



# 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 # 2023 - 131

30-30 Thomson Avenue  
Long Island City, NY 11101

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

**Date:** 12/15/2023

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

**From:** Juan Martinez, PE, Director  
Office of Quality Assurance

**Date Submitted:** 12/13/2023

**Plant:** Green Asphalt

**NYSDOT Facility Numbers:** H0385

**Laboratory:** N/A

**Mix Design Type:** 6FRA Top 100% RAP

**Generic Mix Design Serial Number:** GreenAsphalt/6FRA/Top/Generic/NYCDDC/12/23/131

**Generic Mix Design Date:** 9/19/2023

**Generic Mix Design Expiration Date:** 12/31/2025

- 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: Scott Cruz, 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: Green Asphalt Co LLC  
 NYSDOT FACILITY #: H0385  
 PLANT ADDRESS: 37-98 Railroad Avenue  
Long Island City, NY 11101

MIX DESIGN DATE: 9/19/2023  
 PREPARED BY: Matt Harrison  
 COMPANY: Green Asphalt Co LLC  
 PLANT QC MGR: Matt Harrison

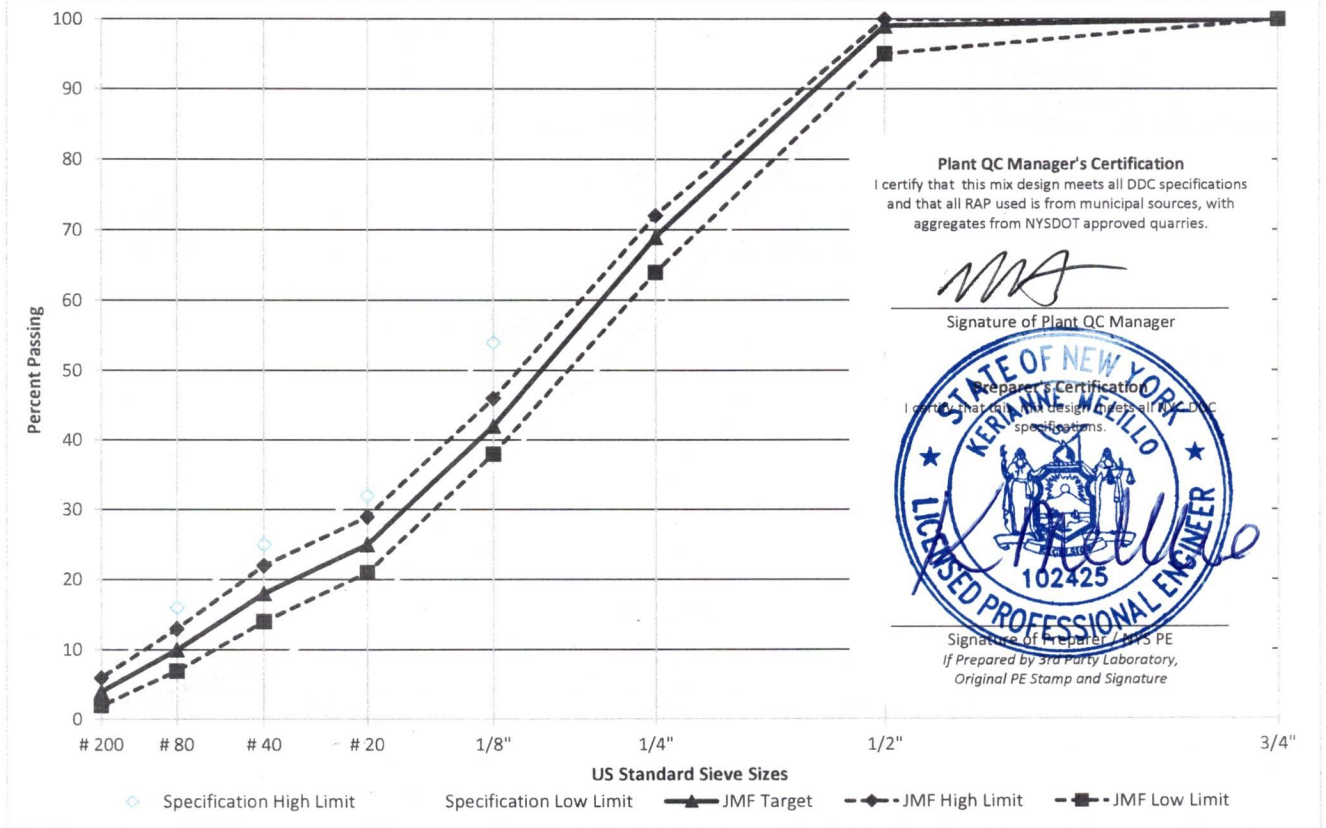
Item	Supplier / Quarry	NYSDOT Source	High Friction	Agg. Blend %	Mix %	Lbs / Ton
					0.0%	0
					0.0%	0
					0.0%	0
					0.0%	0
			N/A		0.0%	0
			N/A		0.0%	0
<b>Rap 6F Stone (-5/8)</b>	<b>NYC DOT/DDC</b>	<b>N/A</b>	<b>Yes</b>	<b>64.4%</b>	<b>64.1%</b>	<b>1,282</b>
	RAP % Asphalt: <b>4.1%</b>			RAP AC	2.6%	52
<i>All RAP to be from Municipal Sources - Aggregates from State Quarries</i>						
				RAP Aggregate	61.5%	1,230
<b>RAP Sand</b>	<b>NYC DOT/DDC</b>	<b>N/A</b>	<b>Yes</b>	<b>35.6%</b>	<b>35.4%</b>	<b>708</b>
	RAP % Asphalt: <b>6.4%</b>			RAP AC	2.3%	46
<i>All RAP to be from Municipal Sources - Aggregates from State Quarries</i>						
				RAP Aggregate	33.1%	662
Rejuvenating Oil	Grade: <b>Valero VP 165</b>	SG (G <sub>b</sub> ):	<b>0.93</b>		<b>0.5%</b>	<b>10</b>
Total Asphalt Content (P <sub>b</sub> ):					<b>5.4%</b>	<b>108</b>
					100.0%	2,000

**Project No: Generic**  
**“APPROVED”**  
 NYC DDC - Office of Quality Assurance  
 Date: **12/12/23** Reviewed By: **S.C.**  
 LOG No: **2023-131**

QA&CS APPROVAL STAMP

**GreenAsphalt/6FRA/Top/Generic/NYCDDC/12/23/131 Expiration: 12/31/2025**  
QA&CS SERIAL NUMBER & EXPIRATION DATE

Sieve Size	1-1/2"	1"	3/4"	1/2"	1/4"	1/8"	# 20	# 40	# 80	# 200	P <sub>b</sub>
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	69	42	25	18	10	4	5.4
JMF Range	100-100	100-100	100-100	95-100	64-72	38-46	21-29	14-22	7-13	2-6	5-6.1



# QA & CONSTRUCTION SAFETY BUREAU

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

PLANT NAME: Green Asphalt Co LLC

NYSDOT FACILITY #: H0385

MIX DESIGN DATE: 9/19/2023

### Theoretical Maximum Specific Gravity $G_{mm}$ per ASTM D2041

Trial Batch	1		2		3		4		5	
$P_b$	5.3%		5.4%		5.5%		5.6%		5.7%	
A) Sample in Air (grams)	1819.2	1836.7	1845.6	1817.9	1812.7	1824.1	1831.3	1828.9	1855.5	1801.5
B) Pycnometer in Water (Grams)	7705.3	7474.2	7705.3	7474.2	7705.3	7474.2	7705.3	7474.2	7705.3	7474.2
C) Sample & Pycnometer in Water (Grams)	8820.2	8600.2	8832.6	8585.0	8811.1	8588.4	8818.6	8586.7	8830.7	8564.5
$G_{mm} (A/(A+B-C))$	2.583	2.584	2.569	2.571	2.564	2.570	2.551	2.553	2.541	2.533
Average $G_{mm}$	2.584		2.570		2.567		2.552		2.537	

Density Technician: Matt Harrison

Date Tested: 9/13/2023

### 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

$P_b = 5.3\%$

Specimen A	1252.8	1257.4	749.1	508.3	2.465	2.584	4.6%		2850	1.04	2960	10.5	282
Specimen B	1253.1	1257.7	749.5	508.2	2.466	2.584	4.6%		2700	1.04	2810	10.7	263
Specimen C	1251.5	1256.5	748.8	507.7	2.465	2.584	4.6%		2925	1.04	3040	10.4	292
Average					2.465	2.584	4.6%	153.8			2940	10.5	279

#### TRIAL BATCH 2

$P_b = 5.4\%$

Specimen A	1252.2	1257.9	748.7	509.2	2.459	2.570	4.3%		2441	1	2440	10.0	244
Specimen B	1253.5	1259.7	749.3	510.4	2.456	2.570	4.4%		2290	1	2290	9.5	241
Specimen C	1252.8	1256.3	749.1	507.2	2.470	2.570	3.9%		2374	1.04	2470	9.2	268
Average					2.462	2.570	4.2%	153.6			2400	9.6	251

#### TRIAL BATCH 3

$P_b = 5.5\%$

Specimen A	1249.1	1255.9	749.1	506.8	2.465	2.567	4.0%		2049	1.04	2130	9.3	229
Specimen B	1247.6	1254.7	748.3	506.4	2.464	2.567	4.0%		2275	1.04	2370	9.0	263
Specimen C	1246.9	1254.9	747.9	507.0	2.459	2.567	4.2%		2120	1.04	2200	8.9	247
Average					2.463	2.567	4.1%	153.7			2230	9.1	247

#### TRIAL BATCH 4

$P_b = 5.6\%$

Specimen A	1252.3	1257.3	748.7	508.6	2.462	2.552	3.5%		2143	1.04	2230	8.6	259
Specimen B	1249.2	1254.8	747.9	506.9	2.464	2.552	3.4%		2078	1.04	2160	8.6	251
Specimen C	1253.6	1257.8	748.3	509.5	2.460	2.552	3.6%		2159	1	2160	8.7	248
Average					2.462	2.552	3.5%	153.6			2180	8.6	253

#### TRIAL BATCH 5

$P_b = 5.7\%$

Specimen A	1251.3	1255.7	749.1	506.6	2.470	2.537	2.6%		2041	1.04	2120	8.1	262
Specimen B	1249.0	1254.2	748.5	505.7	2.470	2.537	2.6%		2037	1.04	2120	8.1	262
Specimen C	1253.1	1257.4	748.9	508.5	2.464	2.537	2.9%		2020	1.04	2100	8.4	250
Average					2.468	2.537	2.7%	154.0			2110	8.2	258

Marshall Technician: Matt Harrison

Date Tested: 9/13/2023

QA & CONSTRUCTION SAFETY BUREAU

AGGREGATE SPECIFIC GRAVITY & COMBINED GRADATION WORKSHEET - 6F RA Top MIX

PLANT NAME: Green Asphalt Co LLC      NYSDOT FACILITY #: H0385      MIX DESIGN DATE: 9/19/2023

Average Bin Gradations

Sieve	Not Used		Not Used		Not Used		Not Used		Not Used		Not Used		Rap 6F Stone (-5/8)		RAP Sand	
	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass	% Ret.	% Pass
1.5"		100.0		100.0		100.0		100.0		100.0		100.0	0.0	100.0	0.0	100.0
1"		100.0		100.0		100.0		100.0		100.0		100.0	0.0	100.0	0.0	100.0
3/4"		100.0		100.0		100.0		100.0		100.0		100.0	0.0	100.0	0.0	100.0
1/2"		100.0		100.0		100.0		100.0		100.0		100.0	1.6	98.4	0.0	100.0
1/4"		100.0		100.0		100.0		100.0		100.0		100.0	46.3	52.1	1.1	98.9
1/8"		100.0		100.0		100.0		100.0		100.0		100.0	28.9	23.2	23.0	75.9
#20		100.0		100.0		100.0		100.0		100.0		100.0	7.4	15.8	33.9	42.0
#40		100.0		100.0		100.0		100.0		100.0		100.0	5.0	10.8	11.2	30.8
#80		100.0		100.0		100.0		100.0		100.0		100.0	5.0	5.8	13.0	17.8
#200		100.0		100.0		100.0		100.0		100.0		100.0	3.2	2.6	10.4	7.4
Pan													2.6		7.4	
Totals	0.0		0.0		0.0		0.0		0.0		0.0		100.0		100.0	

Stockpiles Sampled By: Matt Harrison      Date Sampled: 9/12/2023  
 Gradation Technician: Matt Harrison      Date Tested: 9/13/2023

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	Not Used	Not Used	Not Used	Not Used	Rap 6F Stone (-5/8)	RAP Sand
% Coarse Agg.	---	---	---	---	---	---	47.9%	1.1%
Test Required?	NO	NO	NO	NO	NO	NO	YES	NO
A) Wt. in Air							2022.0	
B) Wt. SSD							2036.5	
C) Wt. in Water							1324.4	
G <sub>sb</sub> (A/(B-C))	---	---	---	---	---	---	2.839	---
G <sub>sa</sub> (A/(A-C))	---	---	---	---	---	---	2.899	---

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	Not Used	Not Used	Not Used	Not Used	Rap 6F Stone (-5/8)	RAP Sand
% Fine Agg.	---	---	---	---	---	---	52.1%	98.9%
Test Required?	NO	NO	NO	NO	NO	NO	YES	YES
A) Wt. in Air							1028.2	1019.0
B) Wt. Flask + Water							1242.6	1241.5
C) Wt. Flask + Water + Sample							1904.2	1885.6
S) Wt. SSD							1028.9	1021.6
G <sub>sb</sub> (A/(B+S-C))	---	---	---	---	---	---	2.799	2.699
G <sub>sa</sub> (A/(B+A-C))	---	---	---	---	---	---	2.805	2.718

Combined Aggregate Specific Gravity

	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Rap 6F Stone (-5/8)	RAP Sand
Combined G <sub>sb</sub>	---	---	---	---	---	---	2.818	2.699
Combined G <sub>sa</sub>	---	---	---	---	---	---	2.849	2.718

S. G. Technician: Matt Harrison      Date Tested: 9/13/2023

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
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
Not Used	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rap 6F Stone (-5/8)	64.4%	64.4	64.4	64.4	63.4	33.6	14.9	10.2	7.0	3.7	1.7
RAP Sand	35.6%	35.6	35.6	35.6	35.6	35.2	27.0	15.0	11.0	6.3	2.6
Total	100.0%	100.0	100.0	100.0	99.0	68.8	42.0	25.1	17.9	10.1	4.3
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: Green Asphalt Co LLC

NYSDOT FACILITY #: H0385

MIX DESIGN DATE: 9/19/2023

<b>BATCH 1</b>		Batch P <sub>b</sub> :	5.3%													
		Batch Grams:	1280.0		<b>Batch Weights, Retained on Sieve - Grams</b>											
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	
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	
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	
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	
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	
Rap 6F Stone (-5/8)	64.4%	63.6%	814.0	33.4	0.0	0.0	0.0	13.0	376.9	235.2	60.2	40.7	40.7	26.0	-12.2	
RAP Sand	35.6%	36.0%	461.0	29.5	0.0	0.0	0.0	0.0	5.1	106.0	156.3	51.6	59.9	47.9	4.6	
Virgin Asphalt		0.4%	5.0	5.0												
<b>Total Mix</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1280.0</b>	<b>67.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>13.0</b>	<b>382.0</b>	<b>341.3</b>	<b>216.5</b>	<b>92.3</b>	<b>100.6</b>	<b>74.0</b>	<b>-7.6</b>	

5.30%

<b>BATCH 2</b>		Batch P <sub>b</sub> :	5.4%													
		Batch Grams:	1280.0		<b>Batch Weights, Retained on Sieve - Grams</b>											
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	
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	
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	
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	
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	
Rap 6F Stone (-5/8)	64.4%	63.5%	813.1	33.3	0.0	0.0	0.0	13.0	376.5	235.0	60.2	40.7	40.7	26.0	-12.2	
RAP Sand	35.6%	36.0%	460.5	29.5	0.0	0.0	0.0	0.0	5.1	105.9	156.1	51.6	59.9	47.9	4.6	
Virgin Asphalt		0.5%	6.3	6.3												
<b>Total Mix</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1280.0</b>	<b>69.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>13.0</b>	<b>381.6</b>	<b>340.9</b>	<b>216.3</b>	<b>92.2</b>	<b>100.5</b>	<b>73.9</b>	<b>-7.6</b>	

5.40%

<b>BATCH 3</b>		Batch P <sub>b</sub> :	5.5%													
		Batch Grams:	1280.0		<b>Batch Weights, Retained on Sieve - Grams</b>											
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	
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	
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	
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	
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	
Rap 6F Stone (-5/8)	64.4%	63.5%	812.3	33.3	0.0	0.0	0.0	13.0	376.1	234.8	60.1	40.6	40.6	26.0	-12.2	
RAP Sand	35.6%	35.9%	460.1	29.4	0.0	0.0	0.0	0.0	5.1	105.8	156.0	51.5	59.8	47.8	4.6	
Virgin Asphalt		0.6%	7.7	7.7												
<b>Total Mix</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1280.0</b>	<b>70.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>13.0</b>	<b>381.1</b>	<b>340.6</b>	<b>216.1</b>	<b>92.1</b>	<b>100.4</b>	<b>73.8</b>	<b>-7.6</b>	

5.50%

<b>BATCH 4</b>		Batch P <sub>b</sub> :	5.6%													
		Batch Grams:	1280.0		<b>Batch Weights, Retained on Sieve - Grams</b>											
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	
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	
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	
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	
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	
Rap 6F Stone (-5/8)	64.4%	63.4%	811.4	33.3	0.0	0.0	0.0	13.0	375.7	234.5	60.0	40.6	40.6	26.0	-12.2	
RAP Sand	35.6%	35.9%	459.6	29.4	0.0	0.0	0.0	0.0	5.1	105.7	155.8	51.5	59.7	47.8	4.6	
Virgin Asphalt		0.7%	9.0	9.0												
<b>Total Mix</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1280.0</b>	<b>71.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>13.0</b>	<b>380.7</b>	<b>340.2</b>	<b>215.8</b>	<b>92.0</b>	<b>100.3</b>	<b>73.8</b>	<b>-7.6</b>	

5.60%

<b>BATCH 5</b>		Batch P <sub>b</sub> :	5.7%													
		Batch Grams:	1280.0		<b>Batch Weights, Retained on Sieve - Grams</b>											
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	
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	
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	
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	
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	
Rap 6F Stone (-5/8)	64.4%	63.3%	810.6	33.2	0.0	0.0	0.0	13.0	375.3	234.3	60.0	40.5	40.5	25.9	-12.2	
RAP Sand	35.6%	35.9%	459.1	29.4	0.0	0.0	0.0	0.0	5.0	105.6	155.6	51.4	59.7	47.7	4.6	
Virgin Asphalt		0.8%	10.3	10.3												
<b>Total Mix</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1280.0</b>	<b>73.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>13.0</b>	<b>380.3</b>	<b>339.8</b>	<b>215.6</b>	<b>91.9</b>	<b>100.2</b>	<b>73.7</b>	<b>-7.6</b>	

5.70%

# QA & CONSTRUCTION SAFETY BUREAU

## MIX VOLUMETRIC PROPERTIES WORKSHEET -6F RA Top MIX

PLANT:	Green Asphalt Co LLC	NYS DOT FACILITY #:	H0385	MIX DESIGN DATE:	9/19/2023
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Agg. Blend %	Constituent Material	NYS DOT Source	G <sub>sa</sub>	G <sub>sb</sub>	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%
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%
64.4%	Rap 6F Stone (-5/8)		2.849	2.818	63.6%	63.5%	63.5%	63.4%	63.3%
35.6%	RAP Sand		2.718	2.699	36.0%	36.0%	35.9%	35.9%	35.9%
	Virgin Asphalt				0.4%	0.5%	0.6%	0.7%	0.8%
100.0%					100.0%	100.0%	100.0%	100.0%	100.0%

Mix General Properties			Trial Batch				
			1	2	3	4	5
P <sub>b</sub>	Percent Total Asphalt Binder, %		5.3%	5.4%	5.5%	5.6%	5.7%
P <sub>ba</sub>	Percent Absorbed Asphalt Binder, %		1.11%	0.97%	1.00%	0.85%	0.69%
P <sub>be</sub>	Percent Effective Asphalt Binder, %		4.25%	4.48%	4.56%	4.80%	5.05%
DP	Dust Proportion (0.6 to 1.2 desired)		1.0	1.0	0.9	0.9	0.9
G <sub>mm</sub>	Mix Maximum Specific Gravity		2.584	2.570	2.567	2.552	2.537
G <sub>mb</sub>	Mix Bulk Specific Gravity		2.465	2.462	2.463	2.462	2.468
G <sub>sb</sub>	Aggregate Bulk Gravity		2.775	2.775	2.775	2.775	2.775
G <sub>se</sub>	Aggregate Effective Gravity		2.870	2.858	2.860	2.847	2.833
G <sub>sa</sub>	Aggregate Apparent Specific Gravity		2.801	2.801	2.801	2.801	2.801

Mix Acceptance Properties			Low Limit	High Limit	Trial Batch				
					1	2	3	4	5
VMA	Voids in Mineral Aggregate, %	13.5%			✓ 15.9%	✓ 16.1%	✓ 16.1%	✓ 16.2%	✓ 16.1%
<i>Note: All five trial batches must meet the minimum VMA requirement.</i>									
VFA	Voids Filled with Asphalt, %	65%	75%		✓ 71.0%	✓ 73.9%	✓ 74.9%	✗ 78.3%	✗ 83.1%
P <sub>a</sub>	Percent Air Voids, %	3.0%	5.0%		✓ 4.6%	✓ 4.2%	✓ 4.1%	✓ 3.5%	✗ 2.7%
---	Marshall Stability (Corrected), lb	1500			✓ 2940	✓ 2400	✓ 2230	✓ 2180	✓ 2110
---	Marshall Flow, 0.01"	8	12		✓ 10.5	✓ 9.6	✓ 9.1	✓ 8.6	✓ 8.2
---	Marshall Quotient, lb/0.01"	150			✓ 279	✓ 251	✓ 247	✓ 253	✓ 258

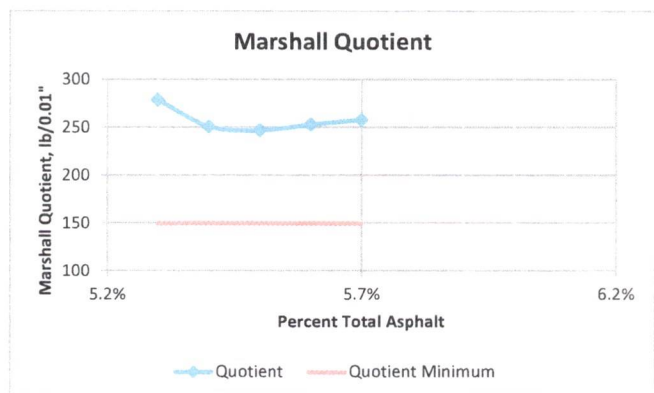
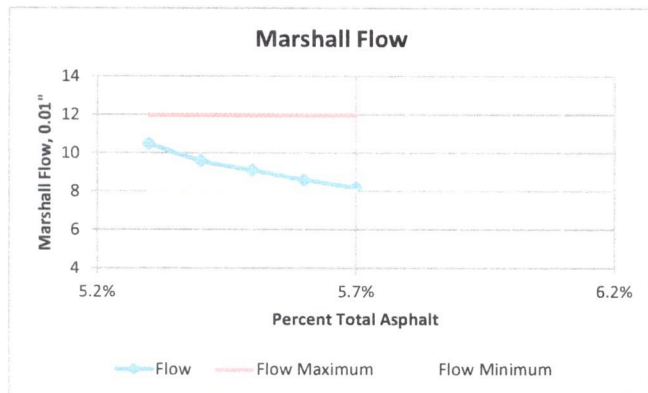
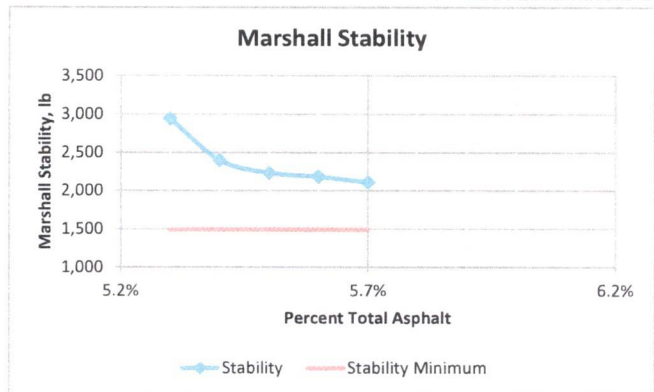
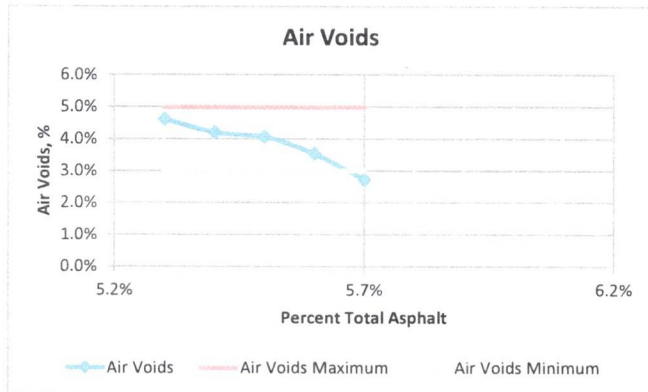
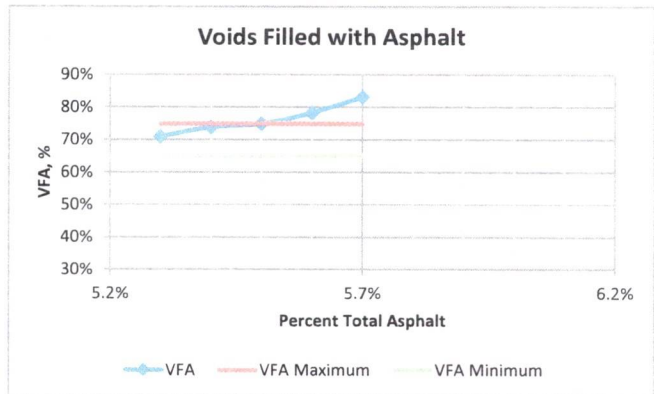
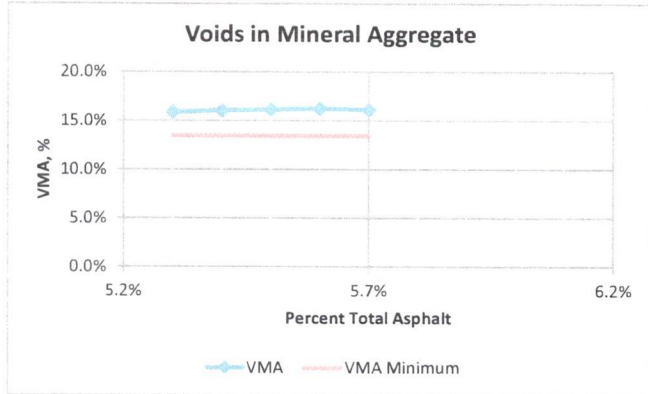
# QA & CONSTRUCTION SAFETY BUREAU

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

PLANT NAME: Green Asphalt Co LLC

NYSDOT FACILITY #: H0385

MIX DESIGN DATE: 9/19/2023



Property	High	Low
Voids in Mineral Aggregate (VMA), %	5.7%	5.3%
Voids Filled with Asphalt (VFA), %	5.5%	5.3%
Percent Air Voids, %	5.6%	5.3%
Marshall Stability (Corrected), lb	5.7%	5.3%
Marshall Flow, 0.01"	5.7%	5.3%
Marshall Quotient, lb/0.01"	5.7%	5.3%
Overlap	5.5%	5.3%

Properties at Desired AC%
16.1%
73.9%
4.2%
2400
9.6
261.6

Midpoint	5.4%
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Desired Total Asphalt Content P <sub>b</sub>	5.4%
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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.