

**Quadrant:** N  
**Section:** 7  
**Sublot:** 1

**Laboratory Diary**

General Description of Mix and Materials

Design Method: Super  
 Compactive Effort: 80 gyrations  
 Binder Performance Grade: 67-22  
 Modifier Type: Neat  
 Aggregate Type: Granite/Sand/RAP  
 Design Gradation Type: DGA

Avg. Lab Properties of Plant Produced Mix

Sieve Size	Target	QC
25 mm (1"):	100	100
19 mm (3/4"):	100	100
12.5 mm (1/2"):	100	100
9.5 mm (3/8"):	98	98
4.75 mm (#4):	74	77
2.36 mm (#8):	52	59
1.18 mm (#16):	41	47
0.60 mm (#30):	27	32
0.30 mm (#50):	15	17
0.15 mm (#100):	10	10
0.075 mm (#200):	6.3	6.3
Binder Content (Pb):	5.7	6.0
Eff. Binder Content (Pbe):	5.0	5.3
Dust-to-Eff. Binder Ratio:	1.2	1.2
RAP Binder Replacement (%):	33.0	28.2
RAS Binder Replacement (%):	0.0	0.0
Total Binder Replacement (%):	33.0	28.2
Rice Gravity (Gmm):	2.481	2.448
Bulk Gravity (Gmb):	2.382	2.344
Air Voids (Va):	4.0	4.3
Agg. Bulk Gravity (Gsb):	2.665	2.63
VMA:	15.7	16
VFA:	75	74

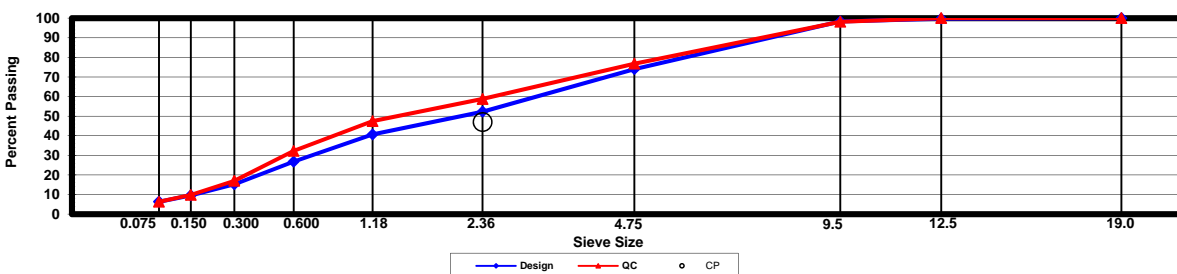
**Construction Diary**

Relevant Conditions for Construction

Completion Date: May 12, 2016  
 24 Hour High Temperature (F): 90  
 24 Hour Low Temperature (F): 64  
 24 Hour Rainfall (in): 0.00  
 Planned Sublot Lift Thickness (in): 1.5  
 Paving Machine: Blaw-Knox

Plant Configuration and Placement Details

Component	% Setting
Binder Content (Plant Setting)	5.6
89 Granite	30.0
Coarse Sand	24.0
M10 Granite	11.0
EAP -1/2 RAP	35.0
Inline Delta-S (% of Aged Binder)	5.0
As-Built Sublot Lift Thickness (in):	1.5
Total Thickness of All New Sublots (in):	5.5
Approx. Underlying HMA Thickness (in):	4.1
Type of Tack Coat Utilized:	PG67-22
Undiluted Target Tack Rate (gal/sy):	0.06
Approx. Avg. Temperature at Plant (F):	340
Avg. Measured Mat Compaction:	92.1%



**General Notes:**

- References are by quadrant (E=East, N=North, W=West, S=South, L=Lee Rd 159, U=US-280), section #, and sublot (top=1).
- DGA, SMA, & OGFC refer to dense graded asphalt, stone matrix asphalt, & open-graded friction course, respectively.
- Production Gsb estimated using the actual production Gse and the difference between Gse and Gsb in the mix design.

**Section and/or Sublot Specific Notes:**

This mix was produced by inline injecting Delta-S into the AC supply line to dose the aged binder from RAP at a target rate of 5 percent by weight of aged binder. The actual rate was calculated as 5.4% based on before and after marks on the tote and the total tons of treated mix from the plant computer.

**Quadrant:** N  
**Section:** 7  
**Sublot:** 2

**Laboratory Diary**

General Description of Mix and Materials

Design Method: Super  
 Compactive Effort: 60 gyrations  
 Binder Performance Grade: HiMA  
 Modifier Type: Kraton  
 Aggregate Type: Lms/Sand/Grn/RAP  
 Design Gradation Type: DGA

Avg. Lab Properties of Plant Produced Mix

Sieve Size	Target	QC
25 mm (1"):	100	100
19 mm (3/4"):	97	96
12.5 mm (1/2"):	85	86
9.5 mm (3/8"):	65	75
4.75 mm (#4):	49	56
2.36 mm (#8):	44	45
1.18 mm (#16):	35	38
0.60 mm (#30):	22	28
0.30 mm (#50):	12	14
0.15 mm (#100):	7	8
0.075 mm (#200):	4.8	4.8
Binder Content (Pb):	4.6	5.0
Eff. Binder Content (Pbe):	4.1	4.5
Dust-to-Eff. Binder Ratio:	1.2	1.1
RAP Binder Replacement (%):	20.0	16.3
RAS Binder Replacement (%):	0.0	0.0
Total Binder Replacement (%):	20.0	16.3
Rice Gravity (Gmm):	2.562	2.508
Bulk Gravity (Gmb):	2.460	2.422
Air Voids (Va):	4.0	3.4
Agg. Bulk Gravity (Gsb):	2.725	2.68
VMA:	13.9	14
VFA:	71	76

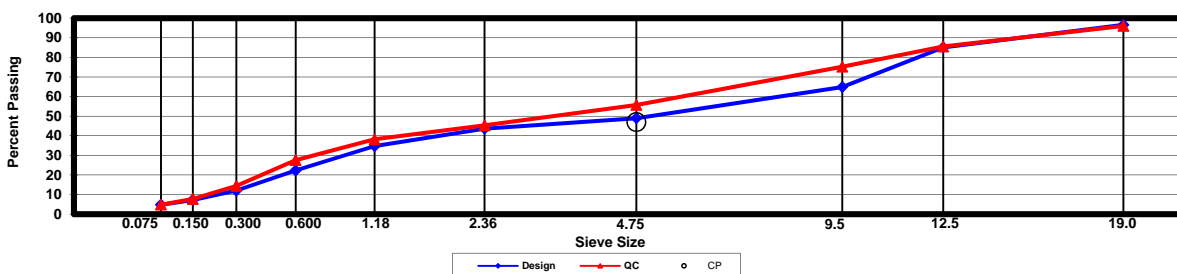
**Construction Diary**

Relevant Conditions for Construction

Completion Date: April 14, 2016  
 24 Hour High Temperature (F): 67  
 24 Hour Low Temperature (F): 56  
 24 Hour Rainfall (in): 1.63  
 Planned Subot Lift Thickness (in): 2.3  
 Paving Machine: Blaw-Knox

Plant Configuration and Placement Details

Component	% Setting
Binder Content (Plant Setting)	4.8
78 Limestone	32.0
57 Limestone	17.0
Coarse Sand	23.0
M10 Granite	11.0
EAP -1/2 RAP	17.0
Evotherm P15	0.5
As-Built Sublot Lift Thickness (in):	1.8
Total Thickness of All New Sublots (in):	5.5
Approx. Underlying HMA Thickness (in):	2.2
Type of Tack Coat Utilized:	NTSS-1HM
Undiluted Target Tack Rate (gal/sy):	0.08
Approx. Avg. Temperature at Plant (F):	335
Avg. Measured Mat Compaction:	94.4%



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- Production Gsb estimated using the actual production Gse and the difference between Gse and Gsb in the mix design.

**Section and/or Sublot Specific Notes:**

NA

**Quadrant:** N  
**Section:** 7  
**Sublot:** 3

**Laboratory Diary**

General Description of Mix and Materials

Design Method: Super  
 Compactive Effort: 60 gyrations  
 Binder Performance Grade: HiMA  
 Modifier Type: Kraton  
 Aggregate Type: Lms/Sand/Grn/RAP  
 Design Gradation Type: DGA

Avg. Lab Properties of Plant Produced Mix

Sieve Size	Target	QC
25 mm (1"):	100	100
19 mm (3/4"):	97	100
12.5 mm (1/2"):	85	97
9.5 mm (3/8"):	65	89
4.75 mm (#4):	49	59
2.36 mm (#8):	44	45
1.18 mm (#16):	35	38
0.60 mm (#30):	22	28
0.30 mm (#50):	12	16
0.15 mm (#100):	7	9
0.075 mm (#200):	4.8	4.3
Binder Content (Pb):	4.6	5.5
Eff. Binder Content (Pbe):	4.1	5.0
Dust-to-Eff. Binder Ratio:	1.2	0.9
RAP Binder Replacement (%):	20.0	14.9
RAS Binder Replacement (%):	0.0	0.0
Total Binder Replacement (%):	20.0	14.9
Rice Gravity (Gmm):	2.562	2.503
Bulk Gravity (Gmb):	2.460	2.438
Air Voids (Va):	4.0	2.6
Agg. Bulk Gravity (Gsb):	2.725	2.69
VMA:	13.9	14
VFA:	71	82

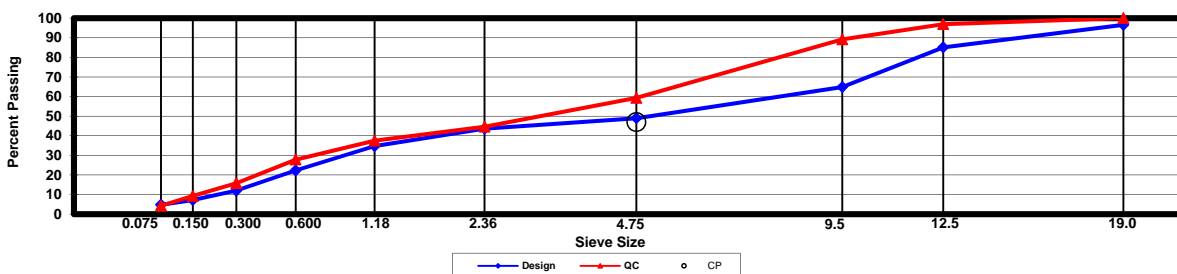
**Construction Diary**

Relevant Conditions for Construction

Completion Date: April 13, 2016  
 24 Hour High Temperature (F): 67  
 24 Hour Low Temperature (F): 51  
 24 Hour Rainfall (in): 0.07  
 Planned Subot Lift Thickness (in): 2.3  
 Paving Machine: Blaw-Knox

Plant Configuration and Placement Details

Component	% Setting
Binder Content (Plant Setting)	4.9
78 Limestone	32.0
57 Limestone	17.0
Coarse Sand	23.0
M10 Granite	11.0
EAP -1/2 RAP	17.0
Evotherm P15	0.5
As-Built Sublot Lift Thickness (in):	2.2
Total Thickness of All New Sublots (in):	5.5
Approx. Underlying HMA Thickness (in):	0.0
Type of Tack Coat Utilized:	NA
Undiluted Target Tack Rate (gal/sy):	NA
Approx. Avg. Temperature at Plant (F):	320
Avg. Measured Mat Compaction:	94.3%



**General Notes:**

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**Section and/or Sublot Specific Notes:**

NA