# Aggregate Optimization Chart

Production Gradation Report

**PLANT #:** **P11**

Contractor:

Sample Date: 8/25/25

Concrete Grade: **P1M, 3500HP, 4000HP**

Dates Test Represents: 8/26/2025 through 9/1/2025

MDOT No.:

| Agg. Class | Pit # | Source | Weight (SSD) | ft³ | Specific Gravity | % Contribution |
|---|---|---|---|---|---|---|
| CA | 71-47 | Presque Isle | 900 | 5.50 | 2.62 | 29.3 |
| IA | 71-47 | Presque Isle | 970 | 5.93 | 2.62 | 31.6 |
| 2NS | 63-115 | Ray Rd | 1200 | 7.26 | 2.65 | 39.1 |
| | | **Total Wt** | **3070** | **18.70** | | 100.0 |

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

| Sieve | CA | IA | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|---|---|---|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 98.5 | 100.0 | 100.0 | 99.6 | 0.4 | 0.4 |
| 1" | 60.0 | 100.0 | 100.0 | 88.3 | 11.3 | 11.7 |
| 3/4" | 14.3 | 99.5 | 100.0 | 74.7 | 13.6 | 25.3 |
| 1/2" | 5.3 | 78.5 | 100.0 | 65.4 | 9.3 | 34.6 |
| 3/8" | 4.3 | 54.7 | 100.0 | 57.6 | 7.8 | 42.4 |
| #4 | 3.2 | 12.8 | 98.3 | 43.4 | 14.2 | 56.6 |
| #8 | 2.9 | 5.0 | 85.0 | 35.7 | 7.8 | 64.3 |
| #16 | 2.7 | 3.6 | 67.9 | 28.5 | 7.2 | 71.5 |
| #30 | 2.6 | 3.3 | 49.4 | 21.1 | 7.4 | 78.9 |
| #50 | 2.4 | 3.1 | 24.7 | 11.3 | 9.8 | 88.7 |
| #100 | 2.2 | 2.9 | 5.7 | 3.8 | 7.5 | 96.2 |
| LBW | 1.9 | 2.6 | 0.6 | 1.6 | 2.2 | 98.4 |


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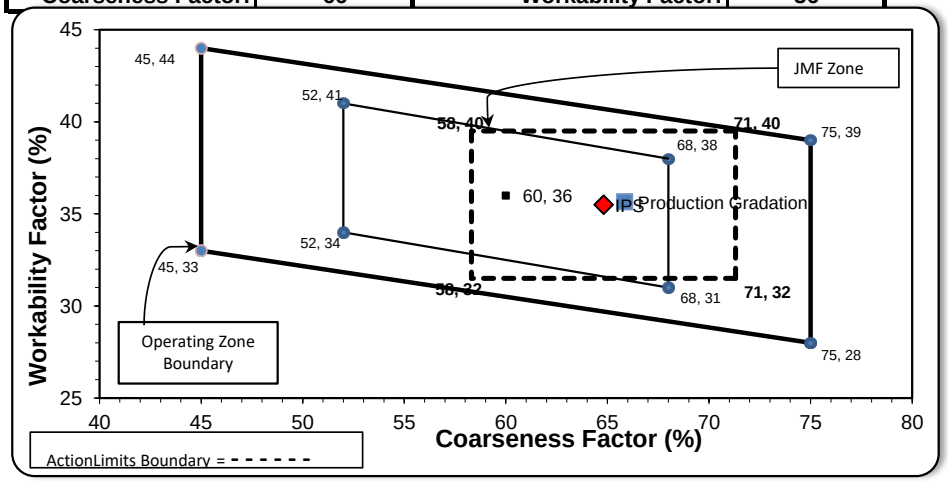
*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom.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

Production Gradation ◉ Batch Plant Gradations ○ Aggregate Supplier Gradations

| Coarseness Factor: | 66 | Workability Factor: | 36 |
|---|---|---|---|




Intial Production Sample (IPS)

| Coarseness Factor: | 65 |
|---|---|
| Workability Factor: | 36 |

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 99.0 | 0.6 | 0.6 |
| 1" | 84.0 | 15.3 | 16.0 |
| 3/4" | 73.5 | 10.5 | 26.5 |
| 1/2" | 65.2 | 8.2 | 34.8 |
| 3/8" | 58.2 | 7.1 | 41.8 |
| #4 | 44.1 | 14.1 | 55.9 |
| #8 | 35.5 | 8.6 | 64.5 |
| #16 | 29.1 | 6.4 | 70.9 |
| #30 | 21.9 | 7.3 | 78.1 |
| #50 | 9.6 | 12.2 | 90.4 |
| #100 | 2.6 | 7.1 | 97.4 |
| LBW | 1.0 | 1.6 | 99.0 |

PREPARED BY:
SM, LLC Technical Service

Approved By:

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# Daily Summary Report

Date Tuesday, August 26, 2025

| | | | | | |
|---|---|---|---|---|---|
| Sample Id | -674923723 | -674966470 | -1989632129 | -674948251 | -674918323 |
| Plant | S000<br>Superior Onsite | S000<br>Superior Onsite | S000<br>Superior Onsite | S000<br>Superior Onsite | S000<br>Superior Onsite |
| Product | 7919<br>COARSE AGG<br>P1M LS | 1051<br>6AA LS | 7920<br>INTERMED AGG<br>P1M LS | 1022<br>2NS GR | 1067<br>26A Mod LS |
| Specification | Coarse Agg P1M LS Target | | Intermed Agg P1M LS Target | 2NS GR Spec | 26A Mod LS Spec |
| Sample Type | QA | QA | QA | QA | QA |
| 2" (50mm) | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1 1/2" (37.5mm) | 98.5 | 100.0 | 100.0 | | 100.0 |
| 1" (25mm) | 60.0 | 98.6 | 100.0 | | 100.0 |
| 3/4" (19mm) | 14.3 | 81.2 | 99.5 | | 100.0 |
| 1/2" (12.5mm) | 5.3 | 40.4 | 78.5 | | 99.2 |
| 3/8" (9.5mm) | 4.3 | 21.3 | 54.7 | 100.0 | 80.2 |
| #4 (4.75mm) | 3.2 | 4.4 | 12.8 | 98.3 | 15.7 |
| #8 (2.36mm) | 2.9 | 2.5 | 5.0 | 85.0 | 4.9 |
| #16 (1.18mm) | 2.7 | 2.1 | 3.6 | 67.9 | 3.4 |
| #30 (.6mm) | 2.6 | 2.0 | 3.3 | 49.4 | 2.8 |
| #50 (.3mm) | 2.4 | 1.9 | 3.1 | 24.7 | 2.6 |
| #100 (.15mm) | 2.2 | 1.9 | 2.9 | 5.7 | 2.5 |
| #200 (75µm) | 2.0 | 1.77 | 2.7 | 0.8 | 2.3 |
| Pan | 0.0 | 0.00 | 0.0 | 0.0 | 0.0 |
| FM | | | | 2.69 | |
| -#200 (75um) | | | | 0.8 | |
| Wash Loss (#200/75um) | 1.9 | 1.7 | 2.6 | 0.6 | 2.2 |
| Total Moisture | 1.8 | 2.9 | 3.0 | 4.6 | 3.1 |

# Aggregate Optimization Chart

Production Gradation Report

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

Contractor:

Sample Date: 8/25/25

Concrete Grade: **P1M, 3500HP, 4000HP**

Dates Test Represents: 8/26/2025 through 9/1/2025

MDOT No.:

| Agg. Class | Pit # | Source | Weight (SSD) | ft³ | Specific Gravity | % Contribution |
|---|---|---|---|---|---|---|
| CA | 71-47 | Presque Isle | 900 | 5.50 | 2.62 | 29.3 |
| IA | 71-47 | Presque Isle | 970 | 5.93 | 2.62 | 31.6 |
| 2NS | 63-009 | Koenig Oxford | 1200 | 7.26 | 2.65 | 39.1 |
| | | **Total Wt** | **3070** | **18.70** | | 100.0 |

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

| Sieve | CA | IA | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|---|---|---|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 96.9 | 100.0 | 100.0 | 99.1 | 0.9 | 0.9 |
| 1" | 33.4 | 100.0 | 100.0 | 80.5 | 18.6 | 19.5 |
| 3/4" | 7.4 | 95.1 | 100.0 | 71.3 | 9.2 | 28.7 |
| 1/2" | 1.4 | 72.4 | 100.0 | 62.4 | 8.9 | 37.6 |
| 3/8" | 1.1 | 44.8 | 100.0 | 53.6 | 8.8 | 46.4 |
| #4 | 1.1 | 8.7 | 96.3 | 40.7 | 12.9 | 59.3 |
| #8 | 1.1 | 3.9 | 82.2 | 33.7 | 7.0 | 66.3 |
| #16 | 1.1 | 2.8 | 65.7 | 26.9 | 6.8 | 73.1 |
| #30 | 1.1 | 2.4 | 46.7 | 19.3 | 7.6 | 80.7 |
| #50 | 1.0 | 2.2 | 21.1 | 9.2 | 10.1 | 90.8 |
| #100 | 1.0 | 2.1 | 5.4 | 3.1 | 6.2 | 96.9 |
| LBW | 0.8 | 1.9 | 1.1 | 1.3 | 1.8 | 98.7 |


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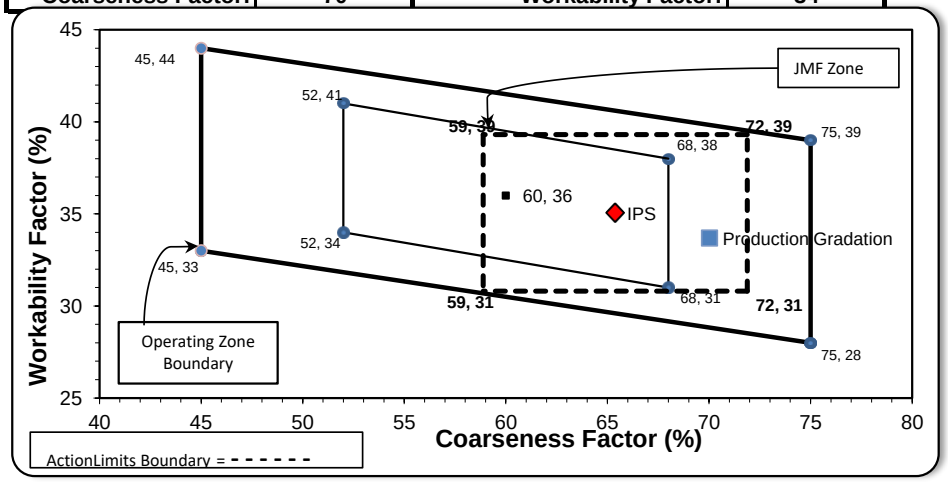
*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom.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

Production Gradation ◉ Batch Plant Gradations ○ Aggregate Supplier Gradations

| Coarseness Factor: | 70 | Workability Factor: | 34 |
|---|---|---|---|




Intial Production Sample (IPS)

| Coarseness Factor: | 65 |
|---|---|
| Workability Factor: | 35 |

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 99.6 | 0.4 | 0.4 |
| 1" | 83.9 | 15.7 | 16.1 |
| 3/4" | 74.1 | 9.8 | 25.9 |
| 1/2" | 64.3 | 9.7 | 35.7 |
| 3/8" | 57.5 | 6.8 | 42.5 |
| #4 | 44.5 | 13.1 | 55.5 |
| #8 | 35.1 | 9.4 | 64.9 |
| #16 | 27.9 | 7.2 | 72.1 |
| #30 | 21.7 | 6.2 | 78.3 |
| #50 | 12.6 | 9.1 | 87.4 |
| #100 | 3.5 | 9.1 | 96.5 |
| LBW | 1.2 | 2.4 | 98.8 |

PREPARED BY:
SM, LLC Technical Service

Approved By:

# Daily Summary Report

| | | | |
|---|---|---|---|
| Date | Tuesday, August 26, 2025 | | |
| Sample Id | -674967386 | -1989622577 | -667668788 |
| Plant | S39 Superior Sterling Heights | S39 Superior Sterling Heights | S39 Superior Sterling Heights |
| Product | 7919 COARSE AGG P1M LS | 7920 INTERMED AGG P1M LS | 1022 2NS GR |
| Specification | Coarse Agg P1M LS Target | Intermed Agg P1M LS Target | 2NS GR Spec |
| Sample Type | QA | QA | QA |
| 2" (50mm) | 100.0 | 100.0 | |
| 1 1/2" (37.5mm) | 96.9 | 100.0 | |
| 1" (25mm) | 33.4 | 100.0 | |
| 3/4" (19mm) | 7.4 | 95.1 | |
| 1/2" (12.5mm) | 1.4 | 72.4 | |
| 3/8" (9.5mm) | 1.1 | 44.8 | 100.0 |
| #4 (4.75mm) | 1.1 | 8.7 | 96.3 |
| #8 (2.36mm) | 1.1 | 3.9 | 82.2 |
| #16 (1.18mm) | 1.1 | 2.8 | 65.7 |
| #30 (.6mm) | 1.1 | 2.4 | 46.7 |
| #50 (.3mm) | 1.0 | 2.2 | 21.1 |
| #100 (.15mm) | 1.0 | 2.1 | 5.4 |
| #200 (75µm) | 0.9 | 1.9 | 1.4 |
| Pan | 0.0 | 0.0 | 0.0 |
| FM | | | 2.82 |
| Wash Loss (#200/75um) | 0.8 | 1.9 | 1.1 |
| Total Moisture | 0.53 | 1.37 | 2.54 |