

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P11**

Sample Date: 9/9/26

Concrete Grade: **P1M-3500HP**

Contractor: _____

Dates Test Represents: 9/10/2026 through 9/16/2026

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	820	5.11	2.57	26.8
IA	71-47	Presque Isle	1040	6.49	2.57	34.0
2NS	63-115	Ray Rd	1200	7.20	2.67	39.2
Total Wt			3060	18.80		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"	95.5	100.0	100.0	98.8	1.2	1.2
1"	34.3	100.0	100.0	82.4	16.4	17.6
3/4"	8.1	100.0	100.0	75.4	7.0	24.6
1/2"	3.1	75.6	100.0	65.7	9.6	34.3
3/8"	2.8	49.2	100.0	56.7	9.1	43.3
#4	2.4	10.2	96.4	41.9	14.8	58.1
#8	2.2	3.9	82.1	34.1	7.8	65.9
#16	2.2	2.6	60.8	25.3	8.8	74.7
#30	2.0	2.3	44.2	18.7	6.7	81.3
#50	2.0	2.2	22.0	9.9	8.7	90.1
#100	1.8	2.1	5.2	3.2	6.7	96.8
LBW	1.4	1.8	0.8	1.3	1.9	98.7



Superior Materials, LLC

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

*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.

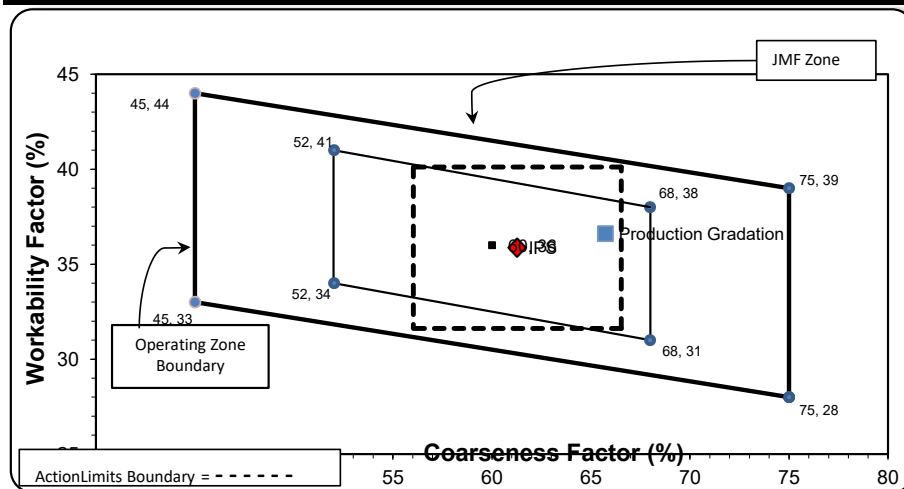
Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	66	Workability Factor:	34	36.6
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Coarseness Factor:	61
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Workability Factor:	36
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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

Production Gradation Report

PLANT #: **P-21**

Sample Date: 9/9/26

Concrete Grade: **P1M-3500HP**

Contractor: _____

Dates Test Represents: 9/10/2026 through 9/16/2026

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	% Contribution
CA	71-47	Presque Isle	760	4.74	2.57	24.9
IA	71-47	Presque Isle	1110	6.92	2.57	36.4
2NS	81-019	Pleasant Lk	1180	7.14	2.65	38.7
Total Wt			3050	18.80		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"	95.5	100.0	100.0	98.9	1.1	1.1
1"	34.3	100.0	100.0	83.6	15.2	16.4
3/4"	8.1	100.0	100.0	77.1	6.5	22.9
1/2"	3.1	75.6	100.0	67.0	10.1	33.0
3/8"	2.8	49.2	100.0	57.3	9.7	42.7
#4	2.4	10.2	98.1	42.3	15.0	57.7
#8	2.2	3.9	85.2	34.9	7.3	65.1
#16	2.2	2.6	64.4	26.4	8.5	73.6
#30	2.0	2.3	42.0	17.6	8.8	82.4
#50	2.0	2.2	14.5	6.9	10.7	93.1
#100	1.8	2.1	3.1	2.4	4.5	97.6
LBW	0.4	1.8	0.9	1.1	1.3	98.9



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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.

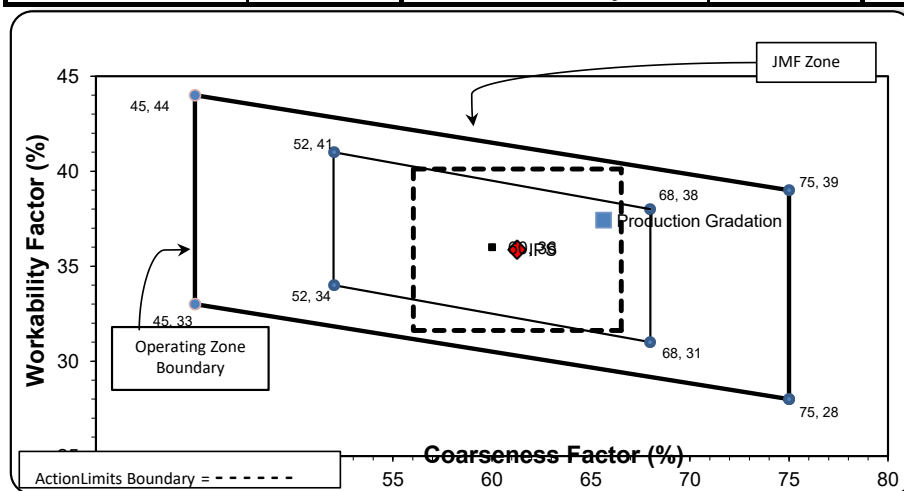
Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	66	Workability Factor:	35	37.4
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Coarseness Factor:	61
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Workability Factor:	36
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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

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Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

Sample Date: 9/9/26

Concrete Grade: **P1M-3500HP**

Contractor: _____

Dates Test Represents: 9/10/2026 through 9/16/2026

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	58-003	StoneCo	1350	8.04	2.69	42.9
IA	58-003	StoneCo	600	3.57	2.69	19.0
2NS	63-114	Highland	1200	7.23	2.66	38.1
Total Wt			3150	18.85		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"	100.0	100.0	100.0	100.0	0.0	0.0
1"	62.5	100.0	100.0	83.9	16.1	16.1
3/4"	34.4	100.0	100.0	71.9	12.0	28.1
1/2"	14.3	90.1	100.0	61.4	10.5	38.6
3/8"	8.9	75.0	100.0	56.2	5.2	43.8
#4	2.4	18.7	98.6	42.2	14.0	57.8
#8	1.6	2.7	84.0	33.2	9.0	66.8
#16	1.3	1.7	66.2	26.1	7.1	73.9
#30	1.2	1.5	46.7	18.6	7.5	81.4
#50	1.1	1.4	21.9	9.1	9.5	90.9
#100	1.0	1.3	4.4	2.4	6.7	97.6
LBW	1.0	1.1	0.4	0.8	1.6	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 4% for the 3/4" sieve when

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



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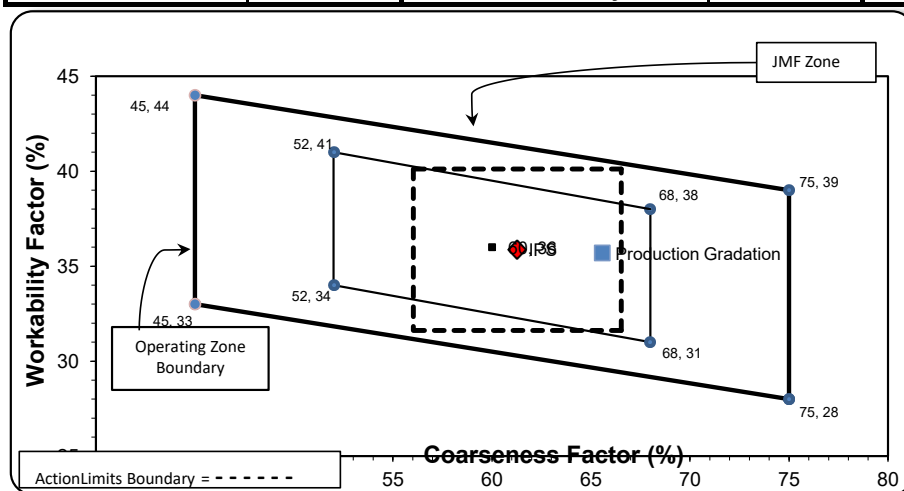
Production Gradation ☐ Batch Plant Gradations ☒ Aggregate Supplier Gradations

Adjusted WF Initial Production Sample (IPS)

Coarseness Factor:	66	Workability Factor:	33	35.7
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Coarseness Factor:	61
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Workability Factor:	36
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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

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Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

Sample Date: 9/9/26

Concrete Grade: **P1M-3500HP**

Contractor: _____

Dates Test Represents: 9/10/2026 through 9/16/2026

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
CA	58-003	StoneCo	1350	8.04	2.69	42.9
IA	58-003	StoneCo	600	3.57	2.69	19.0
2NS	63-114	Highland	1200	7.23	2.66	38.1
Total Wt			3150	18.85		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"	100.0	100.0	100.0	100.0	0.0	0.0
1"	62.5	100.0	100.0	83.9	16.1	16.1
3/4"	34.4	100.0	100.0	71.9	12.0	28.1
1/2"	14.3	90.1	100.0	61.4	10.5	38.6
3/8"	8.9	75.0	100.0	56.2	5.2	43.8
#4	2.4	18.7	98.6	42.2	14.0	57.8
#8	1.6	2.7	84.0	33.2	9.0	66.8
#16	1.3	1.7	66.2	26.1	7.1	73.9
#30	1.2	1.5	46.7	18.6	7.5	81.4
#50	1.1	1.4	21.9	9.1	9.5	90.9
#100	1.0	1.3	4.4	2.4	6.7	97.6
LBW	1.0	1.1	0.4	0.8	1.6	99.2



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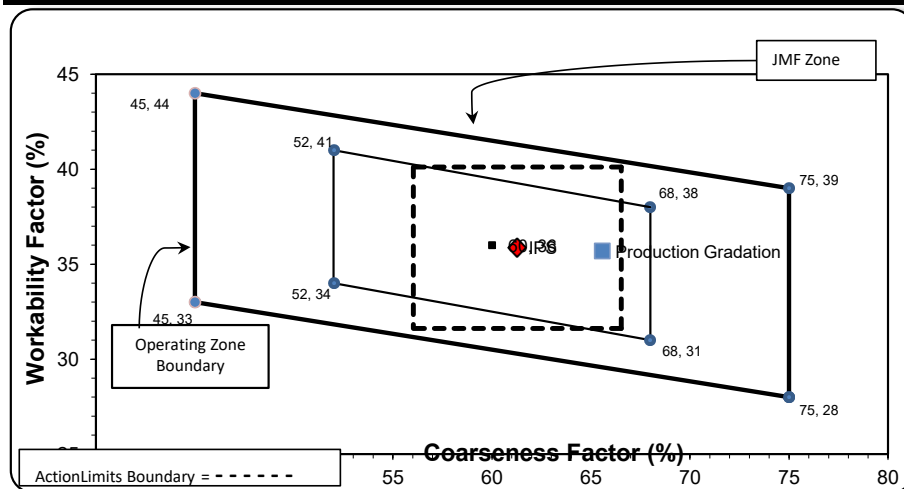
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1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
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