

Quadrant: U
Section: 40
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	96
2.36 mm (#8):	76	79
1.18 mm (#16):	53	61
0.60 mm (#30):	36	42
0.30 mm (#50):	23	26
0.15 mm (#100):	15	14
0.075 mm (#200):	11.5	9.7
Binder Content (Pb):	6.1	6.4
Eff. Binder Content (Pbe):	5.6	5.9
Dust-to-Eff. Binder Ratio:	2.0	1.6
RAP Binder Replacement (%):	11.4	10.9
RAS Binder Replacement (%):	8.6	8.2
Total Binder Replacement (%):	20.0	19.1
Rice Gravity (Gmm):	2.441	2.452
Bulk Gravity (Gmb):	2.343	2.340
Air Voids (Va):	4.0	4.5
Agg. Bulk Gravity (Gsb):	2.647	2.67
VMA:	16.9	18
VFA:	76	75

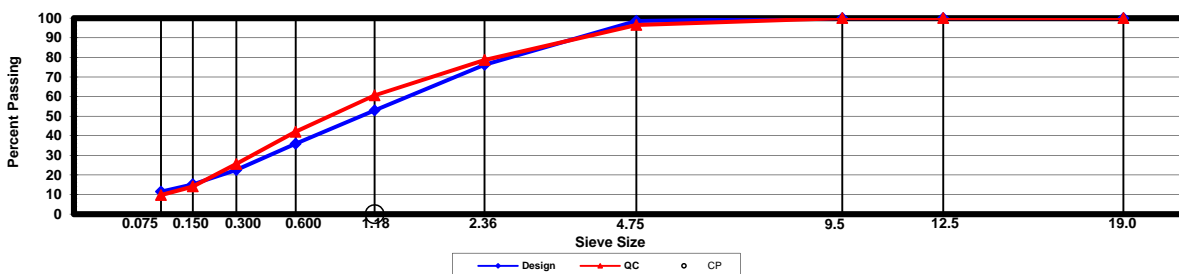
Construction Diary

Relevant Conditions for Construction

Completion Date: September 14, 2015
 24 Hour High Temperature (F): 82
 24 Hour Low Temperature (F): 53
 24 Hour Rainfall (in): 0.00
 Planned Sublot Lift Thickness (in): 1.0
 Paving Machine: Roadtec

Plant Configuration and Placement Details

Component	% Setting
Binder Content (Plant Setting)	6.2
Calera Limestone Screenings	43.0
Coarse Sand	43.0
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):	1.0
Total Thickness of All New Sublots (in):	5.0
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:	90.9%



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

12/7/2015 Draft

Stage	Parameter	"U" Section: Binder:	CCPR		CIR		
			40 Foam	41 Emulsion	44 Foam	43 Emulsion	
Source RAP	Moisture Content (%)		3.4		0.5		
	Residual Binder (%)		4.6		5.6		
	Coated Gradation (% Passing):	1"	100		98		
		3/4"	98		89		
		1/2"	88		63		
		3/8"	76		47		
		#4	49		22		
		#8	27		11		
		#16	14		5		
		#30	6		3		
		#50	2		2		
		#100	0		1		
		#200	0.1		0.3		
		Burned Gradation (% Passing):	1"	100		100	
			3/4"	99		100	
	1/2"		94		98		
	3/8"		87		93		
	#4		64		77		
	#8		47		59		
	#16		36		47		
	#30		29		35		
	#50		22		23		
	#100		16		16		
#200	10.8		10.2				
Loose Mix	Total Moisture Content (%)		7.2	7.0	2.9	4.4	
	Water Added for Mixing/Compacting (%)		3.8	3.6	2.4	3.9	
	Total Binder Content (%)		7.1	6.6	7.4	7.0	
	Added Residual Virgin Binder (%)		2.5	2.0	1.8	1.4	
	Burned Gradation (% Passing):	1"	100	100	100	100	
		3/4"	100	99	100	100	
		1/2"	96	96	97	97	
		3/8"	91	90	93	93	
		#4	71	68	75	76	
		#8	52	49	60	60	
		#16	40	39	49	49	
		#30	32	31	39	38	
		#50	24	23	28	27	
#100	18	17	20	19			
#200	12.4	12.2	13.7	12.9			
Compacted Mix	Number of Gyration for QC Pills		35	30	35	30	
	Compacted Pill Mass (g)		4378.1	4417.2	4486.9	4445.1	
	Average Pill Height (mm)		110.6	110.4	113.0	111.8	
	Estimated "Wet" Pill Density (pcf)		139.3	140.8	139.8	139.9	
	Water Pressed Out During Compaction (%)		2.8	1.9	0.3	1.2	
	Water Lost in Compaction + Curing (%)		6.5	5.5	2.4	3.7	
	Water Lost in Curing (%)		3.7	3.6	2.1	2.5	
	Water Content After Curing (%)		0.7	1.5	0.5	0.7	
	Measured Density of Cured Pills (pcf)		135.3	137.1	137.3	138.0	
	Cured Pill Density + Lost Curing Water (pcf)		140.4	142.0	140.2	141.4	
Compacted Mat	"Wet" Mat Density (pcf)		132.0	133.7	128.6	129.9	
	Average Compaction (%)		94.0%	94.1%	91.8%	91.9%	
	StDev Compaction (%)		1.3%	1.6%	1.0%	1.3%	