



**Department of
Design and
Construction**

Jamie Torres-Springer
Commissioner

**Safety & Site Support Division
Office of Quality Assurance**

John M. DeVito, SCTPP
Director
Quality Assurance Unit

Concrete and Asphalt Generic Mix Design Approval # 2021 – 425

30-30 Thomson Avenue
Long Island City, NY 11101

Date: 10/5/2021

Tel. 718 / 391-1395
Fax 718 / 391-2885
www.nyc.gov/buildnyc

To: **Matthew D. Harrison,
Green Asphalt Co.**

From: **John M. DeVito, Director
Quality Assurance**

Date Submitted: 9/24/2021

Plant: Green Asphalt Co.

NYSDOT Facility Numbers: H0385

Laboratory: MT Group

Mix Design Type: 6FRA Top – 50% RAP

Generic Mix Design Serial Number: GreenAsphalt/6FRA/Top/Generic/NYCDDC/115/21

Generic Mix Design – Mix Design Date: 9/14/2021

Generic Mix Design – Expiration Date: 10/31/2023 (See Comment 1 Below)

- Comments:**
- 1) This mix design is approved only for the NYSDOT Facility Numbers listed above.
 - 2) Approval is limited to the material sources and aggregate sizes shown on the mix design.
 - 3) 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: Scott Cruz, QA Inspector

Recommended for Acceptance by: Kelvin Law, PE, Engineer In Charge

JM

QA & CONSTRUCTION SAFETY BUREAU

ASPHALT JOB MIX FORMULA SHEET - 6F RA TOP MIX

PLANT NAME: Green Asphalt
 NYSDOT FACILITY #: H0385
 PLANT ADDRESS: 37-98 Railroad Ave
Long Island City, NY 11101

MIX DESIGN DATE: 9/14/2021
 PREPARED BY: Alex Cantos
 COMPANY: MT Group
 PLANT QC MGR: Matthew Harrison

Item	Supplier / Quarry	NYSDOT Source	Friction Agg.	Agg. Blend %	Mix %	Lbs / Ton
					0.0%	0
					0.0%	0
#8 Stone	R. J. Valente	1-48R	Yes	50.0%	48.8%	976
					0.0%	0
			N/A		0.0%	0
			N/A		0.0%	0
		N/A	Yes		0.0%	0
RAP % Asphalt:			RAP AC		0.0%	0
All RAP to be from Municipal Sources - Aggregates from State Quarries			RAP Aggregate		0.0%	0
Fine RAP	Green Asphalt	N/A	Yes	50.0%	48.8%	976
RAP % Asphalt:		6.2%	RAP AC		3.0%	60
All RAP to be from Municipal Sources - Aggregates from State Quarries			RAP Aggregate		45.8%	916
Virgin Asphalt	Grade: PG64-22	SG (G _b):	1.031		2.4%	48
Total Asphalt Content (P _b)					5.4%	108
					100.0%	2,000

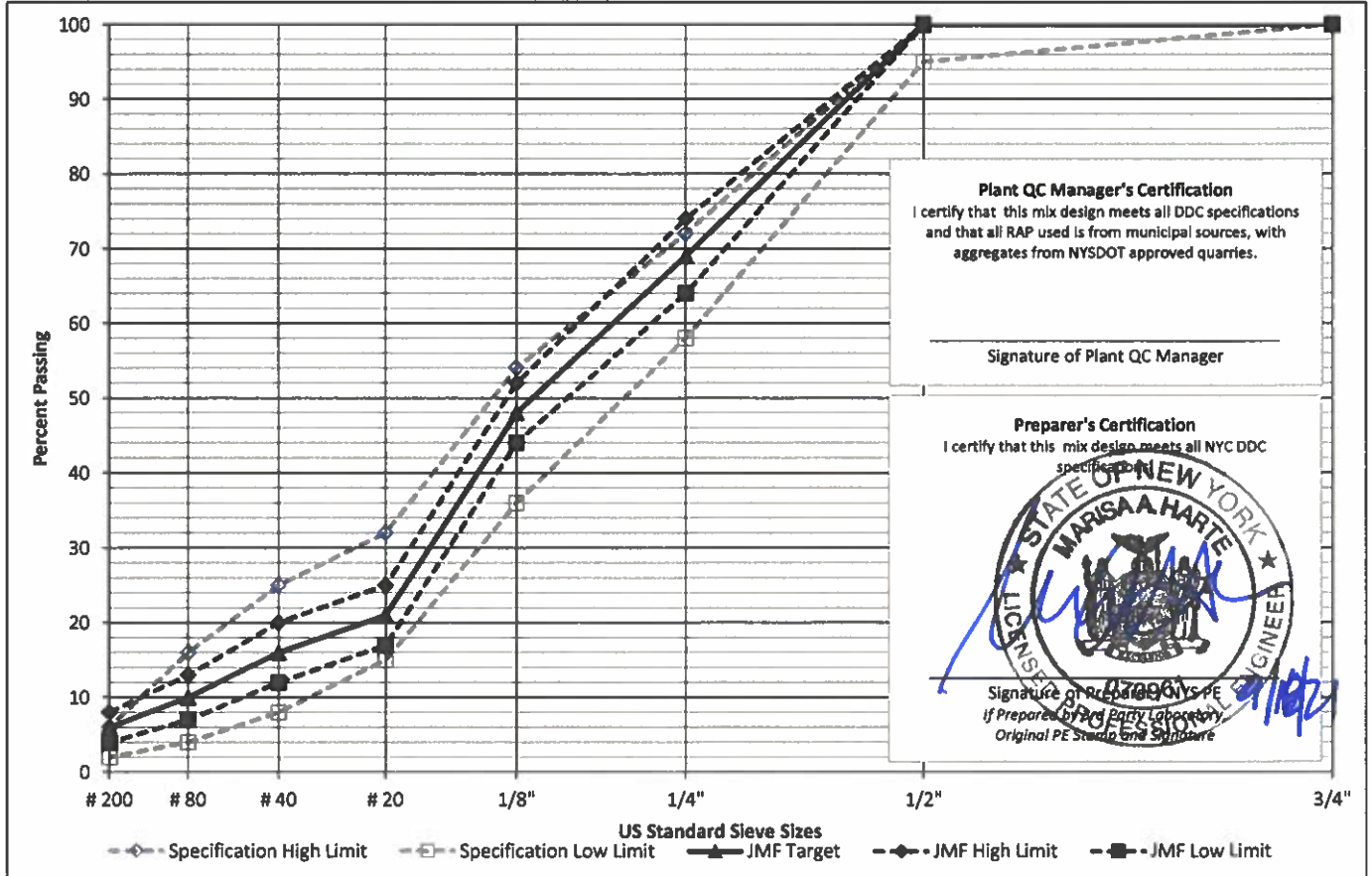
APPROVED

Project: Generic
 NYC DDC QA
 Date: 10/5/21
 Reviewed by: S.C.
 Log No: 2021-425

QA/QC APPROVAL STAMP

GreenAsphalt/6FRA/Top/Generic/NYCDDC/115/21 EXP: 10/31/2023

Sieve Size	1-1/2"	1"	3/4"	1/2"	1/4"	1/8"	# 20	# 40	# 80	# 200	P _b
Specification Limits	100	100	100	95-100	58-72	36-54	15-32	8-25	4-16	2-6	5.0-6.2
JMF Target	100	100	100	100	69	48	21	16	10	6	5.4
JMF Range	100	100	100	100	64-74	44-52	17-25	12-20	7-13	4-8	5.0-6.1



Plant QC Manager's Certification
 I certify that this mix design meets all DDC specifications and that all RAP used is from municipal sources, with aggregates from NYSDOT approved quarries.

Signature of Plant QC Manager

Preparer's Certification
 I certify that this mix design meets all NYC DDC specifications.

Signature of Preparer
 if Prepared by 3rd Party Laboratory
 Original PE Standa and Signature



QA & CONSTRUCTION SAFETY BUREAU

ASPHALT JOB MIX FORMULA SHEET - 6F RA TOP MIX

PLANT NAME: **Green Asphalt**
 NYSDOT FACILITY #: **H0385**
 PLANT ADDRESS: **37-98 Railroad Ave**
Long Island City, NY 11101

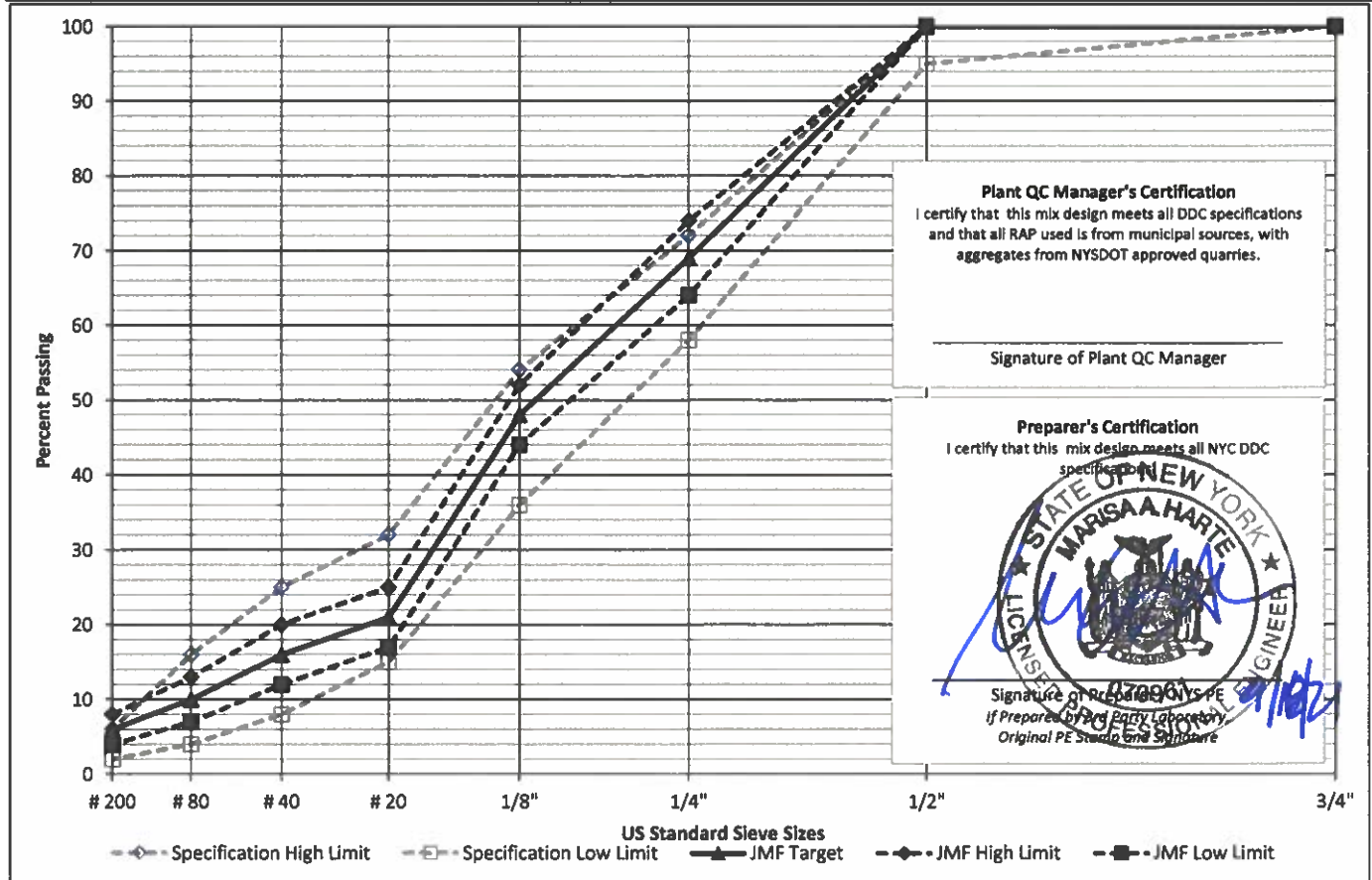
MIX DESIGN DATE: **9/14/2021**
 PREPARED BY: **Alex Cantos**
 COMPANY: **MT Group**
 PLANT QC MGR: **Matthew Harrison**

Item	Supplier / Quarry	NYSDOT Source	Friction Agg.	Agg. Blend %	Mix %	Lbs / Ton
					0.0%	0
					0.0%	0
#8 Stone	R. J. Valente	1-48R	Yes	50.0%	48.8%	976
					0.0%	0
			N/A		0.0%	0
			N/A		0.0%	0
		N/A	Yes		0.0%	0
RAP % Asphalt:				RAP AC	0.0%	0
All RAP to be from Municipal Sources - Aggregates from State Quarries				RAP Aggregate	0.0%	0
Fine RAP	Green Asphalt	N/A	Yes	50.0%	48.8%	976
RAP % Asphalt: 6.2%				RAP AC	3.0%	60
All RAP to be from Municipal Sources - Aggregates from State Quarries				RAP Aggregate	45.8%	916
Virgin Asphalt	Grade: PG64-22	SG (G _b):	1.031		2.4%	48
Total Asphalt Content (P _b)					5.4%	108
					100.0%	2,000

QA/QC APPROVAL STAMP

GreenAsphalt/6FRA/Top/Generic/NYCDDC/115/21 EXP: 10/31/2023

Sieve Size	1-1/2"	1"	3/4"	1/2"	1/4"	1/8"	# 20	# 40	# 80	# 200	P _b
Specification Limits	100	100	100	95-100	58-72	36-54	15-32	8-25	4-16	2-6	5.0-6.2
JMF Target	100	100	100	100	69	48	21	16	10	6	5.4
JMF Range	100	100	100	100	64-74	44-52	17-25	12-20	7-13	4-8	5.0-6.1



PLANT NAME: Green Asphalt

NYS DOT FACILITY #: H0385

MIX DESIGN DATE: 9/14/2021

Average Bin Gradations

Sieve	Not Used		Not Used		#8 Stone		Not Used		Not Used		Not Used		Not Used		Fine RAP	
	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass
1.5"		100.0		100.0	0.0	100.0		100.0		100.0		100.0		100.0	0.0	100.0
1"		100.0		100.0	0.0	100.0		100.0		100.0		100.0		100.0	0.0	100.0
3/4"		100.0		100.0	0.0	100.0		100.0		100.0		100.0		100.0	0.0	100.0
1/2"		100.0		100.0	0.0	100.0		100.0		100.0		100.0		100.0	0.0	100.0
1/4"		100.0		100.0	56.6	43.4		100.0		100.0		100.0		100.0	5.1	94.9
1/8"		100.0		100.0	25.8	17.6		100.0		100.0		100.0		100.0	17.6	77.3
#20		100.0		100.0	16.4	1.2		100.0		100.0		100.0		100.0	36.8	40.5
#40		100.0		100.0	0.0	1.2		100.0		100.0		100.0		100.0	10.0	30.5
#80		100.0		100.0	0.0	1.2		100.0		100.0		100.0		100.0	12.5	18.0
#200		100.0		100.0	0.0	1.2		100.0		100.0		100.0		100.0	8.0	10.0
Pan					1.2									10.0		
Totals	0.0		0.0		100.0		0.0		0.0		0.0		0.0		100.0	

Stockpiles Sampled By: Alex Cantos Date Sampled: 8/12/2021

Gradation Technician: Izak Aranov Date Tested: 8/13/2021

Coarse Aggregate Specific Gravity per ASTM C127

Discard portion of sample that passes the 1/4 sieve.

Only Perform this test if aggregate is 10% or more coarse (less than 90% passing the 1/4" sieve)

	Not Used	Not Used	#8 Stone	Not Used	Not Used	Not Used	Not Used	Fine RAP
% Coarse Agg.	---	---	56.6%	---	---	---	---	5.1%
Test Required?	NO	NO	YES	NO	NO	NO	NO	NO
A) Wt. in Air			3219.9					
B) Wt. SSD			3237.6					
C) Wt. in Water			2043.9					
G _{sb} (A/(B-C))	---	---	2.697	---	---	---	---	---
G _{sa} (A/(A-C))	---	---	2.738	---	---	---	---	---

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 1/4" Sieve.

	Not Used	Not Used	#8 Stone	Not Used	Not Used	Not Used	Not Used	Fine RAP
% Fine Agg.	---	---	43.4%	---	---	---	---	94.9%
Test Required?	NO	NO	YES	NO	NO	NO	NO	YES
A) Wt. in Air			498.9					501.1
B) Wt. Flask + Water			1451.6					1451.6
C) Wt. Flask + Water + Sample			1767.1					1770.8
S) Wt. SSD			501.0					503.6
G _{sb} (A/(B+S-C))	---	---	2.689	---	---	---	---	2.717
G _{sa} (A/(B+A-C))	---	---	2.720	---	---	---	---	2.755

Combined Aggregate Specific Gravity

	Not Used	Not Used	#8 Stone	Not Used	Not Used	Not Used	Not Used	Fine RAP
Combined G _{sb}	---	---	2.694	---	---	---	---	2.717
Combined G _{sa}	---	---	2.730	---	---	---	---	2.755

S. G. Technician: Alex Cantos Date Tested: 8/16/2021

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
Not Used	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
#8 Stone	50.0%	50.0	50.0	50.0	50.0	21.7	8.8	0.6	0.6	0.6	0.6
Not Used	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Not Used	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
Fine RAP	50.0%	50.0	50.0	50.0	50.0	47.5	38.7	20.3	15.3	9.0	5.0
Total	100.0%	100.0	100.0	100.0	100.0	69.2	47.5	20.9	15.9	9.6	5.6
Specification Limits		100	100	100	95-100	58-72	36-54	15-32	8-25	4-16	2-6

PLANT NAME: Green Asphalt

NYSDOT FACILITY #: H0385

MIX DESIGN DATE: 9/14/2021

BATCH 1		Batch P _b :	4.5%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	1245.0	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
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
#8 Stone		50.0%	47.8%	594.5					0.0	0.0	0.0	0.0	336.5	153.4	97.5	0.0	0.0	0.0	0.0	7.1
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
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
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
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
Fine RAP		50.0%	50.9%	633.8				39.3	0.0	0.0	0.0	0.0	32.3	111.5	233.2	63.4	79.2	50.7	24.1	633.8
Virgin Asphalt			1.3%	16.7				16.7												16.7
Total Mix		100.0%	100.0%	1245.0				56.0	0.0	0.0	0.0	0.0	368.8	264.9	330.7	63.4	79.2	50.7	31.2	1245.0

4.50%

BATCH 2		Batch P _b :	5.0%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	1245.0	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
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
#8 Stone		50.0%	47.5%	591.4					0.0	0.0	0.0	0.0	334.7	152.6	97.0	0.0	0.0	0.0	0.0	7.1
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
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
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
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
Fine RAP		50.0%	50.6%	630.5				39.1	0.0	0.0	0.0	0.0	32.2	111.0	232.0	63.0	78.8	50.4	24.0	630.5
Virgin Asphalt			1.9%	23.2				23.2												23.2
Total Mix		100.0%	100.0%	1245.0				62.3	0.0	0.0	0.0	0.0	366.9	263.5	329.0	63.0	78.8	50.4	31.1	1245.0

5.00%

BATCH 3		Batch P _b :	5.5%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	1245.0	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
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
#8 Stone		50.0%	47.3%	588.3					0.0	0.0	0.0	0.0	333.0	151.8	96.5	0.0	0.0	0.0	0.0	7.0
Not Used		0.0%	0.0%	0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	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	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0
Fine RAP		50.0%	50.4%	627.1				38.9	0.0	0.0	0.0	0.0	32.0	110.4	230.8	62.7	78.4	50.2	23.8	627.1
Virgin Asphalt			2.4%	29.6				29.6												29.6
Total Mix		100.0%	100.0%	1245.0				68.5	0.0	0.0	0.0	0.0	364.9	262.1	327.3	62.7	78.4	50.2	30.9	1245.0

5.50%

BATCH 4		Batch P _b :	6.0%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	1245.0	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
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
#8 Stone		50.0%	47.0%	585.2					0.0	0.0	0.0	0.0	331.2	151.0	96.0	0.0	0.0	0.0	0.0	7.0
Not Used		0.0%	0.0%	0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	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	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0
Fine RAP		50.0%	50.1%	623.8				38.7	0.0	0.0	0.0	0.0	31.8	109.8	229.6	62.4	78.0	49.9	23.7	623.8
Virgin Asphalt			2.9%	36.0				36.0												36.0
Total Mix		100.0%	100.0%	1245.0				74.7	0.0	0.0	0.0	0.0	363.0	260.8	325.5	62.4	78.0	49.9	30.7	1245.0

6.00%

BATCH 5		Batch P _b :	6.5%	Batch Weights, Retained on Sieve - Grams																
		Batch Grams:	1245.0	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
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
#8 Stone		50.0%	46.8%	582.0					0.0	0.0	0.0	0.0	329.4	150.2	95.5	0.0	0.0	0.0	0.0	7.0
Not Used		0.0%	0.0%	0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	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	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0
Fine RAP		50.0%	49.8%	620.5				38.5	0.0	0.0	0.0	0.0	31.6	109.2	228.3	62.1	77.6	49.6	23.6	620.5
Virgin Asphalt			3.4%	42.5				42.5												42.5
Total Mix		100.0%	100.0%	1245.0				80.9	0.0	0.0	0.0	0.0	361.1	259.4	323.8	62.1	77.6	49.6	30.6	1245.0

6.50%

QA & CONSTRUCTION SAFETY BUREAU

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

PLANT NAME: Green Asphalt NYSDOT FACILITY #: H0385 MIX DESIGN DATE: 9/14/2021

Theoretical Maximum Specific Gravity G_{mm} per ASTM D2041

Trial Batch	1		2		3		4		5	
P_b	4.5%		5.0%		5.5%		6.0%		6.5%	
A) Sample in Air (grams)	1545.2	1508.7	1512.2	1533.2	1506.0	1505.5	1523.6	1541.2	1563.3	1511.4
B) Pycnometer in Water (Grams)	1573.5	1538.2	1573.5	1538.2	1573.5	1538.2	1573.5	1538.2	1573.5	1538.2
C) Sample & Pycnometer in Water (Grams)	2515.8	2459.3	2492.4	2468.0	2483.4	2449.3	2490.3	2464.3	2508.0	2442.4
$G_{mm} (A/(A+B-C))$	2.563	2.568	2.549	2.541	2.526	2.533	2.511	2.506	2.486	2.489
Average G_{mm}	2.565		2.545		2.530		2.508		2.488	

Density Technician: Alex Cantos Date Tested: 9/13/2021

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		$P_b = 4.5\%$											
Specimen A	1274.6	1276.8	743.3	533.5	2.389	2.565	6.86%		3430	0.96	3290	9.3	354
Specimen B	1272.4	1274.6	742.8	531.8	2.393	2.565	6.72%		3400	0.96	3260	9.1	358
Specimen C	1272.9	1275.1	743.5	531.6	2.394	2.565	6.65%		3260	0.96	3130	10.1	310
Average					2.392	2.565	6.74%	149.3			3230	9.5	341

TRIAL BATCH 2		$P_b = 5.0\%$											
Specimen A	1270.6	1272.4	744.7	527.7	2.408	2.545	5.39%		3720	0.96	3570	10.5	340
Specimen B	1272.7	1274.6	745.7	528.9	2.406	2.545	5.45%		3840	0.96	3690	10.2	362
Specimen C	1273.4	1275.2	745.8	529.4	2.405	2.545	5.49%		3910	0.96	3750	10.2	368
Average					2.406	2.545	5.46%	150.1			3670	10.3	356

TRIAL BATCH 3		$P_b = 5.5\%$											
Specimen A	1271.3	1272.5	748.4	524.1	2.426	2.530	4.12%		3480	0.96	3340	11.6	288
Specimen B	1271.6	1272.8	746.1	526.7	2.414	2.530	4.57%		3640	0.96	3490	11.1	314
Specimen C	1270.4	1271.7	745.8	525.9	2.416	2.530	4.52%		3440	0.96	3300	12.0	275
Average					2.419	2.530	4.39%	150.9			3380	11.6	292

TRIAL BATCH 4		$P_b = 6.0\%$											
Specimen A	1270.4	1271.3	748.6	522.7	2.430	2.508	3.09%		3150	1	3150	12.7	248
Specimen B	1268.6	1269.6	747.5	522.1	2.430	2.508	3.12%		3160	1	3160	12.5	253
Specimen C	1272.2	1272.1	748.9	523.2	2.432	2.508	3.05%		3350	0.96	3220	12.8	252
Average					2.431	2.508	3.07%	151.7			3180	12.7	251

TRIAL BATCH 5		$P_b = 6.5\%$											
Specimen A	1268.9	1269.6	750.4	519.2	2.444	2.488	1.77%		2860	1	2860	12.1	236
Specimen B	1273.1	1273.7	751.2	522.5	2.437	2.488	2.07%		2930	1	2930	12.3	238
Specimen C	1269.6	1270.4	750.8	519.6	2.443	2.488	1.79%		2840	1	2840	11.9	239
Average					2.441	2.488	1.89%	152.3			2880	12.1	238

Marshall Technician: Alex Cantos Date Tested: 9/13/2021

QA & CONSTRUCTION SAFETY BUREAU

MIX VOLUMETRIC PROPERTIES WORKSHEET - 6F RA TOP MIX

PLANT:	Green Asphalt	NYSDOT FACILITY #:	H0385	MIX DESIGN DATE:	9/14/2021
--------	---------------	--------------------	-------	------------------	-----------

Agg. Blend %	37-98 Railroad Ave	NYSDOT 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%
0.0%	Not Used	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%
50.0%	#8 Stone	1-48R	2.730	2.694	47.8%	47.5%	47.3%	47.0%	46.8%
0.0%	Not Used	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%
0.0%	Not Used	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%
0.0%	Not Used	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%
0.0%	Not Used	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%
50.0%	Fine RAP		2.755	2.717	50.9%	50.6%	50.4%	50.1%	49.8%
	Virgin Asphalt				1.3%	1.9%	2.4%	2.9%	3.4%
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, %			4.5%	5.0%	5.5%	6.0%	6.5%
P _{ba}	Percent Absorbed Asphalt Binder, %			0.72%	0.72%	0.80%	0.75%	0.73%
P _{be}	Percent Effective Asphalt Binder, %			3.81%	4.32%	4.74%	5.30%	5.82%
DP	Dust Proportion (0.6 - 1.2 desired)			0.7	0.8	0.8	0.9	1.0
G _{mm}	Mix Maximum Specific Gravity			2.565	2.545	2.530	2.508	2.488
G _{mb}	Mix Bulk Specific Gravity			2.392	2.406	2.419	2.431	2.441
G _{sb}	Aggregate Bulk Gravity			2.706	2.706	2.706	2.706	2.706
G _{se}	Aggregate Effective Gravity			2.758	2.758	2.764	2.760	2.759
G _{sa}	Aggregate Apparent Specific Gravity			2.742	2.742	2.742	2.742	2.742

Mix Acceptance Properties				Low Limit	High Limit	Trial Batch					
						1	2	3	4	5	
VMA	Voids in Mineral Aggregate, %	15.5%		✓	15.6%	✓	15.5%	✓	15.5%	✓	15.7%
<i>Note: All five trial batches must meet the minimum VMA requirement.</i>											
VFA	Voids Filled with Asphalt, %	65%	75%	✗	56.7%	✗	64.8%	✓	71.7%	✗	87.9%
P _a	Percent Air Voids, %	3.0%	5.0%	✗	6.7%	✗	5.5%	✓	4.4%	✓	3.1%
---	Marshall Stability (Corrected), lb	1500		✓	3230	✓	3670	✓	3380	✓	3180
---	Marshall Flow, 0.01"	8	12	✓	9.5	✓	10.3	✓	11.6	✗	12.7
---	Marshall Quotient, lb/0.01"	150		✓	341	✓	356	✓	292	✓	251

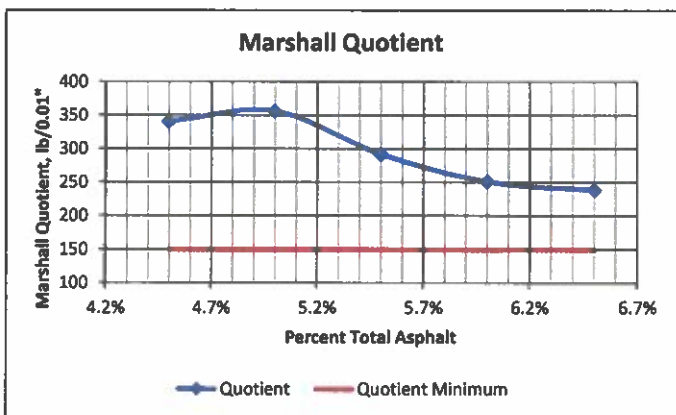
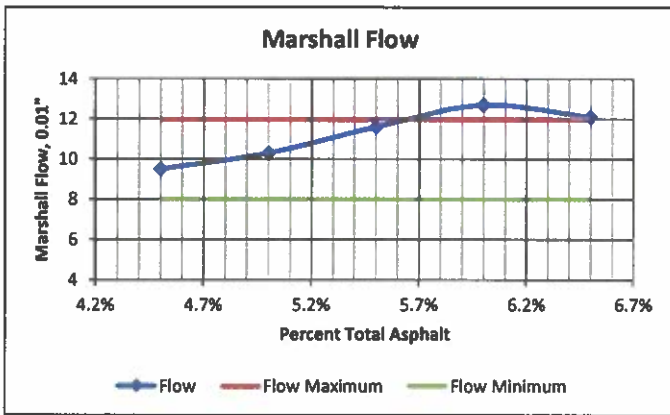
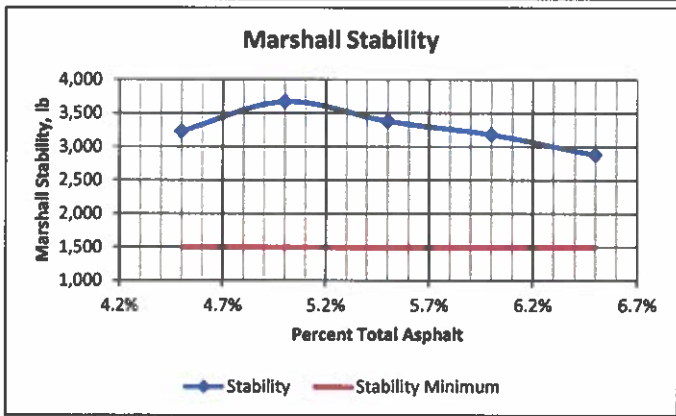
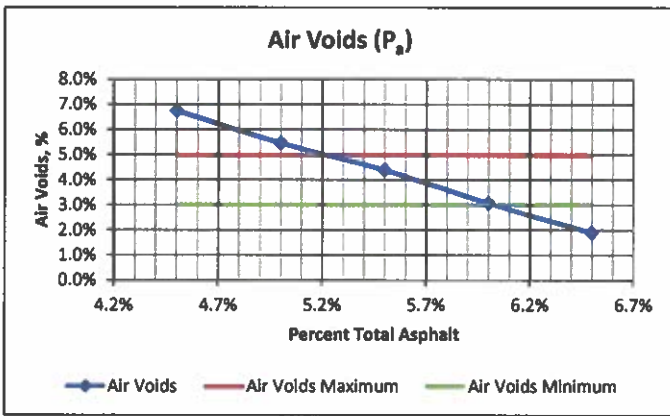
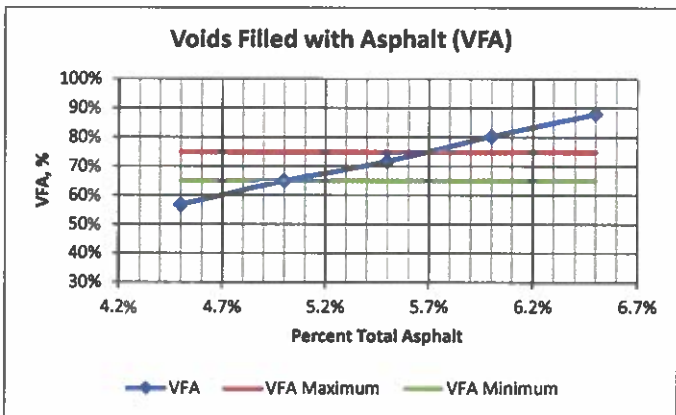
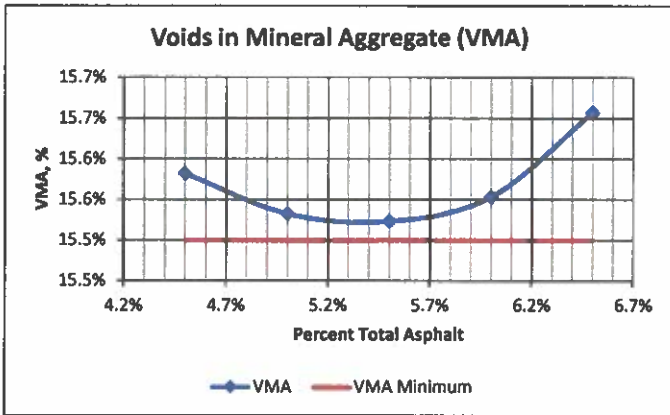
QA & CONSTRUCTION SAFETY BUREAU

PROPERTY CURVES & DESIRED ASPHALT CONTENT WORKSHEET - 6F RA TOP MIX

PLANT NAME: Green Asphalt

NYSDOT FACILITY #: H0385

MIX DESIGN DATE: 9/14/2021



Property	Low	High
Voids in Mineral Aggregate (VMA), %	4.5%	6.5%
Voids Filled with Asphalt (VFA), %	5.0%	5.7%
Percent Air Voids, (P _a) %	5.2%	6.0%
Marshall Stability (Corrected), lb	4.5%	6.5%
Marshall Flow, 0.01"	4.5%	5.7%
Marshall Quotient, lb/0.01"	4.5%	6.5%
Overlap	5.2%	5.7%

Properties at Desired AC%
15.5%
71.7%
4.4%
3380
11.6
295.6

Midpoint 5.5%

Desired Total Asphalt Content P₀ 5.5%

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.