

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

**Laboratory Diary**

General Description of Mix and Materials

Design Method: FC-5  
 Compactive Effort: 50 gyrations  
 Binder Performance Grade: 76-22  
 Modifier Type: SBS  
 Aggregate Type: Granite/RAP  
 Design Gradation Type: PFC

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"):	95	97
9.5 mm (3/8"):	64	78
4.75 mm (#4):	15	24
2.36 mm (#8):	9	11
1.18 mm (#16):	8	9
0.60 mm (#30):	6	8
0.30 mm (#50):	5	6
0.15 mm (#100):	4	5
0.075 mm (#200):	3.7	3.9
Binder Content (Pb):	5.5	5.1
Eff. Binder Content (Pbe):	4.9	NA
Dust-to-Binder Ratio:	0.8	NA
Rice Gravity (Gmm):	2.446	2.476
Avg. Bulk Gravity (Gmb):	2.037	NA
Avg Air Voids (Va):	16.8	NA
Agg. Bulk Gravity (Gsb):	2.613	NA
Avg VMA:	26.3	NA
Avg. VFA:	36	NA

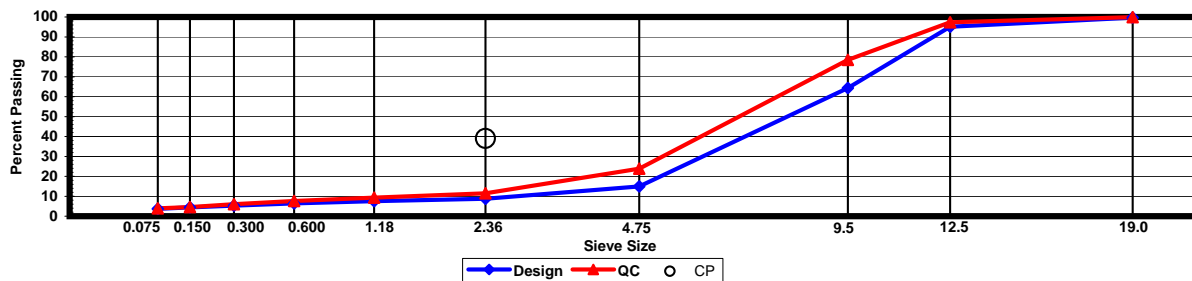
**Construction Diary**

Relevant Conditions for Construction

Completion Date: July 15, 2009  
 24 Hour High Temperature (F): 91  
 24 Hour Low Temperature (F): 74  
 24 Hour Rainfall (in): 0.24  
 Planned Subot Lift Thickness (in): 0.8  
 Paving Machine: Spray Paver

Plant Configuration and Placement Details

Component	% Setting
Asphalt Content (Plant Setting)	5.5
78 LaGrange Granite	85.0
Coarse Fraction Local RAP	15.0
Cellulose	0.3
As-Built Sublot Lift Thickness (in):	0.8
Total Thickness of All 2009 Sublots (in):	4.7
Approx. Underlying HMA Thickness (in):	3.0
Type of Tack Coat Utilized:	CRS-2P(SBS)
Target Tack Application Rate (gal/sy):	0.21
Approx. Avg. Temperature at Plant (F):	335
Avg. Measured Mat Compaction:	79.3%



**General Notes:**

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

**Quadrant:** N  
**Section:** 1  
**Sublot:** 2

**Laboratory Diary**

General Description of Mix and Materials

Design Method: Super  
 Compactive Effort: 100 gyrations  
 Binder Performance Grade: 67-22  
 Modifier Type: NA  
 Aggregate Type: Grn/Lms  
 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"):	97	98
9.5 mm (3/8"):	82	84
4.75 mm (#4):	60	62
2.36 mm (#8):	50	51
1.18 mm (#16):	38	39
0.60 mm (#30):	28	30
0.30 mm (#50):	19	20
0.15 mm (#100):	12	13
0.075 mm (#200):	7.0	7.4
Binder Content (Pb):	4.8	4.6
Eff. Binder Content (Pbe):	4.4	4.2
Dust-to-Binder Ratio:	1.6	1.8
Rice Gravity (Gmm):	2.514	2.492
Avg. Bulk Gravity (Gmb):	2.413	2.424
Avg Air Voids (Va):	4.0	2.7
Agg. Bulk Gravity (Gsb):	2.684	2.647
Avg VMA:	14.4	12.6
Avg. VFA:	72	78

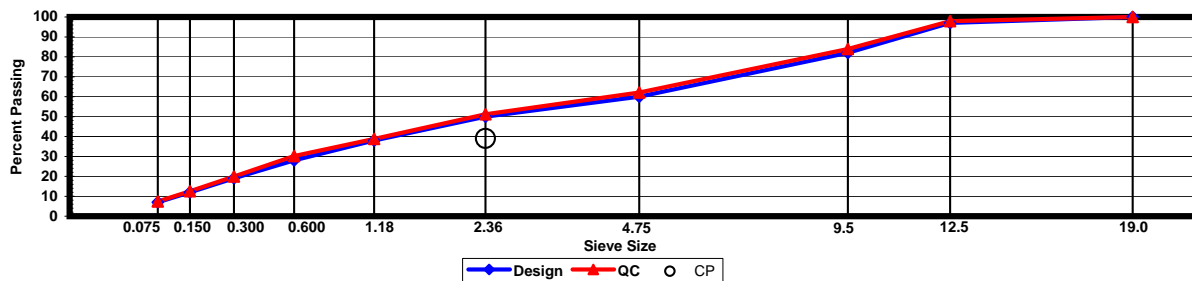
**Construction Diary**

Relevant Conditions for Construction

Completion Date: June 30, 2009  
 24 Hour High Temperature (F): 95  
 24 Hour Low Temperature (F): 65  
 24 Hour Rainfall (in): 0.00  
 Planned Sublot Lift Thickness (in): 2.0  
 Paving Machine: Roadtec

Plant Configuration and Placement Details

Component	% Setting
Asphalt Content (Plant Setting)	4.7
78 LaGrange Granite	46.0
M10 Columbus Granite	44.0
8910 Opelika Limestone Screenings	10.0
As-Built Sublot Lift Thickness (in):	1.9
Total Thickness of All 2009 Sublots (in):	4.7
Approx. Underlying HMA Thickness (in):	3.0
Type of Tack Coat Utilized:	NTSS-1HM
Target Tack Application Rate (gal/sy):	0.07
Approx. Avg. Temperature at Plant (F):	325
Avg. Measured Mat Compaction:	93.6%



**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:** 1  
**Sublot:** 3

**Laboratory Diary**

General Description of Mix and Materials

Design Method: Super  
 Compactive Effort: 100 gyrations  
 Binder Performance Grade: 67-22  
 Modifier Type: NA  
 Aggregate Type: Grn/Lms  
 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"):	97	98
9.5 mm (3/8"):	82	86
4.75 mm (#4):	60	63
2.36 mm (#8):	50	51
1.18 mm (#16):	38	39
0.60 mm (#30):	28	30
0.30 mm (#50):	19	21
0.15 mm (#100):	12	14
0.075 mm (#200):	7.0	8.4
Binder Content (Pb):	4.8	4.6
Eff. Binder Content (Pbe):	4.4	4.2
Dust-to-Binder Ratio:	1.6	2.0
Rice Gravity (Gmm):	2.514	2.486
Avg. Bulk Gravity (Gmb):	2.413	2.417
Avg Air Voids (Va):	4.0	2.8
Agg. Bulk Gravity (Gsb):	2.684	2.641
Avg VMA:	14.4	12.7
Avg. VFA:	72	78

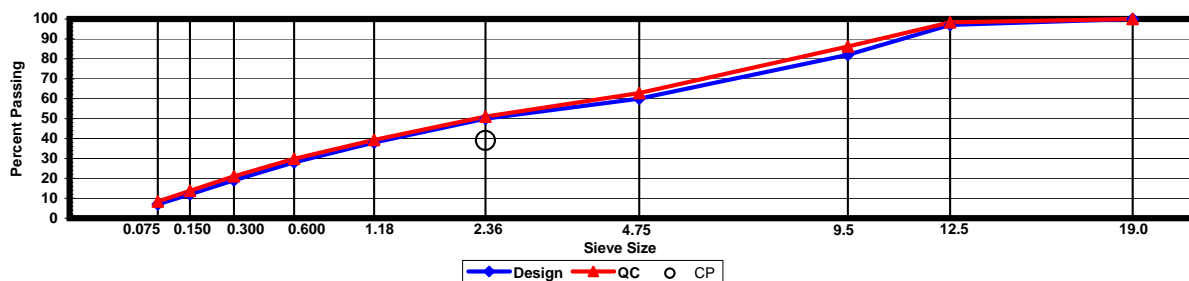
**Construction Diary**

Relevant Conditions for Construction

Completion Date: June 29, 2009  
 24 Hour High Temperature (F): 92  
 24 Hour Low Temperature (F): 72  
 24 Hour Rainfall (in): 0.00  
 Planned Sublot Lift Thickness (in): 2.0  
 Paving Machine: Roadtec

Plant Configuration and Placement Details

Component	% Setting
Asphalt Content (Plant Setting)	4.8
78 LaGrange Granite	46.0
M10 Columbus Granite	44.0
8910 Opelika Limestone Screenings	10.0
As-Built Sublot Lift Thickness (in):	1.9
Total Thickness of All 2009 Sublots (in):	4.7
Approx. Underlying HMA Thickness (in):	3.0
Type of Tack Coat Utilized:	NTSS-1HM
Target Tack Application Rate (gal/sy):	0.07
Approx. Avg. Temperature at Plant (F):	315
Avg. Measured Mat Compaction:	94.0%



**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 antistripping additive at a rate of 0.5 percent

**Quadrant:** N  
**Section:** 1  
**Sublot:** 4

**Laboratory Diary**

General Description of Mix and Materials

Design Method:	Super
Compactive Effort:	60 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Lms/Grn/Snd
Design Gradation Type:	Dense

Avg. Lab Properties of Plant Produced Mix

<u>Sieve Size</u>	<u>Design</u>	<u>QC</u>
1":	100	100
3/4":	94	96
1/2":	84	85
3/8":	72	74
No. 4:	53	53
No. 8:	45	43
No. 16:	36	36
No. 30:	28	26
No. 50:	15	14
No. 100:	8	8
No. 200:	5.0	5.4
Asphalt Content:	4.5	4.6
Pill Bulk Gravity:	2.468	2.415
TMD (Rice):	2.571	2.567
Avg Air Voids:	4.0	5.9
Avg VMA:	14.2	15.8

**Construction Diary**

Relevant Conditions for Construction

Completion Date:	September 27, 2006
24 Hour High Temperature (F):	81
24 Hour Low Temperature (F):	52
24 Hour Rainfall (in):	0.00
Planned Mill / Lift Thickness (in):	3.00
Paving Machine:	Roadtec

Plant Configuration and Placement Details

<u>Component</u>	<u>% Setting</u>
Asphalt Content (Plant Setting)	4.6
78 Opelika Limestone	33.0
57 Opelika Limestone	20.0
M10 Columbus Granite	25.0
Shorter Coarse Sand	22.0
Approximate Length (ft):	200
Survey Mill / Lift Thickness (in):	NA
Type of Tack Coat Utilized:	67-22
Target Tack Application Rate (gal/sy):	0.05
Avg Temperature at Plant (F):	315
Avg Section Compaction:	92.1%

**General Notes:**

- 1) Mixes are referenced by quadrant (E=East, N=North, W=West, and S=South), section number (sequential) and subplot (top=1);
- 2) The total research thickness of all mix performance sections ranges from 3/4 to 4 inches by design;
- 3) The total HMA thickness of all structural study sections (N1 through N10) ranges from 7 to 14 inches by design;
- 4) ARZ, TRZ and BRZ refer to gradations intended to pass above, through and below the restricted zone, respectively;
- 5) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively; and
- 6) VMA values computed from QC volumetrics are based on design values of Gsb (stockpile gravity testing is ongoing).