



# Department of Design and Construction

Eduardo N. del Valle  
Acting Commissioner

Safety & Site Support Division  
Office of Quality Assurance

Alla Ayzenshtat  
Deputy Commissioner  
Safety & Site Support

## Concrete and Asphalt Generic Mix Design Approval # 2025 – 125

30-30 Thomson Avenue  
Long Island City, NY 11101

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

**Date:** 12/19/2025

**To:** City Asphalt,  
Maxon Thomas

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

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**Date Submitted:** 12/16/2025

**Plant:** City Asphalt

**NYSDOT Facility Numbers:** H0395

**Laboratory:** N/A

**Mix Design Type:** 3RA Binder (PEM draft specifications compliant)

**Generic Mix Design Serial Number:** CityAsphalt/3RA/Binder/Generic/NYCDDC/12/25/125

**Generic Mix Design Date:** 12/16/2025

**Generic Mix Design Expiration Date:** 12/31/2027

- 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: Alfred Roman, Engineer In Charge

# QA & CONSTRUCTION SAFETY BUREAU

## ASPHALT JOB MIX FORMULA SHEET - 3 RA BINDER MIX

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

MIX DESIGN DATE: 12/16/2025  
 PREPARED BY: Maxon Thomas  
 COMPANY: City Asphalt  
 PLANT QC MGR: Maxon Thomas

| Item                                                                  | Supplier / Quarry          | NYSDOT Source         | High Friction | Agg. Blend %  | Mix %                   | Lbs / Ton |
|-----------------------------------------------------------------------|----------------------------|-----------------------|---------------|---------------|-------------------------|-----------|
| NY #2 Stone                                                           | Tilcon - Clinton Point, NY | 8-9R                  | No            | 31.7%         | 31.0%                   | 619       |
| NY #1 stone                                                           | Tilcon - West Nyack, NY    | 8-8R                  | Yes           | 22.0%         | 21.5%                   | 430       |
|                                                                       |                            |                       |               |               | 0.0%                    | 0         |
|                                                                       |                            |                       |               |               | 0.0%                    | 0         |
| Manufactured sand                                                     | Tilcon - Clinton Point, NY | 8-9RFM                | N/A           | 6.3%          | 6.2%                    | 123       |
|                                                                       |                            |                       | N/A           |               | 0.0%                    | 0         |
| Fine RAP                                                              | City Asphalt               | N/A                   | Yes           | 33.7%         | 32.9%                   | 658       |
|                                                                       | RAP % Asphalt: 6.2%        |                       |               | RAP AC        | 2.0%                    | 40        |
| All RAP to be from Municipal Sources - Aggregates from State Quarries |                            |                       |               | RAP Aggregate | 30.9%                   | 618       |
| Coarse RAP                                                            | City Asphalt               | N/A                   | Yes           | 6.3%          | 6.2%                    | 123       |
|                                                                       | RAP % Asphalt: 3.2%        |                       |               | RAP AC        | 0.2%                    | 4         |
| All RAP to be from Municipal Sources - Aggregates from State Quarries |                            |                       |               | RAP Aggregate | 6.0%                    | 119       |
| Virgin Asphalt                                                        | Grade: PG64-22             | SG (G <sub>b</sub> ): | 1.036         |               | 2.3%<br>2.1% CV 3/17/26 | 46        |
| Total Asphalt Content (P <sub>b</sub> ):                              |                            |                       |               |               | 4.5%<br>4.3% CV 3/17/26 | 90        |
|                                                                       |                            |                       |               | 100.0%        | 100.0%                  | 2,000     |

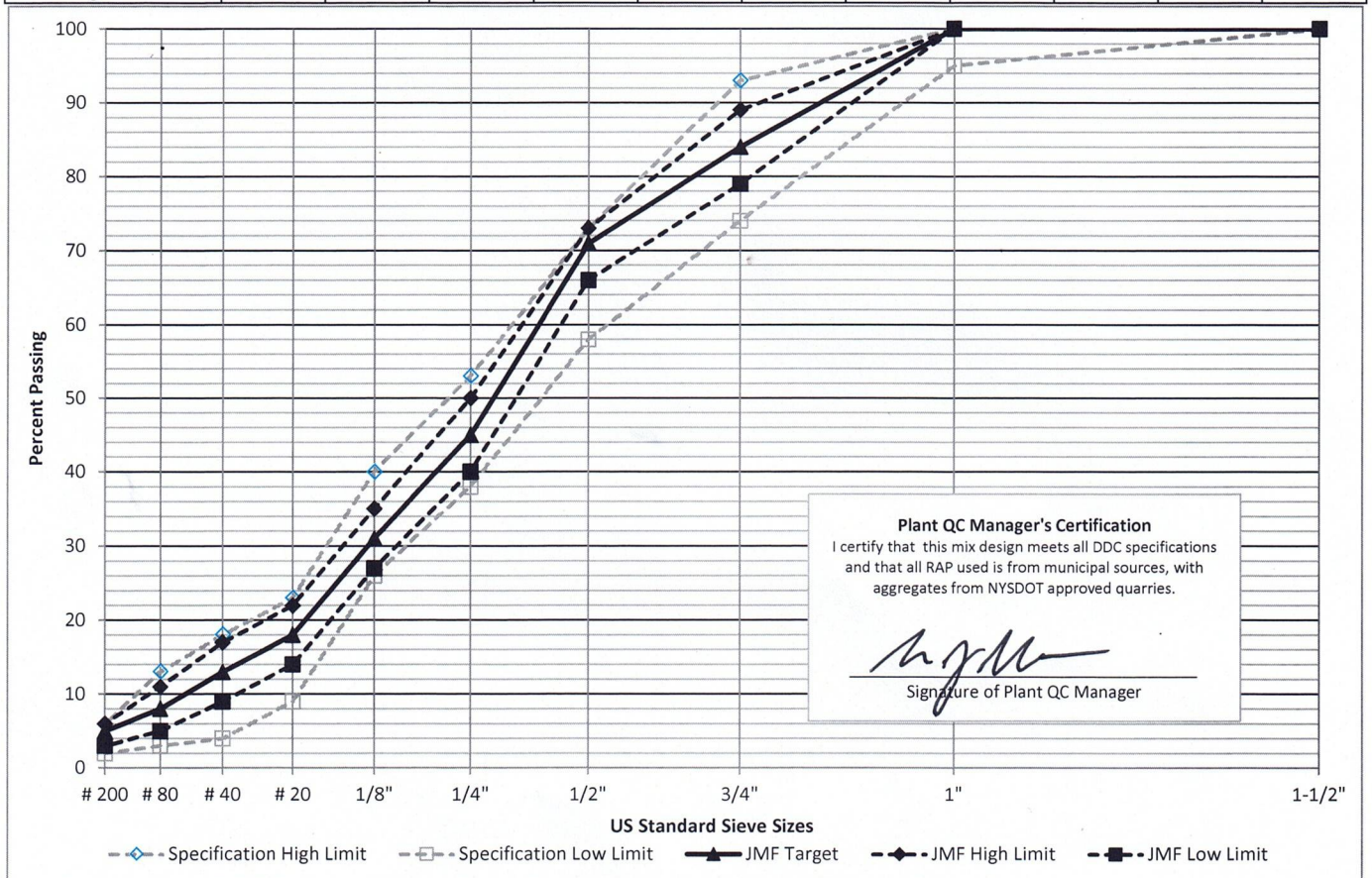
Project No: Generic  
**"APPROVED"**  
 NYC DDC - Office of Quality Assurance  
 Date: 12/19/25 Reviewed By: S.C.  
 LOG No: 2025-125

QA&CS APPROVAL STAMP

CityAsphalt/3RA/Binder/Generic/NYCDDC/12/25/125 Expiration: 12/31/2027

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 | 95-100  | 74-93 | 58-73 | 38-53 | 26-40 | 9-23  | 4-18 | 3-13 | 2-6   | 4-6            |
| JMF Target           | 100     | 100     | 84    | 71    | 45    | 31    | 18    | 13   | 8    | 5     | 4.5            |
| JMF Range            | 100-100 | 100-100 | 79-89 | 66-73 | 40-50 | 27-35 | 14-22 | 9-17 | 5-11 | 3-6   | 4-5.2          |



# QA & CONSTRUCTION SAFETY BUREAU

## AGGREGATE SPECIFIC GRAVITY & COMBINED GRADATION WORKSHEET - 3 RA BINDER MIX

PLANT NAME: City Asphalt

NYSDOT FACILITY #: H0395

MIX DESIGN DATE: 12/16/2025

### Average Bin Gradations

|        | NY #2 Stone |        | NY #1 stone |        | Not Used |        | Not Used |        | Manufactured sand |        | Not Used |        | Fine RAP |        | Coarse RAP |        |
|--------|-------------|--------|-------------|--------|----------|--------|----------|--------|-------------------|--------|----------|--------|----------|--------|------------|--------|
| Sieve  | % Ret.      | % Pass | % Ret.      | % Pass | % Ret.   | % Pass | % Ret.   | % Pass | % Ret.            | % Pass | % Ret.   | % Pass | % Ret.   | % Pass | % Ret.     | % Pass |
| 1.5"   | 0.0         | 100.0  | 0.0         | 100.0  |          | 100.0  |          | 100.0  | 0.0               | 100.0  |          | 100.0  | 0.0      | 100.0  | 0.0        | 100.0  |
| 1"     | 1.1         | 98.9   | 0.0         | 100.0  |          | 100.0  |          | 100.0  | 0.0               | 100.0  |          | 100.0  | 0.0      | 100.0  | 0.0        | 100.0  |
| 3/4"   | 49.7        | 49.2   | 0.0         | 100.0  |          | 100.0  |          | 100.0  | 0.0               | 100.0  |          | 100.0  | 0.0      | 100.0  | 0.0        | 100.0  |
| 1/2"   | 37.3        | 11.9   | 3.2         | 96.8   |          | 100.0  |          | 100.0  | 0.0               | 100.0  |          | 100.0  | 0.0      | 100.0  | 3.8        | 96.2   |
| 1/4"   | 8.7         | 3.2    | 81.0        | 15.8   |          | 100.0  |          | 100.0  | 0.0               | 100.0  |          | 100.0  | 4.6      | 95.4   | 63.5       | 32.7   |
| 1/8"   | 2.5         | 0.7    | 12.9        | 2.9    |          | 100.0  |          | 100.0  | 8.6               | 91.4   |          | 100.0  | 28.7     | 66.7   | 10.5       | 22.2   |
| #20    | 0.3         | 0.4    | 1.0         | 1.9    |          | 100.0  |          | 100.0  | 53.2              | 38.2   |          | 100.0  | 25.7     | 41.0   | 7.2        | 15.0   |
| #40    | 0.0         | 0.4    | 0.2         | 1.7    |          | 100.0  |          | 100.0  | 15.3              | 22.9   |          | 100.0  | 10.7     | 30.3   | 3.0        | 12.0   |
| #80    | 0.0         | 0.4    | 0.4         | 1.3    |          | 100.0  |          | 100.0  | 10.8              | 12.1   |          | 100.0  | 11.4     | 18.9   | 3.7        | 8.3    |
| #200   | 0.2         | 0.2    | 0.4         | 0.9    |          | 100.0  |          | 100.0  | 6.8               | 5.3    |          | 100.0  | 7.3      | 11.6   | 2.4        | 5.9    |
| Pan    | 0.2         |        | 0.9         |        |          |        |          |        | 5.3               |        |          |        | 11.6     |        | 5.9        |        |
| Totals | 100.0       |        | 100.0       |        | 0.0      |        | 0.0      |        | 100.0             |        | 0.0      |        | 100.0    |        | 100.0      |        |

Stockpiles Sampled By: Maxon Thomas Date Sampled: 10/9/2025

Gradation Technician: Maxon Thomas Date Tested: 10/9/2025

### 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)

|                           | NY #2 Stone | NY #1 stone | Not Used | Not Used | Manufactured sand | Not Used | Fine RAP | Coarse RAP |
|---------------------------|-------------|-------------|----------|----------|-------------------|----------|----------|------------|
| % Coarse Agg.             | 99.3%       | 97.1%       | ---      | ---      | 8.6%              | ---      | 33.3%    | 77.8%      |
| Test Required?            | YES         | YES         | NO       | NO       | NO                | NO       | YES      | YES        |
| A) Wt. in Air             | 1275.3      | 1432.4      |          |          |                   |          | 986.7    | 968.7      |
| B) Wt. SSD                | 1283.2      | 1446.0      |          |          |                   |          | 995.4    | 995.4      |
| C) Wt. in Water           | 836.6       | 948.0       |          |          |                   |          | 633.5    | 633.5      |
| G <sub>sb</sub> (A)/(B-C) | 2.856       | 2.876       |          |          |                   |          | 2.726    | 2.677      |
| G <sub>sa</sub> (A)/(A-C) | 2.907       | 2.957       |          |          |                   |          | 2.794    | 2.890      |

### 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.

|                               | NY #2 Stone | NY #1 stone | Not Used | Not Used | Manufactured sand | Not Used | Fine RAP | Coarse RAP |
|-------------------------------|-------------|-------------|----------|----------|-------------------|----------|----------|------------|
| % Fine Agg.                   | 0.7%        | 2.9%        | ---      | ---      | 91.4%             | ---      | 66.7%    | 22.2%      |
| Test Required?                | NO          | NO          | NO       | NO       | YES               | NO       | YES      | YES        |
| A) Wt. in Air                 |             |             |          |          | 495.4             |          | 494.6    | 494.6      |
| B) Wt. Flask + Water          |             |             |          |          | 646.0             |          | 648.0    | 648.0      |
| C) Wt. Flask + Water + Sample |             |             |          |          | 962.0             |          | 973.1    | 973.1      |
| S) Wt. SSD                    |             |             |          |          | 500.0             |          | 499.0    | 499.0      |
| G <sub>sb</sub> (A)/(B+S-C)   | ---         | ---         | ---      | ---      | 2.692             | ---      | 2.844    | 2.844      |
| G <sub>sa</sub> (A)/(B+A-C)   | ---         | ---         | ---      | ---      | 2.761             | ---      | 2.918    | 2.918      |

### Combined Aggregate Specific Gravity

|                          | NY #2 Stone | NY #1 stone | Not Used | Not Used | Manufactured sand | Not Used | Fine RAP | Coarse RAP |
|--------------------------|-------------|-------------|----------|----------|-------------------|----------|----------|------------|
| Combined G <sub>sb</sub> | 2.856       | 2.876       | ---      | ---      | 2.692             | ---      | 2.804    | 2.712      |
| Combined G <sub>sa</sub> | 2.907       | 2.957       | ---      | ---      | 2.761             | ---      | 2.875    | 2.896      |

S. G. Technician: Maxon Thomas Date Tested: 10/9/2025

### Combined Average Gradations, % Passing

| Bin                  | Agg Blend | 1.5"    | 1"     | 3/4"  | 1/2"  | 1/4"  | 1/8"  | #20  | #40  | #80  | #200 |
|----------------------|-----------|---------|--------|-------|-------|-------|-------|------|------|------|------|
| NY #2 Stone          | 31.7%     | 31.7    | 31.4   | 15.6  | 3.8   | 1.0   | 0.2   | 0.1  | 0.1  | 0.1  | 0.1  |
| NY #1 stone          | 22.0%     | 22.0    | 22.0   | 22.0  | 21.3  | 3.5   | 0.6   | 0.4  | 0.4  | 0.3  | 0.2  |
| 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  |
| Manufactured sand    | 6.3%      | 6.3     | 6.3    | 6.3   | 6.3   | 6.3   | 5.8   | 2.4  | 1.4  | 0.8  | 0.3  |
| 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             | 33.7%     | 33.7    | 33.7   | 33.7  | 33.7  | 32.1  | 22.5  | 13.8 | 10.2 | 6.4  | 3.9  |
| Coarse RAP           | 6.3%      | 6.3     | 6.3    | 6.3   | 6.1   | 2.1   | 1.4   | 0.9  | 0.8  | 0.5  | 0.4  |
| Total                | 100.0%    | 100.0   | 99.7   | 83.9  | 71.1  | 45.0  | 30.5  | 17.7 | 12.9 | 8.1  | 4.9  |
| Specification Limits |           | 100-100 | 95-100 | 74-93 | 58-73 | 38-53 | 26-40 | 9-23 | 4-18 | 3-13 | 2-6  |

**QA & CONSTRUCTION SAFETY BUREAU**  
**ASPHALT TRIAL GRADATION WORKSHEET - 3 RA BINDER MIX**

PLANT NAME: City Asphalt

NYSDOT FACILITY #: H0395

MIX DESIGN DATE: 12/16/2025

**BATCH 1**

Batch P<sub>B</sub>: 3.3%

Batch Grams: 4000.0

**Batch Weights, Retained on Sieve - Grams**

| 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   |        |
|-------------------|------------|-----------|-------------|-------------|------|------|-------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| NY #2 Stone       | 31.7%      | 30.7%     | 1226.2      |             | 0.0  | 13.5 | 609.4 | 457.4 | 106.7  | 30.7  | 3.7   | 0.0   | 0.0   | 2.5   | 2.5   | 1226.2 |
| NY #1 stone       | 22.0%      | 21.3%     | 851.0       |             | 0.0  | 0.0  | 0.0   | 27.2  | 689.3  | 109.8 | 8.5   | 1.7   | 3.4   | 3.4   | 7.7   | 851.0  |
| 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    |
| Manufactured sand | 6.3%       | 6.1%      | 243.7       |             | 0.0  | 0.0  | 0.0   | 0.0   | 0.0    | 21.0  | 129.6 | 37.3  | 26.3  | 16.6  | 12.9  | 243.7  |
| 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          | 33.7%      | 34.7%     | 1389.7      | 86.2        | 0.0  | 0.0  | 0.0   | 0.0   | 63.9   | 398.8 | 357.1 | 148.7 | 158.4 | 101.4 | 75.0  | 1389.7 |
| Coarse RAP        | 6.3%       | 6.3%      | 251.7       | 8.1         | 0.0  | 0.0  | 0.0   | 9.6   | 159.9  | 26.4  | 18.1  | 7.6   | 9.3   | 6.0   | 6.8   | 251.7  |
| Virgin Asphalt    |            | 0.9%      | 37.8        | 37.8        |      |      |       |       |        |       |       |       |       |       |       | 37.8   |
| Total Mix         | 100.0%     | 100.0%    | 4000.0      | 132.0       | 0.0  | 13.5 | 609.4 | 494.2 | 1019.7 | 586.7 | 517.1 | 195.2 | 197.5 | 129.9 | 104.9 | 4000.0 |

3.30%

**BATCH 2**

Batch P<sub>B</sub>: 3.8%

Batch Grams: 4000.0

**Batch Weights, Retained on Sieve - Grams**

| 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   |        |
|-------------------|------------|-----------|-------------|-------------|------|------|-------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| NY #2 Stone       | 31.7%      | 30.5%     | 1219.8      |             | 0.0  | 13.4 | 606.2 | 455.0 | 106.1  | 30.5  | 3.7   | 0.0   | 0.0   | 2.4   | 2.4   | 1219.8 |
| NY #1 stone       | 22.0%      | 21.2%     | 846.6       |             | 0.0  | 0.0  | 0.0   | 27.1  | 685.7  | 109.2 | 8.5   | 1.7   | 3.4   | 3.4   | 7.6   | 846.6  |
| 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    |
| 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    |
| Manufactured sand | 6.3%       | 6.1%      | 242.4       |             | 0.0  | 0.0  | 0.0   | 0.0   | 0.0    | 20.8  | 129.0 | 37.1  | 26.2  | 16.5  | 12.8  | 242.4  |
| 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    |
| Fine RAP          | 33.7%      | 34.6%     | 1382.5      | 85.7        | 0.0  | 0.0  | 0.0   | 0.0   | 63.6   | 396.8 | 355.3 | 147.9 | 157.6 | 100.9 | 74.7  | 1382.5 |
| Coarse RAP        | 6.3%       | 6.3%      | 250.4       | 8.0         | 0.0  | 0.0  | 0.0   | 9.5   | 159.0  | 26.3  | 18.0  | 7.5   | 9.3   | 6.0   | 6.8   | 250.4  |
| Virgin Asphalt    |            | 1.5%      | 58.3        | 58.3        |      |      |       |       |        |       |       |       |       |       |       | 58.3   |
| Total Mix         | 100.0%     | 100.0%    | 4000.0      | 152.0       | 0.0  | 13.4 | 606.2 | 491.6 | 1014.5 | 583.6 | 514.4 | 194.2 | 196.4 | 129.2 | 104.3 | 4000.0 |

3.80%

**BATCH 3**

Batch P<sub>B</sub>: 4.3%

Batch Grams: 4000.0

**Batch Weights, Retained on Sieve - Grams**

| 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   |        |
|-------------------|------------|-----------|-------------|-------------|------|------|-------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| NY #2 Stone       | 31.7%      | 30.3%     | 1213.5      |             | 0.0  | 13.3 | 603.1 | 452.6 | 105.6  | 30.3  | 3.6   | 0.0   | 0.0   | 2.4   | 2.4   | 1213.5 |
| NY #1 stone       | 22.0%      | 21.1%     | 842.2       |             | 0.0  | 0.0  | 0.0   | 26.9  | 682.1  | 108.6 | 8.4   | 1.7   | 3.4   | 3.4   | 7.6   | 842.2  |
| 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    |
| Manufactured sand | 6.3%       | 6.0%      | 241.2       |             | 0.0  | 0.0  | 0.0   | 0.0   | 0.0    | 20.7  | 128.3 | 36.9  | 26.0  | 16.4  | 12.8  | 241.2  |
| 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          | 33.7%      | 34.4%     | 1375.3      | 85.3        | 0.0  | 0.0  | 0.0   | 0.0   | 63.3   | 394.7 | 353.5 | 147.2 | 156.8 | 100.4 | 74.3  | 1375.3 |
| Coarse RAP        | 6.3%       | 6.2%      | 249.1       | 8.0         | 0.0  | 0.0  | 0.0   | 9.5   | 158.2  | 26.2  | 17.9  | 7.5   | 9.2   | 6.0   | 6.7   | 249.1  |
| Virgin Asphalt    |            | 2.0%      | 78.8        | 78.8        |      |      |       |       |        |       |       |       |       |       |       | 78.8   |
| Total Mix         | 100.0%     | 100.0%    | 4000.0      | 172.0       | 0.0  | 13.3 | 603.1 | 489.0 | 1009.2 | 580.6 | 511.8 | 193.2 | 195.4 | 128.6 | 103.8 | 4000.0 |

4.30%

**BATCH 4**

Batch P<sub>B</sub>: 4.8%

Batch Grams: 4000.0

**Batch Weights, Retained on Sieve - Grams**

| 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   |        |
|-------------------|------------|-----------|-------------|-------------|------|------|-------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| NY #2 Stone       | 31.7%      | 30.2%     | 1207.1      |             | 0.0  | 13.3 | 599.9 | 450.3 | 105.0  | 30.2  | 3.6   | 0.0   | 0.0   | 2.4   | 2.4   | 1207.1 |
| NY #1 stone       | 22.0%      | 20.9%     | 837.8       |             | 0.0  | 0.0  | 0.0   | 26.8  | 678.6  | 108.1 | 8.4   | 1.7   | 3.4   | 3.4   | 7.5   | 837.8  |
| 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    |
| Manufactured sand | 6.3%       | 6.0%      | 239.9       |             | 0.0  | 0.0  | 0.0   | 0.0   | 0.0    | 20.6  | 127.6 | 36.7  | 25.9  | 16.3  | 12.7  | 239.9  |
| 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    |
| Fine RAP          | 33.7%      | 34.2%     | 1368.1      | 84.8        | 0.0  | 0.0  | 0.0   | 0.0   | 62.9   | 392.7 | 351.6 | 146.4 | 156.0 | 99.9  | 73.9  | 1368.1 |
| Coarse RAP        | 6.3%       | 6.2%      | 247.8       | 7.9         | 0.0  | 0.0  | 0.0   | 9.4   | 157.4  | 26.0  | 17.8  | 7.4   | 9.2   | 5.9   | 6.7   | 247.8  |
| Virgin Asphalt    |            | 2.5%      | 99.2        | 99.2        |      |      |       |       |        |       |       |       |       |       |       | 99.2   |
| Total Mix         | 100.0%     | 100.0%    | 4000.0      | 192.0       | 0.0  | 13.3 | 599.9 | 486.5 | 1003.9 | 577.6 | 509.1 | 192.2 | 194.4 | 127.9 | 103.2 | 4000.0 |

4.80%

**BATCH 5**

Batch P<sub>B</sub>: 5.3%

Batch Grams: 4000.0

**Batch Weights, Retained on Sieve - Grams**

| 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   |        |
|-------------------|------------|-----------|-------------|-------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| NY #2 Stone       | 31.7%      | 30.0%     | 1200.8      |             | 0.0  | 13.2 | 596.8 | 447.9 | 104.5 | 30.0  | 3.6   | 0.0   | 0.0   | 2.4   | 2.4   | 1200.8 |
| NY #1 stone       | 22.0%      | 20.8%     | 833.4       |             | 0.0  | 0.0  | 0.0   | 26.7  | 675.0 | 107.5 | 8.3   | 1.7   | 3.3   | 3.3   | 7.5   | 833.4  |
| 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    |
| 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    |
| Manufactured sand | 6.3%       | 6.0%      | 238.6       |             | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   | 20.5  | 127.0 | 36.5  | 25.8  | 16.2  | 12.6  | 238.6  |
| 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    |
| Fine RAP          | 33.7%      | 34.0%     | 1360.9      | 84.4        | 0.0  | 0.0  | 0.0   | 0.0   | 62.6  | 390.6 | 349.8 | 145.6 | 155.1 | 99.3  | 73.5  | 1360.9 |
| Coarse RAP        | 6.3%       | 6.2%      | 246.5       | 7.9         | 0.0  | 0.0  | 0.0   | 9.4   | 156.5 | 25.9  | 17.8  | 7.4   | 9.1   | 5.9   | 6.7   | 246.5  |
| Virgin Asphalt    |            | 3.0%      | 119.7       | 119.7       |      |      |       |       |       |       |       |       |       |       |       | 119.7  |
| Total Mix         | 100.0%     | 100.0%    | 4000.0      | 212.0       | 0.0  | 13.2 | 596.8 | 483.9 | 998.6 | 574.5 | 506.4 | 191.2 | 193.4 | 127.2 | 102.7 | 4000.0 |

5.30%

# QA & CONSTRUCTION SAFETY BUREAU

## ASPHALT MAXIMUM DENSITY & MARSHALL PROPERTIES WORKSHEET - 3 RA BINDER MIX

PLANT NAME: City Asphalt

NYSDOT FACILITY #: H0395

MIX DESIGN DATE: 12/16/2025

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

| Trial Batch                             | 1      |        | 2      |        | 3      |        | 4      |        | 5      |        |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| $P_b$                                   | 3.3%   |        | 3.8%   |        | 4.3%   |        | 4.8%   |        | 5.3%   |        |
| A) Sample in Air (grams)                | 2003.8 | 1994.3 | 1995.1 | 2001.1 | 1997.4 | 1999.6 | 2001.8 | 1997.7 | 2004.4 | 1994.1 |
| 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) | 2690.4 | 2693.0 | 2675.3 | 2687.2 | 2671.5 | 2679.4 | 2667.6 | 2674.1 | 2665.3 | 2664.7 |
| $G_{mm} (A/(A+B-C))$                    | 2.686  | 2.690  | 2.652  | 2.654  | 2.633  | 2.630  | 2.611  | 2.616  | 2.597  | 2.591  |
| Average $G_{mm}$                        | 2.688  |        | 2.653  |        | 2.632  |        | 2.613  |        | 2.594  |        |

Density Technician:

Maxon Thomas

Date Tested:

11/19/2025

### 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

 $P_b = 3.3\%$ 

|            |        |        |       |       |       |       |      |       |      |      |      |     |
|------------|--------|--------|-------|-------|-------|-------|------|-------|------|------|------|-----|
| Specimen A | 1308.8 | 1314.5 | 792.1 | 522.4 | 2.505 | 2.688 | 6.8% | 3976  | 1    | 3980 | 9.2  | 433 |
| Specimen B | 1310.4 | 1316.6 | 793.3 | 523.3 | 2.504 | 2.688 | 6.8% | 4055  | 0.96 | 3890 | 9.5  | 409 |
| Specimen C | 1311.7 | 1318.2 | 793.2 | 525.0 | 2.498 | 2.688 | 7.1% | 3880  | 0.96 | 3720 | 10.0 | 372 |
| Average    |        |        |       |       | 2.503 | 2.688 | 6.9% | 156.2 |      | 3860 | 9.6  | 405 |

#### TRIAL BATCH 2

 $P_b = 3.8\%$ 

|            |        |        |       |       |       |       |      |       |   |      |      |     |
|------------|--------|--------|-------|-------|-------|-------|------|-------|---|------|------|-----|
| Specimen A | 1312.6 | 1316.1 | 793.2 | 522.9 | 2.510 | 2.653 | 5.4% | 3671  | 1 | 3670 | 10.4 | 353 |
| Specimen B | 1309.1 | 1315.5 | 794.3 | 521.2 | 2.512 | 2.653 | 5.3% | 3845  | 1 | 3850 | 10.2 | 377 |
| Specimen C | 1310.5 | 1316.6 | 793.7 | 522.9 | 2.506 | 2.653 | 5.5% | 3920  | 1 | 3920 | 9.8  | 400 |
| Average    |        |        |       |       | 2.509 | 2.653 | 5.4% | 156.6 |   | 3810 | 10.1 | 377 |

#### TRIAL BATCH 3

 $P_b = 4.3\%$ 

|            |        |        |       |       |       |       |      |       |   |      |      |     |
|------------|--------|--------|-------|-------|-------|-------|------|-------|---|------|------|-----|
| Specimen A | 1310.6 | 1313.8 | 795.1 | 518.7 | 2.527 | 2.632 | 4.0% | 3533  | 1 | 3530 | 10.9 | 324 |
| Specimen B | 1309.8 | 1313.0 | 794.2 | 518.8 | 2.525 | 2.632 | 4.1% | 3612  | 1 | 3610 | 11.2 | 322 |
| Specimen C | 1311.3 | 1314.4 | 796.2 | 518.2 | 2.530 | 2.632 | 3.9% | 3490  | 1 | 3490 | 10.6 | 329 |
| Average    |        |        |       |       | 2.527 | 2.632 | 4.0% | 157.7 |   | 3540 | 10.9 | 325 |

#### TRIAL BATCH 4

 $P_b = 4.8\%$ 

|            |        |        |       |       |       |       |      |       |   |      |      |     |
|------------|--------|--------|-------|-------|-------|-------|------|-------|---|------|------|-----|
| Specimen A | 1309.5 | 1312.1 | 797.7 | 514.4 | 2.546 | 2.613 | 2.6% | 2895  | 1 | 2900 | 11.5 | 252 |
| Specimen B | 1311.3 | 1314.0 | 798.6 | 515.4 | 2.544 | 2.613 | 2.6% | 3038  | 1 | 3040 | 11.8 | 258 |
| Specimen C | 1308.8 | 1312.2 | 798.0 | 514.2 | 2.545 | 2.613 | 2.6% | 3145  | 1 | 3150 | 11.4 | 276 |
| Average    |        |        |       |       | 2.545 | 2.613 | 2.6% | 158.8 |   | 3030 | 11.6 | 262 |

#### TRIAL BATCH 5

 $P_b = 5.3\%$ 

|            |        |        |       |       |       |       |      |       |   |      |      |     |
|------------|--------|--------|-------|-------|-------|-------|------|-------|---|------|------|-----|
| Specimen A | 1309.9 | 1311.0 | 799.4 | 511.6 | 2.560 | 2.594 | 1.3% | 2863  | 1 | 2860 | 11.8 | 242 |
| Specimen B | 1311.6 | 1312.5 | 800.6 | 511.9 | 2.562 | 2.594 | 1.2% | 2618  | 1 | 2620 | 12.3 | 213 |
| Specimen C | 1312.5 | 1313.4 | 801.0 | 512.4 | 2.561 | 2.594 | 1.3% | 2688  | 1 | 2690 | 12.6 | 213 |
| Average    |        |        |       |       | 2.561 | 2.594 | 1.3% | 159.8 |   | 2720 | 12.2 | 223 |

Marshall Technician:

Maxon Thomas

Date Tested:

11/19/2025

# QA & CONSTRUCTION SAFETY BUREAU

## MIX VOLUMETRIC PROPERTIES WORKSHEET - 3 RA BINDER MIX

|        |              |                    |       |                  |            |
|--------|--------------|--------------------|-------|------------------|------------|
| PLANT: | City Asphalt | NYSDOT FACILITY #: | H0395 | MIX DESIGN DATE: | 12/16/2025 |
|--------|--------------|--------------------|-------|------------------|------------|

| Agg. Blend % | Constituent Material | NYSDOT Source | G <sub>sa</sub> | G <sub>sb</sub> | Total Mix Composition by Weight |        |        |        |        |
|--------------|----------------------|---------------|-----------------|-----------------|---------------------------------|--------|--------|--------|--------|
|              |                      |               |                 |                 | Trial Batch                     |        |        |        |        |
|              |                      |               |                 |                 | 1                               | 2      | 3      | 4      | 5      |
| 31.7%        | NY #2 Stone          | 8-9R          | 2.907           | 2.856           | 30.7%                           | 30.5%  | 30.3%  | 30.2%  | 30.0%  |
| 22.0%        | NY #1 stone          | 8-8R          | 2.957           | 2.876           | 21.3%                           | 21.2%  | 21.1%  | 20.9%  | 20.8%  |
| 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%   |
| 6.3%         | Manufactured sand    | 8-9RFM        | 2.761           | 2.692           | 6.1%                            | 6.1%   | 6.0%   | 6.0%   | 6.0%   |
| 0.0%         | Not Used             | ---           | ---             | ---             | 0.0%                            | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| 33.7%        | Fine RAP             |               | 2.875           | 2.804           | 34.7%                           | 34.6%  | 34.4%  | 34.2%  | 34.0%  |
| 6.3%         | Coarse RAP           |               | 2.896           | 2.712           | 6.3%                            | 6.3%   | 6.2%   | 6.2%   | 6.2%   |
|              | Virgin Asphalt       |               |                 |                 | 0.9%                            | 1.5%   | 2.0%   | 2.5%   | 3.0%   |
| 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, %      |  | 3.3%        | 3.8%  | 4.3%  | 4.8%  | 5.3%  |
| P <sub>ba</sub>        | Percent Absorbed Asphalt Binder, %   |  | 0.27%       | 0.06% | 0.08% | 0.10% | 0.13% |
| P <sub>be</sub>        | Percent Effective Asphalt Binder, %  |  | 3.04%       | 3.74% | 4.23% | 4.70% | 5.18% |
| DP                     | Dust Proportion (0.6 to 1.2 desired) |  | 0.6         | 0.8   | 0.9   | 1.0   | 1.1   |
| G <sub>mm</sub>        | Mix Maximum Specific Gravity         |  | 2.688       | 2.653 | 2.632 | 2.613 | 2.594 |
| G <sub>mb</sub>        | Mix Bulk Specific Gravity            |  | 2.503       | 2.509 | 2.527 | 2.545 | 2.561 |
| G <sub>sb</sub>        | Aggregate Bulk Gravity               |  | 2.822       | 2.822 | 2.822 | 2.822 | 2.822 |
| G <sub>se</sub>        | Aggregate Effective Gravity          |  | 2.843       | 2.827 | 2.828 | 2.830 | 2.832 |
| G <sub>sa</sub>        | Aggregate Apparent Specific Gravity  |  | 2.897       | 2.897 | 2.897 | 2.897 | 2.897 |

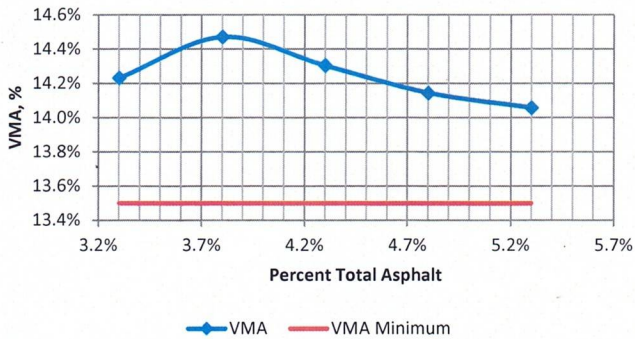
| Mix Acceptance Properties                                           |                                    |       | Low Limit | High Limit | Trial Batch |         |         |         |         |
|---------------------------------------------------------------------|------------------------------------|-------|-----------|------------|-------------|---------|---------|---------|---------|
|                                                                     |                                    |       |           |            | 1           | 2       | 3       | 4       | 5       |
| VMA                                                                 | Voids in Mineral Aggregate, %      | 13.5% |           |            | ✓ 14.2%     | ✓ 14.5% | ✓ 14.3% | ✓ 14.1% | ✓ 14.1% |
| Note: All five trial batches must meet the minimum VMA requirement. |                                    |       |           |            |             |         |         |         |         |
| VFA                                                                 | Voids Filled with Asphalt, %       | 65%   | 75%       |            | ✗ 51.7%     | ✗ 62.5% | ✓ 72.1% | ✗ 81.6% | ✗ 91.0% |
| P <sub>a</sub>                                                      | Percent Air Voids, %               | 3.0%  | 5.0%      |            | ✗ 6.9%      | ✗ 5.4%  | ✓ 4.0%  | ✗ 2.6%  | ✗ 1.3%  |
| ---                                                                 | Marshall Stability (Corrected), lb | 1500  |           |            | ✓ 3860      | ✓ 3810  | ✓ 3540  | ✓ 3030  | ✓ 2720  |
| ---                                                                 | Marshall Flow, 0.01"               | 8     | 12        |            | ✓ 9.6       | ✓ 10.1  | ✓ 10.9  | ✓ 11.6  | ✗ 12.2  |
| ---                                                                 | Marshall Quotient, lb/0.01"        | 150   |           |            | ✓ 405       | ✓ 377   | ✓ 325   | ✓ 262   | ✓ 223   |

PLANT NAME: City Asphalt

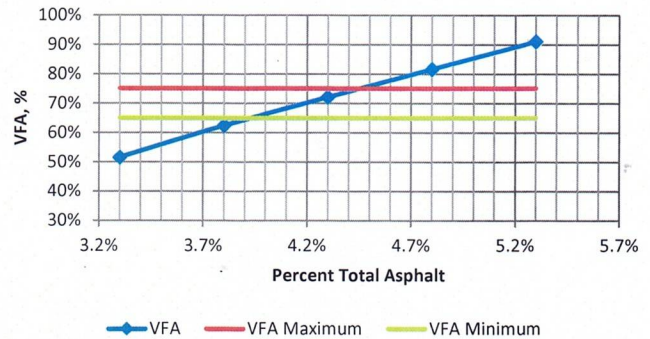
NYSDOT FACILITY #: H0395

MIX DESIGN DATE: 12/16/2025

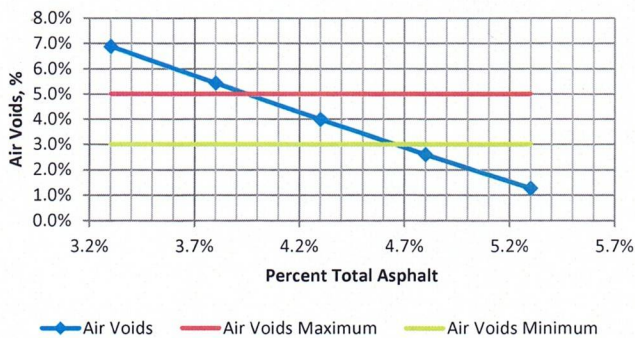
**Voids in Mineral Aggregate**



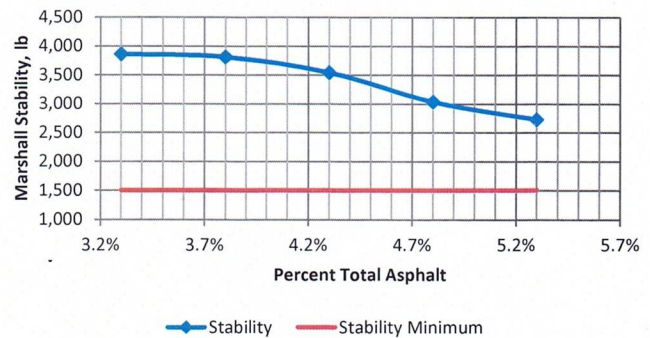
**Voids Filled with Asphalt**



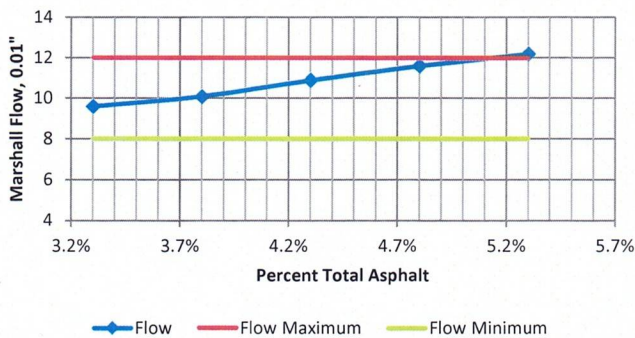
**Air Voids**



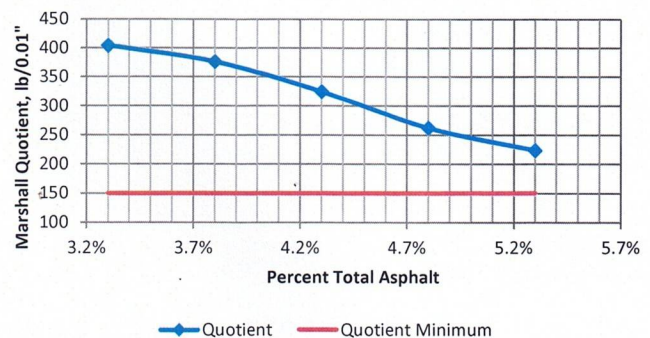
**Marshall Stability**



**Marshall Flow**



**Marshall Quotient**



| Property                            | High | Low  |
|-------------------------------------|------|------|
| Voids in Mineral Aggregate (VMA), % | 5.3% | 3.3% |
| Voids Filled with Asphalt (VFA), %  | 4.5% | 4.0% |
| Percent Air Voids, %                | 4.7% | 3.9% |
| Marshall Stability (Corrected), lb  | 5.3% | 3.3% |
| Marshall Flow, 0.01"                | 5.2% | 3.3% |
| Marshall Quotient, lb/0.01"         | 5.3% | 3.3% |
| Overlap                             | 5.3% | 3.3% |

| Properties at Desired AC% |
|---------------------------|
| 14.3%                     |
| 72.1%                     |
| 4.0%                      |
| 3540                      |
| 10.9                      |
| 318.4                     |

|          |      |
|----------|------|
| Midpoint | 4.3% |
|----------|------|

|                                              |      |
|----------------------------------------------|------|
| Desired Total Asphalt Content P <sub>b</sub> | 4.3% |
|----------------------------------------------|------|

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.