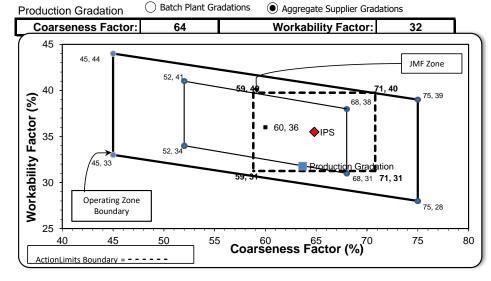
## Aggregate Optimization Chart

PLANT :	#:	P11					Contractor:		
Sample Date	e:	4/21/25			Concrete Grade:	P1M, 3500HP,	4000HP		
Dates Test R	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			
		Total Wt	3070	18.70		100.0	< Verify this n	umber is 100%	_
Sieve		CA	IJ	4	2NS	Cumulative % Passing	% Retained	Cumulative % Retained	
2"	1	00.0	10	0.0	100.0	100.0	0.0	0.0	1
1.5"		95.6	10	0.0	100.0	98.8	1.2	1.2	
1"	:	21.3	10	0.0	100.0	77.7	21.1	22.3	
3/4"		3.6	98	5.6	100.0	72.2	5.5	27.8	
1/2"		1.1	78	3.4	100.0	64.9	7.3	35.1	
3/8"		1.1	52	2.7	100.0	56.6	8.4	43.4	*Maximum %
#4		1.1	7.	.7	97.7	41.0	15.6	59.0	*Any two adja
#8		1.0	2	.6	78.4	31.8	9.2	68.2	nom. max., #1
#16		1.0	2	.0	62.0	25.2	6.6	74.8	*% Retained
#30		0.9	1.	.8	46.6	19.1	6.1	80.9	nom. max., #1
#50		0.9	1.	7	24.8	10.5	8.6	89.5	*% Retained
#100		0.9		.6	4.8	2.7	7.9	97.3	a 2" max. size
LBW		0.7	1.	.3	0.7	0.9	1.8	99.1	



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



Intial Production Sample (IPS)									
Coars	eness Factor:	65							
Work	ability Factor:	36							
Sieve	Cumulative	%	Cumulative						
Sieve	% Passing	Retained	% 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: Mart P. Ball

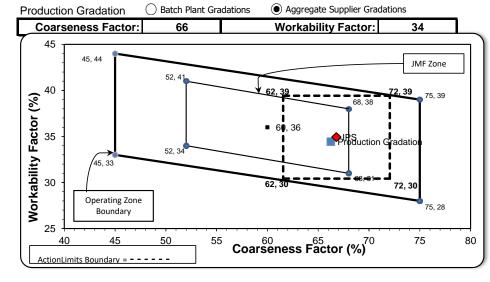
## Aggregate Optimization Chart

PLANT #:		P-36					Contractor:		
Sample Date	:	4/21/25			Concrete Grade	P1M, 3500HP,	4000HP		
Dates Test R	epresents:	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			
		Total Wt	3070	18.70		100.0	< Verify this n	umber is 100%	-
Sieve		CA	I/	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained	
2"	1	00.0	10	0.0	100.0	100.0	0.0	0.0	1
1.5"		95.6	100	0.0	100.0	98.8	1.2	1.2	
1"	:	21.3	100	0.0	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	*Maximum %
#4		1.1	7.	7	98.2	41.2	15.4	58.8	*Any two adja
#8		1.0	2.	6	85.2	34.4	6.8	65.6	nom. max., #10
#16		1.0	2.	0	69.3	28.0	6.4	72.0	*% Retained r
#30		0.9	1.	8	48.5	19.8	8.2	80.2	nom. max., #10
#50		0.9	1.	7	21.4	9.2	10.6	90.8	*% Retained n
#100		0.9	1.		3.2	2.0	7.1	98.0	a 2" max. size (
LBW		0.7	1.	3	0.4	0.8	1.2	99.2	]



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



Sieve	Intial Production	on Sample (IPS	5)	
Sieve Cumulative % Passing % Retained Cumulative % Retained   2" 100.0 0.0 0.0   1.5" 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	Coars	eness Factor:	67	
Sieve % Passing Retained % Retained   2" 100.0 0.0 0.0   1.5" 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	Work	ability Factor:	35	
% Passing Retained % 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	Siovo	Cumulative	%	Cumulative
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	Sieve	% Passing	Retained	% Retained
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	2"	100.0	0.0	0.0
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	1.5"	100.0	0.0	0.0
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	1"	85.0	15.0	15.0
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	3/4"	72.1	12.9	27.9
#4 42.7 13.8 57.3   #8 34.9 7.8 65.1   #16 29.0 5.9 71.0	1/2"	64.5	7.6	35.5
#8 34.9 7.8 65.1   #16 29.0 5.9 71.0	3/8"	56.5	8.0	43.5
#16 29.0 5.9 71.0	#4	42.7	13.8	57.3
	#8	34.9	7.8	65.1
#30 21.0 8.0 79.0	#16	29.0	5.9	71.0
	#30	21.0	8.0	79.0
#50 8.2 12.8 91.8	#50	8.2	12.8	91.8
#100 1.6 6.5 98.4	#100	1.6	6.5	98.4
LBW 0.7 0.9 99.3	LBW	0.7	0.9	99.3

Approved By: Mart 1. Ball

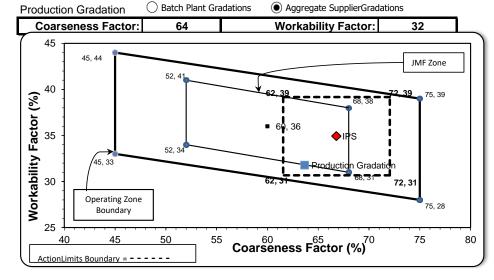
## Aggregate Optimization Chart

<b>PLANT</b>	#:	P-02					Contractor:		
Sample Date	e:	4/21/25			Concrete Grade:	P1M, 3500HP,	4000HP		
Dates Test F	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			
		Total Wt	3070	18.70		100.0	< Verify this n	umber is 100%	_
Sieve		CA	1/	A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained	
2"	1	00.0	100	0.0	100.0	100.0	0.0	0.0	
1.5"	9	95.6	100	0.0	100.0	98.8	1.2	1.2	
1"	:	21.3	100	0.0	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	*Maximum %
#4		1.1	7.	7	97.7	41.0	15.6	59.0	*Any two adj
#8		1.0	2.	6	78.4	31.8	9.2	68.2	nom. max., #1
#16		1.0	2.	0	62.0	25.2	6.6	74.8	*% Retained
#30		0.9	1.	8	46.6	19.1	6.1	80.9	nom. max., #1
#50		0.9	1.	7	24.8	10.5	8.6	89.5	*% Retained
#100		0.9	1.		4.8	2.7	7.9	97.3	a 2" max. size
LBW		0.7	1.	3	0.7	0.9	1.8	99.1	]



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Intial Production Sample (IPS)									
Coars	eness Factor:	67							
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"	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						

PREPARED BY: SM, LLC Technical Service

Approved By: Mart P. Ball