

# Aggregate Optimization Chart

**PLANT #:** **P-02**

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

Sample Date: 4/22/26

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 4/23/2026 through 4/29/2026

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Persque Isle	1420	8.92	2.55	49.0
26A	71-47	Persque Isle	300	1.89	2.55	10.3
2NS	63-092	Ray Rd	1180	7.11	2.66	40.7
<b>Total Wt</b>			<b>2900</b>	<b>17.92</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"	99.0	100.0	100.0	99.5	0.5	0.5
3/4"	79.7	100.0	100.0	90.1	9.5	9.9
1/2"	34.0	96.5	100.0	67.3	22.7	32.7
3/8"	16.6	82.8	100.0	57.4	9.9	42.6
#4	2.7	15.6	97.3	42.5	14.9	57.5
#8	1.8	4.8	82.9	35.1	7.4	64.9
#16	1.5	2.9	63.3	26.8	8.3	73.2
#30	1.4	2.4	46.6	19.9	6.9	80.1
#50	1.4	2.2	23.9	10.6	9.3	89.4
#100	1.3	2.0	5.1	2.9	7.7	97.1
LBW	1.1	1.8	0.8	1.1	1.9	98.9

\*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.

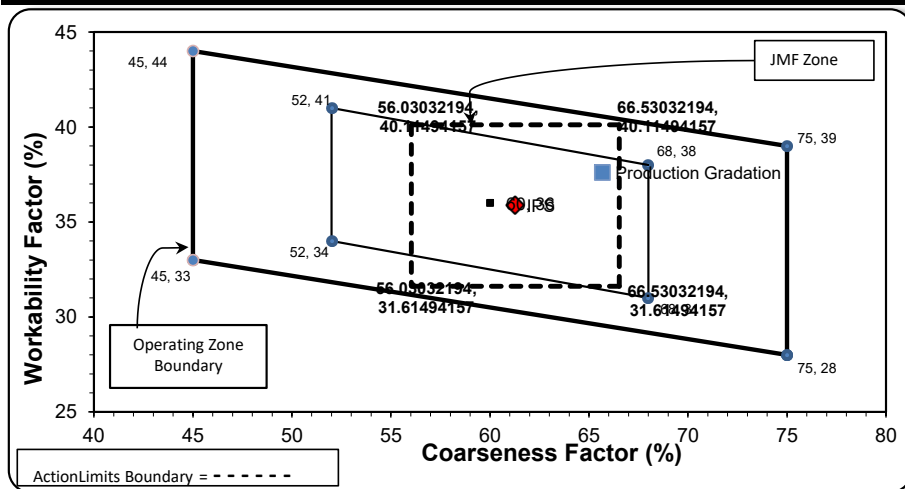
Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>66</b>	<b>Workability Factor:</b>	<b>35</b>	<b>37.6</b>
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<b>Coarseness Factor:</b>	<b>61</b>
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<b>Workability Factor:</b>	<b>36</b>
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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

**PLANT #:** **P-11**

Sample Date: 4/22/26

Concrete Grade: **DM, 4500HP**

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

Dates Test Represents: 4/23/2026 through 4/29/2026

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Persque Isle	1420	8.92	2.55	49.0
26A	71-47	Persque Isle	300	1.89	2.55	10.3
2NS	63-092	Ray Rd	1180	7.11	2.66	40.7
<b>Total Wt</b>			<b>2900</b>	<b>17.92</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"	99.0	100.0	100.0	99.5	0.5	0.5
3/4"	79.7	100.0	100.0	90.1	9.5	9.9
1/2"	34.0	96.5	100.0	67.3	22.7	32.7
3/8"	16.6	82.8	100.0	57.4	9.9	42.6
#4	2.7	15.6	97.3	42.5	14.9	57.5
#8	1.8	4.8	82.9	35.1	7.4	64.9
#16	1.5	2.9	63.3	26.8	8.3	73.2
#30	1.4	2.4	46.6	19.9	6.9	80.1
#50	1.4	2.2	23.9	10.6	9.3	89.4
#100	1.3	2.0	5.1	2.9	7.7	97.1
LBW	1.1	1.8	0.8	1.1	1.9	98.9

\*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.

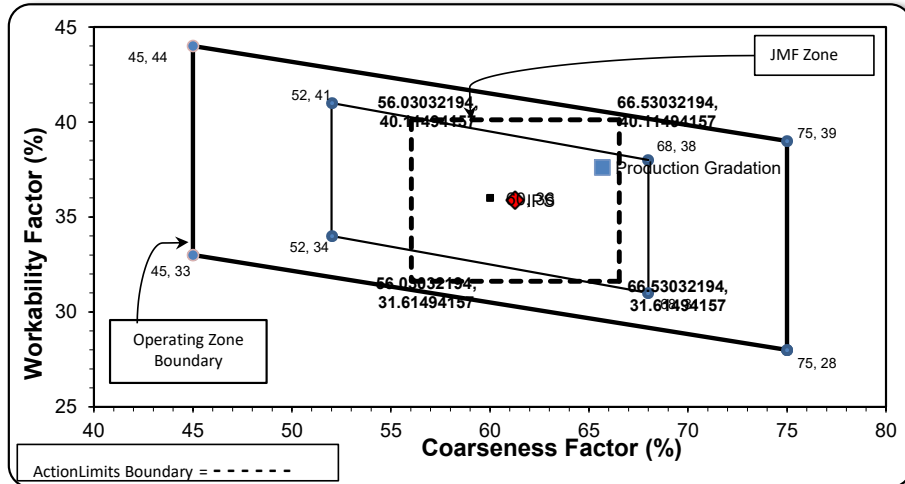
Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>66</b>	<b>Workability Factor:</b>	<b>35</b>	<b>37.6</b>
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<b>Coarseness Factor:</b>	<b>61</b>
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<b>Workability Factor:</b>	<b>36</b>
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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

**PLANT #:** **P-103**

Sample Date: 4/22/26

Concrete Grade: **DM, 4500HP**

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

Dates Test Represents: 4/23/2026 through 4/29/2026

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	StoneCo	1600	9.53	2.69	53.3
26A	58-003	StoneCo	200	1.19	2.69	6.7
2NS	63-115	Highland	1200	7.23	2.66	40.0
<b>Total Wt</b>			<b>3000</b>	<b>17.95</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"	88.6	100.0	100.0	93.9	6.1	6.1
1/2"	45.6	99.1	100.0	70.9	23.0	29.1
3/8"	30.0	82.4	100.0	61.5	9.4	38.5
#4	4.5	8.0	99.1	42.6	18.9	57.4
#8	2.7	1.8	84.2	35.2	7.3	64.8
#16	1.3	1.4	65.3	26.9	8.3	73.1
#30	1.3	1.2	47.6	19.8	7.1	80.2
#50	1.2	1.2	24.0	10.3	9.5	89.7
#100	1.1	1.1	4.3	2.4	7.9	97.6
LBW	0.9	1.0	1.0	0.9	1.4	99.1

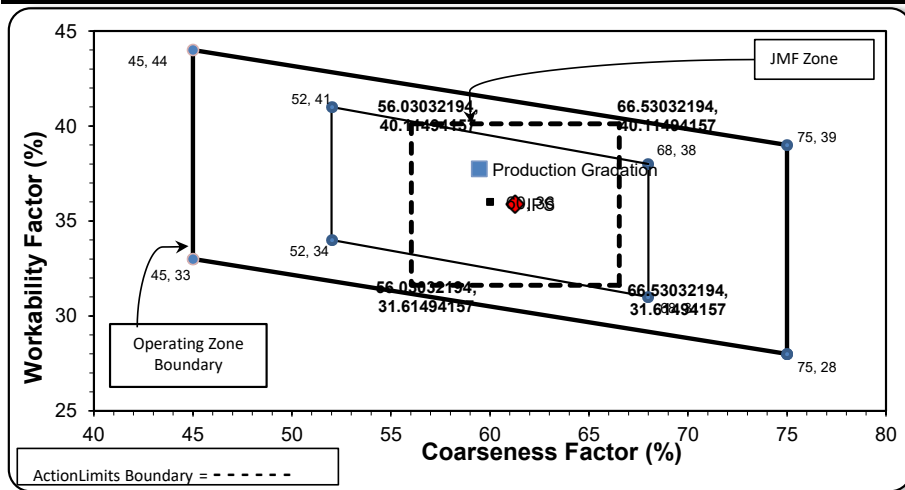
\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.  
 \*\*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.  
 \*\*\*% Retained must be at least 4% for the 3/4" sieve when 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>59</b>	<b>Workability Factor:</b>	<b>35</b>	<b>37.7</b>
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<b>Coarseness Factor:</b>	<b>61</b>
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<b>Workability Factor:</b>	<b>36</b>
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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

**PLANT #:** **P-102**

Sample Date: 4/22/26

Concrete Grade: **DM, 4500HP**

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

Dates Test Represents: 4/23/2026 through 4/29/2026

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	58-003	StoneCo	1600	9.53	2.69	53.3
26A	58-003	StoneCo	200	1.19	2.69	6.7
2NS	63-115	Highland	1200	7.23	2.66	40.0
<b>Total Wt</b>			<b>3000</b>	<b>17.95</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"	88.6	100.0	100.0	93.9	6.1	6.1
1/2"	45.6	99.1	100.0	70.9	23.0	29.1
3/8"	30.0	82.4	100.0	61.5	9.4	38.5
#4	4.5	8.0	99.1	42.6	18.9	57.4
#8	2.7	1.8	84.2	35.2	7.3	64.8
#16	1.3	1.4	65.3	26.9	8.3	73.1
#30	1.3	1.2	47.6	19.8	7.1	80.2
#50	1.2	1.2	24.0	10.3	9.5	89.7
#100	1.1	1.1	4.3	2.4	7.9	97.6
LBW	0.9	1.0	1.0	0.9	1.4	99.1

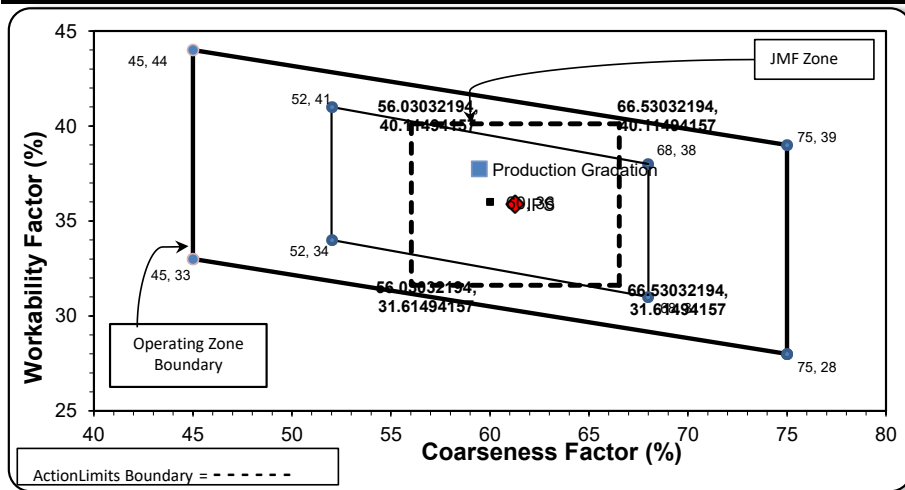
\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.  
 \*\*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.  
 \*\*\*% Retained must be at least 4% for the 3/4" sieve when 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>59</b>	<b>Workability Factor:</b>	<b>35</b>	<b>37.7</b>
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<b>Coarseness Factor:</b>	<b>61</b>
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<b>Workability Factor:</b>	<b>36</b>
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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