

Aggregate Optimization Chart

PLANT #: **P-101**

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____



Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1575 | 9.63 | 2.62 | 51.6 |
| 26A | 71-47 | Presque Isle | 250 | 1.53 | 2.62 | 8.2 |
| 2NS | 75-051 | Mid Michigan | 1230 | 7.41 | 2.66 | 40.3 |
| Total Wt | | | 3055 | 18.57 | | 100.0 |

<---- Verify this number is 100%

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 97.0 | 100.0 | 100.0 | 98.5 | 1.5 | 1.5 |
| 3/4" | 81.0 | 100.0 | 100.0 | 90.2 | 8.2 | 9.8 |
| 1/2" | 39.4 | 95.8 | 100.0 | 68.4 | 21.8 | 31.6 |
| 3/8" | 24.3 | 86.4 | 100.0 | 59.9 | 8.6 | 40.1 |
| #4 | 4.8 | 21.7 | 96.4 | 43.1 | 16.8 | 56.9 |
| #8 | 2.4 | 6.0 | 80.1 | 34.0 | 9.1 | 66.0 |
| #16 | 2.1 | 3.2 | 64.8 | 27.4 | 6.5 | 72.6 |
| #30 | 2.0 | 2.6 | 50.1 | 21.4 | 6.0 | 78.6 |
| #50 | 2.0 | 2.3 | 26.9 | 12.0 | 9.4 | 88.0 |
| #100 | 1.9 | 2.2 | 7.1 | 4.0 | 8.0 | 96.0 |
| LBW | 1.6 | 2.0 | 1.4 | 1.6 | 2.5 | 98.4 |

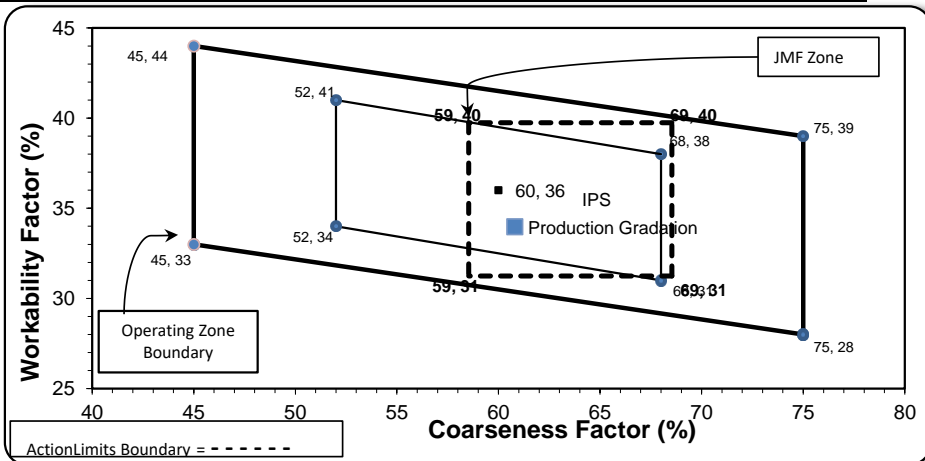
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

| | | | |
|---------------------------|-----------|----------------------------|-----------|
| Coarseness Factor: | 61 | Workability Factor: | 34 |
|---------------------------|-----------|----------------------------|-----------|

Initial Production Sample (IPS)

| | |
|----------------------------|-----------|
| Coarseness Factor: | 64 |
| Workability Factor: | 35 |



| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 0.0 | 0.0 |
| 3/4" | 93.9 | 6.1 | 6.1 |
| 1/2" | 71.4 | 22.5 | 28.6 |
| 3/8" | 59.0 | 12.4 | 41.0 |
| #4 | 45.1 | 13.9 | 54.9 |
| #8 | 35.5 | 9.6 | 64.5 |
| #16 | 28.3 | 7.2 | 71.7 |
| #30 | 21.3 | 6.9 | 78.7 |
| #50 | 11.0 | 10.3 | 89.0 |
| #100 | 3.4 | 7.6 | 96.6 |
| LBW | 1.1 | 2.3 | 98.9 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-102**

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|---------------|--------------|-----------------|------------------|----------------|
| 6AA | 58-003 | Stoneco | 1650 | 9.83 | 2.69 | 53.2 |
| 26A | 58-003 | Stoneco | 250 | 1.49 | 2.69 | 8.1 |
| 2NS | 81-019 | Pleasant Lake | 1200 | 7.26 | 2.65 | 38.7 |
| Total Wt | | | 3100 | 18.58 | | 100.0 |

<----- Verify this number is 100%



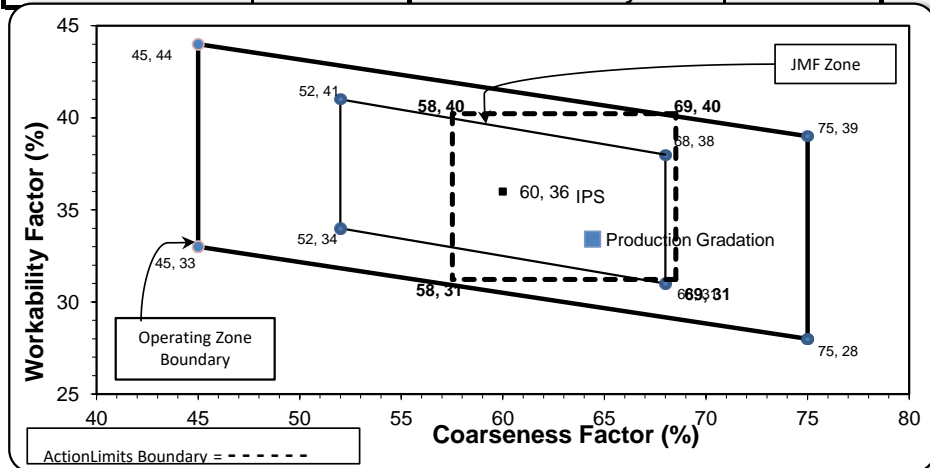
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 98.5 | 100.0 | 100.0 | 99.2 | 0.8 | 0.8 |
| 3/4" | 79.6 | 100.0 | 100.0 | 89.1 | 10.1 | 10.9 |
| 1/2" | 42.3 | 99.0 | 100.0 | 69.2 | 19.9 | 30.8 |
| 3/8" | 21.6 | 85.6 | 100.0 | 57.1 | 12.1 | 42.9 |
| #4 | 2.8 | 6.8 | 98.7 | 40.2 | 16.9 | 59.8 |
| #8 | 1.4 | 1.4 | 84.1 | 33.4 | 6.8 | 66.6 |
| #16 | 1.3 | 1.0 | 66.6 | 26.6 | 6.9 | 73.4 |
| #30 | 1.2 | 0.9 | 47.3 | 19.0 | 7.5 | 81.0 |
| #50 | 1.1 | 0.8 | 23.4 | 9.7 | 9.3 | 90.3 |
| #100 | 1.1 | 0.8 | 6.3 | 3.1 | 6.6 | 96.9 |
| LBW | 0.8 | 0.7 | 1.2 | 0.9 | 2.1 | 99.1 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **64** **Workability Factor:** **33**



Initial Production Sample (IPS)

Coarseness Factor: **63**
Workability Factor: **36**

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.2 | 0.8 | 0.8 |
| 3/4" | 90.9 | 8.3 | 9.1 |
| 1/2" | 71.3 | 19.6 | 28.7 |
| 3/8" | 59.5 | 11.8 | 40.5 |
| #4 | 43.8 | 15.7 | 56.2 |
| #8 | 35.7 | 8.1 | 64.3 |
| #16 | 27.0 | 8.7 | 73.0 |
| #30 | 18.6 | 8.4 | 81.4 |
| #50 | 6.8 | 11.8 | 93.2 |
| #100 | 1.4 | 5.4 | 98.6 |
| LBW | 0.6 | 0.8 | 99.4 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-103**

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|---------------|--------------|-----------------|------------------|----------------|
| 6AA | 58-003 | Stoneco | 1650 | 9.83 | 2.69 | 53.2 |
| 26A | 58-003 | Stoneco | 250 | 1.49 | 2.69 | 8.1 |
| 2NS | 81-019 | Pleasant Lake | 1200 | 7.26 | 2.65 | 38.7 |
| Total Wt | | | 3100 | 18.58 | | 100.0 |

<----- Verify this number is 100%



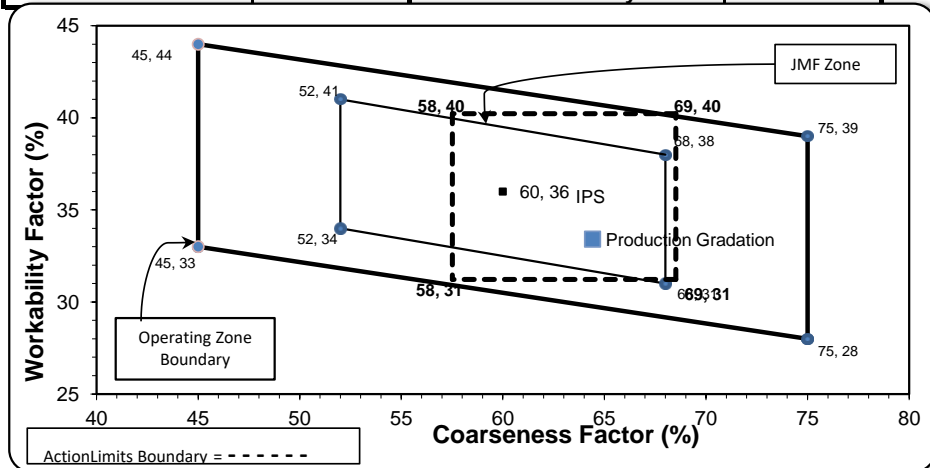
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 98.5 | 100.0 | 100.0 | 99.2 | 0.8 | 0.8 |
| 3/4" | 79.6 | 100.0 | 100.0 | 89.1 | 10.1 | 10.9 |
| 1/2" | 42.3 | 99.0 | 100.0 | 69.2 | 19.9 | 30.8 |
| 3/8" | 21.6 | 85.6 | 100.0 | 57.1 | 12.1 | 42.9 |
| #4 | 2.8 | 6.8 | 98.7 | 40.2 | 16.9 | 59.8 |
| #8 | 1.4 | 1.4 | 84.1 | 33.4 | 6.8 | 66.6 |
| #16 | 1.3 | 1.0 | 66.6 | 26.6 | 6.9 | 73.4 |
| #30 | 1.2 | 0.9 | 47.3 | 19.0 | 7.5 | 81.0 |
| #50 | 1.1 | 0.8 | 23.4 | 9.7 | 9.3 | 90.3 |
| #100 | 1.1 | 0.8 | 6.3 | 3.1 | 6.6 | 96.9 |
| LBW | 0.8 | 0.7 | 1.2 | 0.9 | 2.1 | 99.1 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **64** **Workability Factor:** **33**



Initial Production Sample (IPS)

Coarseness Factor: **63**
Workability Factor: **36**

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.2 | 0.8 | 0.8 |
| 3/4" | 90.9 | 8.3 | 9.1 |
| 1/2" | 71.3 | 19.6 | 28.7 |
| 3/8" | 59.5 | 11.8 | 40.5 |
| #4 | 43.8 | 15.7 | 56.2 |
| #8 | 35.7 | 8.1 | 64.3 |
| #16 | 27.0 | 8.7 | 73.0 |
| #30 | 18.6 | 8.4 | 81.4 |
| #50 | 6.8 | 11.8 | 93.2 |
| #100 | 1.4 | 5.4 | 98.6 |
| LBW | 0.6 | 0.8 | 99.4 |

PREPARED BY:
 SM, LLC Technical Service

Approved BY:

Aggregate Optimization Chart

PLANT #: 14

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|----------|--------------|-----------------|------------------|----------------|
| 6AA | 58-003 | Stoneco | 1600 | 9.53 | 2.69 | 51.4 |
| 26A | 58-003 | Stoneco | 300 | 1.79 | 2.69 | 9.6 |
| 2NS | 19-04 | Schlegel | 1210 | 7.26 | 2.67 | 38.9 |
| Total Wt | | | 3110 | 18.58 | | 100.0 |

<----- Verify this number is 100%



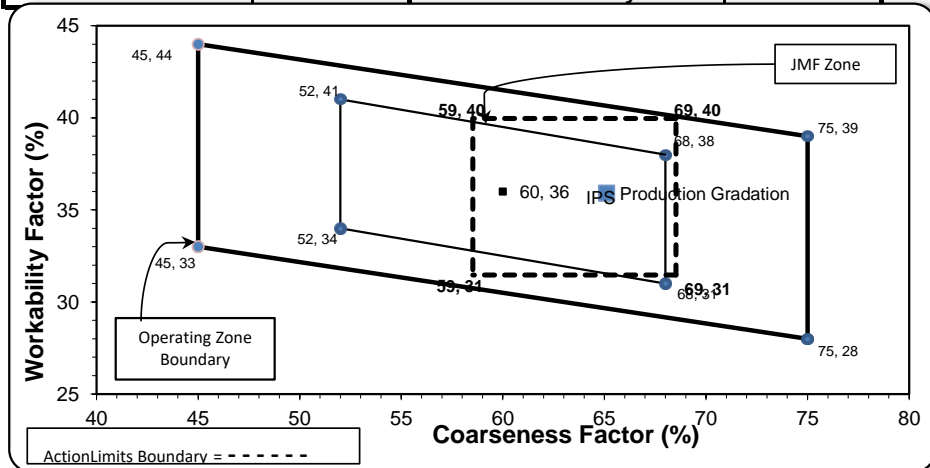
Builders Redi-Mix
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 98.5 | 100.0 | 100.0 | 99.2 | 0.8 | 0.8 |
| 3/4" | 79.6 | 100.0 | 100.0 | 89.5 | 9.7 | 10.5 |
| 1/2" | 42.3 | 99.0 | 100.0 | 70.2 | 19.3 | 29.8 |
| 3/8" | 21.6 | 85.6 | 100.0 | 58.3 | 11.9 | 41.7 |
| #4 | 2.8 | 6.8 | 99.9 | 41.0 | 17.3 | 59.0 |
| #8 | 1.4 | 1.4 | 90.1 | 35.9 | 5.1 | 64.1 |
| #16 | 1.3 | 1.0 | 69.4 | 27.8 | 8.1 | 72.2 |
| #30 | 1.2 | 0.9 | 44.5 | 18.0 | 9.7 | 82.0 |
| #50 | 1.1 | 0.8 | 14.3 | 6.2 | 11.8 | 93.8 |
| #100 | 1.1 | 0.8 | 2.7 | 1.7 | 4.5 | 98.3 |
| LBW | 0.8 | 0.7 | 0.2 | 0.6 | 1.1 | 99.4 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 65 **Workability Factor:** 36



Initial Production Sample (IPS)

Coarseness Factor: 64
Workability Factor: 36

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.2 | 0.8 | 0.8 |
| 3/4" | 90.9 | 8.3 | 9.1 |
| 1/2" | 71.3 | 19.6 | 28.7 |
| 3/8" | 59.2 | 12.1 | 40.8 |
| #4 | 41.5 | 17.7 | 58.5 |
| #8 | 35.7 | 5.8 | 64.3 |
| #16 | 27.9 | 7.9 | 72.1 |
| #30 | 18.3 | 9.5 | 81.7 |
| #50 | 7.3 | 11.0 | 92.7 |
| #100 | 2.0 | 5.3 | 98.0 |
| LBW | 0.9 | 1.1 | 99.1 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: 12

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1600 | 9.79 | 2.62 | 52.5 |
| 26A | 71-47 | Presque Isle | 220 | 1.35 | 2.62 | 7.2 |
| 2NS | 63-115 | Ray Rd | 1230 | 7.44 | 2.65 | 40.3 |
| Total Wt | | | 3050 | 18.57 | | 100.0 |

<----- Verify this number is 100%



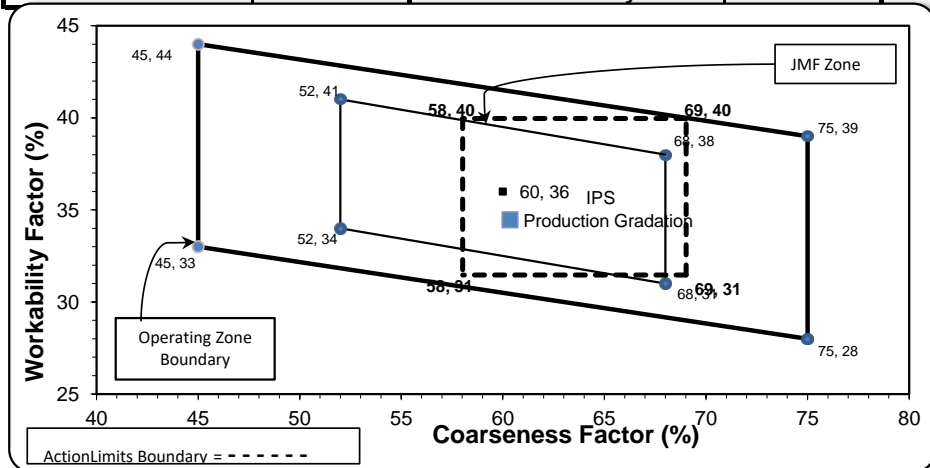
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 96.5 | 100.0 | 100.0 | 98.2 | 1.8 | 1.8 |
| 3/4" | 81.9 | 100.0 | 100.0 | 90.5 | 7.7 | 9.5 |
| 1/2" | 43.2 | 93.1 | 100.0 | 69.7 | 20.8 | 30.3 |
| 3/8" | 27.1 | 81.8 | 100.0 | 60.4 | 9.3 | 39.6 |
| #4 | 5.7 | 15.0 | 96.6 | 43.0 | 17.4 | 57.0 |
| #8 | 2.9 | 3.2 | 81.1 | 34.5 | 8.6 | 65.5 |
| #16 | 2.6 | 1.8 | 66.4 | 28.3 | 6.2 | 71.7 |
| #30 | 2.5 | 1.5 | 50.4 | 21.7 | 6.5 | 78.3 |
| #50 | 2.4 | 1.4 | 25.6 | 11.7 | 10.1 | 88.3 |
| #100 | 2.2 | 1.3 | 5.4 | 3.4 | 8.3 | 96.6 |
| LBW | 1.8 | 1.0 | 0.6 | 1.3 | 2.2 | 98.7 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 60 **Workability Factor:** 34



Initial Production Sample (IPS)

Coarseness Factor: 64
Workability Factor: 36

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.2 | 0.8 | 0.8 |
| 3/4" | 90.9 | 8.3 | 9.1 |
| 1/2" | 71.3 | 19.6 | 28.7 |
| 3/8" | 59.2 | 12.1 | 40.8 |
| #4 | 41.5 | 17.7 | 58.5 |
| #8 | 35.7 | 5.8 | 64.3 |
| #16 | 27.9 | 7.9 | 72.1 |
| #30 | 18.3 | 9.5 | 81.7 |
| #50 | 7.3 | 11.0 | 92.7 |
| #100 | 2.0 | 5.3 | 98.0 |
| LBW | 0.9 | 1.1 | 99.1 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: 20

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____



Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|-------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1550 | 9.48 | 2.62 | 50.8 |
| 26A | 71-47 | Presque Isle | 250 | 1.53 | 2.62 | 8.2 |
| 2NS | 63-92 | Grange Hall | 1250 | 7.56 | 2.65 | 41.0 |
| Total Wt | | | 3050 | 18.57 | | 100.0 |

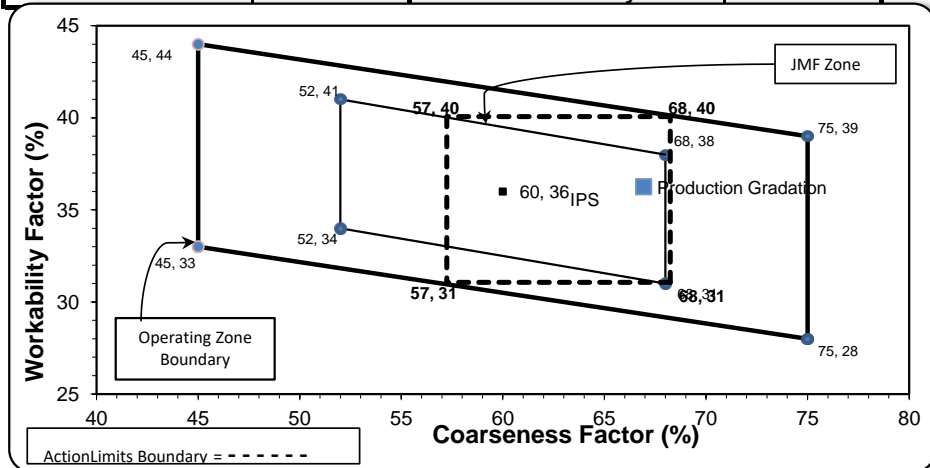
<----- Verify this number is 100%

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 98.8 | 100.0 | 100.0 | 99.4 | 0.6 | 0.6 |
| 3/4" | 77.7 | 100.0 | 100.0 | 88.7 | 10.7 | 11.3 |
| 1/2" | 35.2 | 95.6 | 100.0 | 66.7 | 22.0 | 33.3 |
| 3/8" | 18.7 | 83.6 | 100.0 | 57.3 | 9.4 | 42.7 |
| #4 | 2.5 | 18.1 | 97.7 | 42.8 | 14.5 | 57.2 |
| #8 | 2.0 | 5.0 | 85.0 | 36.3 | 6.5 | 63.7 |
| #16 | 1.8 | 2.6 | 71.7 | 30.5 | 5.7 | 69.5 |
| #30 | 1.8 | 2.1 | 53.4 | 23.0 | 7.5 | 77.0 |
| #50 | 1.7 | 1.9 | 23.4 | 10.6 | 12.4 | 89.4 |
| #100 | 1.6 | 1.8 | 5.3 | 3.1 | 7.5 | 96.9 |
| LBW | 1.3 | 1.6 | 2.1 | 1.7 | 1.5 | 98.3 |

*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 67 **Workability Factor:** 36



Initial Production Sample (IPS)

Coarseness Factor: 63
Workability Factor: 36

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 0.0 | 0.0 |
| 3/4" | 93.3 | 6.7 | 6.7 |
| 1/2" | 70.6 | 22.6 | 29.4 |
| 3/8" | 59.6 | 11.0 | 40.4 |
| #4 | 43.9 | 15.7 | 56.1 |
| #8 | 35.6 | 8.4 | 64.4 |
| #16 | 28.4 | 7.2 | 71.6 |
| #30 | 19.4 | 9.0 | 80.6 |
| #50 | 7.5 | 11.9 | 92.5 |
| #100 | 0.9 | 6.6 | 99.1 |
| LBW | 0.9 | 0.1 | 99.1 |

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: p11

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1550 | 9.48 | 2.62 | 50.8 |
| 26A | 71-47 | Presque Isle | 270 | 1.65 | 2.62 | 8.9 |
| 2NS | 95-013 | Smelter Bay | 1230 | 7.44 | 2.65 | 40.3 |
| Total Wt | | | 3050 | 18.57 | | 100.0 |

<----- Verify this number is 100%



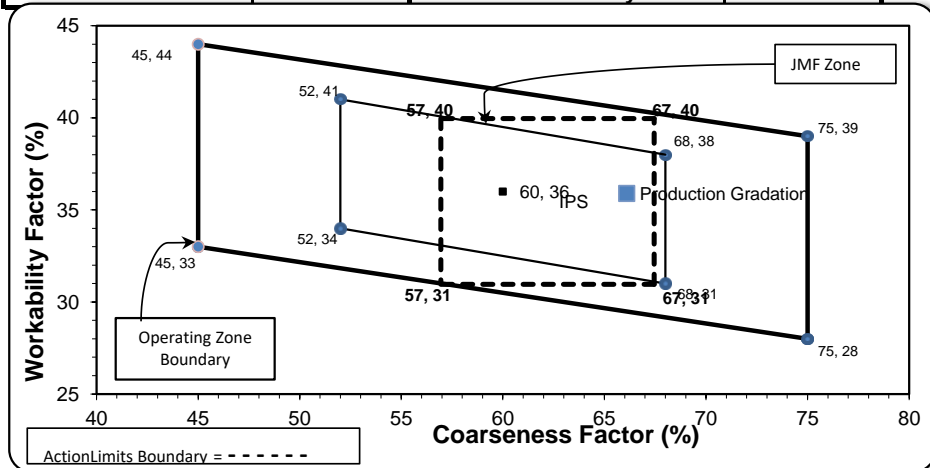
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 3/4" | 79.5 | 100.0 | 100.0 | 89.6 | 10.4 | 10.4 |
| 1/2" | 35.5 | 93.1 | 100.0 | 66.6 | 23.0 | 33.4 |
| 3/8" | 19.8 | 81.8 | 100.0 | 57.6 | 9.0 | 42.4 |
| #4 | 4.1 | 15.0 | 96.5 | 42.3 | 15.3 | 57.7 |
| #8 | 2.3 | 3.2 | 85.4 | 35.9 | 6.4 | 64.1 |
| #16 | 2.1 | 1.8 | 70.8 | 29.8 | 6.1 | 70.2 |
| #30 | 2.0 | 1.5 | 50.6 | 21.6 | 8.2 | 78.4 |
| #50 | 1.9 | 1.4 | 25.2 | 11.3 | 10.3 | 88.7 |
| #100 | 1.7 | 1.3 | 7.6 | 4.0 | 7.2 | 96.0 |
| LBW | 1.2 | 1.0 | 1.2 | 1.2 | 2.9 | 98.8 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 66 **Workability Factor:** 36



Initial Production Sample (IPS)

Coarseness Factor: 62
Workability Factor: 35

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 0.0 | 0.0 |
| 3/4" | 94.0 | 6.0 | 6.0 |
| 1/2" | 70.2 | 23.7 | 29.8 |
| 3/8" | 59.9 | 10.4 | 40.1 |
| #4 | 42.7 | 17.2 | 57.3 |
| #8 | 35.5 | 7.2 | 64.5 |
| #16 | 28.4 | 7.0 | 71.6 |
| #30 | 19.2 | 9.2 | 80.8 |
| #50 | 8.9 | 10.3 | 91.1 |
| #100 | 3.1 | 5.9 | 96.9 |
| LBW | 1.4 | 1.7 | 98.6 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-32**

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1550 | 9.48 | 2.62 | 50.8 |
| 26A | 71-47 | Presque Isle | 270 | 1.65 | 2.62 | 8.9 |
| 2NS | 95-013 | Smelter Bay | 1230 | 7.44 | 2.65 | 40.3 |
| Total Wt | | | 3050 | 18.57 | | 100.0 |

<----- Verify this number is 100%



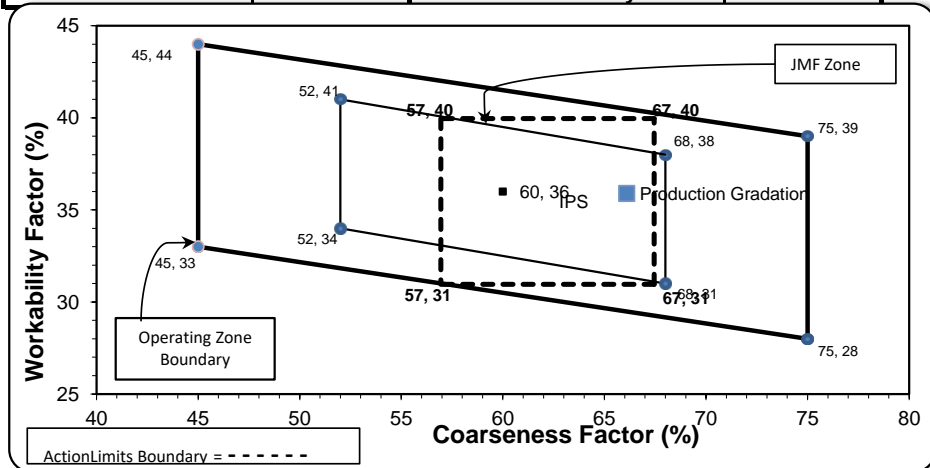
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 3/4" | 79.5 | 100.0 | 100.0 | 89.6 | 10.4 | 10.4 |
| 1/2" | 35.5 | 93.1 | 100.0 | 66.6 | 23.0 | 33.4 |
| 3/8" | 19.8 | 81.8 | 100.0 | 57.6 | 9.0 | 42.4 |
| #4 | 4.1 | 15.0 | 96.5 | 42.3 | 15.3 | 57.7 |
| #8 | 2.3 | 3.2 | 85.4 | 35.9 | 6.4 | 64.1 |
| #16 | 2.1 | 1.8 | 70.8 | 29.8 | 6.1 | 70.2 |
| #30 | 2.0 | 1.5 | 50.6 | 21.6 | 8.2 | 78.4 |
| #50 | 1.9 | 1.4 | 25.2 | 11.3 | 10.3 | 88.7 |
| #100 | 1.7 | 1.3 | 7.6 | 4.0 | 7.2 | 96.0 |
| LBW | 1.2 | 1.0 | 1.2 | 1.2 | 2.9 | 98.8 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **66** **Workability Factor:** **36**



Initial Production Sample (IPS)

Coarseness Factor: **62**
Workability Factor: **35**

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 0.0 | 0.0 |
| 3/4" | 94.0 | 6.0 | 6.0 |
| 1/2" | 70.2 | 23.7 | 29.8 |
| 3/8" | 59.9 | 10.4 | 40.1 |
| #4 | 42.7 | 17.2 | 57.3 |
| #8 | 35.5 | 7.2 | 64.5 |
| #16 | 28.4 | 7.0 | 71.6 |
| #30 | 19.2 | 9.2 | 80.8 |
| #50 | 8.9 | 10.3 | 91.1 |
| #100 | 3.1 | 5.9 | 96.9 |
| LBW | 1.4 | 1.7 | 98.6 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-35**

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|---------------|--------------|-----------------|------------------|----------------|
| 6AA | 58-003 | Stoneco | 1650 | 9.83 | 2.69 | 53.2 |
| 26A | 58-003 | Stoneco | 250 | 1.49 | 2.69 | 8.1 |
| 2NS | 81-019 | Pleasant Lake | 1200 | 7.26 | 2.65 | 38.7 |
| Total Wt | | | 3100 | 18.58 | | 100.0 |

<----- Verify this number is 100%



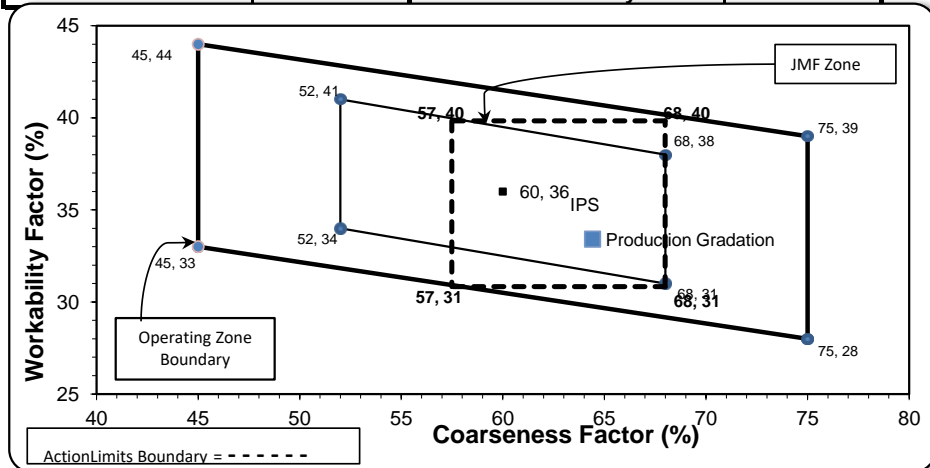
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 98.5 | 100.0 | 100.0 | 99.2 | 0.8 | 0.8 |
| 3/4" | 79.6 | 100.0 | 100.0 | 89.1 | 10.1 | 10.9 |
| 1/2" | 42.3 | 99.0 | 100.0 | 69.2 | 19.9 | 30.8 |
| 3/8" | 21.6 | 85.6 | 100.0 | 57.1 | 12.1 | 42.9 |
| #4 | 2.8 | 6.8 | 98.7 | 40.2 | 16.9 | 59.8 |
| #8 | 1.4 | 1.4 | 84.1 | 33.4 | 6.8 | 66.6 |
| #16 | 1.3 | 1.0 | 66.6 | 26.6 | 6.9 | 73.4 |
| #30 | 1.2 | 0.9 | 47.3 | 19.0 | 7.5 | 81.0 |
| #50 | 1.1 | 0.8 | 23.4 | 9.7 | 9.3 | 90.3 |
| #100 | 1.1 | 0.8 | 6.3 | 3.1 | 6.6 | 96.9 |
| LBW | 0.8 | 0.7 | 1.2 | 0.9 | 2.1 | 99.1 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **64** **Workability Factor:** **33**



Initial Production Sample (IPS)

Coarseness Factor: **63**
Workability Factor: **35**

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.2 | 0.8 | 0.8 |
| 3/4" | 90.9 | 8.3 | 9.1 |
| 1/2" | 71.3 | 19.6 | 28.7 |
| 3/8" | 59.4 | 11.9 | 40.6 |
| #4 | 43.0 | 16.5 | 57.0 |
| #8 | 35.3 | 7.6 | 64.7 |
| #16 | 28.2 | 7.1 | 71.8 |
| #30 | 21.6 | 6.6 | 78.4 |
| #50 | 9.1 | 12.5 | 90.9 |
| #100 | 1.7 | 7.4 | 98.3 |
| LBW | 1.1 | 0.6 | 98.9 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-36**

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____



Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|-------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1600 | 9.79 | 2.62 | 52.5 |
| 26A | 71-47 | Presque Isle | 250 | 1.53 | 2.62 | 8.2 |
| 2NS | 63-92 | Grange Hall | 1200 | 7.26 | 2.65 | 39.3 |
| Total Wt | | | 3050 | 18.57 | | 100.0 |

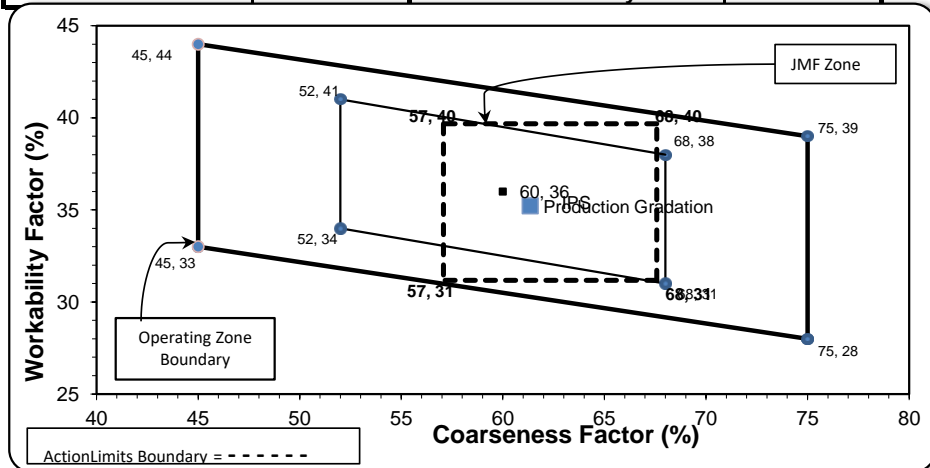
<----- Verify this number is 100%

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 96.5 | 100.0 | 100.0 | 98.2 | 1.8 | 1.8 |
| 3/4" | 81.9 | 100.0 | 100.0 | 90.5 | 7.7 | 9.5 |
| 1/2" | 43.2 | 93.1 | 100.0 | 69.6 | 20.9 | 30.4 |
| 3/8" | 27.1 | 81.8 | 100.0 | 60.3 | 9.4 | 39.7 |
| #4 | 5.7 | 15.0 | 97.7 | 42.7 | 17.6 | 57.3 |
| #8 | 2.9 | 3.2 | 85.0 | 35.2 | 7.4 | 64.8 |
| #16 | 2.6 | 1.8 | 71.7 | 29.7 | 5.5 | 70.3 |
| #30 | 2.5 | 1.5 | 53.4 | 22.4 | 7.3 | 77.6 |
| #50 | 2.4 | 1.4 | 23.4 | 10.6 | 11.9 | 89.4 |
| #100 | 2.2 | 1.3 | 5.3 | 3.3 | 7.2 | 96.7 |
| LBW | 1.8 | 1.0 | 2.1 | 1.9 | 1.5 | 98.1 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **61** **Workability Factor:** **35**



Initial Production Sample (IPS)

Coarseness Factor: **62**
Workability Factor: **35**

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.1 | 0.9 | 0.9 |
| 3/4" | 90.5 | 8.6 | 9.5 |
| 1/2" | 69.8 | 20.7 | 30.2 |
| 3/8" | 59.8 | 10.0 | 40.2 |
| #4 | 42.2 | 17.6 | 57.8 |
| #8 | 35.4 | 6.7 | 64.6 |
| #16 | 28.8 | 6.7 | 71.2 |
| #30 | 21.4 | 7.4 | 78.6 |
| #50 | 8.8 | 12.6 | 91.2 |
| #100 | 1.8 | 7.0 | 98.2 |
| LBW | 0.7 | 1.0 | 99.3 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-38**

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Contractor: _____

Dates Test Represents: 7/4/2023 through 7/10/2023

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|---------------|--------------|-----------------|------------------|----------------|
| 6AA | 58-003 | Stoneco | 1650 | 9.83 | 2.69 | 53.2 |
| 26A | 58-003 | Stoneco | 250 | 1.49 | 2.69 | 8.1 |
| 2NS | 81-019 | Pleasant Lake | 1200 | 7.26 | 2.65 | 38.7 |
| Total Wt | | | 3100 | 18.58 | | 100.0 |

<----- Verify this number is 100%



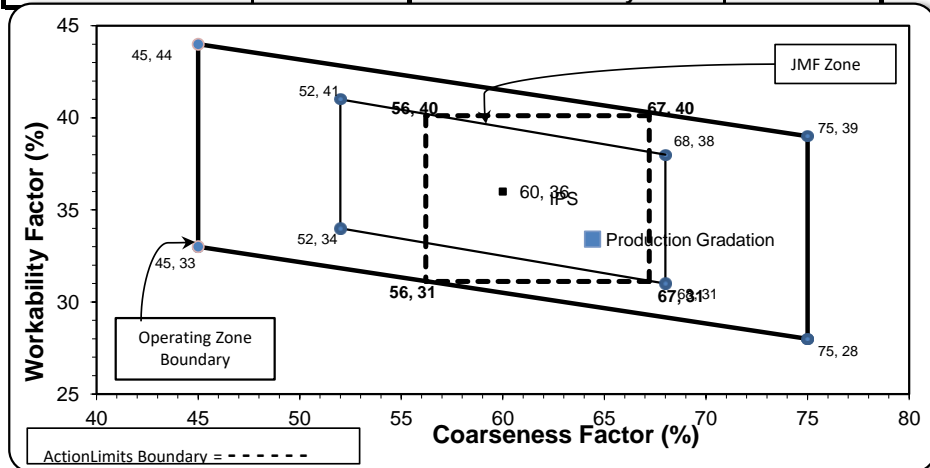
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 98.5 | 100.0 | 100.0 | 99.2 | 0.8 | 0.8 |
| 3/4" | 79.6 | 100.0 | 100.0 | 89.1 | 10.1 | 10.9 |
| 1/2" | 42.3 | 99.0 | 100.0 | 69.2 | 19.9 | 30.8 |
| 3/8" | 21.6 | 85.6 | 100.0 | 57.1 | 12.1 | 42.9 |
| #4 | 2.8 | 6.8 | 98.7 | 40.2 | 16.9 | 59.8 |
| #8 | 1.4 | 1.4 | 84.1 | 33.4 | 6.8 | 66.6 |
| #16 | 1.3 | 1.0 | 66.6 | 26.6 | 6.9 | 73.4 |
| #30 | 1.2 | 0.9 | 47.3 | 19.0 | 7.5 | 81.0 |
| #50 | 1.1 | 0.8 | 23.4 | 9.7 | 9.3 | 90.3 |
| #100 | 1.1 | 0.8 | 6.3 | 3.1 | 6.6 | 96.9 |
| LBW | 0.8 | 0.7 | 1.2 | 0.9 | 2.1 | 99.1 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

| | | | |
|---------------------------|-----------|----------------------------|-----------|
| Coarseness Factor: | 64 | Workability Factor: | 33 |
|---------------------------|-----------|----------------------------|-----------|



Initial Production Sample (IPS)

| Coarseness Factor: | 62 | | |
|----------------------------|----------------------|------------|-----------------------|
| Workability Factor: | 36 | | |
| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.2 | 0.8 | 0.8 |
| 3/4" | 91.1 | 8.1 | 8.9 |
| 1/2" | 72.0 | 19.1 | 28.0 |
| 3/8" | 60.3 | 11.7 | 39.7 |
| #4 | 43.4 | 16.9 | 56.6 |
| #8 | 35.6 | 7.8 | 64.4 |
| #16 | 28.4 | 7.2 | 71.6 |
| #30 | 21.8 | 6.7 | 78.2 |
| #50 | 9.1 | 12.6 | 90.9 |
| #100 | 1.7 | 7.4 | 98.3 |
| LBW | 1.1 | 0.6 | 98.9 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-39**

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____



Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|-----------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1570 | 9.60 | 2.62 | 51.5 |
| 26A | 71-47 | Presque Isle | 230 | 1.41 | 2.62 | 7.5 |
| 2NS | 44-051 | Krake Willis Rd | 1250 | 7.56 | 2.65 | 41.0 |
| Total Wt | | | 3050 | 18.57 | | 100.0 |

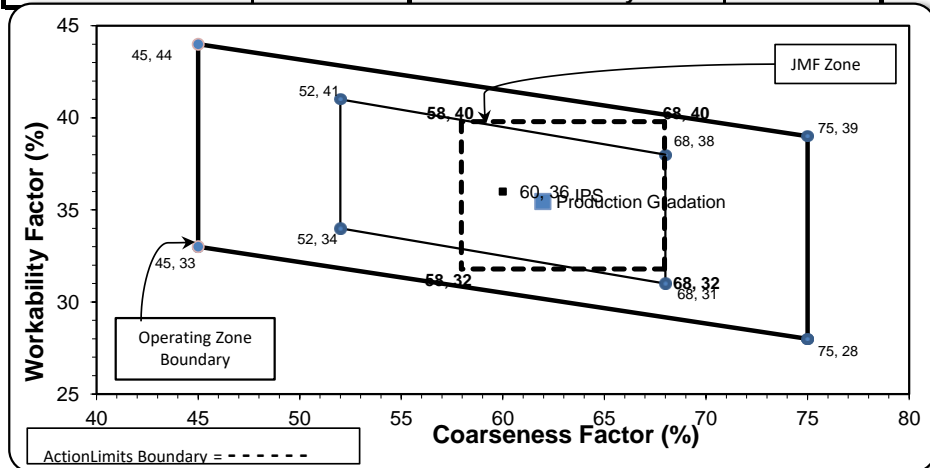
<----- Verify this number is 100%

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 97.0 | 100.0 | 100.0 | 98.5 | 1.5 | 1.5 |
| 3/4" | 81.0 | 100.0 | 100.0 | 90.2 | 8.2 | 9.8 |
| 1/2" | 39.4 | 95.8 | 100.0 | 68.5 | 21.7 | 31.5 |
| 3/8" | 24.3 | 86.4 | 100.0 | 60.0 | 8.5 | 40.0 |
| #4 | 4.8 | 21.7 | 95.9 | 43.4 | 16.6 | 56.6 |
| #8 | 2.4 | 6.0 | 82.4 | 35.5 | 8.0 | 64.5 |
| #16 | 2.1 | 3.2 | 68.2 | 29.3 | 6.2 | 70.7 |
| #30 | 2.0 | 2.6 | 51.0 | 22.1 | 7.1 | 77.9 |
| #50 | 2.0 | 2.3 | 23.0 | 10.6 | 11.5 | 89.4 |
| #100 | 1.9 | 2.2 | 5.6 | 3.4 | 7.2 | 96.6 |
| LBW | 1.6 | 2.0 | 1.1 | 1.4 | 2.0 | 98.6 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

| | | | |
|---------------------------|-----------|----------------------------|-----------|
| Coarseness Factor: | 62 | Workability Factor: | 35 |
|---------------------------|-----------|----------------------------|-----------|



Intial Production Sample (IPS)

| Coarseness Factor: | 63 | | |
|----------------------------|----------------------|------------|-----------------------|
| Workability Factor: | 36 | | |
| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 0.0 | 0.0 |
| 3/4" | 89.8 | 10.2 | 10.2 |
| 1/2" | 70.7 | 19.1 | 29.3 |
| 3/8" | 59.6 | 11.1 | 40.4 |
| #4 | 43.2 | 16.4 | 56.8 |
| #8 | 35.8 | 7.4 | 64.2 |
| #16 | 29.2 | 6.6 | 70.8 |
| #30 | 21.4 | 7.8 | 78.6 |
| #50 | 9.8 | 11.6 | 90.2 |
| #100 | 3.7 | 6.1 | 96.3 |
| LBW | 1.2 | 2.5 | 98.8 |

PREPARED BY:
 SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

PLANT #: **P-02**

Sample Date: 7/3/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 7/4/2023 through 7/10/2023

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1600 | 9.79 | 2.62 | 52.5 |
| 26A | 71-47 | Presque Isle | 220 | 1.35 | 2.62 | 7.2 |
| 2NS | 63-115 | Ray Rd | 1230 | 7.44 | 2.65 | 40.3 |
| Total Wt | | | 3050 | 18.57 | | 100.0 |

<----- Verify this number is 100%



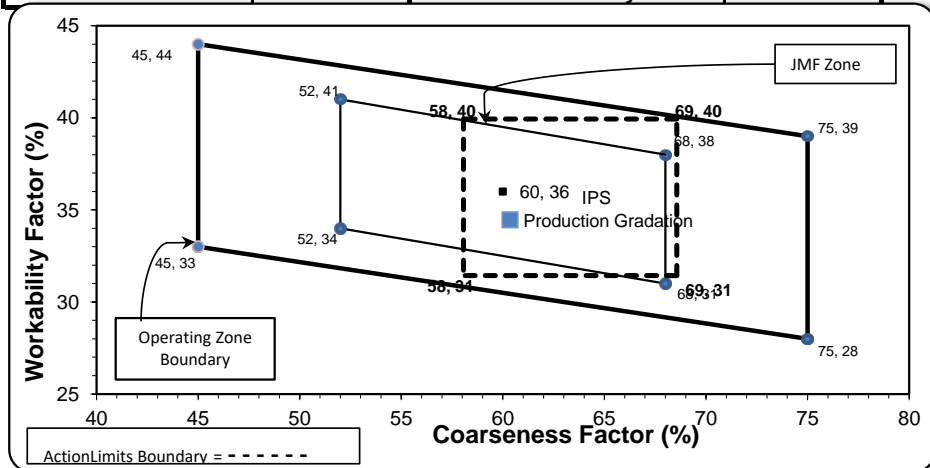
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 96.5 | 100.0 | 100.0 | 98.2 | 1.8 | 1.8 |
| 3/4" | 81.9 | 100.0 | 100.0 | 90.5 | 7.7 | 9.5 |
| 1/2" | 43.2 | 93.1 | 100.0 | 69.7 | 20.8 | 30.3 |
| 3/8" | 27.1 | 81.8 | 100.0 | 60.4 | 9.3 | 39.6 |
| #4 | 5.7 | 15.0 | 96.6 | 43.0 | 17.4 | 57.0 |
| #8 | 2.9 | 3.2 | 81.1 | 34.5 | 8.6 | 65.5 |
| #16 | 2.6 | 1.8 | 66.4 | 28.3 | 6.2 | 71.7 |
| #30 | 2.5 | 1.5 | 50.4 | 21.7 | 6.5 | 78.3 |
| #50 | 2.4 | 1.4 | 25.6 | 11.7 | 10.1 | 88.3 |
| #100 | 2.2 | 1.3 | 5.4 | 3.4 | 8.3 | 96.6 |
| LBW | 1.8 | 1.0 | 0.6 | 1.3 | 2.2 | 98.7 |

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **60** **Workability Factor:** **34**



Initial Production Sample (IPS)

Coarseness Factor: **63**
Workability Factor: **36**

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 0.0 | 0.0 |
| 3/4" | 95.6 | 4.4 | 4.4 |
| 1/2" | 73.1 | 22.6 | 26.9 |
| 3/8" | 59.3 | 13.8 | 40.7 |
| #4 | 42.8 | 16.5 | 57.2 |
| #8 | 35.7 | 7.1 | 64.3 |
| #16 | 28.9 | 6.8 | 71.1 |
| #30 | 20.7 | 8.2 | 79.3 |
| #50 | 9.9 | 10.8 | 90.1 |
| #100 | 2.1 | 7.8 | 97.9 |
| LBW | 0.9 | 1.2 | 99.1 |

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 SM, LLC Technical Service

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