Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-101**

Contractor:

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1725	10.55	2.62	56.5
26A	71-47	Presque Isle	100	0.61	2.62	3.3
2NS	75-051	Mid Michigan	1230	7.41	2.66	40.3
		Total Wt	**3055**	**18.57**		100.0

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

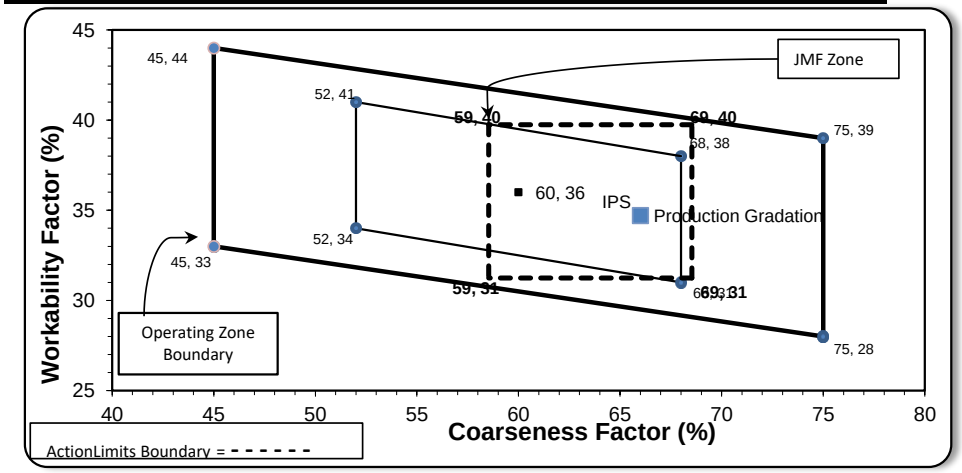
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	95.5	100.0	100.0	97.5	2.5	2.5
3/4"	71.1	100.0	100.0	83.7	13.8	16.3
1/2"	35.0	97.2	100.0	63.2	20.5	36.8
3/8"	24.3	89.5	100.0	56.9	6.3	43.1
#4	5.0	23.2	96.8	42.6	14.4	57.4
#8	2.1	4.6	82.9	34.7	7.8	65.3
#16	1.9	2.0	68.5	28.7	6.0	71.3
#30	1.8	1.6	52.0	22.0	6.7	78.0
#50	1.7	1.4	24.2	10.7	11.3	89.3
#100	1.6	1.4	5.9	3.3	7.4	96.7
LBW	1.4	1.2	1.3	1.4	2.0	98.6

*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:	66	Workability Factor:	35



Initial Production Sample (IPS)

Coarseness Factor:	64
Workability Factor:	35

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	93.9	6.1	6.1
1/2"	71.4	22.5	28.6
3/8"	59.0	12.4	41.0
#4	45.1	13.9	54.9
#8	35.5	9.6	64.5
#16	28.3	7.2	71.7
#30	21.3	6.9	78.7
#50	11.0	10.3	89.0
#100	3.4	7.6	96.6
LBW	1.1	2.3	98.9

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

Contractor: _____

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	53.2
26A	58-003	Stoneco	250	1.49	2.69	8.1
2NS	81-019	Pleasant Lake	1200	7.26	2.65	38.7
		Total Wt	**3100**	**18.58**		100.0

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

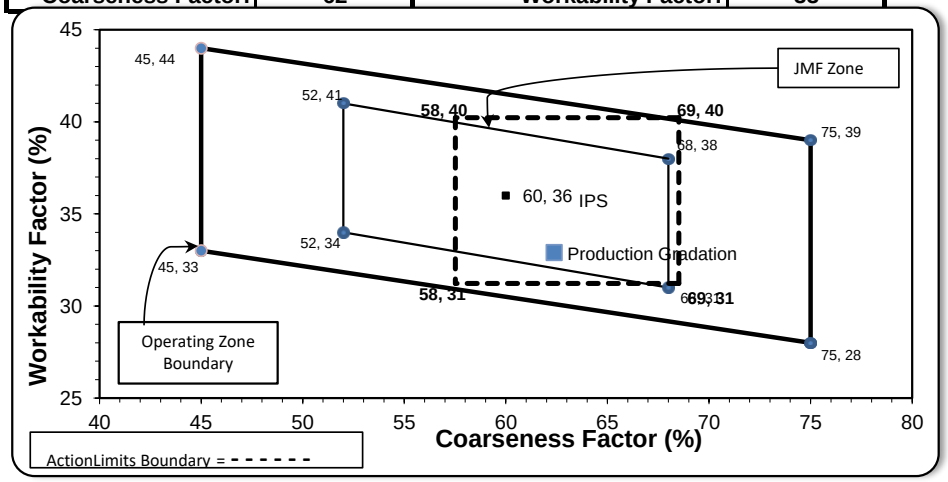
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	83.5	100.0	100.0	91.2	8.8	8.8
1/2"	46.1	99.1	100.0	71.2	20.0	28.8
3/8"	23.0	89.2	100.0	58.1	13.1	41.9
#4	3.9	10.2	98.1	40.9	17.3	59.1
#8	1.9	3.7	81.6	32.9	8.0	67.1
#16	1.4	2.9	63.6	25.6	7.3	74.4
#30	1.2	2.5	44.7	18.1	7.5	81.9
#50	1.2	2.3	22.9	9.7	8.5	90.3
#100	1.1	2.2	6.1	3.1	6.6	96.9
LBW	1.1	2.1	1.3	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 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:	62	Workability Factor:	33



Intial Production Sample (IPS)

Coarseness Factor:	63
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"	99.2	0.8	0.8
3/4"	90.9	8.3	9.1
1/2"	71.3	19.6	28.7
3/8"	59.5	11.8	40.5
#4	43.8	15.7	56.2
#8	35.7	8.1	64.3
#16	27.0	8.7	73.0
#30	18.6	8.4	81.4
#50	6.8	11.8	93.2
#100	1.4	5.4	98.6
LBW	0.6	0.8	99.4

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

Contractor: _____

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	53.2
26A	58-003	Stoneco	250	1.49	2.69	8.1
2NS	81-019	Pleasant Lake	1200	7.26	2.65	38.7
		Total Wt	**3100**	**18.58**		100.0

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

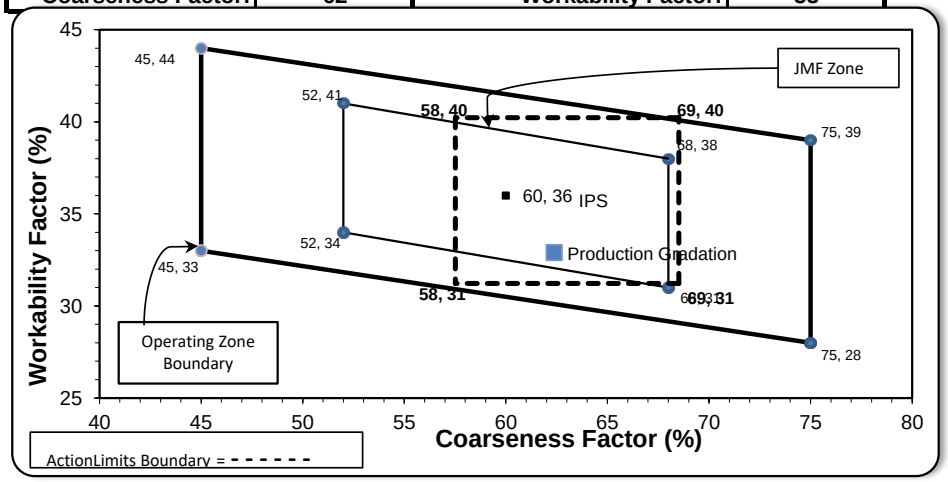
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	83.5	100.0	100.0	91.2	8.8	8.8
1/2"	46.1	99.1	100.0	71.2	20.0	28.8
3/8"	23.0	89.2	100.0	58.1	13.1	41.9
#4	3.9	10.2	98.1	40.9	17.3	59.1
#8	1.9	3.7	81.6	32.9	8.0	67.1
#16	1.4	2.9	63.6	25.6	7.3	74.4
#30	1.2	2.5	44.7	18.1	7.5	81.9
#50	1.2	2.3	22.9	9.7	8.5	90.3
#100	1.1	2.2	6.1	3.1	6.6	96.9
LBW	1.1	2.1	1.3	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 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:	62	Workability Factor:	33



Intial Production Sample (IPS)

Coarseness Factor:	63
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"	99.2	0.8	0.8
3/4"	90.9	8.3	9.1
1/2"	71.3	19.6	28.7
3/8"	59.5	11.8	40.5
#4	43.8	15.7	56.2
#8	35.7	8.1	64.3
#16	27.0	8.7	73.0
#30	18.6	8.4	81.4
#50	6.8	11.8	93.2
#100	1.4	5.4	98.6
LBW	0.6	0.8	99.4

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SM, LLC Technical Service

Approved BY:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: 14

Contractor:

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1630	9.71	2.69	52.4
26A	58-003	Stoneco	270	1.61	2.69	8.7
2NS	19-04	Schlegel	1210	7.26	2.67	38.9
		Total Wt	**3110**	**18.58**		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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	83.5	100.0	100.0	91.4	8.6	8.6
1/2"	46.1	99.1	100.0	71.7	19.7	28.3
3/8"	23.0	89.2	100.0	58.7	13.0	41.3
#4	3.9	10.2	99.9	41.8	16.9	58.2
#8	1.9	3.7	90.1	36.4	5.4	63.6
#16	1.4	2.9	69.4	28.0	8.4	72.0
#30	1.2	2.5	44.5	18.2	9.8	81.8
#50	1.2	2.3	14.3	6.4	11.8	93.6
#100	1.1	2.2	2.7	1.8	4.6	98.2
LBW	1.1	2.1	0.2	0.8	1.0	99.2

Builders Redi-Mix
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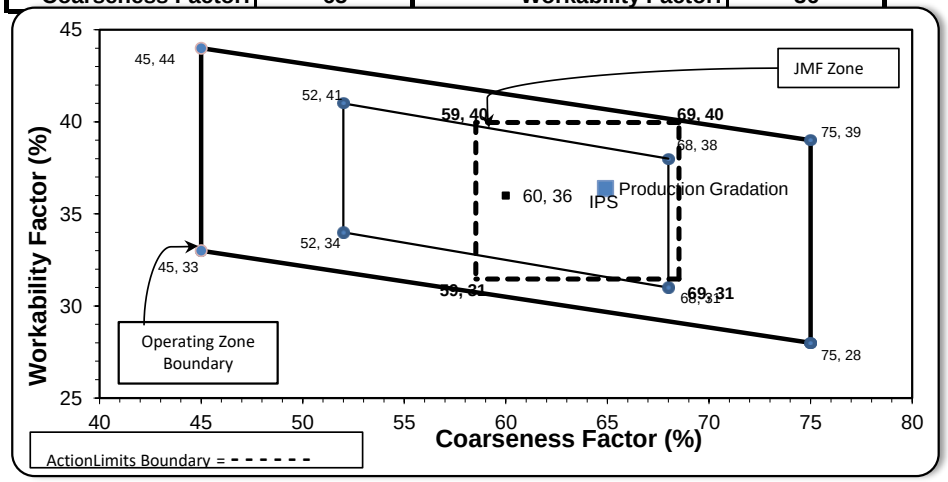
Suite 500
Farmington Hills, MI 48336

*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 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:	65	Workability Factor:	36



Intial Production Sample (IPS)

Coarseness Factor:	64
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"	99.2	0.8	0.8
3/4"	90.9	8.3	9.1
1/2"	71.3	19.6	28.7
3/8"	59.2	12.1	40.8
#4	41.5	17.7	58.5
#8	35.7	5.8	64.3
#16	27.9	7.9	72.1
#30	18.3	9.5	81.7
#50	7.3	11.0	92.7
#100	2.0	5.3	98.0
LBW	0.9	1.1	99.1

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SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: 12

Contractor:

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1670	10.21	2.62	54.8
26A	71-47	Presque Isle	150	0.92	2.62	4.9
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3
		Total Wt	**3050**	**18.57**		100.0

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

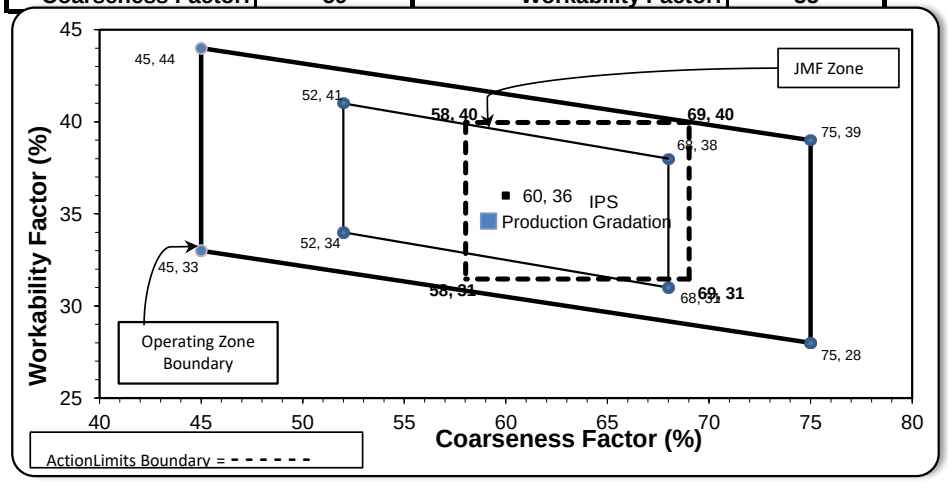
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.4	100.0	100.0	99.7	0.3	0.3
3/4"	85.4	100.0	100.0	92.0	7.7	8.0
1/2"	48.1	95.5	100.0	71.4	20.6	28.6
3/8"	30.4	88.5	100.0	61.3	10.0	38.7
#4	6.8	20.6	96.4	43.6	17.7	56.4
#8	2.9	4.8	81.3	34.6	9.0	65.4
#16	2.4	2.6	66.5	28.3	6.4	71.7
#30	2.3	2.0	50.8	21.8	6.4	78.2
#50	2.2	1.8	26.3	11.9	9.9	88.1
#100	2.1	1.8	5.6	3.5	8.4	96.5
LBW	1.6	1.5	0.9	1.3	2.2	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 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:	59	Workability Factor:	35



Intial Production Sample (IPS)

Coarseness Factor:	64
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"	99.2	0.8	0.8
3/4"	90.9	8.3	9.1
1/2"	71.3	19.6	28.7
3/8"	59.2	12.1	40.8
#4	41.5	17.7	58.5
#8	35.7	5.8	64.3
#16	27.9	7.9	72.1
#30	18.3	9.5	81.7
#50	7.3	11.0	92.7
#100	2.0	5.3	98.0
LBW	0.9	1.1	99.1

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **20**

Contractor:

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1550	9.48	2.62	50.8
26A	71-47	Presque Isle	250	1.53	2.62	8.2
2NS	63-92	Grange Hall	1250	7.56	2.65	41.0
		Total Wt	**3050**	**18.57**		100.0

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

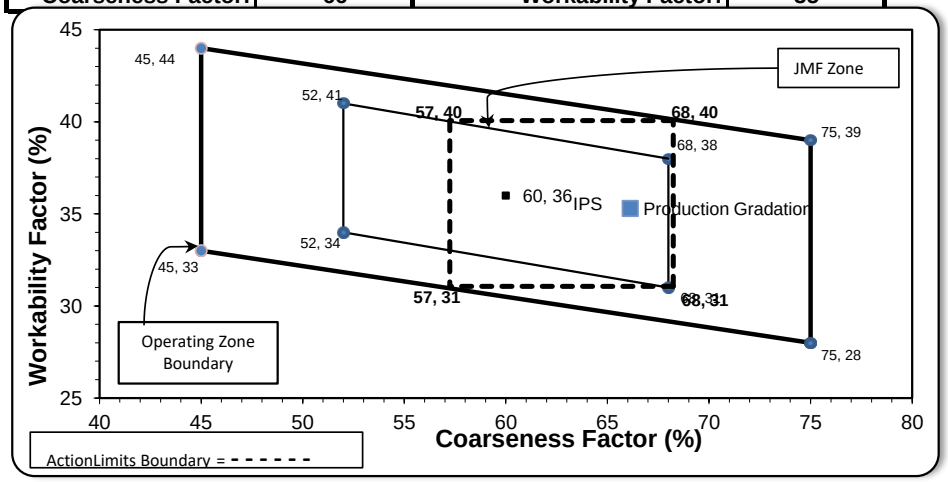
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	97.6	100.0	100.0	98.8	1.2	1.2
3/4"	78.4	100.0	100.0	89.0	9.8	11.0
1/2"	32.6	97.8	100.0	65.6	23.5	34.4
3/8"	17.6	89.0	100.0	57.2	8.3	42.8
#4	4.0	21.7	94.9	42.7	14.5	57.3
#8	2.4	5.8	82.0	35.3	7.4	64.7
#16	2.1	2.7	68.6	29.4	5.9	70.6
#30	2.0	2.2	51.2	22.2	7.2	77.8
#50	2.0	2.0	22.9	10.6	11.6	89.4
#100	1.9	1.9	3.2	2.4	8.1	97.6
LBW	1.5	1.8	0.3	1.0	1.4	99.0

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 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:	35



Intial Production Sample (IPS)

Coarseness Factor:	63
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"	100.0	0.0	0.0
3/4"	93.3	6.7	6.7
1/2"	70.6	22.6	29.4
3/8"	59.6	11.0	40.4
#4	43.9	15.7	56.1
#8	35.6	8.4	64.4
#16	28.4	7.2	71.6
#30	19.4	9.0	80.6
#50	7.5	11.9	92.5
#100	0.9	6.6	99.1
LBW	0.9	0.1	99.1

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **p11**

Contractor:

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft^3	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1670	10.21	2.62	54.8
26A	71-47	Presque Isle	150	0.92	2.62	4.9
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
		Total Wt	**3050**	**18.57**		100.0

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

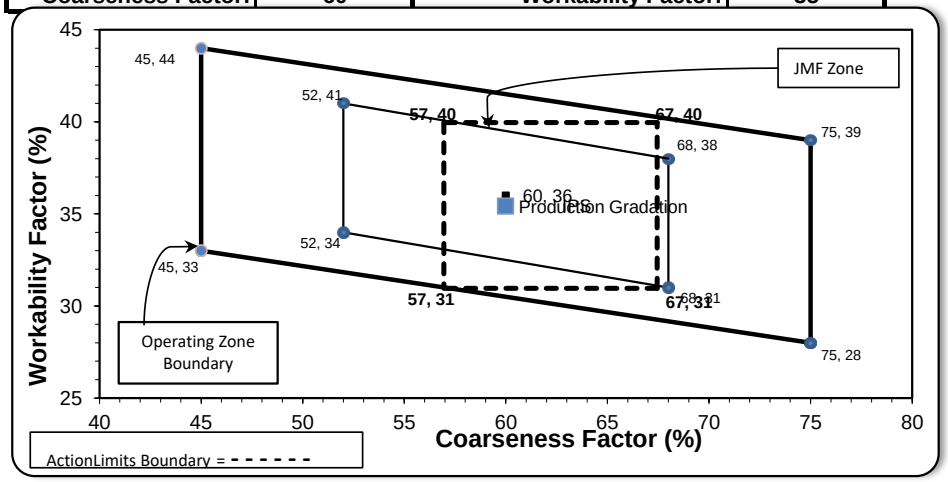
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.0	100.0	100.0	99.5	0.5	0.5
3/4"	89.0	100.0	100.0	94.0	5.5	6.0
1/2"	52.1	95.5	100.0	73.6	20.4	26.4
3/8"	30.3	88.5	100.0	61.3	12.3	38.7
#4	4.2	20.6	96.3	42.1	19.1	57.9
#8	1.3	4.8	85.5	35.4	6.7	64.6
#16	1.1	2.6	70.5	29.2	6.3	70.8
#30	1.0	2.0	50.3	20.9	8.2	79.1
#50	0.9	1.8	23.9	10.2	10.7	89.8
#100	0.8	1.8	7.0	3.3	6.9	96.7
LBW	0.7	1.5	0.7	0.7	2.6	99.3

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 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:	60	Workability Factor:	35



Intial Production Sample (IPS)

Coarseness Factor:	62
Workability Factor:	35

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	94.0	6.0	6.0
1/2"	70.2	23.7	29.8
3/8"	59.9	10.4	40.1
#4	42.7	17.2	57.3
#8	35.5	7.2	64.5
#16	28.4	7.0	71.6
#30	19.2	9.2	80.8
#50	8.9	10.3	91.1
#100	3.1	5.9	96.9
LBW	1.4	1.7	98.6

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

Contractor:

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1670	10.21	2.62	54.8
26A	71-47	Presque Isle	150	0.92	2.62	4.9
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
		Total Wt	**3050**	**18.57**		100.0

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

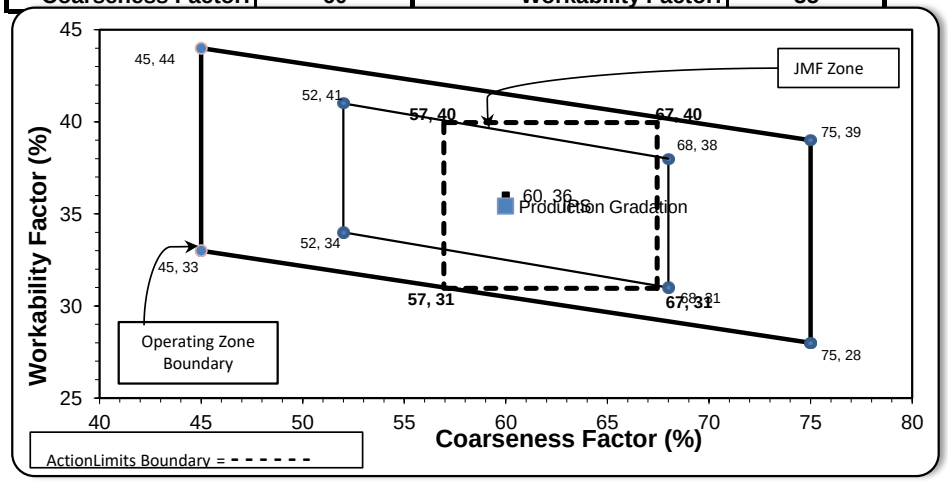
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.0	100.0	100.0	99.5	0.5	0.5
3/4"	89.0	100.0	100.0	94.0	5.5	6.0
1/2"	52.1	95.5	100.0	73.6	20.4	26.4
3/8"	30.3	88.5	100.0	61.3	12.3	38.7
#4	4.2	20.6	96.3	42.1	19.1	57.9
#8	1.3	4.8	85.5	35.4	6.7	64.6
#16	1.1	2.6	70.5	29.2	6.3	70.8
#30	1.0	2.0	50.3	20.9	8.2	79.1
#50	0.9	1.8	23.9	10.2	10.7	89.8
#100	0.8	1.8	7.0	3.3	6.9	96.7
LBW	0.7	1.5	0.7	0.7	2.6	99.3

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 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:	60	Workability Factor:	35



Intial Production Sample (IPS)

Coarseness Factor:	62
Workability Factor:	35

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	94.0	6.0	6.0
1/2"	70.2	23.7	29.8
3/8"	59.9	10.4	40.1
#4	42.7	17.2	57.3
#8	35.5	7.2	64.5
#16	28.4	7.0	71.6
#30	19.2	9.2	80.8
#50	8.9	10.3	91.1
#100	3.1	5.9	96.9
LBW	1.4	1.7	98.6

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-35**

Contractor: _____

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	53.2
26A	58-003	Stoneco	250	1.49	2.69	8.1
2NS	81-019	Pleasant Lake	1200	7.26	2.65	38.7
		Total Wt	**3100**	**18.58**		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"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	83.5	100.0	100.0	91.2	8.8	8.8
1/2"	46.1	99.1	100.0	71.2	20.0	28.8
3/8"	23.0	89.2	100.0	58.1	13.1	41.9
#4	3.9	10.2	98.1	40.9	17.3	59.1
#8	1.9	3.7	81.6	32.9	8.0	67.1
#16	1.4	2.9	63.6	25.6	7.3	74.4
#30	1.2	2.5	44.7	18.1	7.5	81.9
#50	1.2	2.3	22.9	9.7	8.5	90.3
#100	1.1	2.2	6.1	3.1	6.6	96.9
LBW	1.1	2.1	1.3	1.3	1.9	98.7

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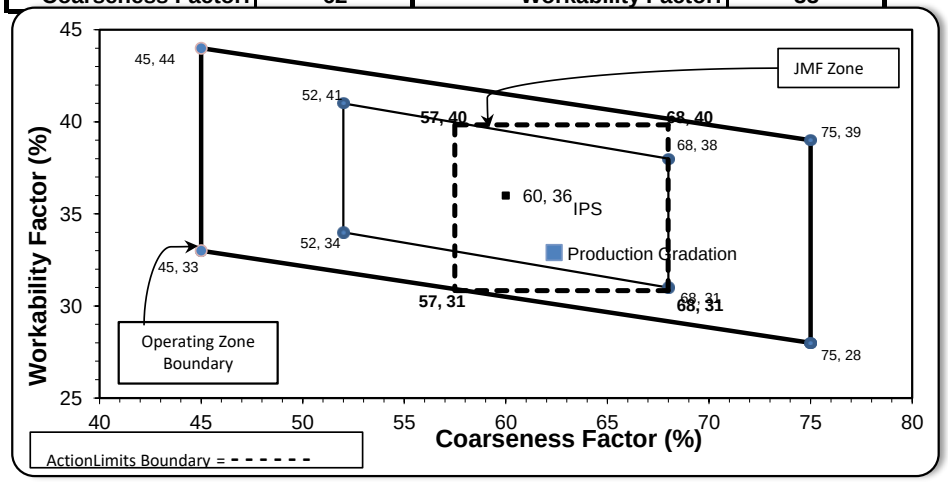
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

*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 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:	62	Workability Factor:	33



Intial Production Sample (IPS)

Coarseness Factor:	63
Workability Factor:	35

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.2	0.8	0.8
3/4"	90.9	8.3	9.1
1/2"	71.3	19.6	28.7
3/8"	59.4	11.9	40.6
#4	43.0	16.5	57.0
#8	35.3	7.6	64.7
#16	28.2	7.1	71.8
#30	21.6	6.6	78.4
#50	9.1	12.5	90.9
#100	1.7	7.4	98.3
LBW	1.1	0.6	98.9

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-36**

Contractor: _____

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1650	10.09	2.62	54.1
26A	71-47	Presque Isle	200	1.22	2.62	6.6
2NS	63-92	Grange Hall	1200	7.26	2.65	39.3
		Total Wt	**3050**	**18.57**		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"	99.4	100.0	100.0	99.7	0.3	0.3
3/4"	85.4	100.0	100.0	92.1	7.6	7.9
1/2"	48.1	95.5	100.0	71.6	20.5	28.4
3/8"	30.4	88.5	100.0	61.6	10.0	38.4
#4	6.8	20.6	94.9	42.4	19.2	57.6
#8	2.9	4.8	82.0	34.1	8.2	65.9
#16	2.4	2.6	68.6	28.5	5.7	71.5
#30	2.3	2.0	51.2	21.5	6.9	78.5
#50	2.2	1.8	22.9	10.3	11.2	89.7
#100	2.1	1.8	3.2	2.5	7.8	97.5
LBW	1.6	1.5	0.3	1.1	1.4	98.9

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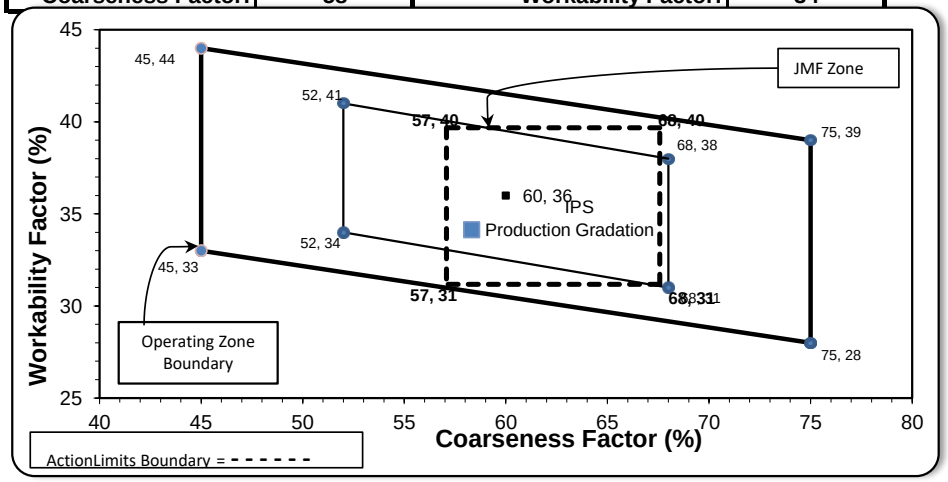
Suite 500
Farmington Hills, MI 48336

*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 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:	58	Workability Factor:	34



Intial Production Sample (IPS)

Coarseness Factor:	62
Workability Factor:	35

Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.1	0.9	0.9
3/4"	90.5	8.6	9.5
1/2"	69.8	20.7	30.2
3/8"	59.8	10.0	40.2
#4	42.2	17.6	57.8
#8	35.4	6.7	64.6
#16	28.8	6.7	71.2
#30	21.4	7.4	78.6
#50	8.8	12.6	91.2
#100	1.8	7.0	98.2
LBW	0.7	1.0	99.3

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-38**

Contractor:

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft^3	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1650	9.83	2.69	53.2
26A	58-003	Stoneco	250	1.49	2.69	8.1
2NS	81-019	Pleasant Lake	1200	7.26	2.65	38.7
		Total Wt	**3100**	**18.58**		100.0

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

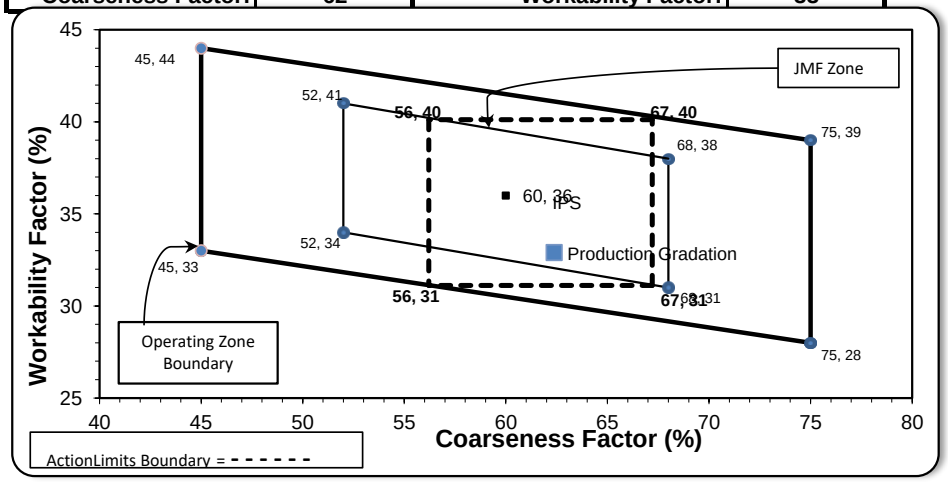
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	83.5	100.0	100.0	91.2	8.8	8.8
1/2"	46.1	99.1	100.0	71.2	20.0	28.8
3/8"	23.0	89.2	100.0	58.1	13.1	41.9
#4	3.9	10.2	98.1	40.9	17.3	59.1
#8	1.9	3.7	81.6	32.9	8.0	67.1
#16	1.4	2.9	63.6	25.6	7.3	74.4
#30	1.2	2.5	44.7	18.1	7.5	81.9
#50	1.2	2.3	22.9	9.7	8.5	90.3
#100	1.1	2.2	6.1	3.1	6.6	96.9
LBW	1.1	2.1	1.3	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 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:	62	Workability Factor:	33



Intial Production Sample (IPS)

Coarseness Factor:	62
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"	99.2	0.8	0.8
3/4"	91.1	8.1	8.9
1/2"	72.0	19.1	28.0
3/8"	60.3	11.7	39.7
#4	43.4	16.9	56.6
#8	35.6	7.8	64.4
#16	28.4	7.2	71.6
#30	21.8	6.7	78.2
#50	9.1	12.6	90.9
#100	1.7	7.4	98.3
LBW	1.1	0.6	98.9

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-39**

Contractor:

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1700	10.40	2.62	55.7
26A	71-47	Presque Isle	100	0.61	2.62	3.3
2NS	44-051	Krake Willis Rd	1250	7.56	2.65	41.0
		Total Wt	**3050**	**18.57**		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"	95.5	100.0	100.0	97.5	2.5	2.5
3/4"	71.1	100.0	100.0	83.9	13.6	16.1
1/2"	35.0	97.2	100.0	63.7	20.2	36.3
3/8"	24.3	89.5	100.0	57.5	6.2	42.5
#4	5.0	23.2	97.7	43.6	13.9	56.4
#8	2.1	4.6	83.2	35.4	8.2	64.6
#16	1.9	2.0	67.2	28.7	6.8	71.3
#30	1.8	1.6	49.3	21.3	7.4	78.7
#50	1.7	1.4	22.5	10.2	11.0	89.8
#100	1.6	1.4	6.3	3.5	6.7	96.5
LBW	1.4	1.2	1.3	1.4	2.2	98.6

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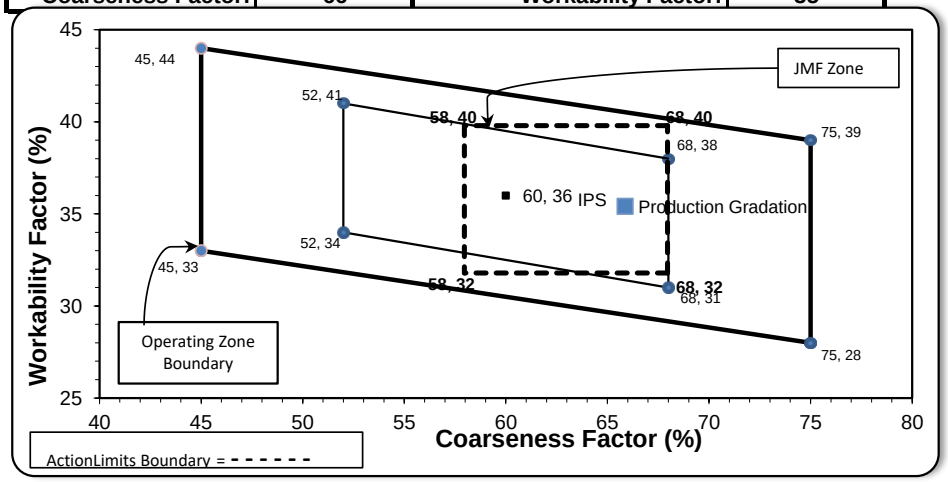
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

*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 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:	35



Intial Production Sample (IPS)

Coarseness Factor:	63
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"	100.0	0.0	0.0
3/4"	89.8	10.2	10.2
1/2"	70.7	19.1	29.3
3/8"	59.6	11.1	40.4
#4	43.2	16.4	56.8
#8	35.8	7.4	64.2
#16	29.2	6.6	70.8
#30	21.4	7.8	78.6
#50	9.8	11.6	90.2
#100	3.7	6.1	96.3
LBW	1.2	2.5	98.8

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-O2**

Contractor: _____

Sample Date: 7/31/23

Concrete Grade: **S2M, 3500HP**

Dates Test Represents: 8/1/2023 through 8/7/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1670	10.21	2.62	54.8
26A	71-47	Presque Isle	150	0.92	2.62	4.9
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3
		Total Wt	**3050**	**18.57**		100.0

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

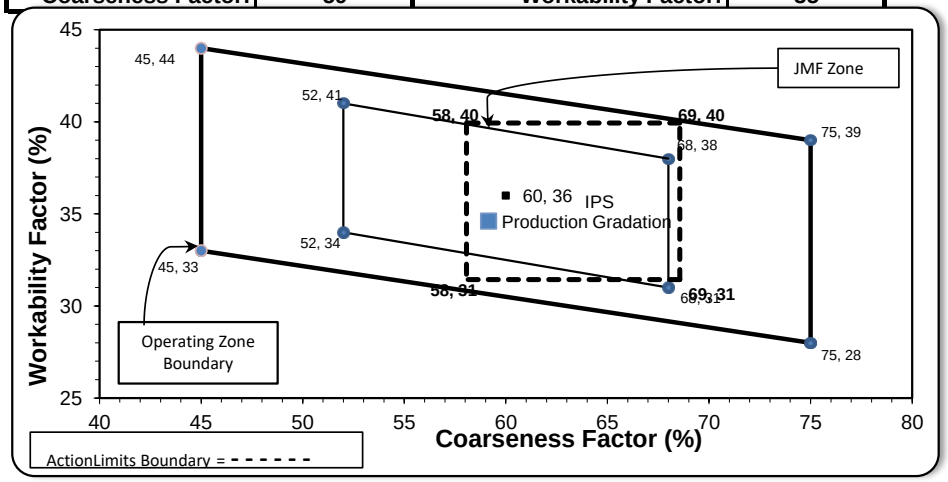
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.4	100.0	100.0	99.7	0.3	0.3
3/4"	85.4	100.0	100.0	92.0	7.7	8.0
1/2"	48.1	95.5	100.0	71.4	20.6	28.6
3/8"	30.4	88.5	100.0	61.3	10.0	38.7
#4	6.8	20.6	96.4	43.6	17.7	56.4
#8	2.9	4.8	81.3	34.6	9.0	65.4
#16	2.4	2.6	66.5	28.3	6.4	71.7
#30	2.3	2.0	50.8	21.8	6.4	78.2
#50	2.2	1.8	26.3	11.9	9.9	88.1
#100	2.1	1.8	5.6	3.5	8.4	96.5
LBW	1.6	1.5	0.9	1.3	2.2	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 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation ○ Batch Plant Gradations ◉ Aggregate SupplierGradations

Coarseness Factor:	59	Workability Factor:	35



Intial Production Sample (IPS)

Coarseness Factor:	63
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"	100.0	0.0	0.0
3/4"	95.6	4.4	4.4
1/2"	73.1	22.6	26.9
3/8"	59.3	13.8	40.7
#4	42.8	16.5	57.2
#8	35.7	7.1	64.3
#16	28.9	6.8	71.1
#30	20.7	8.2	79.3
#50	9.9	10.8	90.1
#100	2.1	7.8	97.9
LBW	0.9	1.2	99.1

PREPARED BY:
SM, LLC Technical Service

Approved By: