

# Aggregate Optimization Chart

## Production Gradation Report

**PLANT #:** **P-35**

Sample Date: 9/16/26

Concrete Grade: **S2M-3500HP**

Contractor: \_\_\_\_\_

Dates Test Represents: 9/17/2026 through 9/23/2026

MDOT No.: \_\_\_\_\_

| Agg. Class      | Pit #  | Source      | Weight (SSD) | ft³          | Specific Gravity | % Contribution |
|-----------------|--------|-------------|--------------|--------------|------------------|----------------|
| 6AA             | 58-003 | StoneCo     | 1400         | 8.34         | 2.69             | 45.0           |
| 26A             | 58-003 | StoneCo     | 530          | 3.16         | 2.69             | 17.0           |
| 2NS             | 81-019 | Pleasant Lk | 1180         | 7.14         | 2.65             | 37.9           |
| <b>Total Wt</b> |        |             | <b>3110</b>  | <b>18.63</b> |                  | <b>100.0</b>   |

<----- 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"  | 79.4  | 100.0 | 100.0 | 90.7                 | 9.3        | 9.3                   |
| 1/2"  | 35.1  | 95.4  | 100.0 | 70.0                 | 20.7       | 30.0                  |
| 3/8"  | 18.5  | 76.3  | 100.0 | 59.3                 | 10.7       | 40.7                  |
| #4    | 2.9   | 22.4  | 98.2  | 42.4                 | 16.9       | 57.6                  |
| #8    | 1.4   | 6.4   | 84.4  | 33.7                 | 8.6        | 66.3                  |
| #16   | 1.2   | 4.0   | 65.8  | 26.2                 | 7.6        | 73.8                  |
| #30   | 1.0   | 3.0   | 44.9  | 18.0                 | 8.2        | 82.0                  |
| #50   | 1.0   | 2.6   | 18.5  | 7.9                  | 10.1       | 92.1                  |
| #100  | 0.9   | 2.3   | 4.5   | 2.5                  | 5.4        | 97.5                  |
| LBW   | 0.7   | 2.0   | 1.0   | 1.0                  | 1.5        | 99.0                  |

\*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 4% for the 3/4" sieve when

a 1.5" max. size (nom. Max. 1.0") aggregate is used.

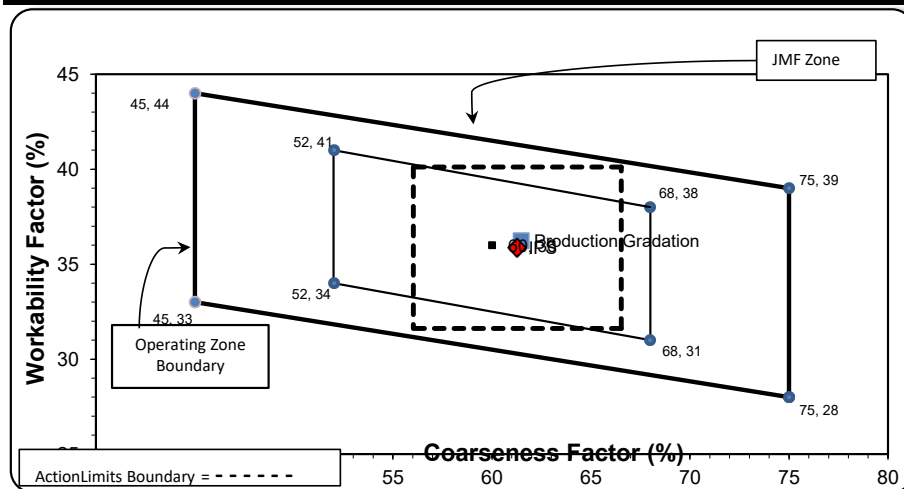
Production Gradation ☒ Batch Plant Gradations ☐ Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

|                           |           |                            |           |             |
|---------------------------|-----------|----------------------------|-----------|-------------|
| <b>Coarseness Factor:</b> | <b>61</b> | <b>Workability Factor:</b> | <b>34</b> | <b>36.2</b> |
|---------------------------|-----------|----------------------------|-----------|-------------|

|                           |           |
|---------------------------|-----------|
| <b>Coarseness Factor:</b> | <b>61</b> |
|---------------------------|-----------|

|                            |           |
|----------------------------|-----------|
| <b>Workability Factor:</b> | <b>36</b> |
|----------------------------|-----------|



| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2"    | 100.0                | 0.0        | 0.0                   |
| 1.5"  | 100.0                | 0.0        | 0.0                   |
| 1"    | 99.3                 | 0.7        | 0.7                   |
| 3/4"  | 89.2                 | 10.1       | 10.8                  |
| 1/2"  | 70.7                 | 18.5       | 29.3                  |
| 3/8"  | 60.7                 | 10.0       | 39.3                  |
| #4    | 44.4                 | 16.3       | 55.6                  |
| #8    | 35.9                 | 8.5        | 64.1                  |
| #16   | 27.3                 | 8.6        | 72.7                  |
| #30   | 19.1                 | 8.2        | 80.9                  |
| #50   | 7.4                  | 11.7       | 92.6                  |
| #100  | 1.9                  | 5.6        | 98.1                  |
| LBW   | 0.7                  | 1.2        | 99.3                  |

PREPARED BY:  
SM, LLC Technical Service

Approved By:  
Nancy Donahue

# Aggregate Optimization Chart

## Production Gradation Report

**PLANT #:** **P-36**

Sample Date: 9/16/26

Concrete Grade: **S2M-3500HP**

Contractor: \_\_\_\_\_

Dates Test Represents: 9/17/2026 through 9/23/2026

MDOT No.: \_\_\_\_\_

| Agg. Class      | Pit #  | Source       | Weight (SSD) | ft³          | Specific Gravity | % Contribution |
|-----------------|--------|--------------|--------------|--------------|------------------|----------------|
| 6AA             | 71-47  | Presque Isle | 1470         | 9.17         | 2.57             | 48.0           |
| 26A             | 71-47  | Presque Isle | 350          | 2.18         | 2.57             | 11.4           |
| 2NS             | 63-115 | Ray Rd       | 1240         | 7.44         | 2.67             | 40.5           |
| <b>Total Wt</b> |        |              | <b>3060</b>  | <b>18.79</b> |                  | <b>100.0</b>   |

<----- 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"    | 95.7  | 100.0 | 100.0 | 97.9                 | 2.1        | 2.1                   |
| 3/4"  | 80.6  | 100.0 | 100.0 | 90.7                 | 7.3        | 9.3                   |
| 1/2"  | 37.7  | 97.5  | 100.0 | 69.8                 | 20.9       | 30.2                  |
| 3/8"  | 22.6  | 85.0  | 100.0 | 61.1                 | 8.7        | 38.9                  |
| #4    | 5.2   | 23.4  | 96.1  | 44.1                 | 17.0       | 55.9                  |
| #8    | 3.1   | 7.8   | 75.9  | 33.1                 | 11.0       | 66.9                  |
| #16   | 2.4   | 3.2   | 58.7  | 25.3                 | 7.8        | 74.7                  |
| #30   | 2.3   | 2.2   | 42.3  | 18.5                 | 6.8        | 81.5                  |
| #50   | 2.1   | 2.0   | 22.2  | 10.2                 | 8.3        | 89.8                  |
| #100  | 2.0   | 1.8   | 6.3   | 3.7                  | 6.5        | 96.3                  |
| LBW   | 1.6   | 1.6   | 1.3   | 1.5                  | 2.2        | 98.5                  |



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\*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 4% for the 3/4" sieve when

a 1.5" max. size (nom. Max. 1.0") aggregate is used.

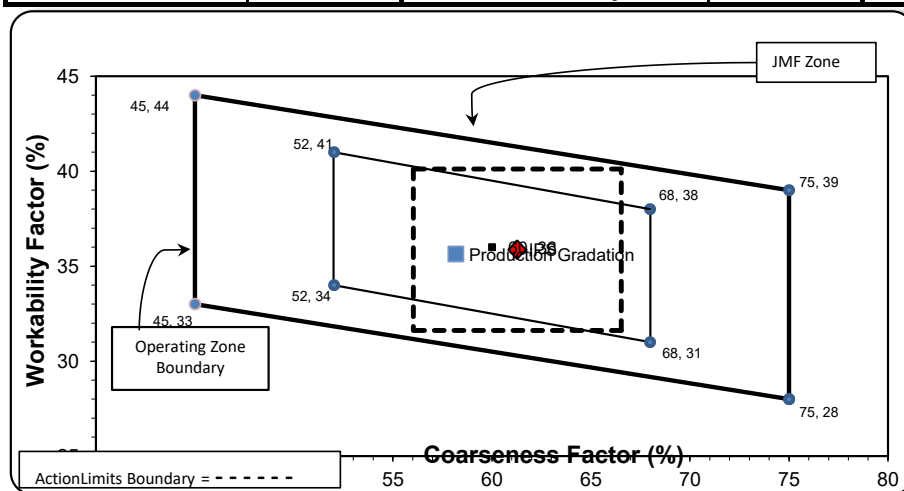
Production Gradation ☒ Batch Plant Gradations ☐ Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

|                           |           |                            |           |             |
|---------------------------|-----------|----------------------------|-----------|-------------|
| <b>Coarseness Factor:</b> | <b>58</b> | <b>Workability Factor:</b> | <b>33</b> | <b>35.6</b> |
|---------------------------|-----------|----------------------------|-----------|-------------|

|                           |           |
|---------------------------|-----------|
| <b>Coarseness Factor:</b> | <b>61</b> |
|---------------------------|-----------|

|                            |           |
|----------------------------|-----------|
| <b>Workability Factor:</b> | <b>36</b> |
|----------------------------|-----------|



| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2"    | 100.0                | 0.0        | 0.0                   |
| 1.5"  | 100.0                | 0.0        | 0.0                   |
| 1"    | 99.3                 | 0.7        | 0.7                   |
| 3/4"  | 89.2                 | 10.1       | 10.8                  |
| 1/2"  | 70.7                 | 18.5       | 29.3                  |
| 3/8"  | 60.7                 | 10.0       | 39.3                  |
| #4    | 44.4                 | 16.3       | 55.6                  |
| #8    | 35.9                 | 8.5        | 64.1                  |
| #16   | 27.3                 | 8.6        | 72.7                  |
| #30   | 19.1                 | 8.2        | 80.9                  |
| #50   | 7.4                  | 11.7       | 92.6                  |
| #100  | 1.9                  | 5.6        | 98.1                  |
| LBW   | 0.7                  | 1.2        | 99.3                  |

PREPARED BY:  
SM, LLC Technical Service

Approved By:  
Nancy Donahue

# Aggregate Optimization Chart

## Production Gradation Report

**PLANT #:** **P-39**

Sample Date: 9/16/26

Concrete Grade: **S2M-3500HP**

Contractor: \_\_\_\_\_

Dates Test Represents: 9/17/2026 through 9/23/2026

MDOT No.: \_\_\_\_\_

| Agg. Class | Pit #   | Source       | Weight (SSD) | ft <sup>3</sup> | Specific Gravity | % Contribution |
|------------|---------|--------------|--------------|-----------------|------------------|----------------|
| 6AA        | 71-47   | Presque Isle | 1580         | 9.85            | 2.57             | 52.0           |
| 26A        | 71-47   | Presque Isle | 260          | 1.62            | 2.57             | 8.6            |
| 2NS        | 63-0009 | Koenig       | 1200         | 7.26            | 2.65             | 39.5           |
| Total Wt   |         |              | 3040         | 18.73           |                  | 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"    | 97.6  | 100.0 | 100.0 | 98.8                 | 1.2        | 1.2                   |
| 3/4"  | 81.4  | 100.0 | 100.0 | 90.3                 | 8.4        | 9.7                   |
| 1/2"  | 41.7  | 95.8  | 100.0 | 69.3                 | 21.0       | 30.7                  |
| 3/8"  | 23.1  | 81.5  | 100.0 | 58.5                 | 10.9       | 41.6                  |
| #4    | 3.4   | 18.0  | 97.5  | 41.8                 | 16.7       | 58.2                  |
| #8    | 2.1   | 5.8   | 83.1  | 34.4                 | 7.4        | 65.6                  |
| #16   | 1.8   | 3.2   | 66.3  | 27.4                 | 7.0        | 72.6                  |
| #30   | 1.7   | 2.6   | 48.6  | 20.3                 | 7.1        | 79.7                  |
| #50   | 1.7   | 2.4   | 24.3  | 10.7                 | 9.6        | 89.3                  |
| #100  | 1.6   | 2.2   | 4.9   | 3.0                  | 7.7        | 97.0                  |
| LBW   | 1.4   | 2.0   | 0.9   | 1.3                  | 1.7        | 98.7                  |



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\*% Retained must be at least 4% for the 3/4" sieve when

a 1.5" max. size (nom. Max. 1.0") aggregate is used.

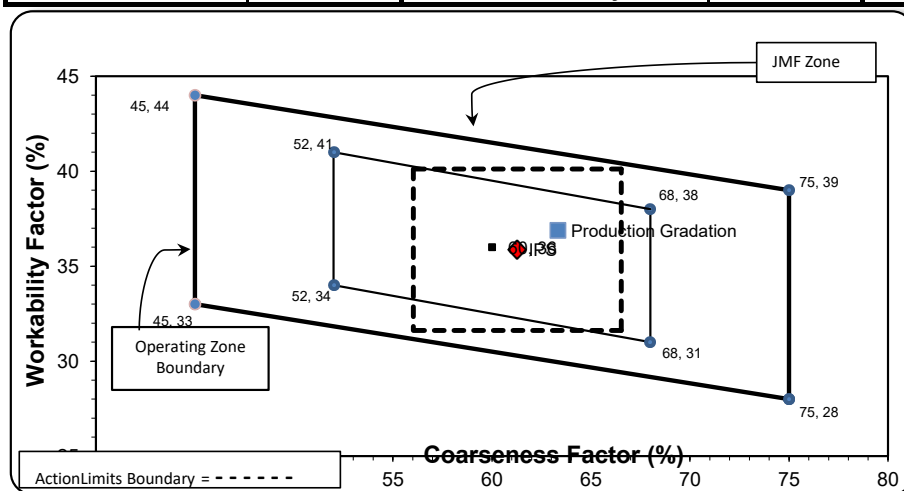
Production Gradation ☒ Batch Plant Gradations ☐ Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

|                    |    |                     |    |      |
|--------------------|----|---------------------|----|------|
| Coarseness Factor: | 63 | Workability Factor: | 34 | 36.9 |
|--------------------|----|---------------------|----|------|

|                    |    |
|--------------------|----|
| Coarseness Factor: | 61 |
|--------------------|----|

|                     |    |
|---------------------|----|
| 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"    | 99.3                 | 0.7        | 0.7                   |
| 3/4"  | 89.2                 | 10.1       | 10.8                  |
| 1/2"  | 70.7                 | 18.5       | 29.3                  |
| 3/8"  | 60.7                 | 10.0       | 39.3                  |
| #4    | 44.4                 | 16.3       | 55.6                  |
| #8    | 35.9                 | 8.5        | 64.1                  |
| #16   | 27.3                 | 8.6        | 72.7                  |
| #30   | 19.1                 | 8.2        | 80.9                  |
| #50   | 7.4                  | 11.7       | 92.6                  |
| #100  | 1.9                  | 5.6        | 98.1                  |
| LBW   | 0.7                  | 1.2        | 99.3                  |

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SM, LLC Technical Service

Approved By:  
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