1/2"	1/4"	1/8"	#20	#40	#80	#200	Pan	
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
#1 Stone		30.6%	29.0%	1448.9	0.0	0.0	0.0	0.0	0.0	0.0	52.2	1099.7	240.5	31.9	8.7	5.8	4.3	5.8	1448.9	
#1A Stone		11.0%	10.4%	520.9	0.0	0.0	0.0	0.0	0.0	0.0	114.6	366.2	34.4	1.0	1.6	2.1	1.0	520.9		
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Manufactured Sand		20.5%	19.4%	970.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89.3	495.0	167.0	120.4	53.4	45.6
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fine RAP		29.8%	29.9%	1494.7	83.7	0.0	0.0	0.0	0.0	0.0	23.9	499.2	388.6	109.1	191.3	130.0	68.8	1494.7		
Coarse RAP		8.1%	7.9%	395.4	11.9	0.0	0.0	0.0	0.0	13.4	235.7	87.0	19.8	13.4	10.7	5.5	-2.0	395.4		
Virgin Asphalt			3.4%	169.4	169.4													169.4		
Total Mix		100.0%	100.0%	5000.0	265.0	0.0	0.0	0.0	0.0	65.6	1473.9	1282.2	969.7	299.3	329.7	195.4		5000.0		

BATCH 4		Batch P _g :	5.8%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	5000.0	Bin	Agg. Blend	Mix Blend	Batch Grams	Asph. Grams	1.5"	1"	3/4"	1/2"	1/4"	1/8"	#20	#40	#80	#200	Pan	
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
#1 Stone		30.6%	28.8%	1441.3	0.0	0.0	0.0	0.0	0.0	0.0	51.9	1093.9	239.2	31.7	8.6	5.8	4.3	5.8	1441.3	
#1A Stone		11.0%	10.4%	518.1	0.0	0.0	0.0	0.0	0.0	0.0	114.0	364.2	34.2	1.0	1.6	2.1	1.0	518.1		
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Manufactured Sand		20.5%	19.3%	965.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	88.8	492.4	166.1	119.7	53.1	45.4
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fine RAP		29.8%	29.7%	1486.8	83.3	0.0	0.0	0.0	0.0	0.0	23.8	496.6	386.6	108.5	190.3	129.4	68.4	1486.8		
Coarse RAP		8.1%	7.9%	393.3	11.8	0.0	0.0	0.0	0.0	13.4	234.4	86.5	19.7	13.4	10.6	5.5	-2.0	393.3		
Virgin Asphalt			3.9%	194.9	194.9													194.9		
Total Mix		100.0%	100.0%	5000.0	290.0	0.0	0.0	0.0	0.0	65.3	1466.1	1275.4	964.6	297.7	328.0	194.4		5000.0		

BATCH 5		Batch P _g :	6.3%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	5000.0	Bin	Agg. Blend	Mix Blend	Batch Grams	Asph. Grams	1.5"	1"	3/4"	1/2"	1/4"	1/8"	#20	#40	#80	#200	Pan	
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
#1 Stone		30.6%	28.7%	1433.6	0.0	0.0	0.0	0.0	0.0	0.0	51.6	1088.1	238.0	31.5	8.6	5.7	4.3	5.7	1433.6	
#1A Stone		11.0%	10.3%	515.4	0.0	0.0	0.0	0.0	0.0	0.0	113.4	362.3	34.0	1.0	1.5	2.1	1.0	515.4		
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Manufactured Sand		20.5%	19.2%	960.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	88.4	489.8	165.2	119.1	52.8	45.1
Not Used		0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fine RAP		29.8%	29.6%	1479.0	82.8	0.0	0.0	0.0	0.0	0.0	23.7	494.0	384.5	108.0	189.3	128.7	68.0	1479.0		
Coarse RAP		8.1%	7.8%	391.2	11.7	0.0	0.0	0.0	0.0	13.3	233.2	86.1	19.6	13.3	10.6	5.5	-2.0	391.2		
Virgin Asphalt			4.4%	220.4	220.4													220.4		
Total Mix		100.0%	100.0%	5000.0	315.0	0.0	0.0	0.0	0.0	64.9	1458.3	1268.7	959.5	296.1	326.2	193.3		5000.0		

QA & CONSTRUCTION SAFETY BUREAU

ASPHALT MAXIMUM DENSITY & MARSHALL PROPERTIES WORKSHEET - 6F RA TOP MIX

PLANT NAME: City Asphalt

NYSDOT FACILITY #: H0395

MIX DESIGN DATE: 2/5/2024

Theoretical Maximum Specific Gravity G_{mm} per ASTM D2041

Trial Batch	1		2		3		4		5	
P_b	4.3%		4.8%		5.3%		5.8%		6.3%	
A) Sample in Air (grams)	2002.2	1997.4	1995.1	2002.9	1998.7	2000.4	2000.6	1999.0	1993.3	2004.8
B) Pycnometer in Water (Grams)	1432.6	1440.1	1432.6	1440.1	1432.6	1440.1	1432.6	1440.1	1432.6	1440.1
C) Sample & Pycnometer in Water (Grams)	2673.9	2677.2	2664.3	2676.6	2659.2	2669.7	2655.4	2663.8	2644.9	2659.7
$G_{mm} (A/(A+B-C))$	2.631	2.627	2.613	2.613	2.589	2.595	2.572	2.578	2.552	2.553
Average G_{mm}	2.629		2.613		2.592		2.575		2.553	

Density Technician: Maxon Thomas Date Tested: 2/1/2024

Computation of Marshall Mix Properties (75 Blows per Side)

Weight In Air	SSD Weight	Weight In Water	Sample Volume	Bulk SG G_{mb}	Max SG G_{mm}	% Air P_a	Unit Weight	Meas. Stability	Corr. Factor	Corr. Stability	Marshall Flow	Marshall Quotient
Grams	Grams	Grams	CC	---	---	%	PCF	lbs	lbs	lbs	0.01"	lb/0.01"
A	B	C	D	E	F	G	H	J	K	L	M	N
---	---	---	B-C	A/D	---	(F-E)/F	E*62.4	---	---	J*K	---	L/M

TRIAL BATCH 1 $P_b = 4.3\%$													
Specimen A	1289.1	1291.6	766.7	524.9	2.456	2.629	6.58%		3045	0.96	2920	8.8	332
Specimen B	1286.6	1288.4	766.1	522.3	2.463	2.629	6.30%		3066	1	3070	8.7	353
Specimen C	1291.4	1293.5	767.3	526.2	2.454	2.629	6.65%		3128	0.96	3000	9.1	330
Average					2.458	2.629	6.50%	153.4			3000	8.9	338

TRIAL BATCH 2 $P_b = 4.8\%$													
Specimen A	1292.6	1293.9	770.9	523.0	2.472	2.613	5.41%		3491	0.96	3350	9.9	338
Specimen B	1289.9	1291.3	769.5	521.8	2.472	2.613	5.40%		3526	1	3530	10.5	336
Specimen C	1287.8	1289.3	768.8	520.5	2.474	2.613	5.31%		3420	1	3420	10.2	335
Average					2.473	2.613	5.36%	154.3			3430	10.2	337

TRIAL BATCH 3 $P_b = 5.3\%$													
Specimen A	1290.4	1291.3	772.5	518.8	2.487	2.592	4.04%		3291	1	3290	10.6	310
Specimen B	1288.8	1289.9	772.2	517.7	2.489	2.592	3.96%		3355	1	3360	10.4	323
Specimen C	1287.5	1288.5	771.0	517.5	2.488	2.592	4.02%		3248	1	3250	10.9	298
Average					2.488	2.592	4.01%	155.3			3300	10.6	311

TRIAL BATCH 4 $P_b = 5.8\%$													
Specimen A	1292.7	1293.4	777.7	515.7	2.507	2.575	2.65%		3212	1	3210	11.2	287
Specimen B	1293.5	1294.1	777.4	516.7	2.503	2.575	2.78%		3190	1	3190	11.5	277
Specimen C	1290.3	1290.9	775.2	515.7	2.502	2.575	2.83%		3230	1	3230	11.0	294
Average					2.504	2.575	2.76%	156.2			3210	11.2	286

TRIAL BATCH 5 $P_b = 6.3\%$													
Specimen A	1291.1	1292.6	780.3	512.3	2.520	2.553	1.28%		3093	1	3090	12.2	253
Specimen B	1295.3	1296.8	781.0	515.8	2.511	2.553	1.64%		2985	1	2990	12.7	235
Specimen C	1290.8	1292.5	780.1	512.4	2.519	2.553	1.33%		2997	1	3000	12.8	234
Average					2.517	2.553	1.41%	157.1			3030	12.6	241

Marshall Technician: Maxon Thomas Date Tested: 2/2/2024

QA & CONSTRUCTION SAFETY BUREAU

MIX VOLUMETRIC PROPERTIES WORKSHEET - 6F RA TOP MIX

PLANT:	City Asphalt	NYS DOT FACILITY #:	H0395	MIX DESIGN DATE:	2/5/2024
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Agg. Blend %	Constituent Material	NYS DOT Source	G _{sa}	G _{sb}	Total Mix Composition by Weight				
					Trial Batch				
					1	2	3	4	5
0.0%	Not Used	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%
30.6%	#1 Stone	8-8R	2.946	2.863	29.3%	29.1%	29.0%	28.8%	28.7%
11.0%	#1A Stone	8-9R	2.843	2.775	10.5%	10.5%	10.4%	10.4%	10.3%
0.0%	Not Used	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%
20.5%	Manufactured Sand	8-9 RFM	2.869	2.770	19.6%	19.5%	19.4%	19.3%	19.2%
0.0%	Not Used	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%
29.8%	Fine RAP		2.869	2.795	30.2%	30.1%	29.9%	29.7%	29.6%
8.1%	Coarse RAP		2.839	2.772	8.0%	7.9%	7.9%	7.9%	7.8%
	Virgin Asphalt				2.4%	2.9%	3.4%	3.9%	4.4%
100.0%					100.0%	100.0%	100.0%	100.0%	100.0%

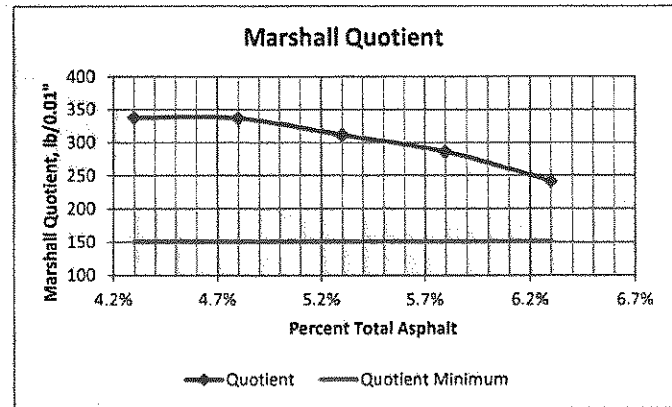
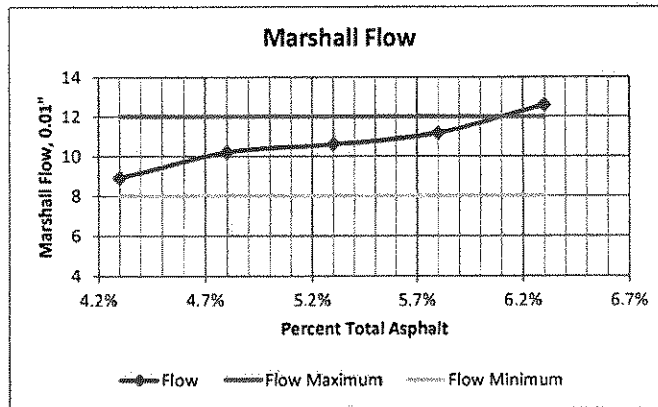
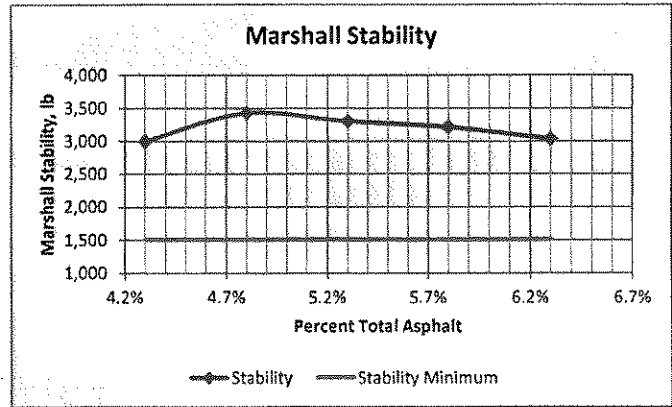
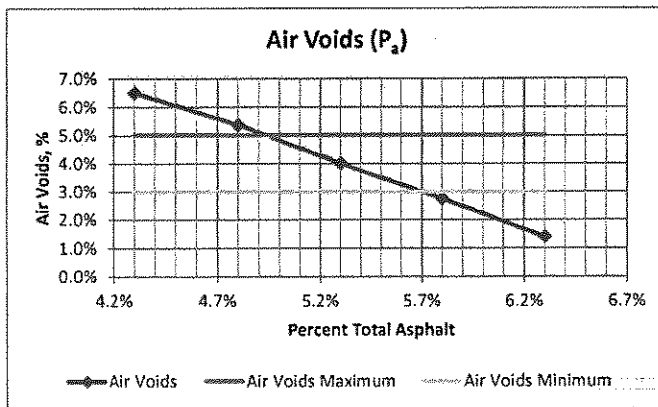
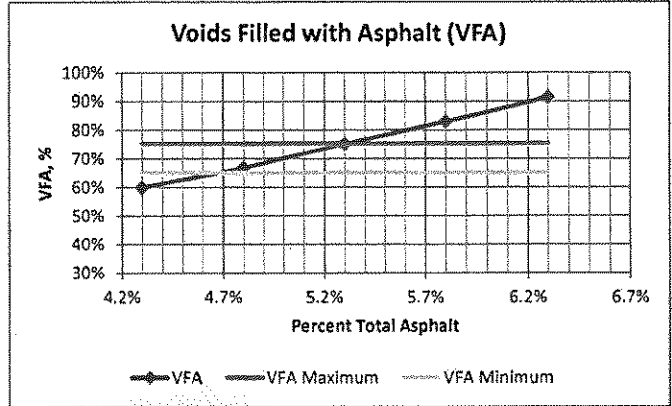
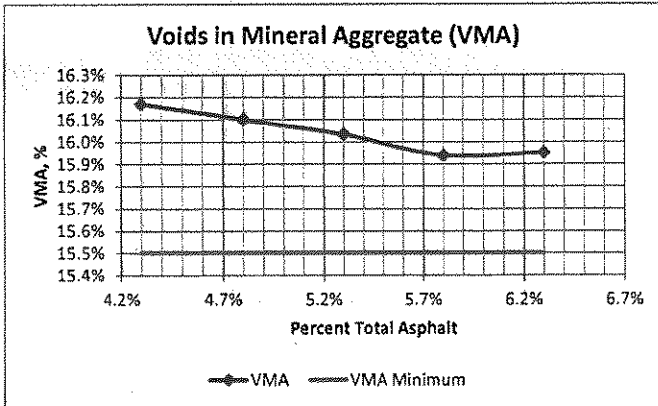
Mix General Properties			Trial Batch				
			1	2	3	4	5
P _b	Percent Total Asphalt Binder, %		4.3%	4.8%	5.3%	5.8%	6.3%
P _{ba}	Percent Absorbed Asphalt Binder, %		0.24%	0.31%	0.31%	0.36%	0.34%
P _{be}	Percent Effective Asphalt Binder, %		4.07%	4.50%	5.00%	5.46%	5.98%
DP	Dust Proportion (0.6 - 1.2 desired)		0.9	1.0	1.1	1.2	1.4
G _{mm}	Mix Maximum Specific Gravity		2.629	2.613	2.592	2.575	2.553
G _{mb}	Mix Bulk Specific Gravity		2.458	2.473	2.488	2.504	2.517
G _{sb}	Aggregate Bulk Gravity		2.806	2.806	2.806	2.806	2.806
G _{se}	Aggregate Effective Gravity		2.824	2.830	2.830	2.834	2.832
G _{sa}	Aggregate Apparent Specific Gravity		2.887	2.887	2.887	2.887	2.887

Mix Acceptance Properties			Low Limit	High Limit	Trial Batch				
					1	2	3	4	5
VMA	Voids in Mineral Aggregate, %	15.5%			✓ 16.2%	✓ 16.1%	✓ 16.0%	✓ 15.9%	✓ 16.0%
<i>Note: All five trial batches must meet the minimum VMA requirement.</i>									
VFA	Voids Filled with Asphalt, %	65%	75%		✗ 59.8%	✓ 66.7%	✓ 75.0%	✗ 82.7%	✗ 91.2%
P _a	Percent Air Voids, %	3.0%	5.0%		✗ 6.5%	✗ 5.4%	✓ 4.0%	✗ 2.8%	✗ 1.4%
---	Marshall Stability (Corrected), lb	1500			✓ 3000	✓ 3430	✓ 3300	✓ 3210	✓ 3030
---	Marshall Flow, 0.01"	8	12		✓ 8.9	✓ 10.2	✓ 10.6	✓ 11.2	✗ 12.6
---	Marshall Quotient, lb/0.01"	150			✓ 338	✓ 337	✓ 311	✓ 286	✓ 241

PLANT NAME: City Asphalt

NYSDOT FACILITY #: H0395

MIX DESIGN DATE: 2/5/2024



Property	High	Low
Voids in Mineral Aggregate (VMA), %	6.3%	4.3%
Voids Filled with Asphalt (VFA), %	5.3%	4.8%
Percent Air Voids, (P_a) %	5.7%	4.9%
Marshall Stability (Corrected), lb	6.3%	4.3%
Marshall Flow, 0.01"	6.1%	4.3%
Marshall Quotient, lb/0.01"	6.3%	4.3%
Overlap	6.3%	4.3%

Properties at Desired AC%
16.0%
75.0%
4.0%
3300
10.6
302.6

Midpoint	5.3%
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Desired Total Asphalt Content P_b	5.3%
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Desired Asphalt Content is the midpoint, unless the midpoint is on the VMA curve's positive slope. If this is the case, the Desired Asphalt Content is as close as possible to the bottom of the VMA curve, within the Overlap Range.