

# Aggregate Optimization Chart

**PLANT #:** P11

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

Sample Date: 4/21/25

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

Dates Test Represents: 4/22/2025 through 4/28/2025

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
CA	71-47	Presque Isle	870	5.32	2.62	28.3
IA	71-47	Presque Isle	1000	6.12	2.62	32.6
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
<b>Total Wt</b>			<b>3070</b>	<b>18.70</b>		<b>100.0</b>

<----- 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"	95.6	100.0	100.0	98.8	1.2	1.2
1"	21.3	100.0	100.0	77.7	21.1	22.3
3/4"	3.6	98.6	100.0	72.2	5.5	27.8
1/2"	1.1	78.4	100.0	64.9	7.3	35.1
3/8"	1.1	52.7	100.0	56.6	8.4	43.4
#4	1.1	7.7	97.7	41.0	15.6	59.0
#8	1.0	2.6	78.4	31.8	9.2	68.2
#16	1.0	2.0	62.0	25.2	6.6	74.8
#30	0.9	1.8	46.6	19.1	6.1	80.9
#50	0.9	1.7	24.8	10.5	8.6	89.5
#100	0.9	1.6	4.8	2.7	7.9	97.3
LBW	0.7	1.3	0.7	0.9	1.8	99.1

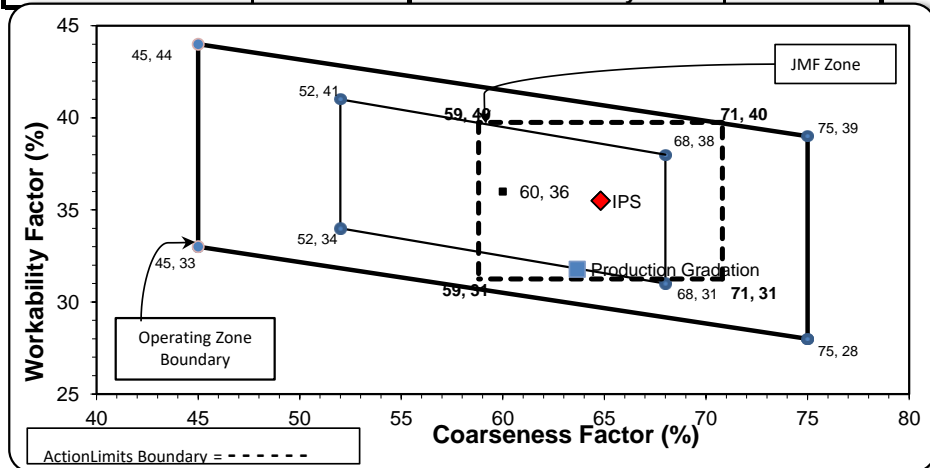
\*Maximum % Retained must be above the 3/8" sieve.  
 \*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.  
 \*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.  
 \*% Retained must be at least 8% for the 1" sieve when a 2"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



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

Production Gradation  Batch Plant Gradations  Aggregate Supplier Gradations

**Coarseness Factor:** 64      **Workability Factor:** 32



Initial 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:

# Aggregate Optimization Chart

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

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

Sample Date: 4/21/25

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

Dates Test Represents: 4/22/2025 through 4/28/2025

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
CA	71-47	Presque Isle	870	5.32	2.62	28.3
IA	71-47	Presque Isle	1000	6.12	2.62	32.6
2NS	63-92	Grange Hall	1200	7.26	2.65	39.1
<b>Total Wt</b>			<b>3070</b>	<b>18.70</b>		<b>100.0</b>

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



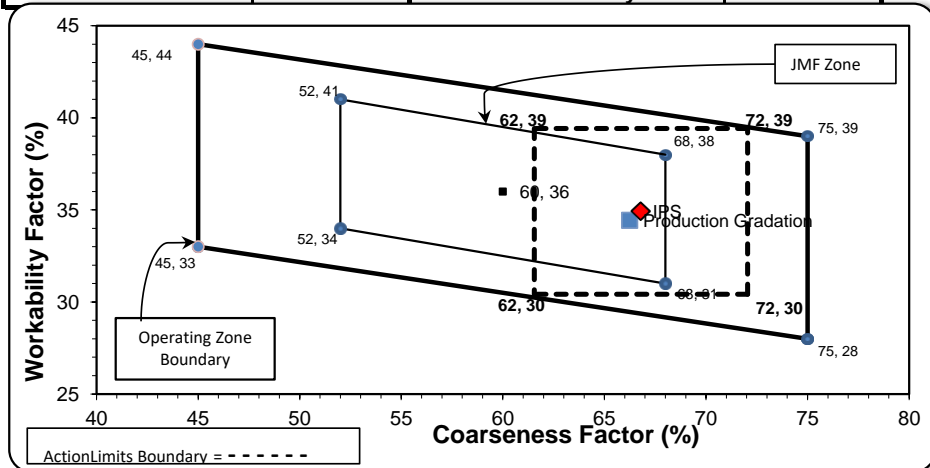
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Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	95.6	100.0	100.0	98.8	1.2	1.2
1"	21.3	100.0	100.0	77.7	21.1	22.3
3/4"	3.6	98.6	100.0	72.2	5.5	27.8
1/2"	1.1	78.4	100.0	64.9	7.3	35.1
3/8"	1.1	52.7	100.0	56.6	8.4	43.4
#4	1.1	7.7	98.2	41.2	15.4	58.8
#8	1.0	2.6	85.2	34.4	6.8	65.6
#16	1.0	2.0	69.3	28.0	6.4	72.0
#30	0.9	1.8	48.5	19.8	8.2	80.2
#50	0.9	1.7	21.4	9.2	10.6	90.8
#100	0.9	1.6	3.2	2.0	7.1	98.0
LBW	0.7	1.3	0.4	0.8	1.2	99.2

\*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

<b>Coarseness Factor:</b>	<b>66</b>	<b>Workability Factor:</b>	<b>34</b>
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Initial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>67</b>
<b>Workability Factor:</b>	<b>35</b>

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	85.0	15.0	15.0
3/4"	72.1	12.9	27.9
1/2"	64.5	7.6	35.5
3/8"	56.5	8.0	43.5
#4	42.7	13.8	57.3
#8	34.9	7.8	65.1
#16	29.0	5.9	71.0
#30	21.0	8.0	79.0
#50	8.2	12.8	91.8
#100	1.6	6.5	98.4
LBW	0.7	0.9	99.3

PREPARED BY:  
 SM, LLC Technical Service

Approved By:

# Aggregate Optimization Chart

**PLANT #:** **P-O2**

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

Sample Date: 4/21/25

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

Dates Test Represents: 4/22/2025 through 4/28/2025

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

Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
CA	71-47	Presque Isle	870	5.32	2.62	28.3
IA	71-47	Presque Isle	1000	6.12	2.62	32.6
2NS	63-115	Ray Rd	1200	7.26	2.65	39.1
<b>Total Wt</b>			<b>3070</b>	<b>18.70</b>		<b>100.0</b>

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



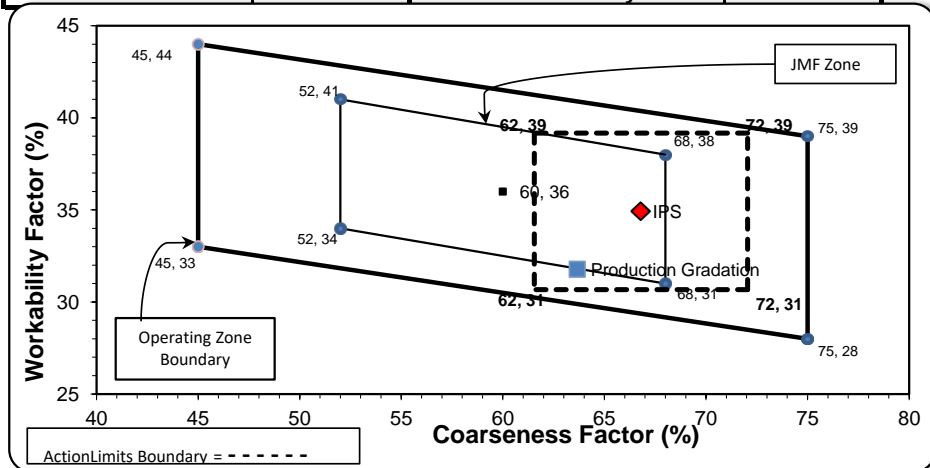
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Sieve	CA	IA	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	95.6	100.0	100.0	98.8	1.2	1.2
1"	21.3	100.0	100.0	77.7	21.1	22.3
3/4"	3.6	98.6	100.0	72.2	5.5	27.8
1/2"	1.1	78.4	100.0	64.9	7.3	35.1
3/8"	1.1	52.7	100.0	56.6	8.4	43.4
#4	1.1	7.7	97.7	41.0	15.6	59.0
#8	1.0	2.6	78.4	31.8	9.2	68.2
#16	1.0	2.0	62.0	25.2	6.6	74.8
#30	0.9	1.8	46.6	19.1	6.1	80.9
#50	0.9	1.7	24.8	10.5	8.6	89.5
#100	0.9	1.6	4.8	2.7	7.9	97.3
LBW	0.7	1.3	0.7	0.9	1.8	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

<b>Coarseness Factor:</b>	<b>64</b>	<b>Workability Factor:</b>	<b>32</b>
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Intial Production Sample (IPS)

<b>Coarseness Factor:</b>	<b>67</b>
<b>Workability Factor:</b>	<b>35</b>

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	85.0	15.0	15.0
3/4"	72.3	12.7	27.7
1/2"	64.5	7.8	35.5
3/8"	56.5	8.0	43.5
#4	42.7	13.8	57.3
#8	34.9	7.8	65.1
#16	29.0	5.9	71.0
#30	21.0	8.0	79.0
#50	8.2	12.8	91.8
#100	1.6	6.5	98.4
LBW	0.7	0.9	99.3

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