Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-101**

Contractor: _____

Sample Date: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1500	9.17	2.62	51.7
26A	71-47	Presque Isle	250	1.53	2.62	8.6
2NS	75-051	Mid Michigan	1150	6.93	2.66	39.7
		Total Wt	**2900**	**17.63**		100.0

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

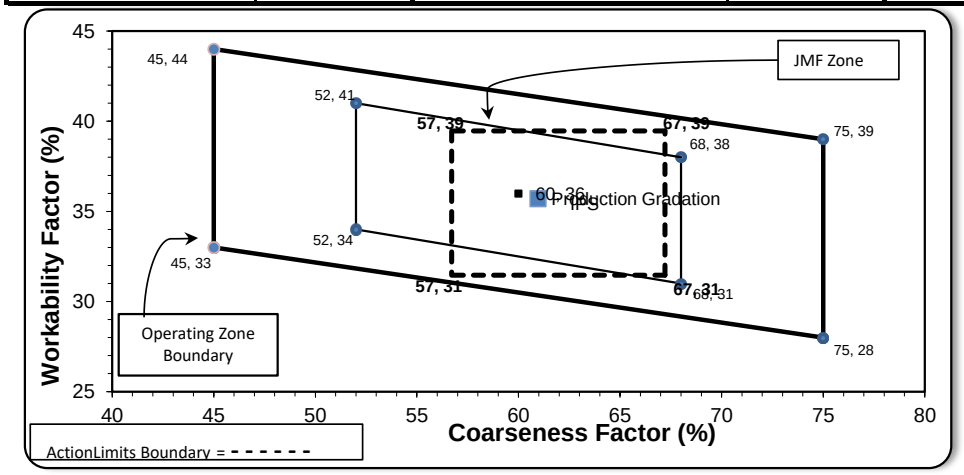
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	96.7	100.0	100.0	98.3	1.7	1.7
3/4"	84.6	100.0	100.0	92.0	6.3	8.0
1/2"	41.8	93.4	100.0	69.3	22.7	30.7
3/8"	24.5	80.7	100.0	59.3	10.0	40.7
#4	4.2	14.3	96.1	41.5	17.8	58.5
#8	2.3	2.5	80.2	33.2	8.3	66.8
#16	2.0	1.2	65.1	27.0	6.3	73.0
#30	2.0	2.0	50.1	21.1	5.9	78.9
#50	1.9	0.9	27.8	12.1	9.0	87.9
#100	1.8	0.9	8.5	4.4	7.7	95.6
LBW	1.5	0.8	1.2	1.3	3.1	98.7

*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.

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

Production Gradation ○ Batch Plant Gradations ◉ Aggregate Supplier Gradations

Coarseness Factor:	61	Workability Factor:	33	Adjusted WF 35.7



Initial 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"	95.0	5.0	5.0
1/2"	70.5	24.5	29.5
3/8"	60.0	10.5	40.0
#4	44.4	15.6	55.6
#8	35.5	9.0	64.5
#16	28.5	7.0	71.5
#30	21.5	7.0	78.5
#50	10.2	11.3	89.8
#100	3.1	7.1	96.9
LBW	1.3	1.8	98.7

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-102**

Contractor: _____

Sample Date: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1525	9.09	2.69	51.7
26A	58-003	Stoneco	275	1.64	2.69	9.3
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0
		Total Wt	**2950**	**17.68**		100.0

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

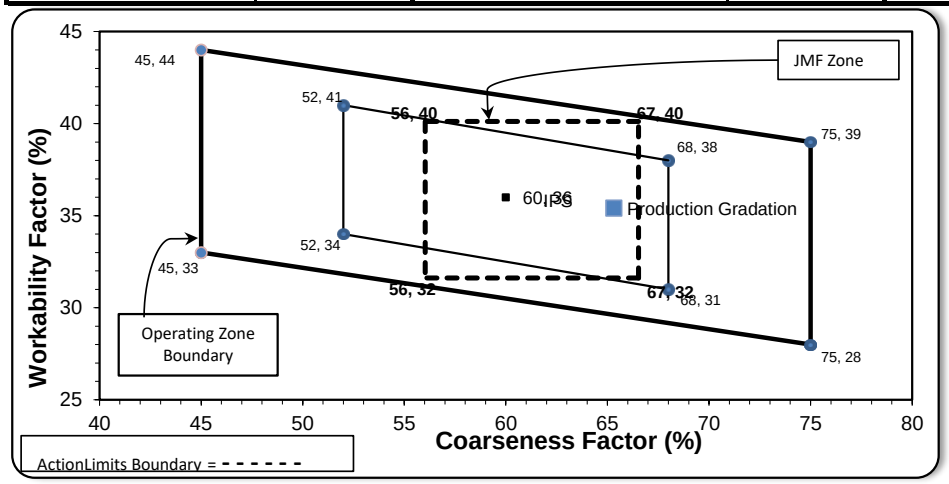
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	77.4	100.0	100.0	88.3	11.7	11.7
1/2"	35.3	99.8	100.0	66.5	21.8	33.5
3/8"	17.4	88.0	100.0	56.2	10.4	43.8
#4	3.7	9.7	97.3	40.7	15.4	59.3
#8	2.1	3.1	80.9	32.9	7.8	67.1
#16	1.5	2.2	63.7	25.8	7.1	74.2
#30	1.4	1.9	45.3	18.6	7.3	81.4
#50	1.3	1.8	22.8	9.7	8.8	90.3
#100	1.2	1.8	7.0	3.5	6.2	96.5
LBW	1.2	1.6	1.2	1.2	2.3	98.8

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

Coarseness Factor:	65	Workability Factor:	33	Adjusted WF 35.4



Intial Production Sample (IPS)

Coarseness Factor:	61
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"	99.3	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:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-103**

Contractor:

Sample Date: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1525	9.09	2.69	51.7
26A	58-003	Stoneco	275	1.64	2.69	9.3
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0
		Total Wt	**2950**	**17.68**		100.0

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

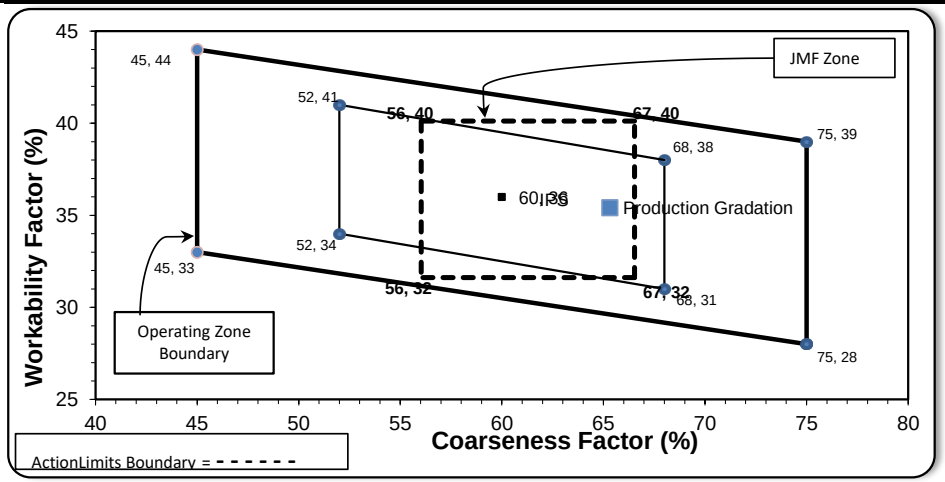
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	77.4	100.0	100.0	88.3	11.7	11.7
1/2"	35.3	99.8	100.0	66.5	21.8	33.5
3/8"	17.4	88.0	100.0	56.2	10.4	43.8
#4	3.7	9.7	97.3	40.7	15.4	59.3
#8	2.1	3.1	80.9	32.9	7.8	67.1
#16	1.5	2.2	63.7	25.8	7.1	74.2
#30	1.4	1.9	45.3	18.6	7.3	81.4
#50	1.3	1.8	22.8	9.7	8.8	90.3
#100	1.2	1.8	7.0	3.5	6.2	96.5
LBW	1.2	1.6	1.2	1.2	2.3	98.8

*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.

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

Production Gradation ○ Batch Plant Gradations ◉ Aggregate Supplier Gradations

Coarseness Factor:	65	Workability Factor:	33	Adjusted WF 35.4



Intial Production Sample (IPS)

Coarseness Factor:	61
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"	99.3	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:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: 14

Contractor:

Sample Date: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1500	8.94	2.69	50.7
26A	58-003	Stoneco	360	2.14	2.69	12.2
2NS	19-04	Schlegel	1100	6.60	2.67	37.2
		Total Wt	**2960**	**17.68**		100.0

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

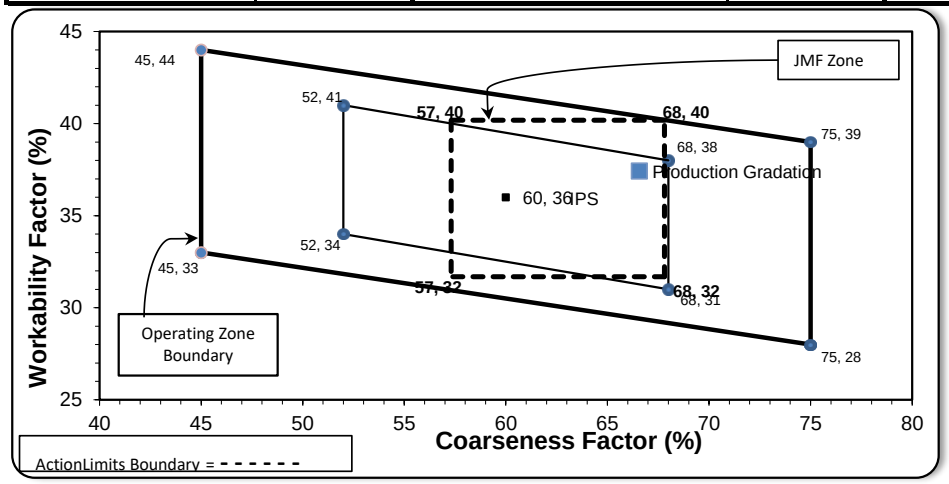
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	77.4	100.0	100.0	88.5	11.5	11.5
1/2"	35.3	99.8	100.0	67.2	21.4	32.8
3/8"	17.4	88.0	100.0	56.7	10.5	43.3
#4	3.7	9.7	99.9	40.2	16.5	59.8
#8	2.1	3.1	90.1	34.9	5.3	65.1
#16	1.5	2.2	69.4	26.8	8.1	73.2
#30	1.4	1.9	44.5	17.5	9.3	82.5
#50	1.3	1.8	14.3	6.2	11.3	93.8
#100	1.2	1.8	2.7	1.8	4.4	98.2
LBW	1.2	1.6	0.2	0.9	1.0	99.1

Builders Redi-Mix
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

Coarseness Factor:	67	Workability Factor:	35	Adjusted WF 37.4



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"	99.3	0.7	0.7
3/4"	89.0	10.3	11.0
1/2"	70.3	18.7	29.7
3/8"	59.9	10.4	40.1
#4	41.9	18.0	58.1
#8	35.9	6.0	64.1
#16	27.8	8.2	72.2
#30	18.9	8.8	81.1
#50	6.3	12.6	93.7
#100	1.7	4.6	98.3
LBW	1.0	0.7	99.0

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **12**

Contractor:

Sample Date: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1550	9.48	2.62	53.4
26A	71-47	Presque Isle	205	1.25	2.62	7.1
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
		Total Wt	**2905**	**17.69**		100.0

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

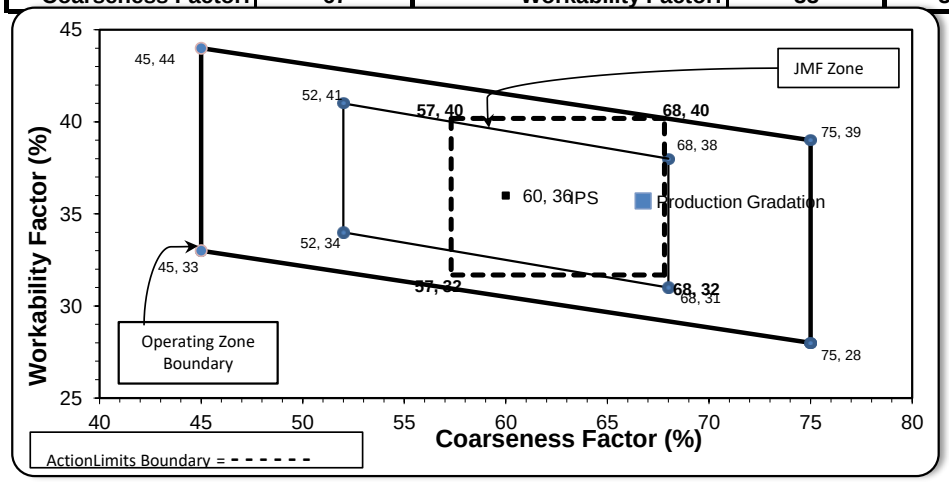
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	98.7	100.0	100.0	99.3	0.7	0.7
3/4"	78.0	100.0	100.0	88.3	11.0	11.7
1/2"	39.0	92.2	100.0	66.9	21.4	33.1
3/8"	19.2	79.0	100.0	55.4	11.5	44.6
#4	4.3	11.6	96.2	41.2	14.2	58.8
#8	2.3	2.6	80.3	33.2	8.0	66.8
#16	2.1	1.3	64.2	26.6	6.6	73.4
#30	2.0	1.0	47.7	20.0	6.6	80.0
#50	1.9	0.9	24.2	10.7	9.4	89.3
#100	1.8	0.9	5.2	3.1	7.6	96.9
LBW	1.6	0.7	0.6	1.1	1.9	98.9

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

Coarseness Factor:	67	Workability Factor:	33	Adjusted WF 35.7



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"	99.3	0.7	0.7
3/4"	89.0	10.3	11.0
1/2"	70.3	18.7	29.7
3/8"	59.9	10.4	40.1
#4	41.9	18.0	58.1
#8	35.9	6.0	64.1
#16	27.8	8.2	72.2
#30	18.9	8.8	81.1
#50	6.3	12.6	93.7
#100	1.7	4.6	98.3
LBW	1.0	0.7	99.0

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **p11**

Contractor:

Sample Date: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft^3	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1400	8.56	2.62	48.2
26A	71-47	Presque Isle	355	2.17	2.62	12.2
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6
		Total Wt	**2905**	**17.69**		100.0

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

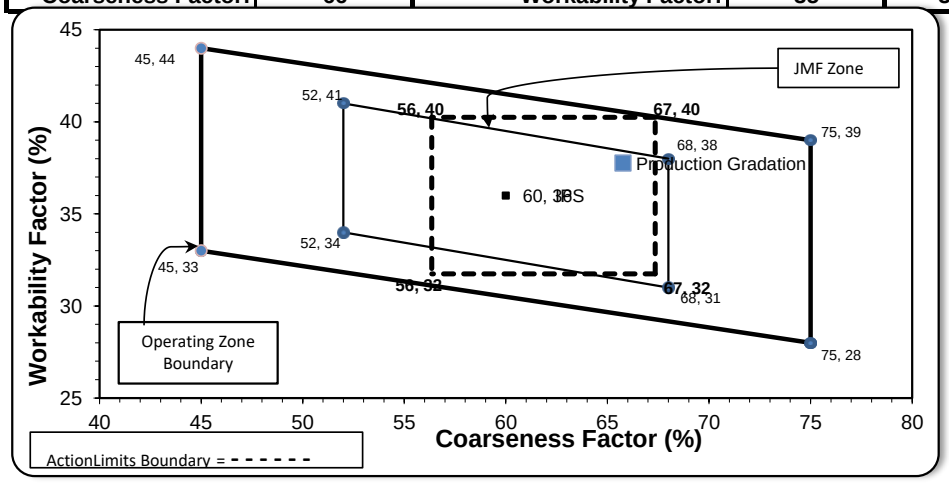
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	95.8	100.0	100.0	98.0	2.0	2.0
3/4"	70.6	100.0	100.0	85.8	12.1	14.2
1/2"	30.6	92.2	100.0	65.6	20.2	34.4
3/8"	17.0	79.0	100.0	57.4	8.2	42.6
#4	3.8	11.6	97.0	41.6	15.8	58.4
#8	1.8	2.6	86.1	35.3	6.4	64.7
#16	1.6	1.3	71.4	29.2	6.1	70.8
#30	1.4	1.0	51.2	21.1	8.1	78.9
#50	1.3	0.9	23.9	10.2	10.9	89.8
#100	1.2	0.9	6.8	3.4	6.8	96.6
LBW	0.8	0.7	1.0	0.9	2.5	99.1

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

Coarseness Factor:	66	Workability Factor:	35	Adjusted WF 37.8



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"	100.0	0.0	0.0
3/4"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

Contractor:

Sample Date: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft^3	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1400	8.56	2.62	48.2
26A	71-47	Presque Isle	355	2.17	2.62	12.2
2NS	95-013	Smelter Bay	1150	6.95	2.65	39.6
		Total Wt	**2905**	**17.69**		100.0

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

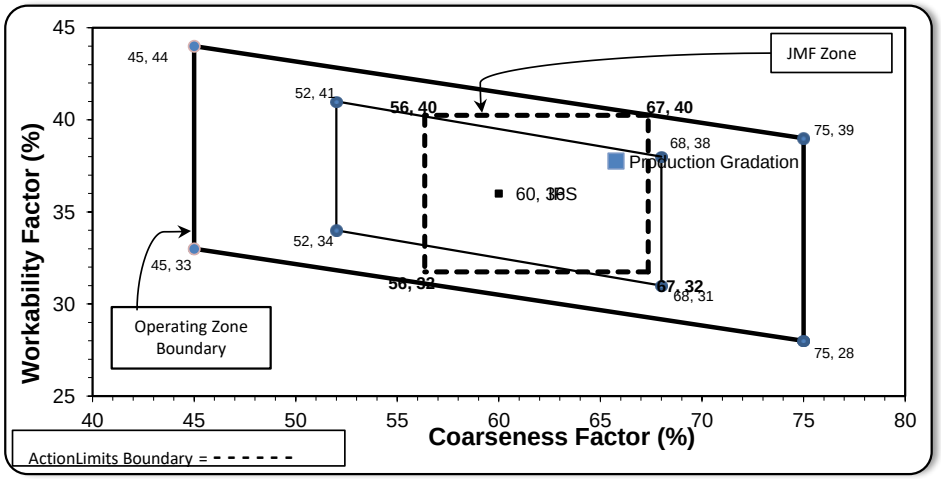
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	95.8	100.0	100.0	98.0	2.0	2.0
3/4"	70.6	100.0	100.0	85.8	12.1	14.2
1/2"	30.6	92.2	100.0	65.6	20.2	34.4
3/8"	17.0	79.0	100.0	57.4	8.2	42.6
#4	3.8	11.6	97.0	41.6	15.8	58.4
#8	1.8	2.6	86.1	35.3	6.4	64.7
#16	1.6	1.3	71.4	29.2	6.1	70.8
#30	1.4	1.0	51.2	21.1	8.1	78.9
#50	1.3	0.9	23.9	10.2	10.9	89.8
#100	1.2	0.9	6.8	3.4	6.8	96.6
LBW	0.8	0.7	1.0	0.9	2.5	99.1

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

Coarseness Factor:	66	Workability Factor:	35	Adjusted WF 37.8



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"	100.0	0.0	0.0
3/4"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-35**

Contractor: _____

Sample Date: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1525	9.09	2.69	51.7
26A	58-003	Stoneco	275	1.64	2.69	9.3
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0
		Total Wt	**2950**	**17.68**		100.0

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

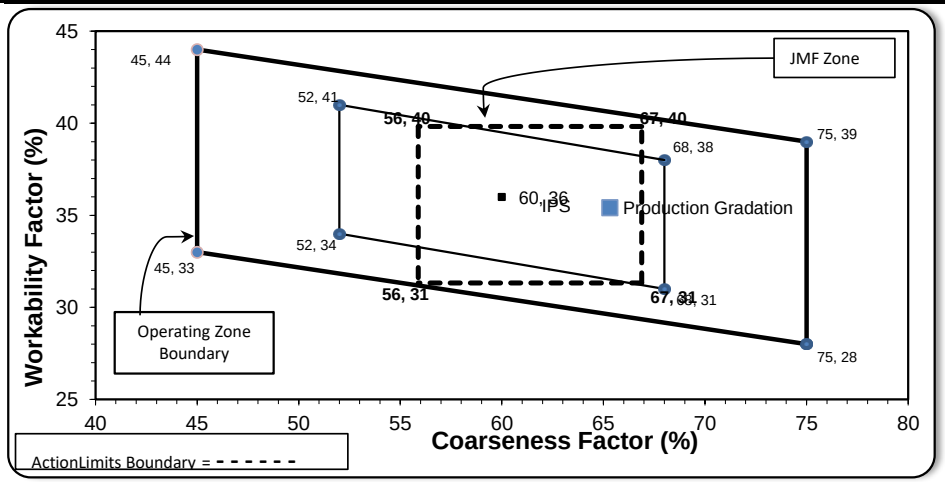
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	100.0	100.0	100.0	100.0	0.0	0.0
3/4"	77.4	100.0	100.0	88.3	11.7	11.7
1/2"	35.3	99.8	100.0	66.5	21.8	33.5
3/8"	17.4	88.0	100.0	56.2	10.4	43.8
#4	3.7	9.7	97.3	40.7	15.4	59.3
#8	2.1	3.1	80.9	32.9	7.8	67.1
#16	1.5	2.2	63.7	25.8	7.1	74.2
#30	1.4	1.9	45.3	18.6	7.3	81.4
#50	1.3	1.8	22.8	9.7	8.8	90.3
#100	1.2	1.8	7.0	3.5	6.2	96.5
LBW	1.2	1.6	1.2	1.2	2.3	98.8

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

Coarseness Factor:	65	Workability Factor:	33	Adjusted WF 35.4



Intial Production Sample (IPS)

Coarseness Factor:	61
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"	99.3	0.7	0.7
3/4"	89.1	10.2	10.9
1/2"	70.5	18.6	29.5
3/8"	60.5	10.0	39.5
#4	44.1	16.4	55.9
#8	35.6	8.5	64.4
#16	27.7	7.9	72.3
#30	20.6	7.1	79.4
#50	8.7	11.8	91.3
#100	1.6	7.1	98.4
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: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1500	9.17	2.62	51.6
26A	71-47	Presque Isle	255	1.56	2.62	8.8
2NS	63-92	Grange Hall	1150	6.95	2.65	39.6
		Total Wt	**2905**	**17.69**		100.0

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

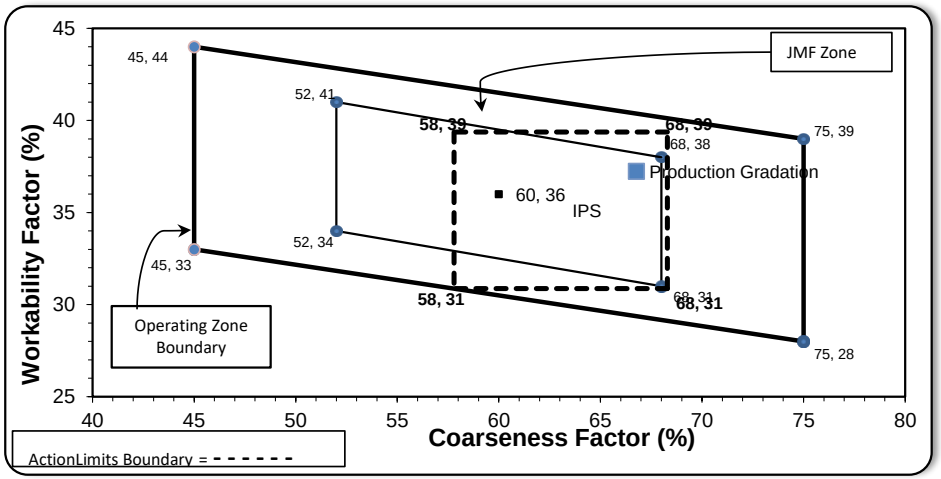
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	98.7	100.0	100.0	99.3	0.7	0.7
3/4"	78.0	100.0	100.0	88.6	10.7	11.4
1/2"	39.0	92.2	100.0	67.8	20.8	32.2
3/8"	19.2	79.0	100.0	56.4	11.4	43.6
#4	4.3	11.6	97.4	41.8	14.6	58.2
#8	2.3	2.6	84.2	34.7	7.0	65.3
#16	2.1	1.3	70.3	29.0	5.7	71.0
#30	2.0	1.0	51.2	21.4	7.6	78.6
#50	1.9	0.9	20.5	9.2	12.2	90.8
#100	1.8	0.9	3.1	2.2	6.9	97.8
LBW	1.6	0.7	0.5	1.1	1.2	98.9

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

Coarseness Factor:	67	Workability Factor:	35	Adjusted WF 37.2



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"	99.1	0.9	0.9
3/4"	90.3	8.8	9.7
1/2"	69.2	21.1	30.8
3/8"	59.1	10.1	40.9
#4	41.8	17.3	58.2
#8	35.1	6.6	64.9
#16	28.5	6.6	71.5
#30	21.2	7.3	78.8
#50	8.7	12.5	91.3
#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: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	58-003	Stoneco	1525	9.09	2.69	51.7
26A	58-003	Stoneco	275	1.64	2.69	9.3
2NS	81-019	Pleasant Lake	1150	6.95	2.65	39.0
		Total Wt	**2950**	**17.68**		100.0

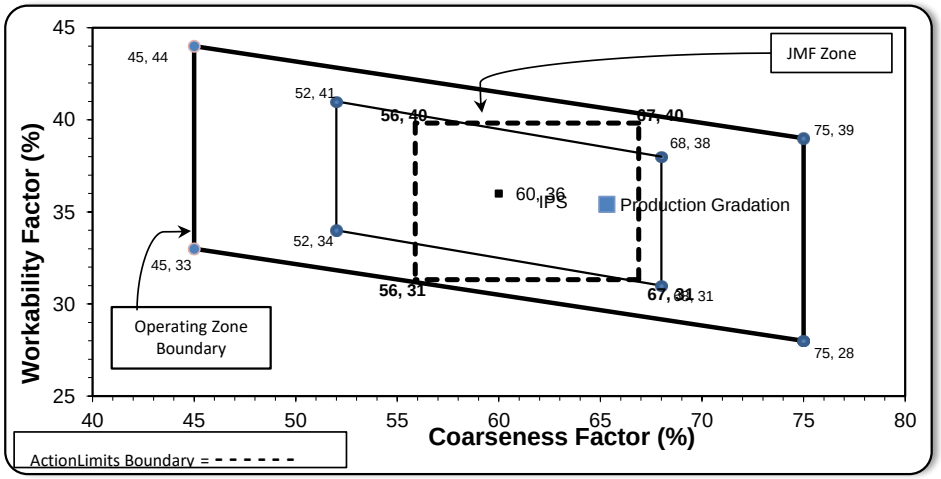
<----- Verify this number is 100%

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"	77.4	100.0	100.0	88.3	11.7	11.7
1/2"	35.3	99.8	100.0	66.5	21.8	33.5
3/8"	17.4	88.0	100.0	56.2	10.4	43.8
#4	3.7	9.7	97.3	40.7	15.4	59.3
#8	2.1	3.1	80.9	32.9	7.8	67.1
#16	1.5	2.2	63.7	25.8	7.1	74.2
#30	1.4	1.9	45.3	18.6	7.3	81.4
#50	1.3	1.8	22.8	9.7	8.8	90.3
#100	1.2	1.8	7.0	3.5	6.2	96.5
LBW	1.2	1.6	1.2	1.2	2.3	98.8

*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

Coarseness Factor:	65	Workability Factor:	33	Adjusted WF 35.4



Intial Production Sample (IPS)

Coarseness Factor:	61
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"	99.3	0.7	0.7
3/4"	89.1	10.2	10.9
1/2"	70.5	18.6	29.5
3/8"	60.5	10.0	39.5
#4	44.1	16.4	55.9
#8	35.6	8.5	64.4
#16	27.7	7.9	72.3
#30	20.6	7.1	79.4
#50	8.7	11.8	91.3
#100	1.6	7.1	98.4
LBW	1.1	0.6	98.9

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

PREPARED BY:
SM, LLC Technical Service

Approved By:

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-39**

Contractor:

Sample Date: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.:

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1605	9.82	2.62	55.2
26A	71-47	Presque Isle	200	1.22	2.62	6.9
2NS	44-051	Krake Willis Rd	1100	6.65	2.65	37.9
		Total Wt	**2905**	**17.69**		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"	96.7	100.0	100.0	98.2	1.8	1.8
3/4"	84.6	100.0	100.0	91.5	6.7	8.5
1/2"	41.8	93.4	100.0	67.4	24.1	32.6
3/8"	24.5	80.7	100.0	57.0	10.4	43.0
#4	4.2	14.3	97.7	40.3	16.7	59.7
#8	2.3	2.5	83.2	32.9	7.4	67.1
#16	2.0	1.2	67.2	26.6	6.3	73.4
#30	2.0	2.0	49.3	19.9	6.7	80.1
#50	1.9	0.9	22.5	9.6	10.3	90.4
#100	1.8	0.9	6.3	3.4	6.2	96.6
LBW	1.5	0.8	1.3	1.4	2.1	98.6

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.

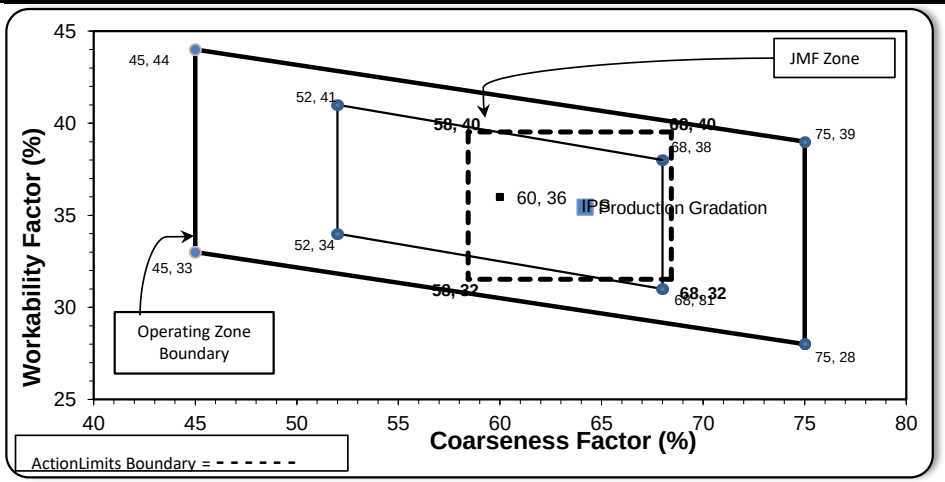
Production Gradation ○ Batch Plant Gradations ◉ Aggregate Supplier Gradations

Coarseness Factor:	64	Workability Factor:	33	Adjusted WF 35.4

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"	89.7	10.3	10.3
1/2"	70.3	19.4	29.7
3/8"	59.1	11.2	40.9
#4	42.8	16.3	57.2
#8	35.5	7.3	64.5
#16	29.0	6.5	71.0
#30	21.2	7.7	78.8
#50	9.8	11.5	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: 8/14/23

Concrete Grade: **DM, 4500HP**

Dates Test Represents: 8/15/2023 through 8/21/2023

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft³	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1550	9.48	2.62	53.4
26A	71-47	Presque Isle	205	1.25	2.62	7.1
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
		Total Wt	**2905**	**17.69**		100.0

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

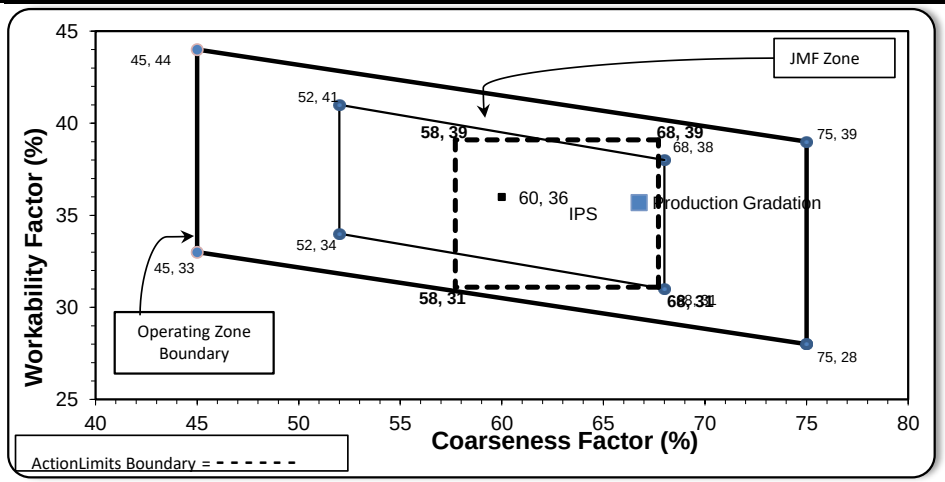
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	98.7	100.0	100.0	99.3	0.7	0.7
3/4"	78.0	100.0	100.0	88.3	11.0	11.7
1/2"	39.0	92.2	100.0	66.9	21.4	33.1
3/8"	19.2	79.0	100.0	55.4	11.5	44.6
#4	4.3	11.6	96.2	41.2	14.2	58.8
#8	2.3	2.6	80.3	33.2	8.0	66.8
#16	2.1	1.3	64.2	26.6	6.6	73.4
#30	2.0	1.0	47.7	20.0	6.6	80.0
#50	1.9	0.9	24.2	10.7	9.4	89.3
#100	1.8	0.9	5.2	3.1	7.6	96.9
LBW	1.6	0.7	0.6	1.1	1.9	98.9

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 SupplierGradations

Coarseness Factor:	67	Workability Factor:	33	Adjusted WF 35.7



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"	100.0	0.0	0.0
3/4"	95.1	4.9	4.9
1/2"	74.6	20.5	25.4
3/8"	59.3	15.3	40.7
#4	42.1	17.2	57.9
#8	35.1	7.1	64.9
#16	29.2	5.9	70.8
#30	21.9	7.3	78.1
#50	9.6	12.4	90.4
#100	2.4	7.2	97.6
LBW	0.9	1.5	99.1

PREPARED BY:
SM, LLC Technical Service

Approved By: