NCAT Report 01-02

AS-BUILT PROPERTIES OF EXPERIMENTAL SECTIONS ON THE 2000 NCAT PAVEMENT TEST TRACK

By

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BACKGROUND

An experimental facility is now operational near the campus of Auburn University that will be utilized by governmental agencies nationwide to streamline the practical application of research designed to extend the life of flexible pavements. Managed by the National Center for Asphalt Technology (NCAT), the Pavement Test Track provides a unique opportunity for sponsors to answer specific questions related to flexible pavement performance in a full scale, accelerated manner where results do not require laboratory scale extrapolations or lifelong field observations.

Experimental sections on the Pavement Test Track are cooperatively funded by external sponsors, most commonly state DOT's, with subsequent operation and research managed by NCAT. Forty-six different flexible pavements have been installed at the facility (26 in the tangents and 20 in the curves), each at a length of approximately 200 feet. The underlying structural buildup is exactly the same for every section, where sponsors typically chose to place their research mixes at a total thickness of 4 inches to facilitate direct comparisons with other sponsors' results. Materials and methods unique to section sponsors were imported during construction to maximize the applicability of results. A design lifetime of truck traffic (10 million equivalent single axle loadings, or ESALs) began in 2000 with a scheduled completion date of 2002.

Unlike conventional efforts on public roadways, research at the NCAT Pavement Test Track is conducted in a closed-loop facility where axle loadings are precisely monitored and environmental effects are identical for every mix. An array of surface parameters (smoothness, rutting, cracking, etc.) are monitored weekly as truck traffic accumulates to facilitate objective performance analyses. State DOT's typically have to wait 10 to 15 years to obtain less reliable results in full-scale field studies on public roadways.

Sponsors typically fund research on two sections so they can compare life cycle costs of common paving alternatives. In this manner, they can rationally manage the public's investment in flexible pavements by choosing mixes that cost less over the life of the structure. For example, it is unwise to spend less on construction if the cheaper construction alternative results in a substantially higher life cycle cost. In addition to comparing alternatives for sponsors, NCAT is responsible for guiding the overall effort in a direction that will address policy issues for the highway industry as a whole. For example, can fine-graded mixes perform as well as coarse-graded mixes if both are proportioned in a manner consistent with established design criteria?

The Pavement Test Track (referred to occasionally hereafter as the Track) is the result of industry and government committing to work together to improve the quality of flexible pavement performance, thus maximizing the taxpayers' investment in America's roadway transportation infrastructure. The facility is expected to clarify the relationship between methods and performance such that design and construction policy in the future can be objectively guided by life cycle costs. Additionally, the broad range of methodologies and materials utilized to build the Track provides a proving ground for laboratory methods intended to predict the performance of pavements in the field.

INTRODUCTION

It is useful to fully document the installation of experimental mixes for several reasons. Sponsors were invited to travel to the Track to oversee the construction of their sections, at which time both laboratory and field data were presented to them in a timely manner so they could make educated decisions regarding quality control and ultimate acceptance. The nature of construction required that these data be collected and digested in an expedited, concise manner; consequently, it is important to provide sponsors with a detailed view of their research following the completion of more rigorous testing.

Additionally, this effort will serve to provide other researchers with information necessary to replicate the materials, mixes, and construction efforts in any supplemental activities that may serve to extend the benefits of this project beyond the original intent of the sponsoring entities. For example, it may be possible to run identically proportioned materials through an unrelated production facility and replicate the effort in other locales.

To address these needs, this document is intended to summarize the as-built condition of experimental sections constructed at the NCAT Pavement Test Track. A summary of information that may be relevant in assessing and comparing section performance is provided as Appendix A, where the location of referenced sections may be identified using Figure 1. Experimental mixes are presented therein chronologically in order of completion date.

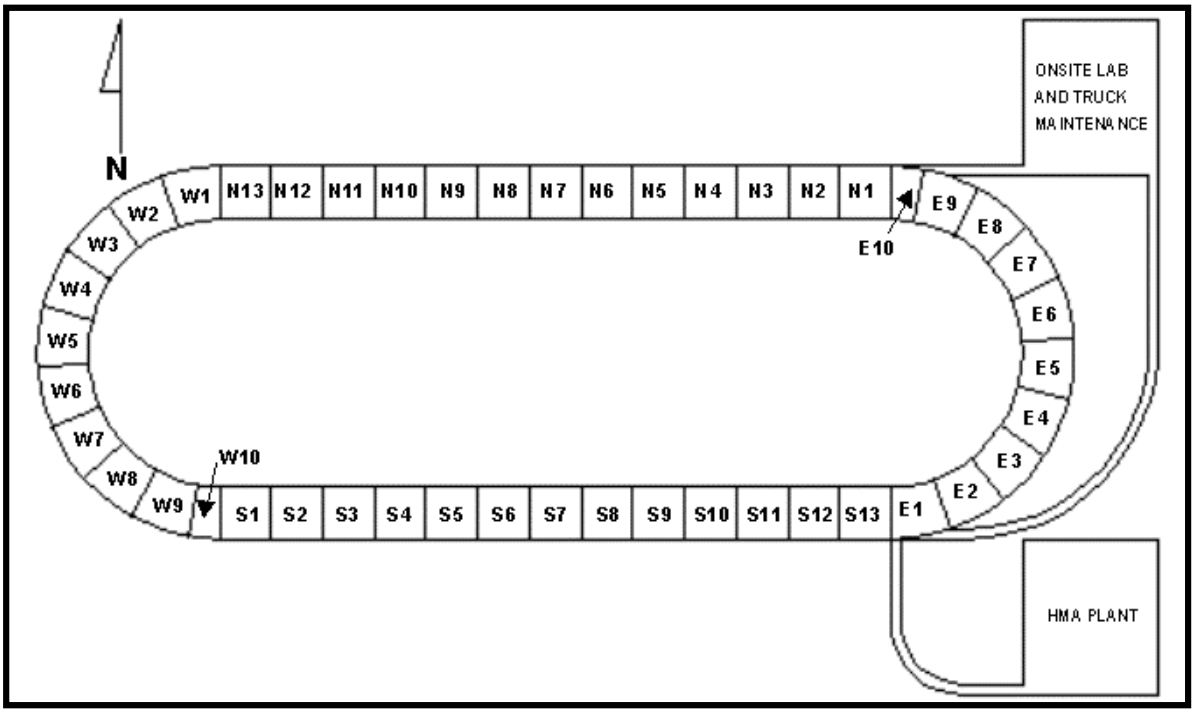

Figure 1. NCAT Pavement Test Track Layout

MATERIALS

Sponsors were encouraged to consider research efforts in other sections in developing their comparison studies. Most sponsors chose to ship in their own unique local aggregates while relying upon the "Track stock" asphalt binder. Appendix B is included herein to generally summarize the nature of the overall experiment and emphasize the relevance of the performance in sections constructed with similar materials.

For example, sponsors who elected to build sections with granite aggregates can compare the performance of fine-graded versus coarse-graded versus dense-graded aggregate blends, 3/8 versus ½ inch nominal maximum aggregate size, neat versus SBR versus SBS modified asphalt binders, Superpave versus Stone Matrix Asphalt (SMA) design methodologies, etc. Specific source locations of aggregate fractions are not revealed herein to protect the anonymity and objectivity of the research; however, the effect of aggregate source and quadrant placement on the Track (curve versus tangent) must be considered when interpreting final results.

A single source was used to supply the neat (PG 67-22) and SBS modified (PG 76-22) asphalt binders; however, it was determined that this supplier could not guarantee that the needed SBR modified (PG 76-22) binder would arrive at the onsite plant at the proper grade (when shipped in uncirculated tankers). Consequently, the neat/SBS supplier shipped unmodified material to a second, more local supplier who added their SBR modifier then delivered the final product to the plant site under certification for quality. Near the end of the project, an SB modified (PG 70-28) asphalt binder was also utilized for the production of two adjacent sections.

PROPORTIONING

Laboratory job-mix formulas were used as a starting point when each mix was trial run through the plant for the first time, except that actual stockpile gradations were used to make subtle adjustments to the bin percentages wherever possible. Stockpile moisture contents were measured daily on any mixes that were scheduled for production to minimize the effect on plant operations and resulting final mix proportions. A portable double drum plant (presented as Figure 2) was temporarily located onsite to produce mix exclusively for Track construction with minimal haul times.

Figure 2. Onsite Double Drum Asphalt Plant Used to Produce All Track Mix

A sufficient quantity of both coated and uncoated material was wasted on either end of each production run so that a meaningful sample could be recovered and tested in the onsite laboratory. Representative samples were recovered using conventional shovel sampling methods, an automated robotic sampling device (presented as Figure 3), and an automated cold belt sweep

Figure 3. Sampling Representative Mix with Automated Robotic Sampler

sampler. A mechanical hot-mix sample splitting device was used in the onsite laboratory to avoid rapid cooling associated with conventional quartering and its subsequent effect on laboratory sample compaction temperatures.

Nuclear asphalt content measurements were utilized to supplement extractions via biodegradable solvent and ignition furnace. Conventional gradations with washed fines were then run on uncoated aggregate blends. Volumetric samples were prepared using the Superpave gyratory compactor (SGC) for the majority of the Track, with a portable Texas gyratory being used for the single Hveem mix and a Marshall hammer used for the SMA's. Both laboratory density and roadway compaction were compared to theoretical maximum values obtained via the Rice method to compute percent compaction and air voids. Drybacks were utilized for sections containing absorptive materials.

Plant settings were then adjusted based upon laboratory test data and either another trial run was deemed necessary or the final plant-run job-mix formula was established. Whenever practical, trial mix was placed on Lee Road 151 (the local, previously unpaved road leading into the facility) so that sponsor representatives could weigh placement and compaction into their decision making process. Following the determination of the final job-mix formula, production of mix for placement on the Track surface was authorized.

CONSTRUCTION

Construction of the actual test sections was allowed to begin after sponsors were satisfied with their trial mix results. Enough mix was produced in a continuous run to accommodate placement of both the inside and outside lanes of a single lift to minimize the amount of wasted material required to obtain stable production. Since most of the equipment was relatively cool due to the nature of the sporadic production runs, the plant was typically allowed to produce mix at slightly under the high end of the allowable temperature range (which is approximately 350/F to protect the binder from rapid aging).

Two 24-ton haul trucks were loaded and driven the short distance to the location of test section placement, with the balance of the plant run being kept in the integrated 65-ton surge bin. Paving was allowed to begin only when both trucks were lined up and ready to discharge into the

material transfer device (MTD). Generally, the inside lane was paved first to establish a rolling pattern and was then utilized for destructive coring so that corrected nuclear gauge testing could be done non-destructively in the research (outside) lane.

Pavers were preheated and raised slightly off the surface of the previously placed mat using metal spacer plates of varying thickness. When a steady flow of mix was available from the MTD, the paver pulled off the joint and began its slow movement to the far end of the section. In every case, it was required that placement operations proceed in the direction of traffic (counter-clockwise). At the far end of the joint, the paver overran the distance requirement by 5 to 10 feet and lifted up the screed. This allowed the paver to be driven clear of the immediate construction zone. If the inside lane had just been completed, the paver was backed up and positioned on metal plates in anticipation of pulling the outside (research) lane. Typically, two pavers (conventional and gravity feed, presented in Figures 4 and 5) were used to pave a section such that the first unit paved the inside lane and the second unit paved the outside lane.

A backhoe was then used to slice into the mound of material that had been left in place at the end of the run when the screed was lifted. This excess material was pulled back and pushed off the side of the shoulder for later cleanup and removal. With a cleanly defined fresh mat at the

Figure 4. Typical Dual Lane Paving Operation Using MTD

Figure 5. Paving Equipment Typically Used to Place Mixes in Outside Lane

far end of the run, the first roller was then allowed to drive onto the uncompacted inside lane. When the roller reached the far end of the mat, it simply ramped down the overplaced mix and reversed direction. Relative increases in density were monitored in the inside lane to identify the breakpoint in the compaction operation, which was used to establish the roller pattern in the outside (research) lane. Vibratory steel-wheeled rollers (Figure 6) were used for breakdown rolling, a pneumatic rubber-tired roller (Figure 7) was used as necessary for intermediate rolling, and the vibratory steel-wheeled roller was used in static mode for finish rolling.

Figure 6. One of Two Vibratory Steel-Wheeled Rollers Utilized for Compaction

Concurrently, the MTD was advanced slightly and boomed over to accommodate dumping two to three tons of blended mix into a front-end loader (as presented in Figure 8). This material would be utilized for the fabrication of numerous research specimens that would later be used for laboratory performance testing, and could not be discharged from the MTD until its blending chamber had been filled via a return visit from one of the two haul trucks. When filled with material that was representative of the new mat, the front-end loader was driven back to the onsite laboratory where material was sampled via shovel and stored in buckets for staged heating and sample compaction.

In compacting the typical experimental section, four coverages with the vibratory steel-wheeled roller were accomplished with 12 passes. The first pass was begun just as the paver lifted up and pulled away at the far end of the mat. Since the vast majority of experimental mixes contained modified asphalt binder, the average temperature documented behind the paver prior to initial compaction was 318°F. Generally, rollers were operated at high frequency and high amplitude; however, the mats were monitored closely to avoid white-topping and related damage to mix aggregates. The pneumatic rubber-tired roller was utilized in several instances where a tender zone was encountered in intermediate temperatures. Finally, steel-wheel rollers were utilized in static mode to accomplish finish rolling, which typically consisted of four coverages via 12 passes with the mat at or just under 175°F.

Figure 7. Pneumatic Rubber-Tired Roller Utilized for Compaction

Figure 8. Obtaining Large Quantity of Representative Mix for Research

Once the placement and compaction operation for both lanes had been completed, a straightedge was used to identify a distance from the far end of the mat that would most likely accommodate a smooth transition between sections. A chalk line was then popped at this distance and a masonry saw was used to cut a clean vertical face in the new mat. Lastly, a backhoe was used to pull all excess material off the shoulder for later cleanup and removal.

The Alabama Department of Transportation (ALDOT) conventional smoothness specification was utilized to review and accept the quality of joint construction for every section on the Track. Although all joints passed their ¼ inch deviation tolerance using a 15 ft straightedge, it was later decided (based upon objective smoothness analyses) that diamond grinding should be utilized to enhance the rideability of 11 of the 46 total construction joints.

VERIFICATION

The Track was constructed via an ALDOT administered construction contract with NCAT serving as the acceptance authority on the production and placement of experimental mixes; consequently, ALDOT field methods were utilized to generate quick laboratory test data that could be used by sponsors to make quality control assessments and acceptance decisions. More broadly accepted methods were utilized after construction to verify the final section properties that would be made available for publication.

Specifically, reflux testing (as presented in Figure 9) and calibrated ignition furnace testing was utilized to determine the asphalt content of samples that were collected during construction and saved for post-processing. Mixes with highly modified binder contents and fiber stabilizer were subjected to low-speed centrifuge testing. Subsequent binder-dust separations were accomplished via high-speed centrifuge. Lastly, particle size distributions of then uncoated aggregate blends were determined.

SUMMARY

The first lower lift was placed in the second section of the east curve on March 21, 2000. Work proceeded in a counter-clockwise manner around the Track through the spring and into summer. The east curve was completed, followed by the north tangent, the west curve, and finally the south tangent. The last upper lift was placed on the first section of the east curve on July 14, 2000.

Based upon a survey of elevations between the wheelpaths before and after construction, the average thickness of the completed experimental sections is 4.1 inches, with an average thickness standard deviation within each section of 0.1 inches. The target thickness for sections included in this evaluation was 4.0 inches. It should be noted that 2 sections placed at a target thickness of 3.6 inches and 2 sections placed at a target thickness of 3.0 inches were not included in this analysis.

After approximately 1.6 million ESALs had been applied, or 16 percent of the 10,000,000 ESAL total requirement, no noticeable distresses had been observed. An extrapolation of this progress indicates that the 10,000,000 ESAL total should be completed by November of 2002.

Numerous publications and activities are planned throughout the course of the research in an effort to inform sponsors on the status of their experimental mixes both on the Track and in the laboratory:

Figure 9. Reflux Extraction Verification Testing of Construction Samples

1. Initially, a concise document tentatively entitled “An Overview of Construction at the NCAT Pavement Test Track” that describes the equipment and methods utilized to construct experimental sections will be useful in conveying construction experiences to the pavement construction community. It is anticipated that this document will be completed by the end of April in 2001;
2. Subsequently, a paper providing the background and development of the Track will be especially useful when paired with quality control data and a summary of the experimental design. Tentatively entitled “A General Overview of Research Efforts at the NCAT Pavement Test Track,” it is anticipated that this project overview will also be delivered by the end of April in 2001;
3. In anticipation of the differentiation in performance that may begin with the intense heating of the mat in the late spring and early summer, an onsite meeting was planned for June 11-12 of 2001. Funds are allocated to bring a single representative from each sponsoring entity to Auburn University with all expenses paid by the pooled fund. Additional representatives may attend with prior notification if the cost is born by the sponsor. Specific details will be provided on this meeting as the date approaches;
4. Soon after the June onsite meeting, sponsors will be provided with a summary of laboratory testing that will ultimately be compared to field performance of experimental sections. Basic material property testing (e.g. shear strength measurements) will be presented as well as torture testing (e.g. loaded wheel testing) to define mix performance in the laboratory. It is anticipated that this formal document will be submitted to section sponsors in mid-July of 2001. The tentative title for this publication is “Laboratory Performance Testing for the NCAT Pavement Test Track”;

5. Upon the completion of approximately one year of traffic, a summary of section performance will be provided and paired with the previously published laboratory predictions to provide an early indication of the suitability of laboratory methods to predict field performance. It is anticipated that this document, tentatively titled “A Progress Report After One Year of Traffic on the NCAT Pavement Test Track,” will be delivered in October of 2001;
6. Following the completion of truck traffic, an interim report will be distributed summarizing the surface condition of experimental sections. This document will likely be titled “A Report of Post-Traffic Surface Condition on the NCAT Pavement Test Track” and is intended to keep sponsors informed regarding ultimate section field performance while awaiting final results from the concurrent post-mortem study. It is anticipated that this document will be distributed approximately two months after the successful application of 10,000,000 ESALs near the end of the project;
7. Ultimately, a report tentatively titled “The Final Report for Initial Research Efforts at the NCAT Pavement Test Track” will be provided to section sponsors as a summary publication to consider the results of post-mortem studies and compare the ultimate field performance of hot-mix design and construction methodologies. Additionally, the suitability of using numerous laboratory performance evaluation methods to predict full-scale performance in the field will be presented. It is anticipated that this final document will be delivered in July of 2003; and
8. Interested parties are encouraged to obtain informal updates at any time via the Internet. The project web site, accessed at www.pavetrack.com, has interactive pages for general information, section construction properties, laboratory and field performance, and links to sponsors and suppliers. The information contained in Appendix A may be viewed for each section by clicking the interactive Track layout on the construction page.

Appendix A

Summary of Final Section Properties

Section E2

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	74
No. 4	41
No. 8	29
No. 16	22
No. 30	18
No. 50	12
No. 100	7
No. 200	4.1

Asphalt Binder Content:	4.7%
Compacted Pill Bulk Gravity:	2.434
Theoretical Maximum Gravity:	2.505
Computed Air Voids:	2.8%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, April 11, 2000
24 Hour High Temperature (F):	76
24 Hour Low Temperature (F):	50
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.8%
Granite	7	48.0%
Granite	89	17.0%
Granite	M10	20.0%
Granite	W10	15.0%

Approximate Length (ft):	213
Surveyed Thickness of Section (in):	4.2
Std Dev of Section Thickness (in):	0.2
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	297
Average Section Compaction:	94.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section E3

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	94
3/8"	73
No. 4	41
No. 8	29
No. 16	23
No. 30	18
No. 50	12
No. 100	7
No. 200	4.2

Asphalt Binder Content:	4.8%
Compacted Pill Bulk Gravity:	2.419
Theoretical Maximum Gravity:	2.519
Computed Air Voids:	4.0%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, April 11, 2000
24 Hour High Temperature (F):	76
24 Hour Low Temperature (F):	50
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.7%
Granite	7	48.0%
Granite	89	19.0%
Granite	M10	18.0%
Granite	W10	15.0%

Approximate Length (ft):	189
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.3
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	325
Average Section Compaction:	93.5%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section E4

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	95
3/8"	75
No. 4	42
No. 8	29
No. 16	23
No. 30	18
No. 50	13
No. 100	8
No. 200	4.6

Asphalt Binder Content:	4.7%
Compacted Pill Bulk Gravity:	2.416
Theoretical Maximum Gravity:	2.512
Computed Air Voids:	3.8%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, April 12, 2000
24 Hour High Temperature (F):	77
24 Hour Low Temperature (F):	51
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.7%
Granite	7	48.0%
Granite	89	19.0%
Granite	M10	18.0%
Granite	W10	15.0%

Approximate Length (ft):	204
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	321
Average Section Compaction:	93.8%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section E5

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	TRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	98
3/8"	83
No. 4	54
No. 8	40
No. 16	30
No. 30	24
No. 50	16
No. 100	9
No. 200	5.1

Asphalt Binder Content:	5.1%
Compacted Pill Bulk Gravity:	2.407
Theoretical Maximum Gravity:	2.500
Computed Air Voids:	3.7%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, April 13, 2000
24 Hour High Temperature (F):	75
24 Hour Low Temperature (F):	51
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.0%
Granite	7	33.0%
Granite	89	23.0%
Granite	M10	24.0%
Granite	W10	20.0%

Approximate Length (ft):	201
Surveyed Thickness of Section (in):	4.2
Std Dev of Section Thickness (in):	0.2
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	317
Average Section Compaction:	92.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section E6

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Granite
Gradation Type:	TRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	81
No. 4	52
No. 8	37
No. 16	28
No. 30	22
No. 50	15
No. 100	8
No. 200	4.3

Asphalt Binder Content:	5.0%
Compacted Pill Bulk Gravity:	2.411
Theoretical Maximum Gravity:	2.510
Computed Air Voids:	3.9%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, April 13, 2000
24 Hour High Temperature (F):	75
24 Hour Low Temperature (F):	51
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.0%
Granite	7	33.0%
Granite	89	23.0%
Granite	M10	24.0%
Granite	W10	20.0%

Approximate Length (ft):	211
Surveyed Thickness of Section (in):	4.2
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	299
Average Section Compaction:	92.9%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section E7

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Granite
Gradation Type:	TRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	97
3/8"	83
No. 4	53
No. 8	38
No. 16	29
No. 30	22
No. 50	16
No. 100	9
No. 200	5.2

Asphalt Binder Content:	4.8%
Compacted Pill Bulk Gravity:	2.413
Theoretical Maximum Gravity:	2.504
Computed Air Voids:	3.6%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, April 17, 2000
24 Hour High Temperature (F):	75
24 Hour Low Temperature (F):	51
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.0%
Granite	7	33.0%
Granite	89	23.0%
Granite	M10	24.0%
Granite	W10	20.0%

Approximate Length (ft):	193
Surveyed Thickness of Section (in):	4.2
Std Dev of Section Thickness (in):	0.2
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	320
Average Section Compaction:	93.2%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section E8

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Granite
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	98
3/8"	86
No. 4	66
No. 8	51
No. 16	38
No. 30	28
No. 50	18
No. 100	10
No. 200	5.2

Asphalt Binder Content:	5.6%
Compacted Pill Bulk Gravity:	2.372
Theoretical Maximum Gravity:	2.477
Computed Air Voids:	4.2%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, April 18, 2000
24 Hour High Temperature (F):	85
24 Hour Low Temperature (F):	50
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.7%
Granite	7	30.0%
Granite	89	10.0%
Granite	M10	24.0%
Granite	W10	36.0%

Approximate Length (ft):	208
Surveyed Thickness of Section (in):	4.2
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	290
Average Section Compaction:	92.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section E9

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	97
3/8"	85
No. 4	64
No. 8	49
No. 16	36
No. 30	27
No. 50	18
No. 100	10
No. 200	5.2

Asphalt Binder Content:	5.4%
Compacted Pill Bulk Gravity:	2.371
Theoretical Maximum Gravity:	2.480
Computed Air Voids:	4.4%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, April 18, 2000
24 Hour High Temperature (F):	85
24 Hour Low Temperature (F):	50
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.7%
Granite	7	30.0%
Granite	89	10.0%
Granite	M10	24.0%
Granite	W10	36.0%

Approximate Length (ft):	198
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	315
Average Section Compaction:	92.9%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section E10

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Granite
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	97
3/8"	87
No. 4	67
No. 8	51
No. 16	38
No. 30	29
No. 50	19
No. 100	10
No. 200	5.6

Asphalt Binder Content:	5.8%
Compacted Pill Bulk Gravity:	2.380
Theoretical Maximum Gravity:	2.467
Computed Air Voids:	3.5%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, April 20, 2000
24 Hour High Temperature (F):	85
24 Hour Low Temperature (F):	54
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.7%
Granite	7	30.0%
Granite	89	10.0%
Granite	M10	24.0%
Granite	W10	36.0%

Approximate Length (ft):	99
Surveyed Thickness of Section (in):	4.4
Std Dev of Section Thickness (in):	0.3
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	326
Average Section Compaction:	93.0%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N1

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Lms/Slag
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	100
3/8"	92
No. 4	69
No. 8	52
No. 16	33
No. 30	22
No. 50	15
No. 100	10
No. 200	6.7

Asphalt Binder Content:	7.4%
Compacted Pill Bulk Gravity:	2.306
Theoretical Maximum Gravity:	2.365
Computed Air Voids:	2.5%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, April 25, 2000
24 Hour High Temperature (F):	75
24 Hour Low Temperature (F):	55
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		7.2%
Slag	78	32.0%
Slag	8910	28.0%
Limestone	Manufactured Sand	40.0%

Approximate Length (ft):	201
Surveyed Thickness of Section (in):	3.9
Std Dev of Section Thickness (in):	0.3
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	306
Average Section Compaction:	95.1%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N2

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Lms/Slag
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	90
No. 4	66
No. 8	50
No. 16	33
No. 30	22
No. 50	16
No. 100	11
No. 200	7.6

Asphalt Binder Content:	7.8%
Compacted Pill Bulk Gravity:	2.300
Theoretical Maximum Gravity:	2.352
Computed Air Voids:	2.2%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, April 25, 2000
24 Hour High Temperature (F):	75
24 Hour Low Temperature (F):	55
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		7.7%
Slag	78	32.0%
Slag	8910	28.0%
Limestone	Manufactured Sand	40.0%

Approximate Length (ft):	200
Surveyed Thickness of Section (in):	4.3
Std Dev of Section Thickness (in):	0.3
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	316
Average Section Compaction:	94.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N3

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Lms/Slag
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	91
No. 4	68
No. 8	51
No. 16	33
No. 30	22
No. 50	15
No. 100	10
No. 200	6.5

Asphalt Binder Content:	7.6%
Compacted Pill Bulk Gravity:	2.294
Theoretical Maximum Gravity:	2.369
Computed Air Voids:	3.2%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, April 26, 2000
24 Hour High Temperature (F):	85
24 Hour Low Temperature (F):	55
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		7.5%
Slag	78	32.0%
Slag	8910	28.0%
Limestone	Manufactured Sand	40.0%

Approximate Length (ft):	200
Surveyed Thickness of Section (in):	4.2
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	295
Average Section Compaction:	94.1%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N4

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Lms/Slag
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	91
No. 4	68
No. 8	52
No. 16	35
No. 30	23
No. 50	15
No. 100	9
No. 200	6.0

Asphalt Binder Content:	6.8%
Compacted Pill Bulk Gravity:	2.296
Theoretical Maximum Gravity:	2.400
Computed Air Voids:	4.3%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, May 18, 2000
24 Hour High Temperature (F):	85
24 Hour Low Temperature (F):	55
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		7.1%
Slag	78	32.0%
Slag	8910	28.0%
Limestone	Manufactured Sand	40.0%

Approximate Length (ft):	199
Surveyed Thickness of Section (in):	4.2
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	288
Average Section Compaction:	93.4%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N5

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Lms/Slag
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	84
No. 4	52
No. 8	38
No. 16	26
No. 30	18
No. 50	14
No. 100	11
No. 200	8.3

Asphalt Binder Content:	6.9%
Compacted Pill Bulk Gravity:	2.285
Theoretical Maximum Gravity:	2.355
Computed Air Voids:	3.0%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, May 18, 2000
24 Hour High Temperature (F):	89
24 Hour Low Temperature (F):	68
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.9%
Slag	78	53.0%
Slag	8910	17.0%
Limestone	Modified 8910	30.0%

Approximate Length (ft):	201
Surveyed Thickness of Section (in):	4.4
Std Dev of Section Thickness (in):	0.3
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	282
Average Section Compaction:	93.8%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N6

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Lms/Slag
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	85
No. 4	54
No. 8	37
No. 16	25
No. 30	17
No. 50	13
No. 100	10
No. 200	8.2

Asphalt Binder Content:	6.8%
Compacted Pill Bulk Gravity:	2.270
Theoretical Maximum Gravity:	2.348
Computed Air Voids:	3.3%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, June 01, 2000
24 Hour High Temperature (F):	92
24 Hour Low Temperature (F):	67
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.5%
Slag	78	53.0%
Slag	8910	17.0%
Limestone	Modified 8910	30.0%

Approximate Length (ft):	197
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.2
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	289
Average Section Compaction:	94.4%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N7

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Lms/Slag
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	98
3/8"	83
No. 4	52
No. 8	36
No. 16	24
No. 30	17
No. 50	13
No. 100	10
No. 200	7.8

Asphalt Binder Content:	6.9%
Compacted Pill Bulk Gravity:	2.281
Theoretical Maximum Gravity:	2.330
Computed Air Voids:	2.1%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, June 01, 2000
24 Hour High Temperature (F):	92
24 Hour Low Temperature (F):	67
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.9%
Slag	78	53.0%
Slag	8910	17.0%
Limestone	Modified 8910	30.0%

Approximate Length (ft):	203
Surveyed Thickness of Section (in):	3.9
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	323
Average Section Compaction:	93.9%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N8

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Lms/Slag
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	85
No. 4	55
No. 8	37
No. 16	24
No. 30	17
No. 50	13
No. 100	10
No. 200	7.5

Asphalt Binder Content:	6.6%
Compacted Pill Bulk Gravity:	2.256
Theoretical Maximum Gravity:	2.351
Computed Air Voids:	4.0%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, June 05, 2000
24 Hour High Temperature (F):	77
24 Hour Low Temperature (F):	60
24 Hour Rainfall (in):	0.08
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.4%
Slag	78	53.0%
Slag	8910	17.0%
Limestone	Modified 8910	30.0%

Approximate Length (ft):	203
Surveyed Thickness of Section (in):	3.9
Std Dev of Section Thickness (in):	0.2
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	319
Average Section Compaction:	94.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N9

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Lms/Slag
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	87
No. 4	57
No. 8	40
No. 16	26
No. 30	19
No. 50	14
No. 100	11
No. 200	8.8

Asphalt Binder Content:	6.7%
Compacted Pill Bulk Gravity:	2.279
Theoretical Maximum Gravity:	2.354
Computed Air Voids:	3.2%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, June 07, 2000
24 Hour High Temperature (F):	84
24 Hour Low Temperature (F):	60
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.4%
Slag	78	53.0%
Slag	8910	17.0%
Limestone	Modified 8910	30.0%

Approximate Length (ft):	197
Surveyed Thickness of Section (in):	3.9
Std Dev of Section Thickness (in):	0.2
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	314
Average Section Compaction:	94.5%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N10

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Lms/Slag
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	98
3/8"	84
No. 4	51
No. 8	34
No. 16	23
No. 30	17
No. 50	13
No. 100	10
No. 200	7.7

Asphalt Binder Content:	6.8%
Compacted Pill Bulk Gravity:	2.257
Theoretical Maximum Gravity:	2.339
Computed Air Voids:	3.5%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, June 07, 2000
24 Hour High Temperature (F):	84
24 Hour Low Temperature (F):	60
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.9%
Slag	78	53.0%
Slag	8910	17.0%
Limestone	Modified 8910	30.0%

Approximate Length (ft):	206
Surveyed Thickness of Section (in):	4.2
Std Dev of Section Thickness (in):	0.3
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	324
Average Section Compaction:	94.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N11 (Lower Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	81
3/8"	70
No. 4	46
No. 8	34
No. 16	27
No. 30	21
No. 50	15
No. 100	10
No. 200	6.3

Asphalt Binder Content:	4.1%
Compacted Pill Bulk Gravity:	2.448
Theoretical Maximum Gravity:	2.529
Computed Air Voids:	3.2%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, June 06, 2000
24 Hour High Temperature (F):	85
24 Hour Low Temperature (F):	68
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.5

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.3%
Granite	6	27.0%
Granite	7	17.0%
Granite	89	20.0%
Granite	M10	24.0%
Granite	W10	11.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	195
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	PG 67-22
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	296
Average Section Compaction:	92.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N11 (Upper Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	TRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	97
3/8"	80
No. 4	52
No. 8	37
No. 16	30
No. 30	24
No. 50	18
No. 100	11
No. 200	7.2

Asphalt Binder Content:	4.3%
Compacted Pill Bulk Gravity:	2.434
Theoretical Maximum Gravity:	2.519
Computed Air Voids:	3.4%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, June 12, 2000
24 Hour High Temperature (F):	83
24 Hour Low Temperature (F):	54
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.5%
Granite	7	38.0%
Granite	89	18.0%
Granite	M10	32.0%
Granite	W10	11.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	195
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	PG 67-22
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	327
Average Section Compaction:	93.1%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N12 (Lower Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	99
1/2"	83
3/8"	72
No. 4	49
No. 8	36
No. 16	28
No. 30	22
No. 50	16
No. 100	10
No. 200	6.5

Asphalt Binder Content:	4.2%
Compacted Pill Bulk Gravity:	2.445
Theoretical Maximum Gravity:	2.535
Computed Air Voids:	3.5%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, June 06, 2000
24 Hour High Temperature (F):	85
24 Hour Low Temperature (F):	68
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.5

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.3%
Granite	6	27.0%
Granite	7	17.0%
Granite	89	20.0%
Granite	M10	24.0%
Granite	W10	11.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	201
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	PG 67-22
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	293
Average Section Compaction:	92.4%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N12 (Upper Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	SMA
Compactive Effort:	50 blows
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	SMA

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	73
No. 4	32
No. 8	23
No. 16	21
No. 30	19
No. 50	17
No. 100	14
No. 200	11.8

Asphalt Binder Content:	6.2%
Compacted Pill Bulk Gravity:	2.335
Theoretical Maximum Gravity:	2.401
Computed Air Voids:	2.7%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, June 12, 2000
24 Hour High Temperature (F):	93
24 Hour Low Temperature (F):	67
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.1%
Granite	7	60.0%
Granite	89	22.0%
Granite	M10	10.0%
Stabilizer	Fiber	0.4%
Filler	Fly Ash	7.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	201
Surveyed Thickness of Section (in):	3.9
Std Dev of Section Thickness (in):	0.2
Type of Tack Coat Utilized:	PG 67-22
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	343
Average Section Compaction:	94.6%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N13 (Lower Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Gravel
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	88
3/8"	73
No. 4	51
No. 8	33
No. 16	25
No. 30	20
No. 50	13
No. 100	8
No. 200	6.3

Asphalt Binder Content:	5.0%
Compacted Pill Bulk Gravity:	2.310
Theoretical Maximum Gravity:	2.384
Computed Air Voids:	3.1%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, June 07, 2000
24 Hour High Temperature (F):	84
24 Hour Low Temperature (F):	60
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.5

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.9%
Gravel	¾" Crushed Gravel	38.0%
Gravel	⅜" Crushed Gravel	43.0%
Limestone	Modified 8910	8.0%
Gravel	Coarse Sand	10.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	199
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	318
Average Section Compaction:	92.5%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section N13 (Upper Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	SMA
Compactive Effort:	50 blows
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Gravel
Gradation Type:	SMA

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	74
No. 4	30
No. 8	25
No. 16	23
No. 30	21
No. 50	17
No. 100	13
No. 200	11.5

Asphalt Binder Content:	6.8%
Compacted Pill Bulk Gravity:	2.175
Theoretical Maximum Gravity:	2.266
Computed Air Voids:	4.0%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, June 12, 2000
24 Hour High Temperature (F):	93
24 Hour Low Temperature (F):	67
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.7%
Gravel	½" Crushed Gravel	72.5%
Gravel	⅜" Crushed Gravel	10.0%
Gravel	Coarse Sand	9.5%
Stabilizer	Fiber	0.5%
Filler	Fly Ash	8.0%

Approximate Length (ft):	199
Surveyed Thickness of Section (in):	4.0
Std Dev of Section Thickness (in):	0.2
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	325
Average Section Compaction:	92.0%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W1

Laboratory Diary

General Description of Mix and Materials

Design Method:	SMA
Compactive Effort:	50 blows
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Granite
Gradation Type:	SMA

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	95
3/8"	68
No. 4	28
No. 8	20
No. 16	18
No. 30	16
No. 50	14
No. 100	12
No. 200	9.7

Asphalt Binder Content:	6.1%
Compacted Pill Bulk Gravity:	2.337
Theoretical Maximum Gravity:	2.422
Computed Air Voids:	3.5%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, June 13, 2000
24 Hour High Temperature (F):	92
24 Hour Low Temperature (F):	73
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.2%
Granite	7	73.0%
Granite	89	11.0%
Granite	M10	10.0%
Stabilizer	Fiber	0.4%
Filler	Fly Ash	6.0%

Approximate Length (ft):	202
Surveyed Thickness of Section (in):	3.9
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	328
Average Section Compaction:	95.0%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W2

Laboratory Diary

General Description of Mix and Materials

Design Method:	SMA
Compactive Effort:	50 blows
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Lms/Slag
Gradation Type:	SMA

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	98
3/8"	77
No. 4	35
No. 8	24
No. 16	17
No. 30	15
No. 50	13
No. 100	12
No. 200	10.7

Asphalt Binder Content:	8.0%
Compacted Pill Bulk Gravity:	2.158
Theoretical Maximum Gravity:	2.243
Computed Air Voids:	3.8%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, June 15, 2000
24 Hour High Temperature (F):	89
24 Hour Low Temperature (F):	76
24 Hour Rainfall (in):	0.17
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		7.7%
Slag	78	74.0%
Limestone	89	10.0%
Limestone	Manufactured Sand	10.0%
Stabilizer	Fiber	0.4%
Filler	Fly Ash	6.0%

Approximate Length (ft):	200
Surveyed Thickness of Section (in):	4.0
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	323
Average Section Compaction:	94.3%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W3 (Lower Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	76
No. 4	41
No. 8	29
No. 16	23
No. 30	18
No. 50	12
No. 100	7
No. 200	4.1

Asphalt Binder Content:	4.7%
Compacted Pill Bulk Gravity:	2.394
Theoretical Maximum Gravity:	2.510
Computed Air Voids:	4.6%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, June 15, 2000
24 Hour High Temperature (F):	89
24 Hour Low Temperature (F):	76
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	3.3

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.7%
Granite	7	48.0%
Granite	89	19.0%
Granite	M10	18.0%
Granite	W10	15.0%

Approximate Length (ft):	205
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	315
Average Section Compaction:	93.2%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W3 (Upper Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	OGFC
Compactive Effort:	50 blows
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Lms/Slag
Gradation Type:	OGFC

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	98
3/8"	68
No. 4	19
No. 8	13
No. 16	11
No. 30	10
No. 50	9
No. 100	8
No. 200	6.8

Asphalt Binder Content:	7.6%
Compacted Pill Bulk Gravity:	NA
Theoretical Maximum Gravity:	NA
Computed Air Voids:	NA

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, June 19, 2000
24 Hour High Temperature (F):	90
24 Hour Low Temperature (F):	78
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		8.5%
Limestone	7	20.0%
Slag	78	75.0%
Stabilizer	Fiber	0.4%
Filler	Fly Ash	5.0%

Approximate Length (ft):	205
Surveyed Thickness of Section (in):	4.0
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	304
Average Section Compaction:	NA

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W4 (Lower Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	SMA
Compactive Effort:	50 blows
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Limestone
Gradation Type:	SMA

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	72
No. 4	24
No. 8	18
No. 16	15
No. 30	13
No. 50	13
No. 100	12
No. 200	11.1

Asphalt Binder Content:	6.2%
Compacted Pill Bulk Gravity:	2.392
Theoretical Maximum Gravity:	2.459
Computed Air Voids:	2.7%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, June 15, 2000
24 Hour High Temperature (F):	89
24 Hour Low Temperature (F):	76
24 Hour Rainfall (in):	0.17
Lift Type:	lower
Design Thickness of Test Mix (in):	3.3

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.2%
Limestone	7	82.0%
Limestone	Modified 8910	11.0%
Stabilizer	Fiber	0.4%
Filler	Fly Ash	7.0%

Approximate Length (ft):	199
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	321
Average Section Compaction:	95.3%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W4 (Upper Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	OGFC
Compactive Effort:	NA
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Granite
Gradation Type:	OGFC

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	95
3/8"	66
No. 4	23
No. 8	14
No. 16	13
No. 30	12
No. 50	11
No. 100	10
No. 200	8.6

Asphalt Binder Content:	6.1%
Compacted Pill Bulk Gravity:	NA
Theoretical Maximum Gravity:	NA
Computed Air Voids:	NA

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, June 20, 2000
24 Hour High Temperature (F):	90
24 Hour Low Temperature (F):	74
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.3%
Granite	7	75.0%
Granite	89	19.0%
Stabilizer	Fiber	0.5%
Filler	Fly Ash	6.0%

Approximate Length (ft):	199
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	321
Average Section Compaction:	NA

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W5 (Lower Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	SMA
Compactive Effort:	50 blows
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Limestone
Gradation Type:	SMA

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	75
No. 4	25
No. 8	19
No. 16	15
No. 30	14
No. 50	14
No. 100	13
No. 200	12.4

Asphalt Binder Content:	5.7%
Compacted Pill Bulk Gravity:	2.391
Theoretical Maximum Gravity:	2.487
Computed Air Voids:	3.9%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, June 19, 2000
24 Hour High Temperature (F):	90
24 Hour Low Temperature (F):	78
24 Hour Rainfall (in):	0.17
Lift Type:	lower
Design Thickness of Test Mix (in):	3.3

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.8%
Limestone	7	82.0%
Limestone	Modified 8910	11.0%
Stabilizer	Fiber	0.4%
Filler	Fly Ash	7.0%

Approximate Length (ft):	203
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	336
Average Section Compaction:	94.2%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W5 (Upper Level)

Laboratory Diary

General Description of Mix and Materials

Design Method:	OGFC
Compactive Effort:	NA
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	OGFC

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	95
3/8"	67
No. 4	22
No. 8	15
No. 16	12
No. 30	11
No. 50	11
No. 100	10
No. 200	8.5

Asphalt Binder Content:	6.2%
Compacted Pill Bulk Gravity:	NA
Theoretical Maximum Gravity:	NA
Computed Air Voids:	NA

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, June 20, 2000
24 Hour High Temperature (F):	90
24 Hour Low Temperature (F):	74
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.2%
Granite	7	75.0%
Granite	89	19.0%
Stabilizer	Fiber	0.5%
Filler	Fly Ash	6.0%

Approximate Length (ft):	203
Surveyed Thickness of Section (in):	4.3
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	330
Average Section Compaction:	NA

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W6

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Lms/Slag
Gradation Type:	TRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	89
No. 4	65
No. 8	45
No. 16	28
No. 30	18
No. 50	13
No. 100	10
No. 200	7.8

Asphalt Binder Content:	6.8%
Compacted Pill Bulk Gravity:	2.291
Theoretical Maximum Gravity:	2.354
Computed Air Voids:	2.7%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, June 20, 2000
24 Hour High Temperature (F):	90
24 Hour Low Temperature (F):	74
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.8%
Slag	78	39.0%
Limestone	Modified 8910	25.0%
Slag	8910	26.0%
Limestone	Manufactured Sand	10.0%

Approximate Length (ft):	203
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	320
Average Section Compaction:	92.1%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W7

Laboratory Diary

General Description of Mix and Materials

Design Method:	SMA
Compactive Effort:	50 blows
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Limestone
Gradation Type:	SMA

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	69
No. 4	22
No. 8	17
No. 16	14
No. 30	12
No. 50	12
No. 100	12
No. 200	10.9

Asphalt Binder Content:	5.9%
Compacted Pill Bulk Gravity:	2.378
Theoretical Maximum Gravity:	2.480
Computed Air Voids:	4.1%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, June 21, 2000
24 Hour High Temperature (F):	91
24 Hour Low Temperature (F):	72
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.1%
Limestone	7	82.0%
Limestone	Modified 8910	11.0%
Stabilizer	Fiber	0.4%
Filler	Fly Ash	7.0%

Approximate Length (ft):	207
Surveyed Thickness of Section (in):	4.2
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	323
Average Section Compaction:	93.5%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W8

Laboratory Diary

General Description of Mix and Materials

Design Method:	SMA
Compactive Effort:	50 blows
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Sandstone
Gradation Type:	SMA

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	80
No. 4	33
No. 8	25
No. 16	22
No. 30	20
No. 50	18
No. 100	15
No. 200	12.9

Asphalt Binder Content:	7.5%
Compacted Pill Bulk Gravity:	2.272
Theoretical Maximum Gravity:	2.355
Computed Air Voids:	3.5%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, June 21, 2000
24 Hour High Temperature (F):	91
24 Hour Low Temperature (F):	72
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		7.0%
Limestone	7	30.0%
Slag	78	34.0%
Sandstone	8	19.0%
Stabilizer	Fiber	0.4%
Filler	Fly Ash	8.0%
Sandstone	Sand	9.0%

Approximate Length (ft):	197
Surveyed Thickness of Section (in):	4.0
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	322
Average Section Compaction:	94.5%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W9

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Qtz gravel
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	80
No. 4	51
No. 8	34
No. 16	22
No. 30	16
No. 50	12
No. 100	9
No. 200	6.7

Asphalt Binder Content:	5.0%
Compacted Pill Bulk Gravity:	2.380
Theoretical Maximum Gravity:	2.465
Computed Air Voids:	3.4%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, June 22, 2000
24 Hour High Temperature (F):	92
24 Hour Low Temperature (F):	75
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.1%
Gravel	½" Crushed Gravel	74.0%
Gravel	⅜" Crushed Gravel	10.0%
Limestone	Modified 8910	16.0%

Approximate Length (ft):	203
Surveyed Thickness of Section (in):	4.0
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	310
Average Section Compaction:	93.6%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section W10

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBR
Aggregate Type:	Qtz gravel
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	81
No. 4	51
No. 8	33
No. 16	22
No. 30	16
No. 50	12
No. 100	9
No. 200	6.5

Asphalt Binder Content:	5.0%
Compacted Pill Bulk Gravity:	2.361
Theoretical Maximum Gravity:	2.460
Computed Air Voids:	4.0%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Friday, June 23, 2000
24 Hour High Temperature (F):	98
24 Hour Low Temperature (F):	78
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.9%
Gravel	½" Crushed Gravel	74.0%
Gravel	⅜" Crushed Gravel	10.0%
Limestone	Modified 8910	16.0%

Approximate Length (ft):	102
Surveyed Thickness of Section (in):	3.9
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	326
Average Section Compaction:	93.3%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S1 (Lower Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	97
1/2"	66
3/8"	48
No. 4	32
No. 8	24
No. 16	20
No. 30	16
No. 50	11
No. 100	7
No. 200	4.1

Asphalt Binder Content:	5.0%
Compacted Pill Bulk Gravity:	2.408
Theoretical Maximum Gravity:	2.484
Computed Air Voids:	3.1%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, June 22, 2000
24 Hour High Temperature (F):	92
24 Hour Low Temperature (F):	75
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.5

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.7%
Granite	6M	52.0%
Granite	789	20.0%
Granite	Manufactured Sand	10.0%
Granite	Regular Screenings	18.0%

Approximate Length (ft):	200
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	329
Average Section Compaction:	93.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S1 (Upper Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	95
3/8"	86
No. 4	54
No. 8	36
No. 16	28
No. 30	21
No. 50	15
No. 100	9
No. 200	5.5

Asphalt Binder Content:	5.0%
Compacted Pill Bulk Gravity:	2.378
Theoretical Maximum Gravity:	2.452
Computed Air Voids:	3.0%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, June 26, 2000
24 Hour High Temperature (F):	92
24 Hour Low Temperature (F):	75
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.2%
Granite	6M	10.0%
Granite	789	53.0%
Granite	Manufactured Sand	12.0%
Granite	Regular Screenings	25.0%

Approximate Length (ft):	200
Surveyed Thickness of Section (in):	3.9
Std Dev of Section Thickness (in):	0.0
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	335
Average Section Compaction:	94.8%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S2 (Lower Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Gravel
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	86
3/8"	69
No. 4	46
No. 8	30
No. 16	23
No. 30	19
No. 50	11
No. 100	7
No. 200	5.5

Asphalt Binder Content:	4.9%
Compacted Pill Bulk Gravity:	2.282
Theoretical Maximum Gravity:	2.388
Computed Air Voids:	4.4%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, June 22, 2000
24 Hour High Temperature (F):	92
24 Hour Low Temperature (F):	75
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.5

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.9%
Gravel	¾" Crushed Gravel	38.0%
Gravel	⅜" Crushed Gravel	43.0%
Limestone	Modified 8910	8.0%
Gravel	Coarse Sand	10.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	200
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	329
Average Section Compaction:	93.0%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S2 (Upper Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Gravel
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	100
3/8"	96
No. 4	67
No. 8	41
No. 16	29
No. 30	22
No. 50	15
No. 100	10
No. 200	8.4

Asphalt Binder Content:	6.0%
Compacted Pill Bulk Gravity:	2.233
Theoretical Maximum Gravity:	2.342
Computed Air Voids:	4.7%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, June 27, 2000
24 Hour High Temperature (F):	92
24 Hour Low Temperature (F):	75
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.3%
Granite	½" Crushed Gravel	15.0%
Granite	⅜" Crushed Gravel	72.0%
AggLime	Agricultural Lime	5.0%
Gravel	Coarse Sand	7.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	200
Surveyed Thickness of Section (in):	3.9
Std Dev of Section Thickness (in):	0.0
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	325
Average Section Compaction:	93.8%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S3 (Lower Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Limestone
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	97
1/2"	86
3/8"	80
No. 4	47
No. 8	27
No. 16	20
No. 30	16
No. 50	12
No. 100	9
No. 200	7.3

Asphalt Binder Content:	4.2%
Compacted Pill Bulk Gravity:	2.461
Theoretical Maximum Gravity:	2.559
Computed Air Voids:	3.8%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, June 26, 2000
24 Hour High Temperature (F):	92
24 Hour Low Temperature (F):	75
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.5

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.4%
Limestone	67	26.0%
Limestone	Modified 8910	28.0%
Limestone	89	40.0%
Gravel	Coarse Sand	5.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	201
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	332
Average Section Compaction:	92.8%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S3 (Upper Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Lms/gravel
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	100
3/8"	100
No. 4	70
No. 8	43
No. 16	29
No. 30	21
No. 50	15
No. 100	11
No. 200	8.9

Asphalt Binder Content:	5.6%
Compacted Pill Bulk Gravity:	2.329
Theoretical Maximum Gravity:	2.414
Computed Air Voids:	3.5%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, July 06, 2000
24 Hour High Temperature (F):	98
24 Hour Low Temperature (F):	78
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.9%
Gravel	⅜" Crushed Gravel	47.0%
Limestone	Modified 8910	34.0%
Limestone	89	14.0%
Gravel	Coarse Sand	4.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	201
Surveyed Thickness of Section (in):	4.0
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	316
Average Section Compaction:	92.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S4 (Lower Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Lms/RAP
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	99
1/2"	88
3/8"	69
No. 4	48
No. 8	38
No. 16	30
No. 30	24
No. 50	15
No. 100	9
No. 200	6.5

Asphalt Binder Content:	4.1%
Compacted Pill Bulk Gravity:	2.466
Theoretical Maximum Gravity:	2.567
Computed Air Voids:	3.9%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, July 05, 2000
24 Hour High Temperature (F):	96
24 Hour Low Temperature (F):	71
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.5

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.3%
Limestone	6	30.0%
Limestone	78	25.0%
Sand	Manufactured	20.0%
Sand	Natural	15.0%
Recycle	RAP	10.0%

Approximate Length (ft):	198
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	322
Average Section Compaction:	93.6%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S4 (Upper Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Limestone
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	98
3/8"	88
No. 4	63
No. 8	46
No. 16	33
No. 30	23
No. 50	13
No. 100	9
No. 200	7.8

Asphalt Binder Content:	5.3%
Compacted Pill Bulk Gravity:	2.394
Theoretical Maximum Gravity:	2.449
Computed Air Voids:	2.2%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, July 06, 2000
24 Hour High Temperature (F):	98
24 Hour Low Temperature (F):	78
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.3%
Limestone	10s (Hard)	15.0%
Limestone	10s (Soft)	10.0%
Limestone	5/8 D Rock	45.0%
Sand	Manufactured	15.0%
Sand	Natural	15.0%

Approximate Length (ft):	198
Surveyed Thickness of Section (in):	4.0
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	322
Average Section Compaction:	94.3%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S5 (Lower Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Lms/Gravel/RAP
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	95
1/2"	83
3/8"	73
No. 4	53
No. 8	36
No. 16	27
No. 30	21
No. 50	15
No. 100	12
No. 200	8.7

Asphalt Binder Content:	4.0%
Compacted Pill Bulk Gravity:	2.369
Theoretical Maximum Gravity:	2.446
Computed Air Voids:	3.1%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, July 05, 2000
24 Hour High Temperature (F):	96
24 Hour Low Temperature (F):	76
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.5

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.6%
Gravel	10	14.0%
Gravel	57	33.0%
Gravel	7	26.0%
Sand	Manufactured	15.0%
Recycle	RAP	12.0%

Approximate Length (ft):	203
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	331
Average Section Compaction:	91.5%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S5 (Upper Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Gravel
Gradation Type:	TRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	95
3/8"	82
No. 4	61
No. 8	45
No. 16	33
No. 30	22
No. 50	10
No. 100	7
No. 200	5.0

Asphalt Binder Content:	5.6%
Compacted Pill Bulk Gravity:	2.332
Theoretical Maximum Gravity:	2.413
Computed Air Voids:	3.4%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Friday, July 07, 2000
24 Hour High Temperature (F):	100
24 Hour Low Temperature (F):	79
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.5%
Gravel	10	21.0%
Gravel	5/8 D Rock	60.0%
Sand	Natural	19.0%

Approximate Length (ft):	203
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	323
Average Section Compaction:	94.9%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S6

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Lms/RAP
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	95
3/8"	87
No. 4	74
No. 8	53
No. 16	41
No. 30	33
No. 50	24
No. 100	12
No. 200	5.9

Asphalt Binder Content:	6.2%
Compacted Pill Bulk Gravity:	2.250
Theoretical Maximum Gravity:	2.356
Computed Air Voids:	4.5%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Friday, July 07, 2000
24 Hour High Temperature (F):	100
24 Hour Low Temperature (F):	79
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.6%
Limestone	C22 Screenings	45.0%
Limestone	78	20.0%
Limestone	9	20.0%
Recycle	RAP	15.0%

Approximate Length (ft):	198
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	332
Average Section Compaction:	92.9%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S7

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Lms/RAP
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	96
3/8"	88
No. 4	71
No. 8	34
No. 16	25
No. 30	20
No. 50	16
No. 100	10
No. 200	6.2

Asphalt Binder Content:	6.6%
Compacted Pill Bulk Gravity:	2.245
Theoretical Maximum Gravity:	2.321
Computed Air Voids:	3.3%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Saturday, July 08, 2000
24 Hour High Temperature (F):	100
24 Hour Low Temperature (F):	100
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		6.9%
Limestone	C20 Screenings	16.0%
Limestone	78	20.0%
Limestone	9	51.0%
Recycle	RAP	13.0%

Approximate Length (ft):	202
Surveyed Thickness of Section (in):	4.0
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	313
Average Section Compaction:	93.2%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S8 (Lower Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	87
3/8"	70
No. 4	39
No. 8	26
No. 16	18
No. 30	14
No. 50	12
No. 100	10
No. 200	7.1

Asphalt Binder Content:	3.7%
Compacted Pill Bulk Gravity:	2.598
Theoretical Maximum Gravity:	2.667
Computed Air Voids:	2.6%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Friday, July 07, 2000
24 Hour High Temperature (F):	100
24 Hour Low Temperature (F):	79
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		3.9%
Granite	67	32.0%
Granite	78M	41.0%
Granite	Manufactured Sand	21.0%
Granite	Regular Screenings	5.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	197
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	331
Average Section Compaction:	93.8%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S8 (Upper Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	100
3/8"	93
No. 4	58
No. 8	38
No. 16	25
No. 30	19
No. 50	15
No. 100	12
No. 200	7.8

Asphalt Binder Content:	4.2%
Compacted Pill Bulk Gravity:	2.576
Theoretical Maximum Gravity:	2.647
Computed Air Voids:	2.7%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Saturday, July 08, 2000
24 Hour High Temperature (F):	103
24 Hour Low Temperature (F):	79
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	3.6

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.2%
Granite	78M	49.0%
Granite	Manufactured Sand	45.0%
Granite	Regular Screenings	5.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	197
Surveyed Thickness of Section (in):	3.8
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	322
Average Section Compaction:	91.8%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S9

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	93
3/8"	82
No. 4	53
No. 8	36
No. 16	27
No. 30	20
No. 50	14
No. 100	9
No. 200	5.7

Asphalt Binder Content:	4.7%
Compacted Pill Bulk Gravity:	2.419
Theoretical Maximum Gravity:	2.510
Computed Air Voids:	3.6%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, July 05, 2000
24 Hour High Temperature (F):	101
24 Hour Low Temperature (F):	75
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	3.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.8%
Granite	67	15.0%
Granite	78M	47.0%
Granite	Dry Screenings	20.0%
Granite	Washed Screenings	18.0%

Approximate Length (ft):	206
Surveyed Thickness of Section (in):	3.0
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	331
Average Section Compaction:	93.4%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S10

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Granite
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	95
3/8"	88
No. 4	69
No. 8	52
No. 16	38
No. 30	27
No. 50	19
No. 100	11
No. 200	6.6

Asphalt Binder Content:	5.2%
Compacted Pill Bulk Gravity:	2.407
Theoretical Maximum Gravity:	2.488
Computed Air Voids:	3.2%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Tuesday, July 11, 2000
24 Hour High Temperature (F):	98
24 Hour Low Temperature (F):	78
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	3.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.3%
Granite	67	11.0%
Granite	78M	25.0%
Granite	Dry Screenings	32.0%
Granite	Washed Screenings	32.0%

Approximate Length (ft):	195
Surveyed Thickness of Section (in):	3.1
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	300
Average Section Compaction:	93.7%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S11 (Lower Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	86
3/8"	70
No. 4	38
No. 8	26
No. 16	18
No. 30	14
No. 50	12
No. 100	10
No. 200	7.2

Asphalt Binder Content:	3.6%
Compacted Pill Bulk Gravity:	2.600
Theoretical Maximum Gravity:	2.662
Computed Air Voids:	2.3%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Monday, July 10, 2000
24 Hour High Temperature (F):	101
24 Hour Low Temperature (F):	75
24 Hour Rainfall (in):	0.00
Lift Type:	lower
Design Thickness of Test Mix (in):	2.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		3.9%
Granite	67	37.0%
Granite	78M	41.0%
Granite	Manufactured Sand	16.0%
Granite	Regular Screenings	5.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	202
Surveyed Thickness of Section (in):	NA
Std Dev of Section Thickness (in):	NA
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	324
Average Section Compaction:	94.6%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S11 (Upper Layer)

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	76-22
Modifier Type:	SBS
Aggregate Type:	Granite
Gradation Type:	BRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	100
3/8"	92
No. 4	62
No. 8	47
No. 16	30
No. 30	22
No. 50	17
No. 100	13
No. 200	7.5

Asphalt Binder Content:	3.9%
Compacted Pill Bulk Gravity:	2.567
Theoretical Maximum Gravity:	2.649
Computed Air Voids:	3.1%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Wednesday, July 12, 2000
24 Hour High Temperature (F):	101
24 Hour Low Temperature (F):	79
24 Hour Rainfall (in):	0.00
Lift Type:	upper
Design Thickness of Test Mix (in):	3.6

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.2%
Granite	78M	49.0%
Granite	Manufactured Sand	45.0%
Granite	Regular Screenings	5.0%
Antistrip	Hydrated Lime	1.0%

Approximate Length (ft):	202
Surveyed Thickness of Section (in):	3.6
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	334
Average Section Compaction:	93.2%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S12

Laboratory Diary

General Description of Mix and Materials

Design Method:	Hveem
Compactive Effort:	NA
Binder Performance Grade:	70-28
Modifier Type:	SB
Aggregate Type:	Limestone
Gradation Type:	TRZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	97
3/8"	82
No. 4	63
No. 8	46
No. 16	32
No. 30	23
No. 50	16
No. 100	10
No. 200	7.0

Asphalt Binder Content:	4.5%
Compacted Pill Bulk Gravity:	2.399
Theoretical Maximum Gravity:	2.494
Computed Air Voids:	3.8%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, July 13, 2000
24 Hour High Temperature (F):	100
24 Hour Low Temperature (F):	79
24 Hour Rainfall (in):	0.67
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		4.7%
Limestone	5/8" Chips	35.0%
Limestone	Coarse Screenings	32.0%
Sand	Natural	8.0%
Sand	Stone Sand	25.0%

Approximate Length (ft):	199
Surveyed Thickness of Section (in):	3.8
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	318
Average Section Compaction:	93.9%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section S13

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	70-28
Modifier Type:	SB
Aggregate Type:	Granite
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	93
3/8"	80
No. 4	68
No. 8	50
No. 16	37
No. 30	27
No. 50	19
No. 100	11
No. 200	6.6

Asphalt Binder Content:	5.3%
Compacted Pill Bulk Gravity:	2.290
Theoretical Maximum Gravity:	2.405
Computed Air Voids:	4.8%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Thursday, July 13, 2000
24 Hour High Temperature (F):	100
24 Hour Low Temperature (F):	79
24 Hour Rainfall (in):	0.67
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.3%
Granite	1/2" Chips	16.0%
Granite	3/4" Chips	22.0%
Granite	Regular Screenings	22.0%
Sand	Manufactured	40.0%

Approximate Length (ft):	201
Surveyed Thickness of Section (in):	4.0
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	322
Average Section Compaction:	93.4%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Section E1

Laboratory Diary

General Description of Mix and Materials

Design Method:	Superpave
Compactive Effort:	100 gyrations
Binder Performance Grade:	67-22
Modifier Type:	NA
Aggregate Type:	Quartzite
Gradation Type:	ARZ

Avg. Lab Properties of Plant Produced Mix

Sieve Size:	% Passing:
1"	100
3/4"	100
1/2"	99
3/8"	92
No. 4	73
No. 8	54
No. 16	38
No. 30	25
No. 50	14
No. 100	9
No. 200	7.4

Asphalt Binder Content:	5.3%
Compacted Pill Bulk Gravity:	2.363
Theoretical Maximum Gravity:	2.444
Computed Air Voids:	3.3%

Construction Diary

Relevant Conditions for Construction

Completion Date:	Friday, July 14, 2000
24 Hour High Temperature (F):	100
24 Hour Low Temperature (F):	80
24 Hour Rainfall (in):	0.00
Lift Type:	dual
Design Thickness of Test Mix (in):	4.0

Plant Configuration and Placement Details

Component:		% Setting:
Liquid Binder Setting		5.3%
Gravel	1/2" Crushed Gravel	36.0%
Gravel	3/8" Crushed Gravel	18.0%
Limestone	Manufactured Sand	30.0%
Sand	Natural	13.0%
Filler	Fly Ash	3.0%

Approximate Length (ft):	199
Surveyed Thickness of Section (in):	4.1
Std Dev of Section Thickness (in):	0.1
Type of Tack Coat Utilized:	CQS-1h
Target Tack Application Rate:	0.03 gal/sy
Avg Mat Temperature Behind Paver (F):	303
Average Section Compaction:	94.0%

General Notes:

1) Mixes are listed chronologically in order of completion date (i.e., construction began with E2 and ended with E1).
2) Sections are referenced by quadrant and sequence number, where “E2” refers to section 2 of the east quadrant.
3) “dual” lift type indicates that the lower and upper lifts were constructed with the same experimental mix.
4) The total thickness of all experimental sections is 4 inches by design, with the exception of S8, S9, S10, S11.
5) ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone.
6) SMA and OGFC refer to stone matrix asphalt and open-graded friction course, respectively.

Appendix B

Track Layout by Mix Type

Track Quad	Section Num	Aggregate Blend Type	Design Method	Design NMA	Grad Type	Binder Grade	Binder Modifier	Approx Length	Lift Type	Design Thick	Survey Thick	Std Dev Thick
E	2	Granite	Super	12.5	BRZ	67-22	NA	213	Dual	4.0	4.2	0.2
E	3	Granite	Super	12.5	BRZ	76-22	SBR	189	Dual	4.0	4.1	0.3
E	4	Granite	Super	12.5	BRZ	76-22	SBS	204	Dual	4.0	4.1	0.1
E	5	Granite	Super	12.5	TRZ	76-22	SBS	201	Dual	4.0	4.2	0.2
E	6	Granite	Super	12.5	TRZ	67-22	NA	211	Dual	4.0	4.2	0.1
E	7	Granite	Super	12.5	TRZ	76-22	SBR	193	Dual	4.0	4.2	0.2
E	8	Granite	Super	12.5	ARZ	67-22	NA	208	Dual	4.0	4.2	0.1
E	9	Granite	Super	12.5	ARZ	76-22	SBS	198	Dual	4.0	4.1	0.1
E	10	Granite	Super	12.5	ARZ	76-22	SBR	99	Dual	4.0	4.4	0.3
N	1	Slag/Lms	Super	12.5	ARZ	76-22	SBS	201	Dual	4.0	3.9	0.3
N	2	Slag/Lms	Super	12.5	ARZ	76-22	SBS	200	Dual	4.0	4.3	0.3
N	3	Slag/Lms	Super	12.5	ARZ	67-22	NA	200	Dual	4.0	4.2	0.1
N	4	Slag/Lms	Super	12.5	ARZ	67-22	NA	199	Dual	4.0	4.2	0.1
N	5	Slag/Lms	Super	12.5	BRZ	67-22	NA	201	Dual	4.0	4.4	0.3
N	6	Slag/Lms	Super	12.5	BRZ	67-22	NA	197	Dual	4.0	4.1	0.2
N	7	Slag/Lms	Super	12.5	BRZ	76-22	SBR	203	Dual	4.0	3.9	0.1
N	8	Slag/Lms	Super	12.5	BRZ	76-22	SBR	203	Dual	4.0	3.9	0.2
N	9	Slag/Lms	Super	12.5	BRZ	76-22	SBS	197	Dual	4.0	3.9	0.2
N	10	Slag/Lms	Super	12.5	BRZ	76-22	SBS	206	Dual	4.0	4.2	0.3
N	11	Granite	Super	19.0	BRZ	67-22	NA	195	Lower	2.5	NA	NA
		Granite	Super	12.5	TRZ	76-22	SBS	195	Upper	1.5	4.1	0.1
N	12	Granite	Super	19.0	BRZ	67-22	NA	201	Lower	2.5	NA	NA
		Granite	SMA	12.5	SMA	76-22	SBS	201	Upper	1.5	3.9	0.2
N	13	Gravel	Super	19.0	BRZ	76-22	SBS	199	Lower	2.5	NA	NA
		Gravel	SMA	12.5	SMA	76-22	SBS	199	Upper	1.5	4.0	0.2
W	1	Granite	SMA	12.5	SMA	76-22	SBR	202	Dual	4.0	3.9	0.1
W	2	Slag/Lms	SMA	12.5	SMA	76-22	SBR	200	Dual	4.0	4.0	0.1
W	3	Granite	Super	12.5	BRZ	76-22	SBR	205	Lower	3.3	NA	NA
		Slag./Lms	OGFC	12.5	OGFC	76-22	SBR	205	Upper	0.7	4.0	0.1
W	4	Limestone	SMA	12.5	SMA	76-22	SBR	199	Lower	3.3	NA	NA
		Granite	OGFC	12.5	OGFC	76-22	SBR	199	Upper	0.7	4.1	0.1
W	5	Limestone	SMA	12.5	SMA	76-22	SBS	203	Lower	3.3	NA	NA
		Granite	OGFC	12.5	OGFC	76-22	SBS	203	Upper	0.7	4.3	0.1
W	6	Slag./Lms	Super	12.5	TRZ	67-22	NA	203	Dual	4.0	4.1	0.1
W	7	Limestone	SMA	12.5	SMA	76-22	SBR	207	Dual	4.0	4.2	0.1
W	8	Sandstn/Slg/Lms	SMA	12.5	SMA	76-22	SBR	197	Dual	4.0	4.0	0.1
W	9	Gravel	Super	12.5	BRZ	67-22	NA	203	Dual	4.0	4.0	0.1
W	10	Gravel	Super	12.5	BRZ	76-22	SBR	102	Dual	4.0	3.9	0.1
S	1	Granite	Super	19.0	BRZ	76-22	SBS	200	Lower	2.5	NA	NA
		Granite	Super	12.5	BRZ	76-22	SBS	200	Upper	1.5	3.9	0.0
S	2	Gravel	Super	19.0	BRZ	76-22	SBS	200	Lower	2.5	NA	NA
		Gravel	Super	9.5	BRZ	76-22	SBS	200	Upper	1.5	3.9	0.0
S	3	Limestone	Super	19.0	BRZ	76-22	SBS	201	Lower	2.5	NA	NA
		Lms/Gravel	Super	9.5	BRZ	76-22	SBS	201	Upper	1.5	4.0	0.1
S	4	Lms/RAP	Super	19.0	ARZ	76-22	SBS	198	Lower	2.5	NA	NA
		Limestone	Super	12.5	ARZ	76-22	SBS	198	Upper	1.5	4.0	0.1
S	5	Lms/Grv/RAP	Super	19.0	BRZ	76-22	SBS	203	Lower	2.5	NA	NA
		Gravel	Super	12.5	TRZ	76-22	SBS	203	Upper	1.5	4.1	0.1
S	6	Limestone	Super	12.5	ARZ	67-22	NA	198	Dual	4.0	4.1	0.1
S	7	Lms/RAP	Super	12.5	BRZ	67-22	NA	202	Dual	4.0	4.0	0.1
S	8	Granite	Super	19.0	BRZ	67-22	NA	197	Lower	2.1	NA	NA
		Granite	Super	12.5	BRZ	76-22	SBS	197	Upper	1.5	3.8	0.1
S	9	Granite	Super	12.5	BRZ	67-22	NA	206	Dual	3.0	3.0	0.1
S	10	Granite	Super	12.5	ARZ	67-22	NA	195	Dual	3.0	3.1	0.1
S	11	Granite	Super	19.0	BRZ	67-22	NA	202	Lower	2.1	NA	NA
		Granite	Super	9.5	BRZ	76-22	SBS	202	Upper	1.5	3.6	0.1
S	12	Limestone	Hveem	12.5	TRZ	70-28	SB	199	Dual	4.0	3.8	0.1
S	13	Granite	Super	12.5	ARZ	70-28	SB	201	Dual	4.0	4.0	0.1
E	1	Gravel	Super	12.5	ARZ	67-22	NA	199	Dual	4.0	4.1	0.1
										Average of Thickness Survey Data Excluding Sections with Other than 4 inch Designs (S8-S11):	4.1	0.1

Notes: - Mixes are listed chronologically in order of completion dates (which are presented in Appendix A).
- "dual" lift type indicates that the upper and lower lifts were constructed with the same experimental mix.
- ARZ, TRZ, and BRZ refer to gradations intended to pass above, through, and below the restricted zone, respectively.
- SMA and OGFC refer to stone matrix asphalt and open-graded friction course mixes, respectively.

Appendix C

Basic Test Data

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: E2 - designed as 12.5 mm granite Superpave with neat PG67-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.80	4.98	4.62	4.53	4.83	NA	**4.7**	0.20
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	95.8	96.7	95.0	96.0	97.6	NA	**96**	1.3
3/8"	75.8	79.8	68.5	73.4	79.5	NA	**74**	5.5
#4	40.3	42.8	37.3	39.0	45.4	NA	**41**	4.3
#8	26.5	29.4	26.8	27.9	31.7	NA	**29**	2.6
#16	19.3	22.3	21.6	21.6	24.2	NA	**22**	1.5
#30	13.9	17.4	17.3	16.9	18.9	NA	**18**	1.1
#50	8.6	12.0	12.2	11.7	13.4	NA	**12**	0.9
#100	4.5	6.7	7.2	6.9	8.0	NA	**7**	0.6
#200	2.70	3.70	4.08	3.99	4.35	NA	**4.1**	0.19

Other Information:

Mix Description: E3 - designed as 12.5 mm granite Superpave with SBR PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.70	5.05	4.39	4.91	5.01	NA	**4.8**	0.31
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	95.8	95.1	91.0	96.0	96.2	NA	**94**	2.9
3/8"	75.8	72.1	64.8	78.0	75.9	NA	**73**	7.1
#4	40.3	38.6	33.2	45.2	44.4	NA	**41**	6.7
#8	26.5	26.7	24.9	31.0	31.6	NA	**29**	3.7
#16	19.3	20.4	20.3	23.4	24.2	NA	**23**	2.1
#30	13.9	16.0	16.7	18.1	18.8	NA	**18**	1.1
#50	8.6	10.9	11.1	12.5	13.2	NA	**12**	1.1
#100	4.5	6.3	6.3	7.3	8.1	NA	**7**	0.9
#200	2.70	2.90	3.78	4.21	4.53	NA	**4.2**	0.38

Other Information:

Mix Description: E4 - designed as 12.5 mm granite Superpave with SBS PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.70	5.08	4.75	4.45	4.67	NA	**4.7**	0.26
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	95.8	96.6	93.2	95.7	95.1	NA	**95**	1.3
3/8"	75.8	74.6	75.0	76.0	74.1	NA	**75**	1.0
#4	40.3	38.0	41.9	42.0	41.9	NA	**42**	0.1
#8	26.5	25.6	29.1	29.1	30.1	NA	**29**	0.6
#16	19.3	19.7	22.3	22.3	23.9	NA	**23**	0.9
#30	13.9	15.8	17.9	17.4	19.2	NA	**18**	0.9
#50	8.6	10.8	11.6	12.2	14.0	NA	**13**	1.2
#100	4.5	5.8	6.8	7.3	8.8	NA	**8**	1.0
#200	2.70	3.00	4.03	4.37	5.33	NA	**4.6**	0.68

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: E5 - designed as 12.5 mm granite Superpave with SBS PG76-22 through restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.00	5.08	5.08	5.31	4.91	NA	**5.1**	0.16
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	97.1	96.4	96.2	98.6	98.1	NA	**98**	1.3
3/8"	83.3	83.6	80.7	83.7	84.6	NA	**83**	2.1
#4	52.1	51.8	48.0	61.9	53.3	NA	**54**	7.0
#8	35.0	35.7	34.6	46.8	38.6	NA	**40**	6.2
#16	25.4	26.2	26.5	34.6	30.1	NA	**30**	4.1
#30	18.1	20.0	21.1	25.8	24.0	NA	**24**	2.4
#50	11.2	13.6	14.5	16.8	17.1	NA	**16**	1.5
#100	5.8	7.2	7.8	8.8	10.3	NA	**9**	1.3
#200	3.30	3.80	4.56	4.72	5.88	NA	**5.1**	0.72

Other Information:

Mix Description: E6 - designed as 12.5 mm granite Superpave with neat PG67-22 through restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.00	5.22	4.98	4.79	4.85	NA	**5.0**	0.19
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	97.1	97.2	97.2	95.4	94.5	NA	**96**	1.3
3/8"	83.3	81.6	83.5	81.5	79.3	NA	**81**	2.1
#4	52.1	48.8	52.9	51.4	51.0	NA	**52**	1.0
#8	35.0	34.4	37.4	36.6	36.7	NA	**37**	0.4
#16	25.4	25.9	28.2	27.7	27.9	NA	**28**	0.2
#30	18.1	19.8	21.8	21.0	21.8	NA	**22**	0.4
#50	11.2	13.3	14.4	14.2	15.0	NA	**15**	0.4
#100	5.8	6.8	7.4	7.9	8.0	NA	**8**	0.4
#200	3.30	3.50	4.01	4.39	4.53	NA	**4.3**	0.27

Other Information:

Mix Description: E7 - designed as 12.5 mm granite Superpave with SBR PG76-22 through restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.00	4.97	4.80	5.07	4.31	NA	**4.8**	0.34
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	97.1	97.9	95.4	96.4	97.8	NA	**97**	1.2
3/8"	83.3	84.0	79.8	84.0	86.4	NA	**83**	3.4
#4	52.1	52.7	46.0	54.7	57.5	NA	**53**	6.0
#8	35.0	37.0	33.3	38.5	40.8	NA	**38**	3.8
#16	25.4	27.6	25.9	28.6	31.1	NA	**29**	2.6
#30	18.1	21.1	21.0	21.8	24.1	NA	**22**	1.6
#50	11.2	14.1	15.1	14.8	17.0	NA	**16**	1.2
#100	5.8	7.8	8.0	8.3	10.2	NA	**9**	1.2
#200	3.30	4.30	4.86	4.73	6.07	NA	**5.2**	0.74

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: E8 - designed as 12.5 mm granite Superpave with neat PG67-22 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.70	5.64	5.84	4.61	5.44	NA	**5.6**	0.54
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	97.4	97.8	98.5	96.7	98.0	NA	**98**	0.9
3/8"	84.9	86.8	88.2	83.0	83.7	NA	**86**	2.8
#4	63.0	65.8	67.7	50.2	64.8	NA	**66**	9.4
#8	46.7	50.0	51.3	35.4	50.0	NA	**51**	8.8
#16	33.7	36.8	37.9	26.8	37.5	NA	**38**	6.3
#30	23.5	27.1	28.3	20.7	27.9	NA	**28**	4.3
#50	13.6	17.3	18.2	14.1	18.5	NA	**18**	2.5
#100	6.4	8.4	9.6	8.0	10.0	NA	**10**	1.1
#200	3.50	4.45	4.96	4.55	5.52	NA	**5.24**	0.49

Other Information:

Mix Description: E9 - designed as 12.5 mm granite Superpave with SBS PG76-22 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.70	5.43	5.52	5.33	5.43	NA	**5.4**	0.08
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	97.4	97.2	97.1	97.3	98.0	NA	**97**	0.5
3/8"	84.9	84.9	86.3	84.8	84.2	NA	**85**	1.1
#4	63.0	63.5	65.8	63.1	62.0	NA	**64**	1.9
#8	46.7	47.9	50.6	48.1	47.5	NA	**49**	1.6
#16	33.7	35.2	38.1	35.7	35.7	NA	**36**	1.4
#30	23.5	26.4	28.8	26.6	26.9	NA	**27**	1.2
#50	13.6	17.0	19.1	17.4	17.9	NA	**18**	0.9
#100	6.4	8.4	10.4	9.2	9.6	NA	**10**	0.6
#200	3.50	4.35	5.45	5.06	5.16	NA	**5.2**	0.20

Other Information:

Mix Description: E10 - designed as 12.5 mm granite Superpave with SBR PG76-22 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.70	5.72	5.70	5.49	6.13	NA	**5.8**	0.27
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	97.4	97.4	97.6	96.3	97.8	NA	**97**	0.8
3/8"	84.9	85.0	86.9	83.4	89.3	NA	**87**	3.0
#4	63.0	64.6	67.1	63.9	69.5	NA	**67**	2.8
#8	46.7	48.7	51.4	48.6	54.2	NA	**51**	2.8
#16	33.7	35.9	38.2	36.2	40.8	NA	**38**	2.3
#30	23.5	26.5	28.7	27.0	30.6	NA	**29**	1.8
#50	13.6	17.0	19.3	17.7	20.4	NA	**19**	1.4
#100	6.4	8.3	10.4	9.3	11.1	NA	**10**	0.9
#200	3.50	4.25	5.59	5.10	6.16	NA	**5.6**	0.53

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: N1 - designed as 12.5 mm slag/limestone Superpave with SBS PG76-22 on fine side at opt AC

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	7.20	7.48	7.94	5.43	6.92	NA	**7.4**	1.09
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.7	99.7	99.7	99.6	99.6	NA	**100**	0.1
3/8"	89.2	92.2	93.3	91.0	90.8	NA	**92**	1.4
#4	69.8	69.8	72.7	65.9	68.8	NA	**69**	3.4
#8	55.7	52.1	54.7	48.9	51.0	NA	**52**	2.9
#16	38.1	32.8	35.3	31.4	32.4	NA	**33**	2.0
#30	24.6	20.8	23.5	20.8	21.6	NA	**22**	1.4
#50	13.8	13.2	16.0	13.9	14.8	NA	**15**	1.1
#100	7.2	7.6	11.0	9.1	9.8	NA	**10**	1.0
#200	3.60	4.25	7.31	6.24	6.47	NA	**6.7**	0.56

Other Information:

Mix Description: N2 - designed as 12.5 mm slag/limestone Superpave with SBS PG76-22 on fine side at opt AC + 1/2%

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	7.70	7.82	8.06	5.87	7.42	NA	**7.8**	0.98
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.7	99.8	98.9	99.3	99.2	NA	**99**	0.2
3/8"	89.2	92.4	91.2	86.2	91.6	NA	**90**	3.0
#4	69.8	68.2	69.4	61.7	66.0	NA	**66**	3.9
#8	55.7	50.2	52.4	46.7	49.9	NA	**50**	2.9
#16	38.1	32.5	35.0	31.2	32.9	NA	**33**	1.9
#30	24.6	21.2	23.7	20.9	22.6	NA	**22**	1.4
#50	13.8	13.9	16.5	14.1	16.3	NA	**16**	1.3
#100	7.2	8.4	11.3	9.4	12.0	NA	**11**	1.3
#200	3.60	4.65	7.60	6.63	8.54	NA	**7.6**	0.96

Other Information:

Mix Description: N3 - designed as 12.5 mm slag/limestone Superpave with neat PG67-22 on fine side at opt AC + 1/2%

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	7.50	7.66	8.16	7.10	7.49	NA	**7.6**	0.44
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.7	99.6	99.5	99.1	99.8	NA	**99**	0.3
3/8"	89.2	90.9	91.7	91.1	90.2	NA	**91**	0.7
#4	69.8	67.4	69.6	68.3	67.5	NA	**68**	1.0
#8	55.7	50.5	52.4	51.2	50.6	NA	**51**	0.9
#16	38.1	32.3	33.7	33.0	32.2	NA	**33**	0.8
#30	24.6	20.8	22.2	21.8	21.2	NA	**22**	0.5
#50	13.8	13.4	15.1	14.7	14.5	NA	**15**	0.3
#100	7.2	7.9	9.9	9.9	9.5	NA	**10**	0.2
#200	3.60	4.55	6.44	6.89	6.30	NA	**6.5**	0.31

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: N4 - designed as 12.5 mm slag/limestone Superpave with neat PG67-22 on fine side at opt AC

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	7.10	6.78	7.16	6.35	6.93	NA	**6.8**	0.34
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.7	99.6	99.7	98.8	99.1	NA	**99**	0.4
3/8"	89.2	92.3	95.2	88.2	90.0	NA	**91**	3.6
#4	69.8	71.9	72.0	65.1	67.2	NA	**68**	3.5
#8	55.7	55.1	54.3	50.6	51.5	NA	**52**	1.9
#16	38.1	35.5	35.9	33.9	34.0	NA	**35**	1.1
#30	24.6	22.5	23.7	22.0	22.1	NA	**23**	1.0
#50	13.8	13.6	15.4	14.1	14.2	NA	**15**	0.7
#100	7.2	7.3	10.2	8.8	8.7	NA	**9**	0.8
#200	3.60	4.30	6.57	6.03	5.48	NA	**6.0**	0.54

Other Information:

Mix Description: N5 - designed as 12.5 mm slag/limestone Superpave w/ neat PG67-22 on coarse side at opt AC + 1/2%

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.90	7.02	7.10	6.50	6.72	NA	**6.8**	0.28
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.6	99.3	99.4	99.2	98.8	NA	**99**	0.3
3/8"	82.1	85.8	89.7	81.2	82.6	NA	**84**	4.5
#4	50.4	53.1	57.7	47.5	50.9	NA	**52**	5.2
#8	36.3	37.6	39.9	35.5	37.3	NA	**38**	2.2
#16	26.1	24.5	26.9	25.2	26.0	NA	**26**	0.9
#30	18.2	16.6	19.1	17.9	18.3	NA	**18**	0.6
#50	12.1	11.3	14.4	12.9	13.4	NA	**14**	0.8
#100	8.8	7.6	11.9	9.7	10.3	NA	**11**	1.1
#200	6.30	5.22	9.20	7.57	8.04	NA	**8.3**	0.84

Other Information:

Mix Description: N6 - designed as 12.5 mm slag/limestone Superpave with neat PG67-22 on coarse side at opt AC

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.50	6.85	7.11	6.62	6.63	NA	**6.8**	0.23
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.6	99.1	98.4	99.5	98.6	NA	**99**	0.6
3/8"	82.1	84.2	87.0	86.9	81.8	NA	**85**	3.0
#4	50.4	51.1	55.6	55.5	50.8	NA	**54**	2.7
#8	36.3	34.7	37.4	37.5	36.0	NA	**37**	0.8
#16	26.1	22.4	24.8	24.5	24.4	NA	**25**	0.2
#30	18.2	15.1	17.5	17.2	17.6	NA	**17**	0.2
#50	12.1	10.4	13.2	12.8	13.5	NA	**13**	0.4
#100	8.8	6.9	10.4	9.9	10.8	NA	**10**	0.5
#200	6.30	4.70	8.07	7.81	8.61	NA	**8.2**	0.41

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: N7 - designed as 12.5 mm slag/limestone Superpave w/SBR PG76-22 on coarse side at opt AC + 1/2%

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.90	6.93	7.32	6.62	6.83	NA	**6.9**	0.29
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.6	98.4	98.7	98.9	97.9	NA	**98**	0.5
3/8"	82.1	83.0	82.8	83.6	81.9	NA	**83**	0.8
#4	50.4	50.2	51.3	52.9	51.8	NA	**52**	0.8
#8	36.3	32.8	35.9	35.9	36.4	NA	**36**	0.3
#16	26.1	20.8	24.2	23.0	24.5	NA	**24**	0.8
#30	18.2	13.6	17.2	15.8	17.5	NA	**17**	0.9
#50	12.1	8.8	13.4	11.5	13.4	NA	**13**	1.1
#100	8.8	5.4	10.9	8.6	10.7	NA	**10**	1.3
#200	6.30	3.05	8.67	6.13	8.56	NA	**7.8**	1.43

Other Information:

Mix Description: N8 - designed as 12.5 mm slag/limestone Superpave with SBR PG76-22 on coarse side at opt AC

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.40	6.41	6.76	6.38	6.70	NA	**6.6**	0.20
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.6	98.8	99.4	98.6	99.1	NA	**99**	0.4
3/8"	82.1	82.8	87.4	82.9	86.0	NA	**85**	2.3
#4	50.4	51.5	57.5	53.6	55.1	NA	**55**	2.0
#8	36.3	34.2	38.1	35.9	38.0	NA	**37**	1.2
#16	26.1	21.9	25.0	22.5	25.4	NA	**24**	1.6
#30	18.2	14.8	17.8	15.4	18.1	NA	**17**	1.5
#50	12.1	10.2	13.4	11.0	13.8	NA	**13**	1.5
#100	8.8	6.7	10.8	7.6	11.0	NA	**10**	1.9
#200	6.30	4.05	8.27	5.48	8.77	NA	**7.5**	1.77

Other Information:

Mix Description: N9 - designed as 12.5 mm slag/limestone Superpave with SBS PG76-22 on coarse side at opt AC

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.40	6.61	6.53	6.71	6.96	NA	**6.7**	0.19
3/4"	100.0	100.0	100.0	99.9	100.0	NA	**100**	0.1
1/2"	99.6	98.6	99.5	99.4	98.4	NA	**99**	0.6
3/8"	82.1	84.2	87.9	87.4	85.9	NA	**87**	1.0
#4	50.4	53.0	59.0	56.2	56.9	NA	**57**	1.4
#8	36.3	36.0	40.2	38.8	39.9	NA	**40**	0.7
#16	26.1	23.6	26.8	25.2	26.3	NA	**26**	0.8
#30	18.2	16.2	19.2	17.6	18.7	NA	**19**	0.8
#50	12.1	11.6	14.8	13.2	14.3	NA	**14**	0.8
#100	8.8	8.0	11.9	10.4	11.4	NA	**11**	0.7
#200	6.30	5.45	9.08	8.35	9.08	NA	**8.8**	0.42

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: N10 - designed as 12.5 mm slag/limestone Superpave w/ SBS PG76-22 on coarse side at opt AC + 1/2%

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.90	7.08	6.72	5.70	7.50	NA	**6.8**	0.77
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.6	99.1	97.9	99.0	98.4	NA	**98**	0.6
3/8"	82.1	85.4	84.3	84.6	83.1	NA	**84**	0.8
#4	50.4	53.5	54.1	47.0	50.7	NA	**51**	3.6
#8	36.3	35.1	36.2	31.2	34.6	NA	**34**	2.6
#16	26.1	21.9	23.6	21.5	23.8	NA	**23**	1.3
#30	18.2	14.6	16.6	15.8	17.8	NA	**17**	1.0
#50	12.1	10.0	12.3	12.0	13.9	NA	**13**	1.0
#100	8.8	6.6	9.5	9.2	11.3	NA	**10**	1.1
#200	6.30	4.60	7.27	7.05	8.82	NA	**7.7**	0.96

Other Information:

Mix Description: N11B - designed as 19 mm granite Superpave with neat PG67-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.30	4.20	3.97	4.12	4.10	NA	**4.1**	0.09
3/4"	99.5	99.2	99.1	99.6	100.0	NA	**100**	0.5
1/2"	79.1	79.6	80.8	80.9	80.9	NA	**81**	0.1
3/8"	65.2	68.3	68.1	71.2	70.5	NA	**70**	1.6
#4	43.0	44.0	45.9	47.0	46.6	NA	**46**	0.6
#8	28.9	31.8	33.6	33.5	34.7	NA	**34**	0.7
#16	21.4	24.4	26.5	26.0	27.0	NA	**27**	0.5
#30	15.8	19.2	21.2	20.3	21.3	NA	**21**	0.5
#50	10.5	13.5	15.3	14.5	15.5	NA	**15**	0.5
#100	6.3	8.2	9.9	9.2	10.1	NA	**10**	0.5
#200	4.00	5.12	6.30	6.02	6.45	NA	**6.3**	0.22

Other Information:

Mix Description: N11T - designed as 12.5 mm granite Superpave with SBS PG76-22 through restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.50	4.80	4.10	4.08	4.26	NA	**4.3**	0.34
3/4"	100.0	100.0	100.0	100.0	99.8	NA	**100**	0.1
1/2"	96.7	96.4	97.5	97.6	95.6	NA	**97**	1.1
3/8"	80.8	81.4	80.8	81.4	78.7	NA	**80**	1.4
#4	50.3	50.2	52.1	51.2	52.3	NA	**52**	0.6
#8	35.3	36.0	37.7	36.2	38.2	NA	**37**	1.0
#16	26.3	29.2	30.1	28.6	30.6	NA	**30**	1.0
#30	19.6	22.1	24.4	23.1	24.9	NA	**24**	0.9
#50	13.2	15.3	17.9	16.7	18.2	NA	**18**	0.8
#100	7.9	8.8	11.7	10.5	10.5	NA	**11**	0.7
#200	5.10	5.20	7.52	6.63	7.32	NA	**7.2**	0.46

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: N12B - designed as 19 mm granite Superpave with neat PG67-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.30	4.23	4.16	See N11	See N11	NA	**4.2**	0.05
3/4"	99.5	99.0	99.1	See N11	See N11	99.37	**99**	0.2
1/2"	79.1	79.7	84.6	See N11	See N11	80.95	**83**	2.6
3/8"	65.2	69.2	73.6	See N11	See N11	70.83	**72**	2.0
#4	43.0	44.0	52.2	See N11	See N11	46.48	**49**	4.0
#8	28.9	31.8	39.0	See N11	See N11	33.92	**36**	3.6
#16	21.4	24.2	30.3	See N11	See N11	26.30	**28**	2.8
#30	15.8	19.2	23.9	See N11	See N11	20.92	**22**	2.1
#50	10.5	13.6	17.3	See N11	See N11	15.18	**16**	1.5
#100	6.3	8.2	10.9	See N11	See N11	9.72	**10**	0.8
#200	4.00	5.05	6.87	See N11	See N11	6.19	**6.5**	0.48

Other Information: "Other Source" is an estimation based upon N12B bucket data and N11B bucket sieve corrections

Mix Description: N12T - designed as 12.5 mm granite SMA with SBS PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.10	6.16	5.99	6.79	5.72	NA	**6.2**	0.45
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	95.2	95.0	96.6	95.0	96.1	NA	**96**	0.8
3/8"	67.6	71.7	78.7	71.6	69.9	NA	**73**	4.7
#4	25.5	32.7	34.4	30.3	32.6	NA	**32**	2.1
#8	17.5	23.5	24.5	22.0	23.5	NA	**23**	1.3
#16	14.1	20.5	21.9	19.6	20.8	NA	**21**	1.2
#30	12.4	18.2	19.8	17.8	18.9	NA	**19**	1.0
#50	11.1	15.4	17.6	15.8	16.7	NA	**17**	0.9
#100	9.7	12.4	15.2	13.6	14.5	NA	**14**	0.8
#200	8.30	9.60	12.45	10.95	12.00	NA	**11.8**	0.77

Other Information:

Mix Description: N13B - designed as 19 mm gravel Superpave with SBS PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.90	6.08	4.97	4.19	4.87	NA	**5.0**	0.78
3/4"	100.0	99.3	100.0	100.0	99.4	NA	**100**	0.3
1/2"	85.6	84.7	88.6	88.8	86.9	NA	**88**	1.0
3/8"	65.3	69.1	73.1	74.2	72.6	NA	**73**	0.8
#4	51.5	49.4	51.1	52.2	50.3	NA	**51**	1.0
#8	34.3	32.3	32.6	34.3	33.5	NA	**33**	0.9
#16	24.7	24.0	24.5	25.7	25.0	NA	**25**	0.6
#30	19.0	19.1	19.9	20.7	20.1	NA	**20**	0.4
#50	11.1	11.6	12.6	13.0	13.0	NA	**13**	0.3
#100	6.7	6.3	7.6	8.0	8.1	NA	**8**	0.3
#200	5.10	4.85	5.91	6.56	6.35	NA	**6.3**	0.33

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: N13T - designed as 12.5 mm gravel SMA with SBS PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.70	6.58	6.92	6.51	6.99	NA	**6.8**	0.24
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	100.0	98.2	98.5	99.0	99.0	NA	**99**	0.3
3/8"	73.8	72.7	71.5	75.4	74.8	NA	**74**	2.1
#4	28.2	28.3	29.4	30.5	30.5	NA	**30**	0.7
#8	23.5	23.8	24.8	25.4	25.0	NA	**25**	0.3
#16	20.9	21.7	22.8	23.2	22.8	NA	**23**	0.2
#30	19.1	20.1	21.3	21.7	21.3	NA	**21**	0.2
#50	13.6	15.2	16.8	17.0	16.7	NA	**17**	0.2
#100	10.1	11.2	13.0	13.2	13.2	NA	**13**	0.1
#200	8.80	8.75	11.26	11.63	11.59	NA	**11.5**	0.21

Other Information:

Mix Description: W1 - designed as 12.5 mm granite SMA with SBR PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.20	5.97	6.11	7.92	6.20	NA	**6.1**	0.92
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	93.6	94.2	93.7	94.8	96.5	NA	**95**	1.4
3/8"	63.2	65.4	65.0	68.9	68.8	NA	**68**	2.2
#4	21.6	25.5	27.7	26.4	29.9	NA	**28**	1.8
#8	15.0	18.8	20.9	18.6	22.0	NA	**20**	1.7
#16	12.8	16.2	18.3	16.1	19.0	NA	**18**	1.5
#30	11.3	14.4	16.6	14.4	17.2	NA	**16**	1.5
#50	9.8	12.4	14.6	12.6	15.3	NA	**14**	1.4
#100	8.4	9.6	12.3	10.6	13.4	NA	**12**	1.4
#200	7.10	7.05	9.55	8.56	10.88	NA	**9.7**	1.16

Other Information:

Mix Description: W2 - designed as 12.5 mm slag/limestone SMA with SBR PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	7.70	7.59	8.08	8.39	7.95	NA	**8.0**	0.33
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.4	97.7	98.0	98.7	98.6	NA	**98**	0.4
3/8"	74.9	74.0	75.6	80.9	75.9	NA	**77**	3.0
#4	30.4	27.6	34.3	33.7	36.4	NA	**35**	1.4
#8	23.0	19.0	24.5	22.3	24.0	NA	**24**	1.1
#16	17.5	13.8	18.1	16.1	17.5	NA	**17**	1.0
#30	13.4	11.4	15.1	13.5	14.9	NA	**15**	0.9
#50	10.4	9.8	13.6	12.1	13.8	NA	**13**	0.9
#100	8.1	7.9	12.5	10.6	12.9	NA	**12**	1.2
#200	6.40	6.50	11.00	9.90	11.29	NA	**10.7**	0.73

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: W3B - designed as 12.5 mm granite Superpave w/ SBR PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.70	4.89	4.58	See E3	See E3	NA	**4.7**	0.22
3/4"	100.0	100.0	100.0	See E3	See E3	100.00	**100**	0.0
1/2"	95.8	96.4	96.2	See E3	See E3	95.70	**96**	0.4
3/8"	75.8	75.6	75.4	See E3	See E3	76.40	**76**	0.7
#4	40.3	41.0	38.2	See E3	See E3	43.32	**41**	3.6
#8	26.5	28.3	26.6	See E3	See E3	30.75	**29**	2.9
#16	19.3	21.4	21.4	See E3	See E3	23.62	**23**	1.6
#30	13.9	16.4	17.0	See E3	See E3	18.27	**18**	0.9
#50	8.6	10.5	11.9	See E3	See E3	11.87	**12**	0.0
#100	4.5	5.0	7.3	See E3	See E3	5.93	**7**	1.0
#200	2.70	2.65	4.28	See E3	See E3	3.92	**4.1**	0.25

Other Information: "Other Source" is an estimation based upon W3B bucket data and E3 bucket sieve corrections

Mix Description: W3T - designed as 12.5 mm slag/limestone OGFC with SBR PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	8.50	NA	7.93	6.78	8.01	NA	**7.6**	0.69
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	97.5	97.8	98.1	97.8	97.1	NA	**98**	0.5
3/8"	68.1	73.2	73.7	68.2	61.6	NA	**68**	6.0
#4	17.3	18.4	23.5	15.6	17.1	NA	**19**	4.2
#8	13.1	12.0	15.6	11.2	12.4	NA	**13**	2.3
#16	11.4	9.8	12.3	9.7	10.6	NA	**11**	1.3
#30	9.0	8.7	10.7	9.0	9.7	NA	**10**	0.9
#50	7.6	7.8	9.7	8.3	9.0	NA	**9**	0.7
#100	6.4	6.4	8.6	7.4	8.2	NA	**8**	0.6
#200	5.30	4.95	7.28	6.28	6.99	NA	**6.8**	0.51

Other Information: Post construction solvent testing was repeated, absorptive materials yielded inconsistent results on AC

Mix Description: W4B - designed as 12.5 mm limestone SMA with SBR PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.20	NA	6.21	5.80	6.45	NA	**6.2**	0.33
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	92.3	93.2	95.8	96.8	95.0	NA	**96**	0.9
3/8"	73.2	65.4	68.9	75.1	71.6	NA	**72**	3.1
#4	27.1	24.9	24.7	23.7	22.5	NA	**24**	1.1
#8	17.6	17.2	18.7	17.6	16.8	NA	**18**	1.0
#16	14.2	14.8	15.5	14.7	14.1	NA	**15**	0.7
#30	10.4	13.0	13.8	13.2	12.8	NA	**13**	0.5
#50	9.4	11.8	12.9	12.6	12.3	NA	**13**	0.3
#100	8.7	10.8	12.3	12.0	12.1	NA	**12**	0.1
#200	7.80	9.30	11.16	11.00	11.29	NA	**11.1**	0.15

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: W4T - designed as 12.5 mm granite OGFC with SBR PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.30	5.92	6.16	6.18	5.99	NA	**6.1**	0.13
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	93.4	94.0	93.8	96.6	95.0	NA	**95**	1.4
3/8"	62.2	65.9	66.9	67.8	64.6	NA	**66**	1.6
#4	14.9	22.3	24.6	21.8	21.9	NA	**23**	1.6
#8	7.4	14.2	15.8	13.7	13.7	NA	**14**	1.2
#16	7.0	12.2	13.6	12.2	12.0	NA	**13**	0.9
#30	6.9	10.8	12.6	11.6	11.2	NA	**12**	0.7
#50	6.8	9.4	11.6	11.1	10.5	NA	**11**	0.5
#100	6.5	8.1	10.4	10.2	9.5	NA	**10**	0.5
#200	6.00	7.23	8.68	9.04	8.09	NA	**8.6**	0.48

Other Information:

Mix Description: W5B - designed as 12.5 mm limestone SMA with SBS PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.80	5.69	5.76	See W4	See W4	NA	**5.7**	0.05
3/4"	100.0	100.0	100.0	See W4	See W4	100.00	**100**	0.0
1/2"	92.3	94.8	94.9	See W4	See W4	97.45	**96**	1.8
3/8"	73.2	72.0	72.4	See W4	See W4	78.45	**75**	4.3
#4	27.1	25.4	25.9	See W4	See W4	24.13	**25**	1.2
#8	17.6	18.6	18.8	See W4	See W4	19.10	**19**	0.2
#16	14.2	15.3	15.5	See W4	See W4	15.25	**15**	0.2
#30	10.4	13.8	14.0	See W4	See W4	14.07	**14**	0.0
#50	9.4	13.0	13.5	See W4	See W4	13.80	**14**	0.2
#100	8.7	12.1	13.2	See W4	See W4	13.42	**13**	0.2
#200	7.80	10.65	12.36	See W4	See W4	12.50	**12.4**	0.10

Other Information: "Other Source" is an estimation based upon W5B bucket data and W4B bucket sieve corrections

Mix Description: W5T - designed as 12.5 mm granite OGFC with SBS PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.20	6.44	6.20	6.15	6.12	NA	**6.2**	0.15
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	93.4	94.5	93.8	96.2	93.5	NA	**95**	1.5
3/8"	62.2	64.8	62.5	67.8	69.4	NA	**67**	3.6
#4	14.9	19.7	20.9	21.4	23.0	NA	**22**	1.1
#8	7.4	12.2	14.0	15.9	14.8	NA	**15**	1.0
#16	7.0	10.4	12.1	12.0	12.8	NA	**12**	0.4
#30	6.9	9.6	11.2	11.4	11.9	NA	**11**	0.4
#50	6.8	8.8	10.4	10.9	11.1	NA	**11**	0.4
#100	6.5	7.2	9.3	10.2	10.2	NA	**10**	0.5
#200	6.00	5.85	7.77	9.17	8.61	NA	**8.5**	0.71

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: W6 - designed as 12.5 mm slag/limestone Superpave with neat PG67-22 through restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.80	6.69	7.36	6.49	6.74	NA	**6.8**	0.38
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.7	98.6	99.6	97.7	99.4	NA	**99**	1.0
3/8"	86.8	86.6	91.2	86.9	89.9	NA	**89**	2.2
#4	62.2	61.8	67.4	63.7	64.9	NA	**65**	1.9
#8	46.2	41.9	45.6	44.0	44.6	NA	**45**	0.8
#16	32.8	25.4	28.3	27.4	27.2	NA	**28**	0.6
#30	22.4	15.8	18.8	18.3	17.9	NA	**18**	0.4
#50	14.0	9.8	13.4	13.1	12.9	NA	**13**	0.2
#100	9.6	6.2	10.2	9.9	9.8	NA	**10**	0.2
#200	6.40	4.35	7.85	7.84	7.59	NA	**7.8**	0.15

Other Information:

Mix Description: W7 - designed as 12.5 mm limestone SMA with SBR PG76-22, flyash mineral filler and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.10	6.04	5.78	See W4	See W4	NA	**5.9**	0.18
3/4"	100.0	100.0	100.0	See W4	See W4	100.00	**100**	0.0
1/2"	92.3	93.9	95.1	See W4	See W4	96.55	**96**	1.1
3/8"	73.2	70.2	60.4	See W4	See W4	76.65	**69**	11.5
#4	27.1	22.7	23.1	See W4	See W4	21.43	**22**	1.2
#8	17.6	16.8	17.5	See W4	See W4	17.30	**17**	0.1
#16	14.2	13.5	14.3	See W4	See W4	13.45	**14**	0.6
#30	10.4	11.8	12.8	See W4	See W4	12.07	**12**	0.5
#50	9.4	11.0	12.5	See W4	See W4	11.80	**12**	0.5
#100	8.7	10.0	12.1	See W4	See W4	11.32	**12**	0.6
#200	7.80	8.95	11.02	See W4	See W4	10.80	**10.9**	0.16

Other Information: "Other Source" is an estimation based upon W7 bucket data and W4B bucket sieve corrections

Mix Description: W8 - designed as 12.5 mm sandstone/slag/limestone SMA with SBR PG76-22, flyash and fibers

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	7.00	7.96	7.48	6.96	7.40	NA	**7.5**	0.41
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	96.9	97.0	98.1	98.9	98.8	NA	**99**	0.5
3/8"	76.8	75.6	78.0	80.5	83.0	NA	**80**	2.5
#4	29.7	28.5	32.2	32.6	33.4	NA	**33**	0.6
#8	21.8	20.5	24.0	24.4	25.2	NA	**25**	0.6
#16	18.6	17.2	20.8	21.9	22.8	NA	**22**	1.0
#30	15.8	15.8	19.1	20.6	21.6	NA	**20**	1.3
#50	12.9	12.5	16.4	18.1	19.2	NA	**18**	1.4
#100	10.5	8.6	13.3	15.0	16.6	NA	**15**	1.7
#200	8.80	7.25	11.09	12.62	14.86	NA	**12.9**	1.90

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: W9 - designed as 12.5 mm gravel Superpave with neat PG67-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.10	4.74	4.81	5.50	5.11	NA	**5.0**	0.35
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	98.5	95.0	94.5	96.3	96.0	NA	**96**	1.0
3/8"	74.1	76.6	75.6	82.9	80.8	NA	**80**	3.8
#4	44.4	47.4	48.0	53.1	52.4	NA	**51**	2.8
#8	28.4	32.9	33.8	33.6	33.8	NA	**34**	0.1
#16	20.6	21.4	21.5	22.4	22.7	NA	**22**	0.7
#30	15.0	14.9	15.6	16.0	16.6	NA	**16**	0.5
#50	9.5	10.1	11.3	11.5	12.4	NA	**12**	0.6
#100	6.9	7.1	8.4	8.3	9.8	NA	**9**	0.9
#200	4.10	5.60	6.31	6.30	7.48	NA	**6.7**	0.68

Other Information:

Mix Description: W10 - designed as 12.5 mm gravel Superpave with SBR PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.90	4.97	4.39	5.50	5.11	NA	**5.0**	0.46
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	98.5	97.2	96.2	96.3	96.0	NA	**96**	0.2
3/8"	74.1	81.7	78.9	82.9	80.8	NA	**81**	2.0
#4	44.4	49.8	48.3	53.1	52.4	NA	**51**	2.6
#8	28.4	32.0	32.0	33.6	33.8	NA	**33**	1.0
#16	20.6	21.2	21.5	22.4	22.7	NA	**22**	0.6
#30	15.0	14.6	15.3	16.0	16.6	NA	**16**	0.7
#50	9.5	9.7	10.9	11.5	12.4	NA	**12**	0.8
#100	6.9	6.2	7.9	8.3	9.8	NA	**9**	1.0
#200	4.10	4.30	5.81	6.30	7.48	NA	**6.5**	0.86

Other Information:

Mix Description: S1B - designed as 19 mm granite Superpave with SBS PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.70	4.64	4.76	4.52	5.96	NA	**5.0**	0.67
3/4"	98.9	100.0	98.5	96.1	97.4	NA	**97**	1.2
1/2"	68.1	68.7	68.3	63.9	64.6	NA	**66**	2.4
3/8"	51.8	51.1	51.1	48.4	44.7	NA	**48**	3.2
#4	34.8	33.4	33.3	32.9	29.3	NA	**32**	2.2
#8	25.4	24.3	24.9	25.0	23.0	NA	**24**	1.1
#16	20.3	19.4	20.5	20.1	18.7	NA	**20**	0.9
#30	14.5	15.0	16.6	16.1	14.6	NA	**16**	1.0
#50	10.6	9.8	11.8	11.8	10.2	NA	**11**	0.9
#100	4.1	4.8	7.4	7.9	6.2	NA	**7**	0.9
#200	1.50	2.60	4.23	4.81	3.21	NA	**4.1**	0.81

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: S1T - designed as 12.5 mm granite Superpave with SBS PG76-22 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.20	4.62	5.27	4.96	5.05	NA	**5.0**	0.27
3/4"	99.8	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	93.6	96.1	95.0	94.3	94.8	NA	**95**	0.3
3/8"	85.2	88.4	87.2	83.7	85.8	NA	**86**	1.7
#4	52.8	55.8	56.3	51.0	53.7	NA	**54**	2.6
#8	35.5	37.0	37.7	34.5	35.8	NA	**36**	1.6
#16	27.9	28.0	28.5	26.7	27.7	NA	**28**	0.9
#30	20.1	20.6	21.3	20.6	21.4	NA	**21**	0.4
#50	14.9	12.4	14.3	14.5	15.0	NA	**15**	0.4
#100	5.8	5.2	8.2	9.5	9.7	NA	**9**	0.8
#200	2.00	3.00	4.49	6.04	6.07	NA	**5.5**	0.91

Other Information:

Mix Description: S2B - designed as 19 mm gravel Superpave with SBS PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.90	5.04	4.83	See N13	See N13	NA	**4.9**	0.15
3/4"	100.0	100.0	99.4	See N13	See N13	100.00	**100**	0.4
1/2"	85.6	84.6	84.4	See N13	See N13	87.98	**86**	2.5
3/8"	65.3	67.7	66.3	See N13	See N13	71.88	**69**	3.9
#4	51.5	45.0	44.7	See N13	See N13	46.80	**46**	1.5
#8	34.3	28.7	29.2	See N13	See N13	29.85	**30**	0.5
#16	24.7	22.0	22.8	See N13	See N13	23.05	**23**	0.2
#30	19.0	17.6	18.5	See N13	See N13	18.72	**19**	0.2
#50	11.1	9.9	11.8	See N13	See N13	11.15	**11**	0.5
#100	6.7	5.2	7.3	See N13	See N13	6.80	**7**	0.4
#200	5.10	3.90	5.74	See N13	See N13	5.32	**5.5**	0.30

Other Information: "Other Source" is an estimation based upon S2B bucket data and N13B bucket sieve corrections

Mix Description: S2T - designed as 9.5 mm gravel Superpave with SBS PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.30	NA	6.06	5.81	6.10	NA	**6.0**	0.16
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	100.0	99.8	100.0	100.0	100.0	NA	**100**	0.0
3/8"	94.4	94.4	95.9	96.1	96.4	NA	**96**	0.3
#4	69.9	62.5	66.5	67.1	67.3	NA	**67**	0.4
#8	44.4	38.4	40.6	41.6	41.8	NA	**41**	0.6
#16	30.4	26.8	28.5	29.3	29.7	NA	**29**	0.6
#30	21.8	19.8	21.6	22.2	22.8	NA	**22**	0.6
#50	13.5	12.6	14.6	14.9	15.7	NA	**15**	0.6
#100	9.1	7.8	9.9	10.3	11.2	NA	**10**	0.7
#200	7.00	5.90	7.51	8.53	9.15	NA	**8.4**	0.83

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: S3B - designed as 19 mm limestone Superpave with SBS PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.40	4.32	4.11	4.21	3.98	NA	**4.2**	0.14
3/4"	97.7	100.0	NA	97.0	96.8	NA	**97**	0.1
1/2"	87.3	91.0	NA	87.7	84.4	NA	**86**	2.3
3/8"	79.1	85.4	NA	82.4	77.8	NA	**80**	3.3
#4	46.2	50.4	NA	48.8	45.2	NA	**47**	2.5
#8	26.4	26.6	NA	27.0	26.6	NA	**27**	0.3
#16	17.3	19.0	NA	19.5	19.7	NA	**20**	0.1
#30	13.2	15.0	NA	15.5	16.4	NA	**16**	0.6
#50	8.4	10.0	NA	11.0	12.5	NA	**12**	1.1
#100	5.3	6.6	NA	8.2	9.6	NA	**9**	1.0
#200	4.10	5.25	NA	6.71	7.88	NA	**7.3**	0.83

Other Information:

Mix Description: S3T - designed as 9.5 mm limestone/gravel Superpave with SBS PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.90	5.66	5.49	5.66	5.76	NA	**5.6**	0.11
3/4"	100.0	100.0	NA	100.0	100.0	NA	**100**	0.0
1/2"	100.0	100.0	NA	100.0	100.0	NA	**100**	0.0
3/8"	99.8	99.7	NA	99.7	99.5	NA	**100**	0.1
#4	73.6	68.8	NA	71.0	69.7	NA	**70**	0.9
#8	44.9	40.2	NA	42.8	42.3	NA	**43**	0.4
#16	29.0	26.6	NA	28.6	28.7	NA	**29**	0.1
#30	20.5	19.1	NA	20.9	21.4	NA	**21**	0.4
#50	13.7	12.8	NA	14.6	15.5	NA	**15**	0.6
#100	9.6	8.4	NA	10.5	11.6	NA	**11**	0.8
#200	7.30	6.25	NA	8.44	9.41	NA	**8.9**	0.69

Other Information:

Mix Description: S4B - designed as 19 mm limestone/RAP Superpave with SBS PG76-22 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.30	4.28	4.01	3.89	4.40	NA	**4.1**	0.24
3/4"	98.3	98.2	98.5	99.4	98.0	NA	**99**	0.7
1/2"	81.7	84.0	85.0	89.6	88.5	NA	**88**	2.4
3/8"	63.6	65.6	66.1	70.0	69.8	NA	**69**	2.2
#4	43.9	46.4	45.7	50.0	48.6	NA	**48**	2.2
#8	35.9	37.4	36.2	39.3	39.4	NA	**38**	1.8
#16	24.5	28.6	28.2	30.0	31.3	NA	**30**	1.6
#30	17.4	22.1	22.6	23.9	26.1	NA	**24**	1.8
#50	6.8	11.8	13.0	13.9	17.3	NA	**15**	2.3
#100	3.0	5.8	7.4	8.1	12.2	NA	**9**	2.6
#200	2.00	3.75	5.10	5.74	8.68	NA	**6.5**	1.91

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: S4T - designed as 12.5 mm limestone Superpave with SBS PG76-22 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.30	5.63	5.13	4.93	5.37	NA	**5.3**	0.30
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	98.2	97.2	96.1	98.0	99.0	NA	**98**	1.5
3/8"	88.3	86.5	83.0	89.2	90.9	NA	**88**	4.2
#4	64.8	62.5	58.5	63.9	66.9	NA	**63**	4.3
#8	47.8	44.8	43.7	46.8	48.7	NA	**46**	2.5
#16	32.3	31.4	31.4	33.2	34.3	NA	**33**	1.5
#30	20.7	21.2	22.1	23.4	24.4	NA	**23**	1.2
#50	10.2	10.0	12.0	13.0	13.6	NA	**13**	0.8
#100	5.4	6.0	8.4	9.3	9.9	NA	**9**	0.8
#200	3.90	4.40	7.45	7.68	8.21	NA	**7.8**	0.39

Other Information:

Mix Description: S5B - designed as 19 mm limestone/gravel/RAP Superpave with SBS PG76-22 on coarse side

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.60	3.76	4.24	3.77	4.37	NA	**4.0**	0.32
3/4"	93.4	94.9	96.1	89.0	98.8	NA	**95**	5.1
1/2"	77.9	81.6	85.7	80.0	82.9	NA	**83**	2.8
3/8"	67.4	70.4	76.6	69.8	72.6	NA	**73**	3.4
#4	43.2	49.0	56.3	50.8	52.2	NA	**53**	2.9
#8	27.0	33.0	39.1	34.4	34.4	NA	**36**	2.7
#16	18.7	23.6	28.6	25.1	26.5	NA	**27**	1.8
#30	13.2	17.4	22.2	19.4	20.7	NA	**21**	1.4
#50	8.8	11.2	16.0	14.0	15.3	NA	**15**	1.0
#100	6.3	7.7	12.2	10.7	12.0	NA	**12**	0.8
#200	4.80	4.95	9.11	8.14	8.88	NA	**8.7**	0.51

Other Information:

Mix Description: S5T - designed as 12.5 mm gravel Superpave with SBS PG76-22 through restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.50	6.42	5.62	5.17	5.30	NA	**5.6**	0.56
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	94.6	95.1	94.0	94.8	95.0	NA	**95**	0.5
3/8"	77.3	84.6	83.2	82.2	79.2	NA	**82**	2.1
#4	55.7	65.5	62.9	63.4	55.8	NA	**61**	4.3
#8	37.4	48.2	46.4	46.9	40.9	NA	**45**	3.3
#16	26.8	34.8	33.5	34.0	30.5	NA	**33**	1.9
#30	17.8	23.0	22.5	22.7	21.0	NA	**22**	0.9
#50	7.3	9.6	9.5	10.3	9.8	NA	**10**	0.4
#100	4.0	5.8	6.2	6.9	6.6	NA	**7**	0.4
#200	3.10	4.30	4.83	4.75	5.27	NA	**5.0**	0.28

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: S6 - designed as 12.5 mm limestone/RAP Superpave with neat PG67-22 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.60	5.72	6.47	6.03	6.09	6.45	**6.2**	0.31
3/4"	100.0	100.0	100.0	100.0	99.6	100.00	**100**	0.2
1/2"	95.0	95.4	95.4	93.0	95.0	96.00	**95**	1.3
3/8"	85.9	87.6	88.1	85.0	85.2	90.00	**87**	2.4
#4	74.9	74.4	75.7	73.4	71.2	76.00	**74**	2.2
#8	52.3	52.8	54.9	51.3	51.0	55.00	**53**	2.2
#16	39.0	39.6	42.6	40.6	39.7	42.00	**41**	1.3
#30	29.5	30.6	34.3	32.0	32.0	32.00	**33**	1.1
#50	20.6	21.2	25.7	23.6	23.9	23.00	**24**	1.2
#100	8.8	7.4	12.9	12.2	12.2	11.00	**12**	0.8
#200	3.30	2.70	6.20	6.28	6.01	5.10	**5.9**	0.54

Other Information: "Other Source" includes average results from analyses conducted by the section sponsor after construction

Mix Description: S7 - designed as 12.5 mm limestone/RAP Superpave with neat PG67-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	6.90	5.79	6.76	6.69	7.04	6.75	**6.6**	0.48
3/4"	100.0	100.0	100.0	100.0	100.0	100.00	**100**	0.0
1/2"	95.0	94.4	94.9	94.8	97.2	96.00	**96**	1.1
3/8"	86.0	85.2	87.8	88.8	90.3	86.00	**88**	1.8
#4	70.1	67.0	69.2	71.9	73.9	68.00	**71**	2.7
#8	27.8	31.2	34.5	34.2	34.8	34.00	**34**	0.4
#16	18.5	21.8	25.5	24.3	25.1	24.00	**25**	0.7
#30	13.8	17.0	21.0	19.6	20.6	20.00	**20**	0.6
#50	9.6	12.2	16.5	15.2	16.2	15.00	**16**	0.7
#100	4.7	5.6	10.4	9.4	10.3	8.00	**10**	1.1
#200	2.50	2.80	6.41	6.15	6.68	5.40	**6.2**	0.55

Other Information: "Other Source" includes average results from analyses conducted by the section sponsor after construction

Mix Description: S8B - designed as 19 mm marble-schist Superpave w/ neat PG67-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	3.90	4.07	3.51	3.62	3.43	NA	**3.7**	0.29
3/4"	99.6	99.4	100.0	100.0	100.0	NA	**100**	0.0
1/2"	86.0	90.1	89.1	84.6	85.8	NA	**87**	2.3
3/8"	70.3	77.4	75.2	66.1	69.2	NA	**70**	4.6
#4	42.3	45.6	44.0	34.6	37.0	NA	**39**	4.9
#8	26.3	30.0	29.4	23.6	25.1	NA	**26**	3.0
#16	17.5	19.2	20.1	16.3	17.4	NA	**18**	2.0
#30	12.0	14.4	15.5	12.8	14.0	NA	**14**	1.4
#50	8.8	11.5	13.0	10.9	12.1	NA	**12**	1.1
#100	5.6	8.8	10.7	9.5	10.6	NA	**10**	0.7
#200	3.90	5.60	7.17	6.72	7.36	NA	**7.1**	0.33

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: S8T - designed as 12.5 mm marble-schist+D1274+D1240 Superpave w/ SBS PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.20	4.52	3.81	4.26	4.21	NA	**4.2**	0.29
3/4"	NA	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	NA	100.0	100.0	100.0	100.0	NA	**100**	0.0
3/8"	NA	93.3	92.0	93.6	93.7	NA	**93**	1.0
#4	NA	57.6	60.0	57.5	58.0	NA	**58**	1.3
#8	NA	37.1	39.1	37.1	38.1	NA	**38**	1.0
#16	NA	23.3	25.3	24.3	25.1	NA	**25**	0.5
#30	NA	16.8	19.1	17.9	18.7	NA	**19**	0.6
#50	NA	13.4	15.8	14.4	15.1	NA	**15**	0.7
#100	NA	10.1	12.7	11.6	12.0	NA	**12**	0.6
#200	NA	6.00	7.87	7.86	7.75	NA	**7.8**	0.07

Other Information:

Mix Description: S9 - designed as 12.5 mm granite Superpave w/ neat PG67-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.80	4.97	4.61	4.82	4.45	NA	**4.7**	0.23
3/4"	99.0	99.9	100.0	99.6	100.0	NA	**100**	0.2
1/2"	92.2	93.8	93.8	96.0	90.6	NA	**93**	2.7
3/8"	80.4	82.2	82.1	84.8	78.5	NA	**82**	3.2
#4	49.9	53.2	53.7	55.8	49.1	NA	**53**	3.4
#8	31.6	36.3	37.2	37.6	34.3	NA	**36**	1.8
#16	21.8	26.1	27.4	27.0	25.9	NA	**27**	0.8
#30	15.9	19.0	20.5	20.2	19.8	NA	**20**	0.4
#50	10.3	12.7	14.2	14.4	14.1	NA	**14**	0.2
#100	6.1	7.0	8.9	9.5	9.2	NA	**9**	0.3
#200	3.30	3.75	5.19	6.08	5.82	NA	**5.7**	0.46

Other Information:

Mix Description: S10 - designed as 12.5 mm granite Superpave w/ neat PG67-22 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.30	5.46	5.29	5.32	4.92	NA	**5.2**	0.23
3/4"	99.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	94.1	95.0	96.0	95.2	94.0	NA	**95**	1.0
3/8"	86.9	87.2	89.4	87.9	86.2	NA	**88**	1.6
#4	69.4	69.4	72.8	70.2	64.4	NA	**69**	4.3
#8	51.5	51.8	54.9	51.8	48.2	NA	**52**	3.4
#16	35.6	36.9	39.8	37.2	35.8	NA	**38**	2.0
#30	25.6	26.0	28.8	27.0	26.5	NA	**27**	1.2
#50	16.8	16.0	19.5	18.4	18.2	NA	**19**	0.7
#100	9.5	7.5	11.6	11.1	11.0	NA	**11**	0.3
#200	5.10	4.05	6.61	6.55	6.50	NA	**6.6**	0.06

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: S11B - designed as 19 mm marble-schist Superpave w/ neat PG67-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	3.90	3.96	3.51	3.62	3.43	NA	**3.6**	0.23
3/4"	99.6	100.0	99.3	100.0	100.0	NA	**100**	0.4
1/2"	86.0	88.4	87.2	84.6	85.8	NA	**86**	1.3
3/8"	70.3	73.4	73.5	66.1	69.2	NA	**70**	3.7
#4	42.3	40.8	41.9	34.6	37.0	NA	**38**	3.7
#8	26.3	27.0	28.5	23.6	25.1	NA	**26**	2.5
#16	17.5	18.0	19.4	16.3	17.4	NA	**18**	1.5
#30	12.0	13.4	15.1	12.8	14.0	NA	**14**	1.1
#50	8.8	10.8	12.9	10.9	12.1	NA	**12**	1.0
#100	5.6	8.4	11.0	9.5	10.6	NA	**10**	0.8
#200	3.90	5.20	7.40	6.72	7.36	NA	**7.2**	0.38

Other Information:

Mix Description: S11T - designed as 9.5 mm marble-schist Superpave w/ SBS PG76-22 on coarse side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.20	4.28	3.67	3.85	3.90	NA	**3.9**	0.26
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
3/8"	91.6	93.9	90.1	90.8	95.1	NA	**92**	2.7
#4	67.8	65.8	62.7	57.8	64.9	NA	**62**	3.6
#8	47.1	49.6	46.8	43.4	49.3	NA	**47**	3.0
#16	30.3	31.8	29.9	28.5	32.2	NA	**30**	1.9
#30	19.8	22.6	21.7	20.6	23.6	NA	**22**	1.5
#50	13.4	17.4	17.1	16.1	19.0	NA	**17**	1.5
#100	7.8	12.4	12.5	12.1	14.5	NA	**13**	1.3
#200	4.90	6.70	6.78	6.98	8.60	NA	**7.5**	1.00

Other Information:

Mix Description: S12 - designed as 12.5 mm limestone Hveem w/ SB PG70-28 through restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	4.70	4.41	4.38	4.64	4.40	NA	**4.5**	0.12
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	98.2	98.0	98.2	96.8	95.8	NA	**97**	1.2
3/8"	84.9	85.2	81.8	82.9	80.0	NA	**82**	1.5
#4	63.2	64.8	62.4	65.4	61.5	NA	**63**	2.1
#8	41.0	46.0	44.9	48.0	45.4	NA	**46**	1.7
#16	28.0	32.0	31.1	32.8	31.7	NA	**32**	0.9
#30	19.0	23.0	22.8	23.5	23.5	NA	**23**	0.4
#50	12.0	14.0	15.8	16.3	17.1	NA	**16**	0.7
#100	7.0	8.0	8.5	9.5	10.6	NA	**10**	1.1
#200	4.10	5.10	6.24	7.00	7.88	NA	**7.0**	0.82

Other Information:

NCAT Pavement Test Track Mix Characterization Testing Summary

Notes: 1 Numbers that are shaded were obvious outliers and not used to compute averages
2 Data used to compute statistics are included in the boxed region of the chart
3 Gradation via bucket wash is not a widely accepted method, thus was not included in statistics
4 "During Construction" samples were typically obtained from truckbeds via robotics
5 "After Construction" samples were shoveled from blended MTD dumps during paving

Mix Description: S13 - designed as 12.5 mm granite Superpave w/ SB PG70-28 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.30	5.21	5.54	4.77	5.57	NA	**5.3**	0.37
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	100.0	90.6	93.1	92.0	93.1	NA	**93**	0.6
3/8"	78.2	78.4	83.0	78.9	79.4	NA	**80**	2.2
#4	64.2	65.0	69.8	65.5	67.4	NA	**68**	2.2
#8	45.0	47.8	52.1	48.3	49.7	NA	**50**	1.9
#16	32.5	34.4	37.9	35.5	36.1	NA	**37**	1.2
#30	23.9	24.2	27.5	26.1	26.3	NA	**27**	0.8
#50	15.4	15.1	19.0	18.3	18.2	NA	**19**	0.4
#100	8.8	7.2	11.5	11.4	11.2	NA	**11**	0.2
#200	5.40	3.70	6.53	6.64	6.50	NA	**6.6**	0.07

Other Information:

Mix Description: E1 - designed as 12.5 mm gravel Superpave w/ neat PG67-22 on fine side of restricted zone

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.35	5.81	5.26	5.13	5.24	NA	**5.4**	0.31
3/4"	100.0	100.0	100.0	100.0	100.0	NA	**100**	0.0
1/2"	99.2	98.5	98.2	98.6	98.9	NA	**99**	0.4
3/8"	85.4	92.0	91.4	92.6	91.3	NA	**92**	0.7
#4	65.6	72.9	74.3	74.0	71.5	NA	**73**	1.5
#8	48.0	53.9	55.4	54.2	53.0	NA	**54**	1.2
#16	33.0	36.8	38.3	37.6	37.0	NA	**38**	0.6
#30	22.7	24.0	25.6	25.2	24.9	NA	**25**	0.4
#50	14.1	11.0	13.8	13.5	13.8	NA	**14**	0.2
#100	8.4	7.0	9.5	9.2	9.6	NA	**9**	0.2
#200	5.30	4.30	7.45	7.21	7.64	NA	**7.4**	0.22

Other Information:

Mix Description: Average of all test results for every mix produced and placed on Track from April to July of 2000

		Testing During Construction		Testing After Construction			Statistics	
	Plant Setting & Theor Blend	ALDOT QC Nuke/Bucket	QC Furnace	Post Solvent	Post Furnace	Other Sources	Test Average	Test Std Dev
AC	5.67	5.64	5.62	5.41	5.65	NA	**5.60**	0.33
3/4"	99.7	99.8	99.8	99.6	99.8	NA	**99.7**	0.2
1/2"	94.4	94.7	94.7	95.0	95.0	NA	**94.8**	1.0
3/8"	78.1	79.9	79.6	80.8	80.5	NA	**80.1**	2.7
#4	48.9	49.8	50.8	51.2	51.6	NA	**50.5**	2.6
#8	33.8	34.6	36.1	35.8	36.5	NA	**35.6**	1.8
#16	24.3	24.7	26.3	25.8	26.6	NA	**25.9**	1.2
#30	17.4	18.3	20.1	19.4	20.3	NA	**19.8**	1.0
#50	11.3	12.4	14.5	13.9	14.9	NA	**14.3**	0.8
#100	7.1	7.6	10.1	9.6	10.5	NA	**10.0**	0.8
#200	4.81	5.02	7.13	6.96	7.58	NA	**7.25**	0.59

Other Information: "Statistics" columns represent the averages of all individual section averages and standard deviations