

**Quadrant:** N  
**Section:** 10 A  
**Sublot:** 1

**Laboratory Diary**

General Description of Mix and Materials

Design Method: Super  
 Compactive Effort: 80 gyrations  
 Binder Performance Grade: 67-22  
 Modifier Type: NA  
 Aggregate Type: RAP/Sand/Grn  
 Design Gradation Type: Fine

Avg. Lab Properties of Plant Produced Mix

Sieve Size	Design	QC
25 mm (1"):	100	100
19 mm (3/4"):	100	100
12.5 mm (1/2"):	100	100
9.5 mm (3/8"):	96	95
4.75 mm (#4):	64	67
2.36 mm (#8):	52	48
1.18 mm (#16):	42	39
0.60 mm (#30):	29	27
0.30 mm (#50):	14	12
0.15 mm (#100):	8	7
0.075 mm (#200):	5.2	4.7
Binder Content (Pb):	6.2	6.0
Eff. Binder Content (Pbe):	5.5	5.2
Dust-to-Binder Ratio:	0.9	0.9
Rice Gravity (Gmm):	2.447	2.450
Avg. Bulk Gravity (Gmb):	2.349	2.356
Avg Air Voids (Va):	4.0	3.8
Agg. Bulk Gravity (Gsb):	2.636	2.631
Avg VMA:	16.4	15.8
Avg. VFA:	76	76

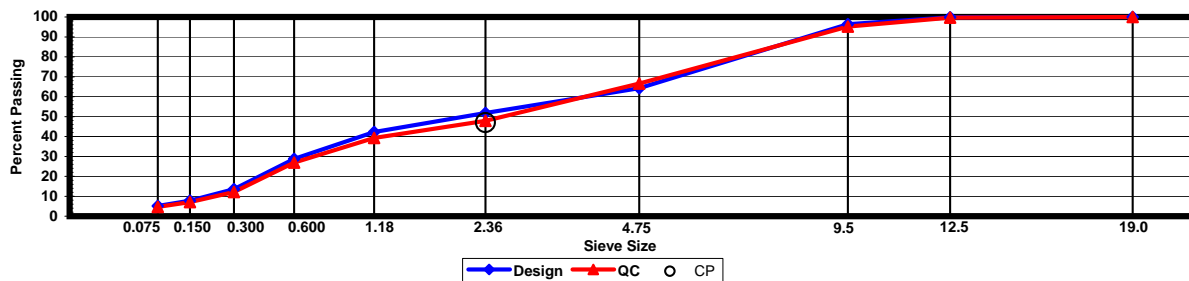
**Construction Diary**

Relevant Conditions for Construction

Completion Date: August 11, 2009  
 24 Hour High Temperature (F): 95  
 24 Hour Low Temperature (F): 76  
 24 Hour Rainfall (in): 0.00  
 Planned Sublot Lift Thickness (in): 1.3  
 Paving Machine: Roadtec

Plant Configuration and Placement Details

Component	% Setting
Asphalt Content (Plant Setting)	5.6
89 Columbus Granite	24.0
Shorter Coarse Sand	26.0
Fine Fraction Local RAP	15.0
Coarse Fraction Local RAP	35.0
As-Built Sublot Lift Thickness (in):	1.4
Total Thickness of All 2009 Sublots (in):	7.1
Approx. Underlying HMA Thickness (in):	0.0
Type of Tack Coat Utilized:	PG67-22
Target Tack Application Rate (gal/sy):	0.05
Approx. Avg. Temperature at Plant (F):	325
Avg. Measured Mat Compaction:	92.6%



**General Notes:**

- Mixes are referenced by quadrant (E=East, N=North, W=West, and S=South), section # (sequential) and subplot (top=1);
- The total HMA thickness of all structural study sections (N1-N11 and S8-S12) ranges from 5-3/4 to 14 inches by design;
- All non-structural sections are supported by a uniform perpetual foundation in order to study surface mix performance;
- SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively; and
- All liquid asphalt purchased for use in Track reconstruction contained LOF 6500 antistripping additive at a rate of 0.5 percent

**Quadrant:** N  
**Section:** 10 A  
**Sublot:** 2

**Laboratory Diary**

General Description of Mix and Materials

Design Method: Super  
 Compactive Effort: 80 gyrations  
 Binder Performance Grade: 67-22  
 Modifier Type: NA  
 Aggregate Type: RAP/Lms/Sand  
 Design Gradation Type: Fine

Avg. Lab Properties of Plant Produced Mix

Sieve Size	Design	QC
25 mm (1"):	100	98
19 mm (3/4"):	94	93
12.5 mm (1/2"):	87	86
9.5 mm (3/8"):	78	79
4.75 mm (#4):	54	56
2.36 mm (#8):	46	46
1.18 mm (#16):	37	37
0.60 mm (#30):	26	26
0.30 mm (#50):	14	13
0.15 mm (#100):	8	8
0.075 mm (#200):	5.1	5.6
Binder Content (Pb):	4.8	4.4
Eff. Binder Content (Pbe):	4.2	3.8
Dust-to-Binder Ratio:	1.2	1.5
Rice Gravity (Gmm):	2.542	2.552
Avg. Bulk Gravity (Gmb):	2.440	2.436
Avg Air Voids (Va):	4.0	4.5
Agg. Bulk Gravity (Gsb):	2.698	2.695
Avg VMA:	13.9	13.6
Avg. VFA:	72	67

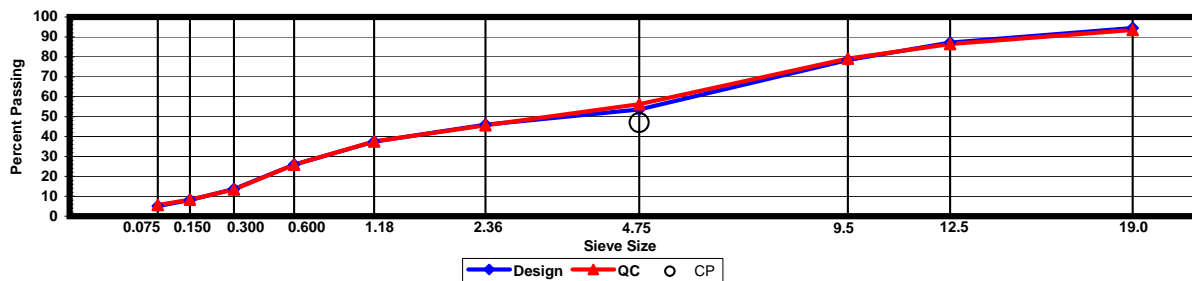
**Construction Diary**

Relevant Conditions for Construction

Completion Date: August 4, 2009  
 24 Hour High Temperature (F): 94  
 24 Hour Low Temperature (F): 73  
 24 Hour Rainfall (in): 0.00  
 Planned Subot Lift Thickness (in): 2.8  
 Paving Machine: Roadtec

Plant Configuration and Placement Details

Component	% Setting
Asphalt Content (Plant Setting)	5.8
78 Opelika Limestone	15.0
57 Opelika Limestone	15.0
Shorter Coarse Sand	20.0
Fine Fraction Local RAP	20.0
Coarse Fraction Local RAP	30.0
As-Built Sublot Lift Thickness (in):	2.7
Total Thickness of All 2009 Sublots (in):	7.1
Approx. Underlying HMA Thickness (in):	0.0
Type of Tack Coat Utilized:	NTSS-1HM
Target Tack Application Rate (gal/sy):	0.05
Approx. Avg. Temperature at Plant (F):	325
Avg. Measured Mat Compaction:	92.9%



**General Notes:**

- Mixes are referenced by quadrant (E=East, N=North, W=West, and S=South), section # (sequential) and subplot (top=1);
- The total HMA thickness of all structural study sections (N1-N11 and S8-S12) ranges from 5-3/4 to 14 inches by design;
- All non-structural sections are supported by a uniform perpetual foundation in order to study surface mix performance;
- SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively; and
- All liquid asphalt purchased for use in Track reconstruction contained LOF 6500 antistripping additive at a rate of 0.5 percent

**Quadrant:** N  
**Section:** 10 A  
**Sublot:** 3

**Laboratory Diary**

General Description of Mix and Materials

Design Method: Super  
 Compactive Effort: 80 gyrations  
 Binder Performance Grade: 67-22  
 Modifier Type: NA  
 Aggregate Type: RAP/Lms/Sand  
 Design Gradation Type: Fine

Avg. Lab Properties of Plant Produced Mix

Sieve Size	Design	QC
25 mm (1"):	100	99
19 mm (3/4"):	94	95
12.5 mm (1/2"):	87	89
9.5 mm (3/8"):	78	82
4.75 mm (#4):	54	58
2.36 mm (#8):	46	47
1.18 mm (#16):	37	39
0.60 mm (#30):	26	27
0.30 mm (#50):	14	14
0.15 mm (#100):	8	9
0.075 mm (#200):	5.1	5.8
Binder Content (Pb):	4.8	4.7
Eff. Binder Content (Pbe):	4.2	4.1
Dust-to-Binder Ratio:	1.2	1.4
Rice Gravity (Gmm):	2.542	2.537
Avg. Bulk Gravity (Gmb):	2.440	2.431
Avg Air Voids (Va):	4.0	4.2
Agg. Bulk Gravity (Gsb):	2.698	2.688
Avg VMA:	13.9	13.8
Avg. VFA:	72	70

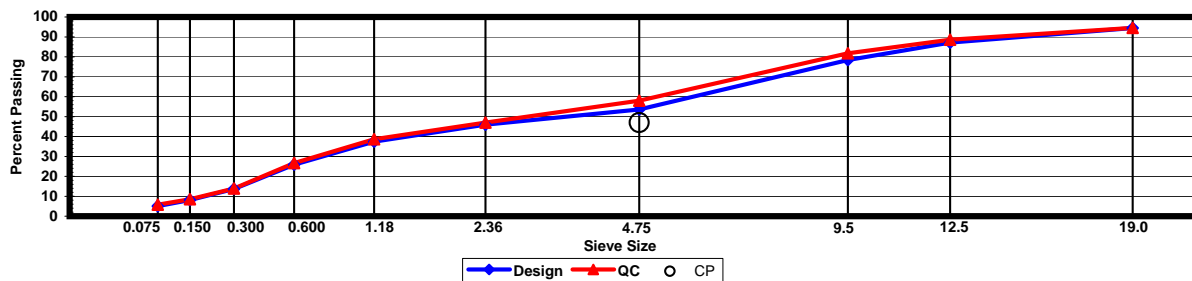
**Construction Diary**

Relevant Conditions for Construction

Completion Date: August 4, 2009  
 24 Hour High Temperature (F): 94  
 24 Hour Low Temperature (F): 73  
 24 Hour Rainfall (in): 0.00  
 Planned Subot Lift Thickness (in): 3.0  
 Paving Machine: Roadtec

Plant Configuration and Placement Details

Component	% Setting
Asphalt Content (Plant Setting)	5.8
78 Opelika Limestone	15.0
57 Opelika Limestone	15.0
Shorter Coarse Sand	20.0
Fine Fraction Local RAP	20.0
Coarse Fraction Local RAP	30.0
As-Built Sublot Lift Thickness (in):	3.0
Total Thickness of All 2009 Sublots (in):	7.1
Approx. Underlying HMA Thickness (in):	0.0
Type of Tack Coat Utilized:	NA
Target Tack Application Rate (gal/sy):	NA
Approx. Avg. Temperature at Plant (F):	325
Avg. Measured Mat Compaction:	95.0%



**General Notes:**

- Mixes are referenced by quadrant (E=East, N=North, W=West, and S=South), section # (sequential) and subplot (top=1);
- The total HMA thickness of all structural study sections (N1-N11 and S8-S12) ranges from 5-3/4 to 14 inches by design;
- All non-structural sections are supported by a uniform perpetual foundation in order to study surface mix performance;
- SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively; and
- All liquid asphalt purchased for use in Track reconstruction contained LOF 6500 antistrip additive at a rate of 0.5 percent

**Quadrant:** N  
**Section:** 10B  
**Sublot:** 1

**Laboratory Diary**

General Description of Mix and Materials

Design Method: Super  
 Compactive Effort: 75 gyrations  
 Binder Performance Grade: 67-22  
 Modifier Type: Neat  
 Aggregate Type: Lms/Sand/F-RAP/RAS  
 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"):	100	100
4.75 mm (#4):	99	95
2.36 mm (#8):	76	69
1.18 mm (#16):	53	51
0.60 mm (#30):	36	34
0.30 mm (#50):	23	21
0.15 mm (#100):	15	15
0.075 mm (#200):	11.5	11.6
Binder Content (Pb):	6.1	6.5
Eff. Binder Content (Pbe):	5.6	6.0
Dust-to-Eff. Binder Ratio:	2.0	1.9
RAP Binder Replacement (%):	11.4	10.7
RAS Binder Replacement (%):	8.6	8.1
Total Binder Replacement (%):	20.0	18.8
Rice Gravity (Gmm):	2.441	2.464
Bulk Gravity (Gmb):	2.343	2.429
Air Voids (Va):	4.0	1.4
Agg. Bulk Gravity (Gsb):	2.647	2.70
VMA:	16.9	16
VFA:	76	91

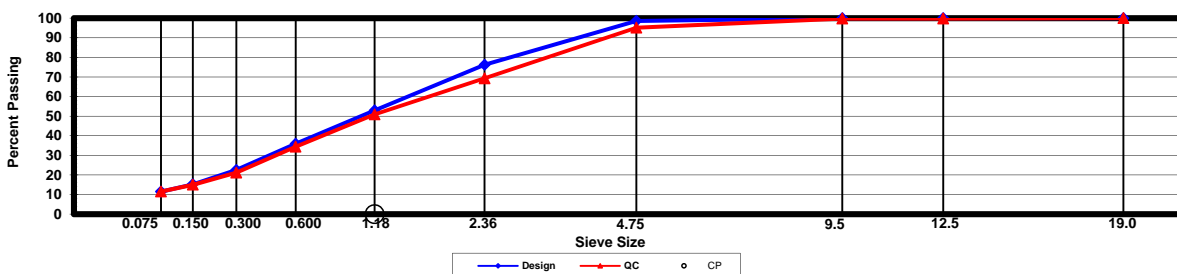
**Construction Diary**

Relevant Conditions for Construction

Completion Date: September 1, 2015  
 24 Hour High Temperature (F): 92  
 24 Hour Low Temperature (F): 70  
 24 Hour Rainfall (in): 0.00  
 Planned Sublot Lift Thickness (in): 0.8  
 Paving Machine: Roadtec

Plant Configuration and Placement Details

Component	% Setting
Binder Content (Plant Setting)	6.0
Calera Limestone Screenings	60.0
Coarse Sand	26.0
EAP Fine RAP	11.0
EAP Post Consumer RAS	3.0
Evotherm P15	0.5
Hydrated Lime	1.0
As-Built Sublot Lift Thickness (in):	0.8
Total Thickness of All New Sublots (in):	1.1
Approx. Underlying HMA Thickness (in):	Pending
Type of Tack Coat Utilized:	NTSS-1HM
Undiluted Target Tack Rate (gal/sy):	0.05
Approx. Avg. Temperature at Plant (F):	340
Avg. Measured Mat Compaction:	89.6%



**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:**

NA