Sample Date:

7/25/22 Concrete Grade: S2M, 3500HP

Dates Test F	Represents:	7/26/2022	tnrougn	8/1/2022		
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1625	9.94	2.62	53.2
26A	71-47	Presque Isle	200	1.22	2.62	6.5
2NS	75-051	Mid Michigan	1230	7.41	2.66	40.3

Contractor:

MDOT No.:



---- Verify this number is 100%

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

Total Wt 3055 18.57 Cumulative Cumulative 26A 6AA % Retained Sieve 2NS % Passing % 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 98.5 100.0 100.0 99.2 0.8 8.0 3/4" 86.0 100.0 100.0 92.6 6.6 7.4 1/2' 46.3 98.4 100.0 71.3 21.2 28.7 3/8' 87.0 100.0 58.5 23.6 12.8 41.5 #4 3.3 23.6 99.0 43.2 15.4 56.8 #8 1.7 5.7 83.4 34.9 8.3 65.1 #16 1.5 3.2 66.3 27.7 7.2 72.3 #30 20.5 79.5 1.4 2.7 48.6 7.2 #50 1.4 2.4 24.5 10.8 9.7 89.2 #100 1.3 2.3 7.2 3.7 7.0 96.3 LBW 2.0

\*Maximum % Retained must be above the 3/8" sieve.

\*Any two adjacent sieves must equal 10% except max.,

nom. max., #100 and #200 sieves.

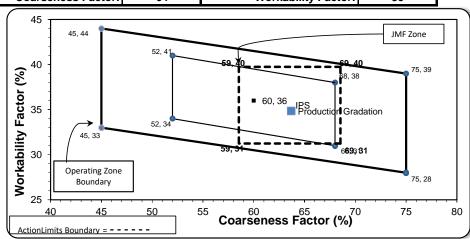
\*% Retained must be at least 4% for each sieve except max.,

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

 Batch Plant Gradations Aggregate Supplier Gradations **Production Gradation** Coarseness Factor: Workability Factor: 64 35



Initial Production Sample (IPS)

Coars	eness Factor:	64	
Work	ability Factor:	35	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

Sample Date:

7/25/22 Concrete Grade: S2M, 3500HP

Dates Test F	represents:	1/20/2022	through	8/1/2022		
Agg. Class	Pit#	Source	Weight (SSD)	ft <sup>3</sup>	Specific	%
Agg. Olass	110#	Oodicc	Weight (33b)	- 10	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

Contractor:

MDOT No.:



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

	Total Wt	3100	18.58		100.0	< Verify this n	umber is 100%
Sieve	6AA	26	6A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	10	0.0	100.0	100.0	0.0	0.0
1.5"	100.0	10	0.0	100.0	100.0	0.0	0.0
1"	100.0	10	0.0	100.0	100.0	0.0	0.0
3/4"	84.8	10	0.0	100.0	91.9	8.1	8.1
1/2"	45.7	99	9.8	100.0	71.1	20.8	28.9
3/8"	19.2	88	3.8	100.0	56.1	15.0	43.9
#4	3.6	12	2.9	99.1	41.3	14.8	58.7
#8	1.4	4	.7	85.3	34.1	7.2	65.9
#16	1.0	3	.1	68.1	27.1	7.0	72.9
#30	0.8	2	.6	51.0	20.4	6.8	79.6
#50	0.7	2	.3	27.0	11.0	9.4	89.0
#100	0.6	2	.3	8.8	3.9	7.1	96.1
LBW	0.5	2	.0	1.6	1.0	2.9	99.0

\*Maximum % Retained must be above the 3/8" sieve.

\*Any two adjacent sieves must equal 10% except max.,

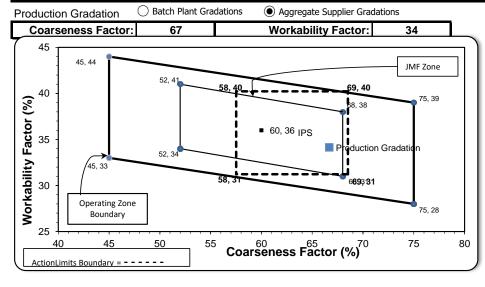
nom. max., #100 and #200 sieves.

\*% 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.



Intial Production Sample (IPS)

Coars	Coarseness Factor:		
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

Sample Date:

**Dates Test Represents:** 

Concrete Grade: S2M, 3500HP 7/25/22

7/26/2022 8/1/2022 through

MDOT No.:

Contractor:

Agg. Class	Pit #	Pit # Source	Weight (SSD)	ft <sup>3</sup>	Specific	%
Agg. Olass	110#			11	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

SUPERIOR MATERIALS

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

	l otal Wt	3100	18.58		100.0	< Verify this n	umber is 100%
Sieve	6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100	.0	100.0	100.0	0.0	0.0
1.5"	100.0	100	0.0	100.0	100.0	0.0	0.0
1"	100.0	100	.0	100.0	100.0	0.0	0.0
3/4"	84.8	100	.0	100.0	91.9	8.1	8.1
1/2"	45.7	99.	8	100.0	71.1	20.8	28.9
3/8"	19.2	88.	8	100.0	56.1	15.0	43.9
#4	3.6	12.	9	99.1	41.3	14.8	58.7
#8	1.4	4.	7	85.3	34.1	7.2	65.9
#16	1.0	3.	1	68.1	27.1	7.0	72.9
#30	0.8	2.0	3	51.0	20.4	6.8	79.6
#50	0.7	2.3	3	27.0	11.0	9.4	89.0
#100	0.6	2.3	3	8.8	3.9	7.1	96.1
LBW	0.5	2.0	)	1.6	1.0	2.9	99.0

\*Maximum % Retained must be above the 3/8" sieve.

\*Any two adjacent sieves must equal 10% except max.,

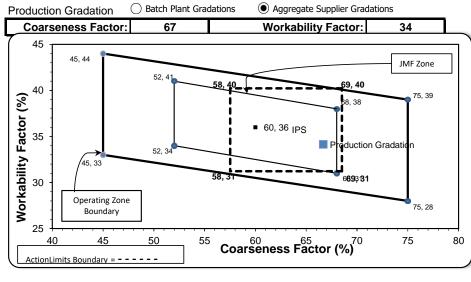
nom. max., #100 and #200 sieves.

\*% 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.



Intial Production Sample (IPS)

Coars	Coarseness Factor:		
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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:

Sample Date:

**Dates Test Represents:** 

Concrete Grade: S2M, 3500HP 7/25/22

7/26/2022	through	8/1/2022		
Source	Woight (ccn)	ft <sup>3</sup>	Specific	%
Source	Weight (SSD)	π	Gravity	Contribution
Presque Isle	1820	11.13	2.62	59.7

Contractor:

MDOT No.:

Agg. Class	Pit#	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1820	11.13	2.62	59.7
26A	71-47	Presque Isle	0	0.00	2.62	0.0
2NS	95-013	Smelter Bay	1230	7.44	2.65	40.3
		Total Wt	3050	18.57		100.0

---- Verify this number is 100%

	UPER ATERI	
Sup	erior Mater	ials, LLC
3070	01 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"	98.9	100.0	100.0	99.3	0.7	0.7
3/4"	87.3	100.0	100.0	92.4	6.9	7.6
1/2"	53.7	95.7	100.0	72.4	20.0	27.6
3/8"	28.0	84.9	100.0	57.0	15.3	43.0
#4	4.8	28.6	95.6	41.4	15.6	58.6
#8	2.3	9.1	81.6	34.3	7.1	65.7 r
#16	2.0	4.1	66.7	28.1	6.2	71.9
#30	1.9	2.9	47.8	20.4	7.7	79.6
#50	1.8	2.6	24.1	10.8	9.6	89.2
#100	1.7	2.4	7.7	4.1	6.7	95.9
LBW	1.3	1.7	1.8	1.5	2.6	98.5

\*Maximum % Retained must be above the 3/8" sieve.

\*Any two adjacent sieves must equal 10% except max.,

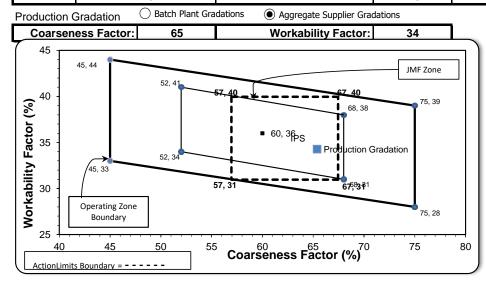
nom. max., #100 and #200 sieves.

\*% 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.



Intial Production Sample (IPS)

Coars	Coarseness Factor:		
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

Pleasant Lake

6AA

100.0

100.0

100.0

84.8

45.7

19.2

3.6

1.4

1.0

0.8

0.7

0.6

PREPARED BY:

Total Wt

1200

3100

26A

100.0

100.0

100.0

100.0

99.8

88.8

12.9

4.7

3.1

2.6

2.3

2.3

PLANT #: P-35

Pit#

58-003

58-003

81-019

Sample Date:

Agg. Class 6AA

26A

2NS

Sieve

2"

1.5"

3/4"

1/2'

3/8'

#4

#8

#16

#30

#50

#100

**Dates Test Represents:** 

7/25/22 Concrete Grade: S2M, 3500HP

7/26/2022	through	8/1/2022		
Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
Stoneco	1650	9.83	2.69	53.2
Stoneco	250	1.49	2.69	8.1

7.26

18.58

2.65

2NS

100.0

100.0

100.0

100.0

100.0

100.0

99.1

85.3

68.1

51.0

27.0

8.8

Contractor:

20.8

15.0

14.8

7.2

7.0

6.8

9.4

7.1





100.0

Cumulative

% Passing

100.0

100.0

100.0

91.9

71.1

56.1

41.3

34.1

27.1

20.4

11.0

3.9

---- Verify this number is 100%

% Retained	Cumulative % Retained
0.0	0.0
0.0	0.0
0.0	0.0
8.1	8.1

28.9

43.9

58.7

65.9

72.9

79.6

89.0

96.1

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.,

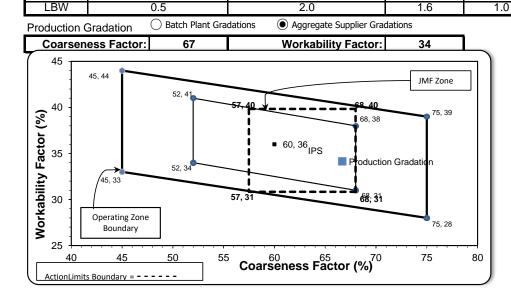
nom. max., #100 and #200 sieves.

\*% Retained must be at least 4% for each sieve except max.,

nom. max., #100 and #200 sieves

\*% Retained must be at least 8% for the 1" sieve when

a 2" max. size (nom. Max. 1.5") aggregate is used



Intial Production Sample (IPS)

Coars	Coarseness Factor:		
Work	Workability Factor:		
Siovo	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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

SM, LLC Technical Service

Sample Date:

Concrete Grade: S2M, 3500HP 7/25/22

ates Lest F	Represents:	7/26/2022	through	8/1/2022		
\gg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1550	9.48	2.62	50.8
26A	71-47	Presque Isle	300	1.83	2.62	9.8
2NS	63-92	Grange Hall	1200	7.26	2.65	39.3

Contractor:

MDOT No.:



Cumulative % Retained	
0.0	Suite 500
0.0	Farmington Hills, MI 48336

	Total Wt	3050	18.57		100.0	< Verify this n	umber is 100%
Sieve	6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100	0.0	100.0	100.0	0.0	0.0
1.5"	100.0	100	0.0	100.0	100.0	0.0	0.0
1"	98.4	100	0.0	100.0	99.2	0.8	0.8
3/4"	79.8	100	0.0	100.0	89.7	9.5	10.3
1/2"	44.9	95	.7	100.0	71.6	18.2	28.4
3/8"	23.7	84	.9	100.0	59.7	11.8	40.3
#4	4.3	28	.6	97.4	43.3	16.4	56.7
#8	1.9	9.	1	82.8	34.4	8.9	65.6
#16	1.6	4.	1	68.5	28.2	6.3	71.8
#30	1.5	2.	9	50.5	20.9	7.3	79.1
#50	1.5	2.	6	21.6	9.5	11.4	90.5
#100	1.4	2.	4	2.8	2.0	7.5	98.0
LBW	1.1	1.	7	0.4	0.9	1.2	99.1

\*Maximum % Retained must be above the 3/8" sieve.

\*Any two adjacent sieves must equal 10% except max.,

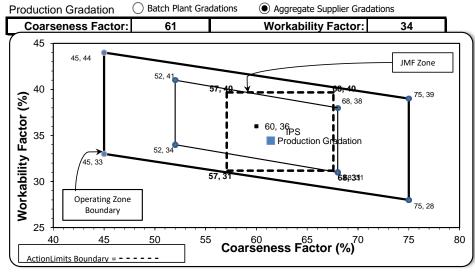
nom. max., #100 and #200 sieves.

\*% 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.



Intial Production Sample (IPS)

Coars	eness Factor:	62	
Work	Workability Factor:		
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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:

Sample Date:

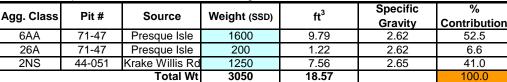
Dates Test Represents:

7/25/22 Concrete Grade: S2M, 3500HP

7/26/2022	through	8/1/2022		
Source	Weight (SSD)	ft <sup>3</sup>	Specific	%
Source	weight (SSD)	It	Gravity	Contribution
Presque Isle	1600	9.79	2.62	52.5
	000	4.00	0.00	0.0

Contractor:





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

	Total Wt	3050	18.57		100.0	< Verify this n	umber is 100%
Sieve	6AA	26	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100	0.0	100.0	100.0	0.0	0.0
1.5"	100.0	100	0.0	100.0	100.0	0.0	0.0
1"	98.5	100	0.0	100.0	99.2	0.8	0.8
3/4"	86.0	100	0.0	100.0	92.7	6.6	7.3
1/2"	46.3	98	.4	100.0	71.7	20.9	28.3
3/8"	23.6	87	.0	100.0	59.1	12.7	40.9
#4	3.3	23	.6	97.0	43.0	16.0	57.0
#8	1.7	5.	7	82.7	35.2	7.9	64.8
#16	1.5	3.	2	68.4	29.0	6.1	71.0
#30	1.4	2.	7	51.6	22.1	7.0	77.9
#50	1.4	2.	4	25.5	11.3	10.7	88.7
#100	1.3	2.	3	7.5	3.9	7.4	96.1
LBW	1.2	2.	0	1.3	1.3	2.6	98.7

\*Maximum % Retained must be above the 3/8" sieve.

\*Any two adjacent sieves must equal 10% except max.,

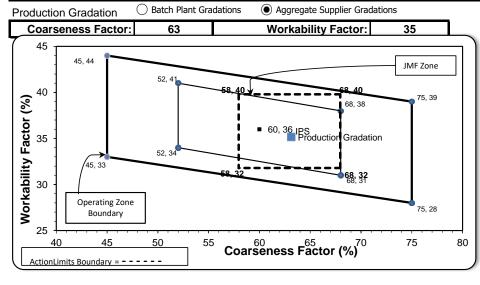
nom. max., #100 and #200 sieves.

\*% Retained must be at least 4% for each sieve except max.,

nom. max., #100 and #200 sieves.

\*% Retained must be at least 8% for the 1" sieve when

a 2" max. size (nom. Max. 1.5") aggregate is used.



Intial Production Sample (IPS)

Coars	eness Factor:	63	
Work	ability Factor:	36	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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:

Sample Date:

7/25/22 Concrete Grade: **S2M**, **3500HP** 

Dates Test F	Represents:	7/26/2022	through	8/1/2022		
Agg. Class	Pit #	Source	Weight (SSD)	ft <sup>3</sup>	Specific Gravity	% Contribution
6AA	71-47	Presque Isle	1700	10.40	2.62	55.7
26A	71-47	Presque Isle	120	0.73	2.62	3.9
2NS	63-115	Ray Rd	1230	7.44	2.65	40.3
		Total Wt	3050	18.57		100.0

Contractor:

MDOT No.:

<---- Verify this number is 100%

SUPERIOR MATERIALS

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

Sieve	6AA	26A	2NS	% Passing	% Retained	% 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"	98.4	100.0	100.0	99.1	0.9	0.9
3/4"	79.8	100.0	100.0	88.7	10.4	11.3
1/2"	44.9	95.7	100.0	69.1	19.6	30.9
3/8"	23.7	84.9	100.0	56.9	12.2	43.1
#4	4.3	28.6	96.2	42.3	14.6	57.7
#8	1.9	9.1	78.0	32.9	9.4	67.1
#16	1.6	4.1	60.3	25.4	7.5	74.6
#30	1.5	2.9	44.2	18.8	6.6	81.2
#50	1.5	2.6	24.9	11.0	7.8	89.0
#100	1.4	2.4	6.7	3.6	7.4	96.4

\*Maximum % Retained must be above the 3/8" sieve.

\*Any two adjacent sieves must equal 10% except max.,

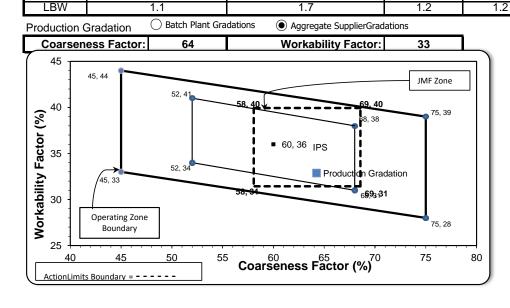
nom. max., #100 and #200 sieves.

 $^{*}\%$  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.



Intial Production Sample (IPS)

98.8

Coars	eness Factor:	63	
Work	ability Factor:	36	
Sieve	Cumulative	%	Cumulative
Sieve	% Passing	Retained	% 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: