FINAL REPORT

SPS-1 PROJECT 1201
STRATEGIC STUDY OF STRUCTURAL FACTORS FOR FLEXIBLE PAVEMENTS
US-27 SOUTHBOUND
PALM BEACH COUNTY, FLORIDA

FHWA/LTPP

SOUTHERN REGION COORDINATION OFFICE

DECEMBER 1996

BRENT RAUHUT ENGINEERING INC.

8240 Mopac, Suite 220 • Austin, Texas 78759 • (512) 346-0870 • FAX (512) 346-8750

FL SPS-1

Brent Rauhut Engineering Inc.

26 December 1996

Mr. Aramis Lopez
Pavement Performance Division - LTPP
Federal Highway Administration
Turner-Fairbanks Highway Research Center
6300 Georgetown Pike, Room F-215
McLean, Virginia 22101

Subject: Final Report - Construction of SPS-1 Project (1201) on US-27 in Palm Beach County, Florida

Dear Aramis,

Enclosed is the Final Report for the Specific Pavement Studies (SPS-1) project on US-27 in Palm Beach County, Florida. This report documents the construction of the Strategic Study of Structural Factors for Flexible Pavements test sections at this location, as well as the monitoring of the project to date.

Please feel free to contact me should you have any questions or comments regarding any of the information included in this report.

Sincerely,

D. R. Johnson
for

Mark P. Gardner
Project Engineer, SRCO

MPG:dmj

Enclosure: As stated.

c.w/Enc: Larry Smith, FLDOT
Ron McNamara, FLDOT
Patrick Glass, FLDOT
John Miller, PCS/LAW-GA
Jamshid Armaghani, FLDOT
Bill Miley, FLDOT
Evan Wisniewski, FHWA-Reg. 4

c.w/o Enc: Monte Symons, FHWA/LTPP-PPD
Morris Reinhardt, RE/SRCO

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TABLE OF CONTENTS

	PAGE
INTRODUCTION	1
SPS-1 GENERAL EXPERIMENT DESIGN	1
SELECTION/NOMINATION OF US-27	1
PRECONSTRUCTION MONITORING	7
MATERIALS SAMPLING AND TESTING	7
CONSTRUCTION	7
POSTCONSTRUCTION MONITORING	8
MATERIALS SAMPLING AND TESTING	8
SUMMARY	8
APPENDIX A - SITE BACKGROUND DATA	A.1
APPENDIX B - LAYER THICKNESSES	B.1
APPENDIX C - MATERIALS SAMPLING AND TESTING PLAN	C.1
APPENDIX D- PHOTOGRAPHS	D.1

LIST OF FIGURES

FIGURE	TITLE	PAGE
1	TYPICAL SECTION LAYOUT	4

LIST OF TABLES

TABLE	TITLE	PAGE
1	EXPERIMENT DESIGN FOR SPS-1	2
2	PROPOSED TEST SECTION LAYOUT	3

FINAL REPORT - SPS-1 PROJECT 1201

STRATEGIC STUDY OF STRUCTURAL FACTORS FOR FLEXIBLE PAVEMENTS US-27, SOUTHBOUND PALM BEACH COUNTY, FLORIDA

INTRODUCTION

A Strategic Highway Research Program (SHRP) Long Term Pavement Performance (LTPP) Specific Pavement Study (SPS) project was constructed on US-27 in the southbound lane, south of South Bay, Florida between May 1994 and November 1995. This report covers the coordination and monitoring activities for this SPS site. Detailed construction data was collected on behalf of the LTPP program. This data is stored at the Southern Region Coordination Office (SRCO) as part of the LTPP data base on the Regional Information Management System and will be included as part of the National Information Management System (NIMS), in Washington, DC.

SPS-1 General Experiment Design

The objective of the SPS-1 experiment, as stated in SHRP's experimental design and research plan for SPS-1 experiments, is to more precisely determine the relative influence of strategic factors that affect the performance of flexible pavements. These factors include drainage, base type and thickness, and asphalt layer thickness. The experimental design factorial for the SPS-1 experiment is shown in Table 1. The Florida experiment meets the requirements for the wet no-freeze environment on a coarse-grained subgrade. The experiment design was developed so that 12 test sections are built at each project site. Table 2 details the variation in layer type and thickness for the 13 test sections built as part of the Florida project, which includes one state supplemental test section. Studying the performance of this and other SPS-1 projects across the nation will significantly enhance the understanding of the effects various drainage conditions, layer type and thickness and environment (among other factors) will have on the performance of flexible pavements. The end result will be improved design reliability.

For additional information on the experimental design for SPS-1, please refer to "Specific Pavement Studies Experimental Design and Research Plan for Experiment SPS-1, Strategic Study of Structural Factors for Flexible Pavements", dated February 1990.

Selection/Nomination of US-27

The SPS-1 project on US-27 in Palm Beach County, Florida was nominated on 9 July 1993. Appendix A includes the project identification and description forms which were used to nominate the project. The nominated construction project was 3.9 miles long, providing ample room for the 13 planned test sections. This project included the construction of two new southbound lanes, to facilitate the relatively high truck traffic (40% of the traffic volume). Figure 1 details the typical cross-section for this project.

TABLE 1. EXPERIMENT DESIGN FOR SPS-1

PAVEMENT STRUCTURE COMBINATIONS				FACTORS FOR MOISTURE, TEMPERATURE, SUBGRADE TYPE AND LOCATION															
				WET								DRY							
				FREEZE				NO FREEZE				FREEZE				NO FREEZE			
				FINE		COARSE		FINE		COARSE		FINE		COARSE		FINE		COARSE	
DRAINAGE	BASE TYPE	TOTAL BASE THICK	SURF THICK	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
NO	AGG	8"	4"		K1		M1		O1		Q1		S1		U1		W1		Y1
			7"	J1		L1		N1		P1		R1		T1		V1		X1	
		12"	4"	J2		L2		N2		P2		R2		T2		V2		X2	
			7"		K2		M2		O2		Q2		S2		U2		W2		Y2
	ATB	8"	4"	J3		L3		N3		P3		R3		T3		V3		X3	
			7"		K3		M3		O3		Q3		S3		U3		W3		Y3
		12"	4"		K4		M4		O4		Q4		S4		U4		W4		Y4
			7"	J4		L4		N4		P4		R4		T4		V4		X4	
	ATB / 4" AGG	8"	4"	J5		L5		N5		P5		R5		T5		V5		X5	
			7"		K5		M5		O5		Q5		S5		U5		W5		Y5
		12"	4"		K6		M6		O6		Q6		S6		U6		W6		Y6
			7"	J6		L6		N6		P6		R6		T6		V6		X6	
YES	PATB / AGG	8"	4"	J7		L7		N7		P7		R7		T7		V7		X7	
			7"		K7		M7		O7		Q7		S7		U7		W7		Y7
		12"	4"		K8		M8		O8		Q8		S8		U8		W8		Y8
			7"	J8		L8		N8		P8		R8		T8		V8		X8	
		16"	4"		K9		M9		O9		Q9		S9		U9		W9		Y9
			7"	J9		L9		N9		P9		R9		T9		V9		X9	
	ATB / PATB	8"	4"		K10		M10		O10		Q10		S10		U10		W10		Y10
			7"	J10		L10		N10		P10		R10		T10		V10		X10	
		12"	4"	J11		L11		N11		P11		R11		T11		V11		X11	
			7"		K11		M11		O11		Q11		S11		U11		W11		Y11
		16"	4"	J12		L12		N12		P12		R12		T12		V12		X12	
			7"		K12		M12		O12		Q12		S12		U12		W12		Y12

AGG = Dense-graded Untreated Aggregate Base
ATB = Dense-graded Asphalt Treated Base
PATB = 4" Thick Open-graded Permeable Asphalt-treated Drainage Layer Underneath ATB or Over AGG Base
4" AGG = 4" Thick Dense-graded Untreated Aggregate Base Layer Underneath ATB

TABLE 2. TEST SECTION LAYOUT

Section	Cross Section	Begin Station	End Station	Transition (Ft.)
120107 (P7)	4″ AC Surf. 4″ PATB 4″ Cr. Agg.	645+00	655+00	1100
120108 (P8)	7″ AC Surf. 4″ PATB 8″ Cr. Agg.	665+00	675+00	0
120106 (P6)	7″ AC Surf. 8″ AC Base 4″ Cr. Agg.	676+00	686+00	1700
120110 (P10)	7″ AC Surf. 4″ AC Base 4″ PATB	703+00	713+00	500
120111 (P101	4″ AC Surf. 8″ AC Base 4″ PATB	718+00	728+00	650
120112 (P12)	4″ AC Surf. 12″ AC Base 4″ PATB	734+50	744+50	450
120109 (P9)	7″ AC Surf. 4″ PATB 12″ Cr. Agg.	749+00	759+00	700
120104 (P4)	7″ AC Surf. 12″ AC Base	766+00	776+00	150
120103 (P3)	4″ AC Surf. 8″ AC Base	777+50	787+50	0
120105 (P5)	4″ AC Surf. 4″ AC Base 4″ Cr. Agg.	787+50	797+50	0
120101 (P1)	7″ AC Surf. 8″ Cr. Agg.	797+50	807+50	350
120102 (P2)	4″ AC Surf. 12″ Cr. Agg.	811+00	821+00	1600
120161 (Suppl.)	4″ AC Surf. 10″ Limerock	837+00	847+00	- - -

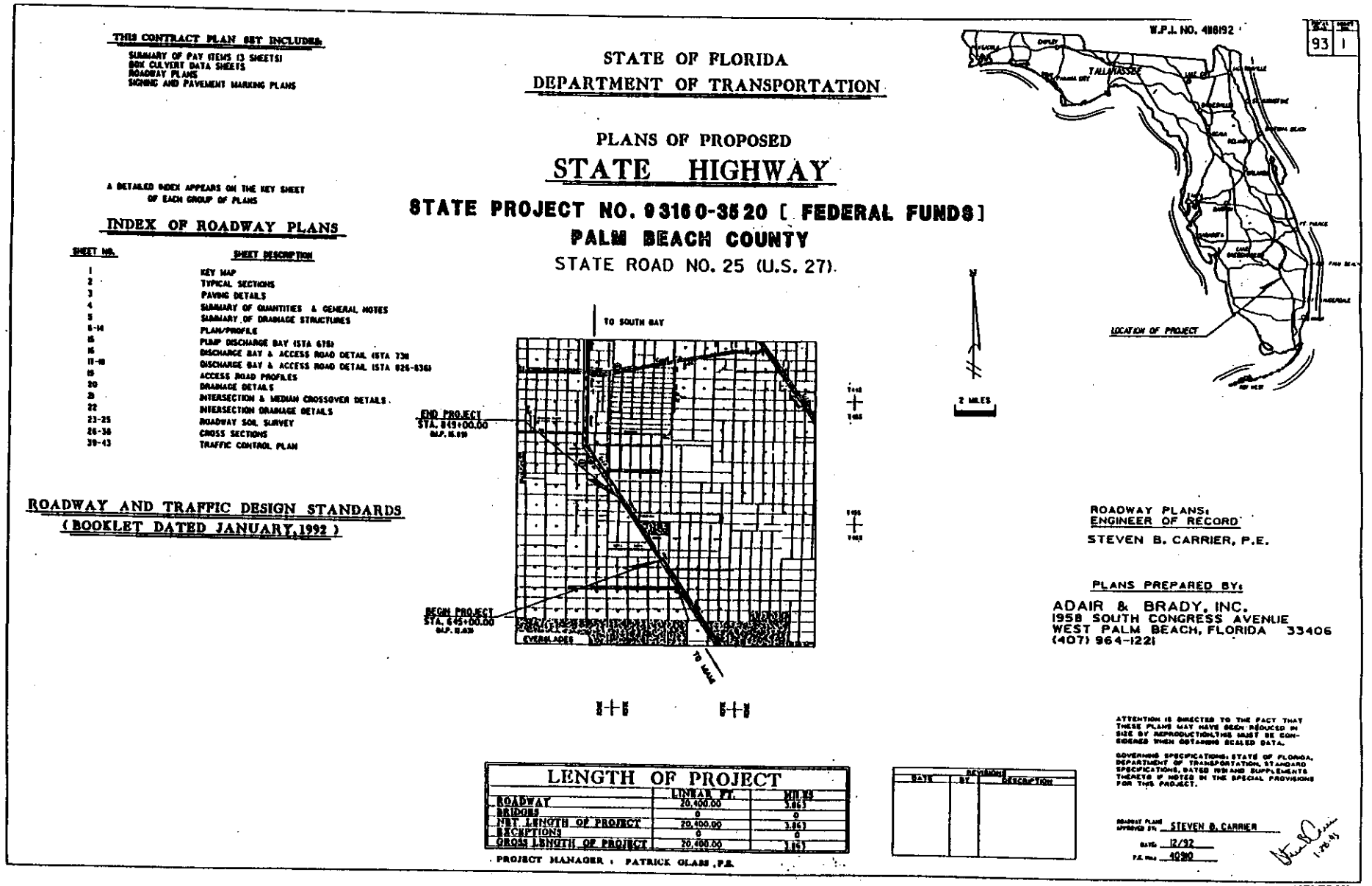

FIGURE 1. TYPICAL SECTION LAYOUT

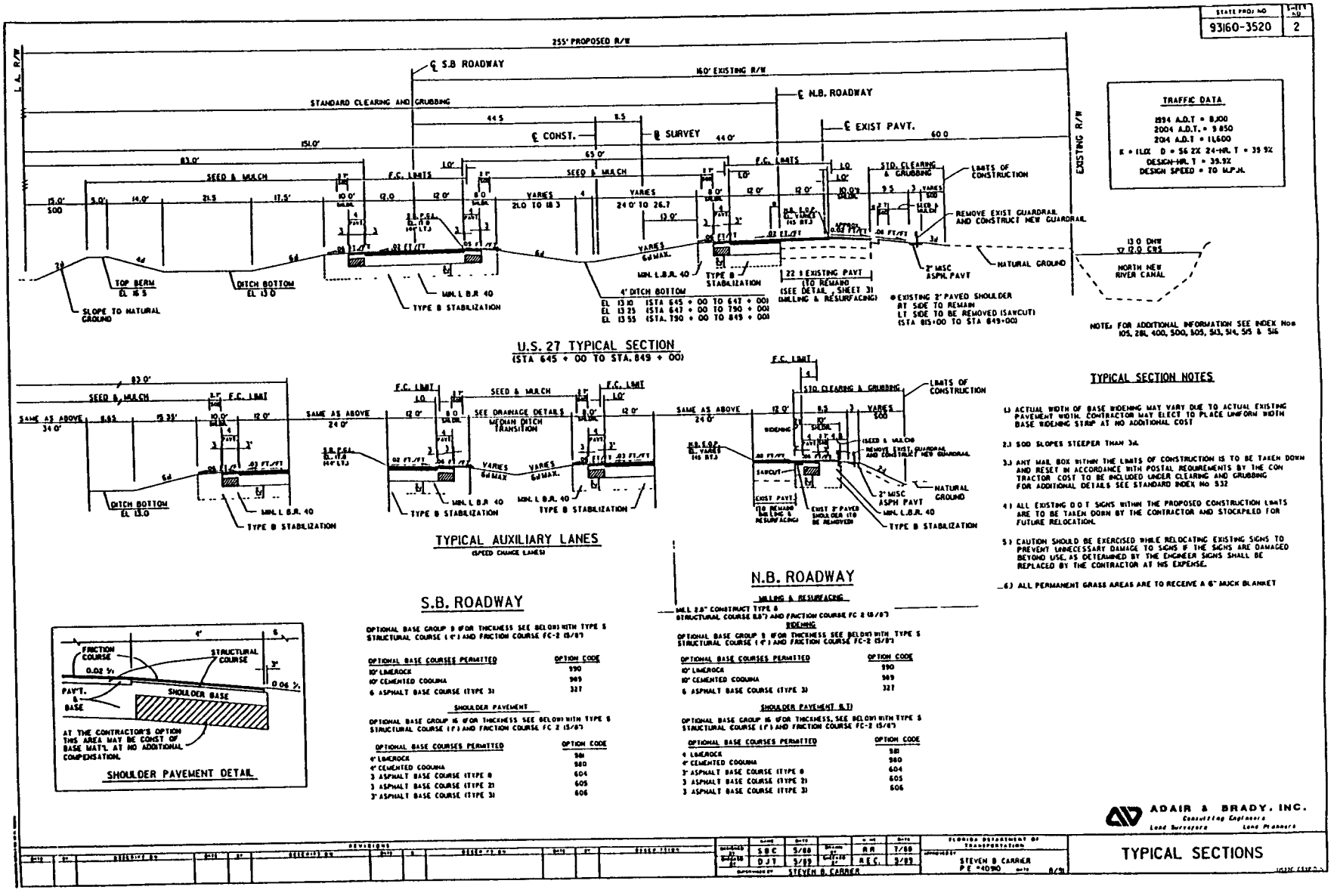

FIGURE 1. TYPICAL SECTION LAYOUT (CONTINUED)

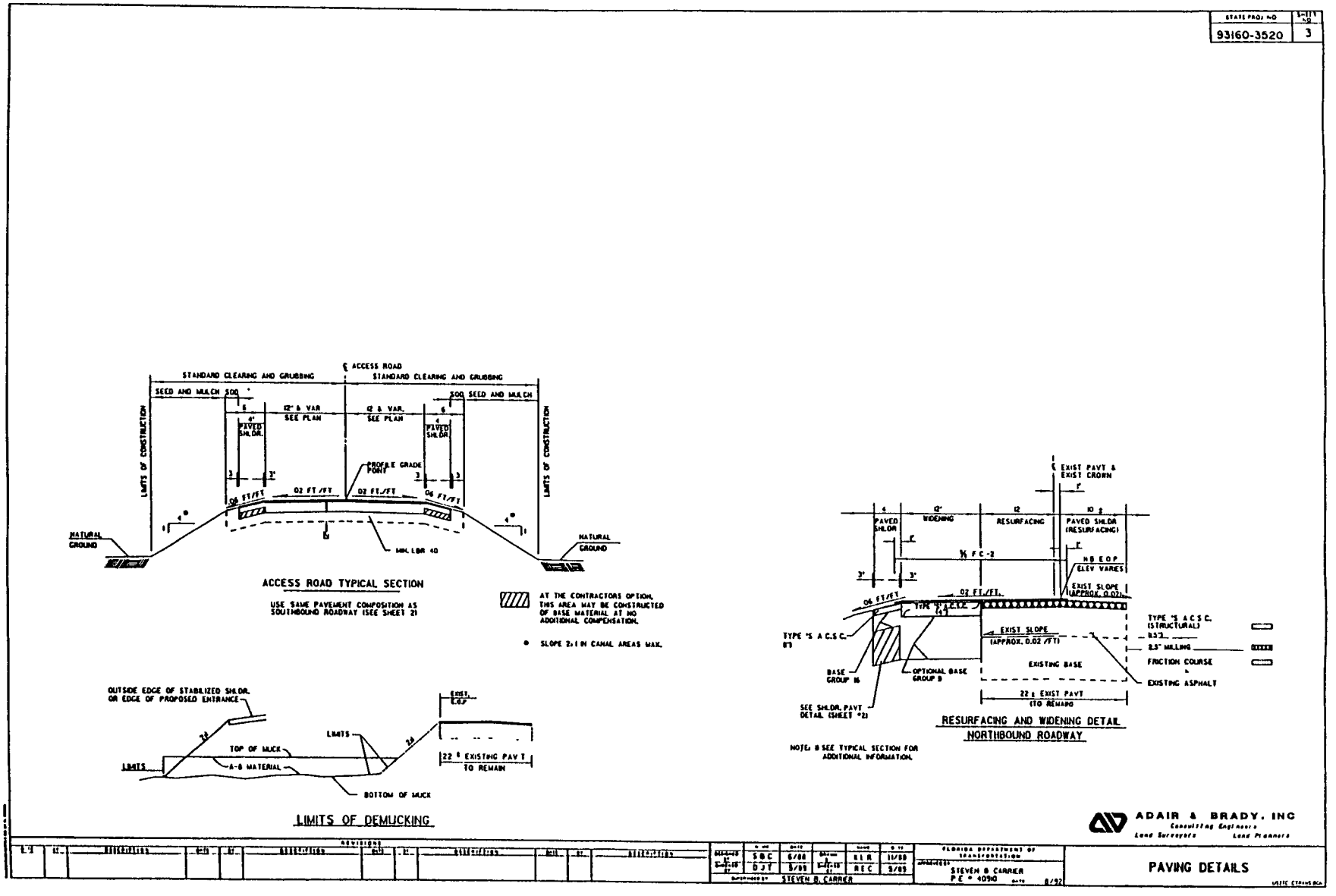

FIGURE 1. TYPICAL SECTION LAYOUT (CONTINUED)

The project site is located in a rural area south of South Bay, Florida, which is generally flat terrain. Large farm land plots line both sides of the roadway, which should provide for very little uniform traffic flow along the project length.

Acceptance of the project occurred on 21 July 1993, less than one month after nomination. The original scheduled letting date for this project was in late July 1993. However, letting was delayed until early 1994. A preconstruction meeting was held on 5 April 1994, officiated by representatives of Stone & Webster Engineering Corporation (Plantation Branch), who were retained by the Florida DOT to oversee the project construction. The contract was awarded to Ranger Construction Company of Fort Lauderdale, Florida.

PRECONSTRUCTION MONITORING

The proposed test section layout was reviewed following placement of the embankment, which included 7′ to 8′ of material along the entire project length. The test section locations were adjusted slightly to avoid culverts or median turnarounds.

Material Sampling and Testing

Subgrade sampling and field testing was conducted during several visits to the site as construction progressed. Sampling efforts occurred intermittently from October 1994 to June 1995. Final subgrade preparations required the contractor to trim the subgrade surface with a milling-type machine to meet uniformity specifications. Bulk samples and nuclear density tests were obtained for the coarse-grained limerock subgrade. Shoulder probes were drilled along the shoulder at each of the test section locations. Due to the density and nature of the subgrade material, split-spoon samples were obtained to a depth of 4′ below the top of subgrade were obtained at five locations throughout the project. Moisture samples were also obtained at the split-spoon sampling locations. The subgrade material was classified as a tan to grey sandy limerock fill, based on field observations.

CONSTRUCTION

Subgrade preparation for this site began in April 1994. The contractor trimmed the subgrade surface to within the specified tolerance prior to placement of the appropriate structural layers. Pavement layer placement began in November 1994. Construction continued for an extended period of time due to inclement weather and other obligations which required the contractor to divert attention to other projects. Except for the wearing course, all pavement layers were constructed by November 1995. East of the project, existing lanes were scheduled for rehabilitation and the contractor elected to complete that overlay prior to constructing the wearing layer on the SPS project. The postconstruction material sampling was conducted on 13-14 December 1995. The final wearing course was placed in September 1996.

Overall construction of the SPS-1 went very well, with only a few minor problems. The following will describe the construction phases throughout the building process of the SPS-1.

The construction process proceeded incrementally from November 1994 through November 1995. Installation of the edge drains into the prepared subgrade and placement of the DGAB layers

began in November 1994. Rain slowed or stopped progress periodically throughout the winter, requiring the exposed DGAB surfaces to be reworked to meet density and moisture content specifications.

Placement of Asphalt Treated Base (ATB) and Permeable Asphalt Treated Base (PATB) began in late November 1994. In general, lift thicknesses ranged from 2.0 to 2.5 inches. Placement of the asphalt materials went well, with controlled roller coverages and placement temperatures. Samples of the asphalt materials were obtained from the paver for laboratory testing. Bulk samples of the asphalt cement and aggregates were obtained from the plant.

Placement of the asphalt surface materials began in March 1995 and proceeded through the summer of 1995. The contractor was working on other areas of the project and would only periodically return to the sections to continue placement of the surface materials. This work was completed without incident in November 1995.

The final surface friction course was placed in October 1996 without incident.

POSTCONSTRUCTION MONITORING

After placement of the surface friction course in October 1996, postconstruction marking of the sections, FWD and profile testing were scheduled. This work will be completed in December 1996.

Material Sampling and Testing

Postconstruction coring began on 13 December 1995. At core locations where the layer depth exceeded the capacity of the core barrel, it was necessary to break the core at a layer interface to sample the full depth. Otherwise, the coring occurred without incident. A total of 64 cores were retrieved, which will undergo a series of testing to be conducted by both the Florida DOT and FHWA testing facility (LAW Engineering). Specific samples and the corresponding tests to be performed are designated in the materials sampling plan, which appears in Appendix B.

SUMMARY

An SPS-1 project was constructed in the southbound lane of US-27 near South Bay, Florida. This project was accomplished through the coordinated efforts of the Florida DOT, the Florida Division Office of the FHWA, the FHWA SRCO, and the Ranger Construction Company. The SPS-1 project was completed (except a friction layer) in November 1995, including all test section designation signs and weigh-in-motion (WIM) facilities. Throughout the construction process, representatives from the Florida DOT, the SRCO and Stone & Webster Engineering were on-site to observe and monitor progress.

The monitoring efforts that were undertaken to document this project were facilitated through the cooperation of the Bituminous Research Division personnel out of Gainesville, Florida, who provided invaluable assistance. All monitoring construction activities were conducted in accordance with applicable SHRP guidelines available at that time.

All personnel representing the general contractor (Ranger Construction Company) performed construction activities in a conscientious manner. It was evident that representatives of both the contractors and the Florida DOT held in high regard the successful completion, per SHRP guidelines of this SPS-1 project.

The test sections on US-27 in Palm Beach County, Florida will contribute significantly to the Study of Structural Factors for Flexible Pavements. Now that the construction is complete, monitoring efforts will begin on these test sections, noting changes in the surface distress, surface profile and structural capacity. This data will enable us to compare the results with other projects such as this, located in other parts of the country, to improve our understanding of pavement performance.

Recognition is given to the following key personnel who contributed significantly in various phases of this project:

Mr. Ben Watts, Secretary of Transportation, Florida DOT
Mr. Frank Carlisle, Assistant Secretary of Transportation, Florida DOT
Mr. Jennings Skinner, FHWA-Florida Division
Mr. Gregg Scheiss, FHWA-Florida Division
Mr. Ron McNamara, Pavement Evaluation & Testing Lab, Florida DOT
Mr. William Miley, Pavement Evaluation & Testing Lab, Florida DOT
Mr. Patrick Glass, Design Program Manager, Florida DOT
Mr. Lincoln Morgado, District Materials Engineer, Florida DOT
Mr. Eghbal Jalali, Construction Program Manager, Florida DOT
Mr. Tim Sears, Project Manager, Stone & Webster Engineering

APPENDIX A

SITE BACKGROUND DATA

Brent Rauhut Engineering Inc.

July 9, 1993

Mr. John Miller
PCS/LAW Engineering
12240 Indian Creek Court, Suite 120
Beltsville, Maryland 20705-1242

Subject: SPS-1 Candidate Project in Florida.

Dear John,

Enclosed is a set of plans, including an SPS-1 candidate project nomination and information form, presented by the State of Florida. The site is located on US-27 in the southbound lane south of Lake Okeechobee. The entire project will be located on a uniform fill with no horizontal or vertical curves.

This project is scheduled to be let at the end of July 1993. The state plans to notify the contractor, should this project be accepted as an SPS-1 site, to work out a change order. The time element therefore, for review, is critical. A set of specifications for this project will be forthcoming to your office directly from the Florida Department of Transportation.

Please note that this project will require the removal of seven feet ± of organic material to a limerock formation. This organic material will be replaced with a select limerock material which will be obtained from one source, thus providing a uniform subgrade material throughout the project.

It is our opinion that this site will be a good candidate for an SPS-1 project, filling the "wet-no freeze" "P"-cell on coarse subgrade.

This has been fully coordinated with Mr. Wheeler. If you should have any questions regarding the above, please call.

Best Wishes,

Brent Rauhut

Brent Rauhut
Program Manager, SRCO

JBR:dmj

Enclosure: As stated.

cc.w/o Enc: Monte Symons, FHWA/LTPP
Mark Sargent, SRCO
Homer G. Wheeler, RE-SRCO

8240 Mopac, Suite 220 • Austin, Texas

(512) 346-0870 • FAX (512) 346-8750

APPENDIX A

CANDIDATE PROJECT NOMINATION AND INFORMATION FORMS

FOR

SPS-1, STRATEGIC STUDY OF STRUCTURAL FACTORS

FOR FLEXIBLE PAVEMENTS

SHEET A. SPS-1 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE Florida SHRP SECTION NO _____

Plan Set 3620 GENERAL PROJECT INFORMATION

PROJECT LOCATION

ROUTE NUMBER 27

ROUTE SIGNING [] Interstate [X] U.S. [] State [] County

Other _____

PROJECT LOCATION Start Milepost 12.03 End Milepost 15.89

Start Station 645+00 End Station 849+00

DIRECTION OF TRAVEL [] North B. [X] South B. [] West B. [] East B.

PROJECT LOCATION DESCRIPTION This project is located on US-27 South of Lake Okeechobee, beginning @ MP 12.03 and ending @ MP 15.89.

COUNTY Palm Beach

HIGHWAY AGENCY DISTRICT NUMBER 4

SHRP ENVIRONMENTAL ZONE

[] WET FREEZE [X] WET NO-FREEZE [] DRY FREEZE [] DRY NO-FREEZE

SIGNIFICANT DATES

LATEST DATE OF APPROVAL NOTIFICATION FROM SHRP _____

CONTRACT LETTING DATE July 1993

ESTIMATED CONSTRUCTION START DATE November 1993

ESTIMATED DATE TEST SECTIONS OPENED TO TRAFFIC February 1995

ESTIMATED CONSTRUCTION COMPLETION DATE February 1995

PROJECT DESCRIPTION

PROJECT TYPE [] New Route [] Removal and Reconstruction [X] Parallel Roadway

Other _____

FACILITY [X] Divided [] Undivided NUMBER OF LANES (One Way) 2

DESIGN TRAFFIC DATA

ANNUAL AVERAGE DAILY TRAFFIC (TWO DIRECTIONS) 7290

% HEAVY TRUCKS AND COMBINATIONS (OF AADT) 39.9%

ESTIMATED 18K ESAL RATE IN STUDY LANE (1,000 ESAL/YR) 1463k

TOTAL DESIGN 18K ESAL APPLICATIONS IN DESIGN LANE _____

DESIGN PERIOD (Years) 20

SHEET B. SPS-1 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE Florida SHRP SECTION NO _____

AGENCY'S PAVEMENT STRUCTURE DESIGN FOR SITE

LAYER[1] NO.	LAYER[2] DESCRIPTION CODE	MATERIAL TYPE[3] CLASS CODE	THICKNESS[4] (INCHES)	STRUCTURAL[5] COEFFICIENT
1	SUBGRADE (7)	4 1	8 4 +	0.08
2	0 6	4 1	1 0 . 0	0. 1 8
3	0 5	4 1	1 0 . 0	0. 1 8
4	0 3	0 1	6 . 0	0. 3 0
5			.	0.
6			.	0.
7			.	0.
8			.	0.
9			.	0.

STRUCTURAL DESIGN METHOD [] 1972 AASHTO [] 1986 AASHTO [] Modified AASHTO

Other Florida Pavement Design Manual

AASHTO DESIGN RELIABILITY FACTORS R% - S_o -

OUTSIDE SHOULDER TYPE

[] Turf [] Granular [X] Asphalt Concrete [] Surface Treatment

[] PCC [] Curb and Gutter Other _____

OUTSIDE SHOULDER WIDTH (Feet) 4

SUBSURFACE EDGE DRAINS [] Yes [X] No

NOTES

1. Layer 1 is the natural occurring subgrade soil. The pavement surface will have the largest assigned layer number.

2. Layer description codes:
   Surface Layer .... 03 Base Layer ..... 05 Subgrade 07
   Subsurface HMAC .. 04 Subbase Layer ..... 06 Embankment (Fill) 11

3. Refer to Tables 1 through 4 for material class codes.

4. If subgrade depth to a rigid layer is known, enter this depth for subgrade thickness, otherwise leave subgrade layer thickness blank.

5. Enter AASHTO structural layer coefficient value, as appropriately modified, used in pavement design or typical coefficient used by agency for this material. For the subgrade, enter either AASHTO soil support value or resilient modulus value (psi) used in design.

SHEET C. SPS-1 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE Florida SHRP SECTION NO _____

TEST SECTION LAYOUT

NUMBER OF TEST SECTIONS ENTIRELY ON: FILL 13 CUT _____

SHORTEST TRANSITION BETWEEN CONSECUTIVE TEST SECTIONS (Feet) 500

VERTICAL GRADE (Avg %) (+ upgrade; - downgrade) %

HORIZONTAL CURVATURE (Degrees) 0% [] Tangent _____

COMMENTS ON DEVIATIONS FROM DESIRED SITE LOCATION CRITERIA This particular project will require the removal of roughly 7 feet of a silty organic material until limerock. This organic material will be replaced with limerock. All replacement materials will be transported from the same source.

OTHER SHRP TEST SECTIONS

DOES AGENCY DESIGN CONFORM TO GPS-1 OR GPS-2 PROJECT CRITERIA? [] YES [] NO

DISTANCE TO NEAREST GPS TEST SECTION ON SAME ROUTE (Miles) -

TEST SECTION NUMBER OF NEAREST GPS SECTION -

SUPPLEMENTAL TEST SECTIONS

IF SUPPLEMENTAL EXPERIMENTAL TEST SECTIONS ARE PROPOSED, COMPLETE THE FOLLOWING

TOTAL NUMBER OF SUPPLEMENTAL TEST SECTIONS 2

FACTORS TO BE INVESTIGATED Florida's limerock material. One 1000' section will be reserved for the weight in motion equipment.

PCS/LAW ENGINEERING
(A Division of Law Engineering, Inc.)
12240 Indian Creek Court, #120
Beltsville, Maryland 20705-1242
FON 301-210-5105 – FAX 301-210-5032

MEMORANDUM

July 21, 1993 File: FL SPS-1 (US 27)

To: Monte Symons

From: John Miller

Subject: SPS-1 - Nomination from Florida

We received a nomination for an SPS-1 from SRO submitted by the Florida DOT. The package included copies of the plans and profiles. The transmittal indicates an undercut of existing organic materials to be replaced by lime rock. In addition, the traffic level is shown as 1,463 KESAL per year. This is extremely high compared to the experiment requirements and should be verified.

The nomination appears to meet experiment requirements. We recommend approval of this project as 120100 (Wet-NoFreeze on coarse subgrade; the P series of test sections, numbers 01-12). Please note the final project plans should be reviewed prior to final approval and the traffic level should be verified.

NATIONAL RESEARCH COUNCIL

STRATEGIC HIGHWAY RESEARCH PROGRAM

Southern Region, 8240 MoPac Expressway, Suite 250 Austin, TX 78759 Tel (512) 346-7477 Fax (512) 346-8750

FAX MESSAGE

HOMER G. WHEELER
Regional Engineer

TO: BILL MILEY, FL-DOT

NO. OF PAGES (INCLUDING THIS TRANSMITTAL PAGE) 3

DATE: JULY 21, 1993

TIME: _____ AM X PM

FAX NO.: _____

- -

Subject: SPS-1 Nomination from Florida.

Dear Bill,

We have received from the Federal Highway Administration the attached Facsimile Message indicating approval for the SPS-1 Project to be located on US-27, SBL between Mileposts 15.8 and 12.0, Palm Beach County, Florida.

Please note the request for verification of estimated traffic level.

If we can be of further assistance, please call.

Sincerely,

Homer

Homer G. Wheeler, P.E.
SHRP Regional Engineer, SRCO

HGW:dmj

Attachments: As stated.

cc.w/Att: Mark Sargent, SRCO
Brent Rauhut, SRCO

THE NATIONAL RESEARCH COUNCIL IS THE PRINCIPAL OPERATING AGENCY OF THE NATIONAL ACADEMY OF SCIENCES AND THE NATIONAL ACADEMY OF ENGINEERING TO SERVE GOVERNMENT AND OTHER ORGANIZATIONS

LONG TERM PAVEMENT PERFORMANCE DIVISION

Federal Highway Administration

Turner-Fairbank Highway Research Center, HNR-40
6300 Georgetown Pike, McLean, Virginia 22101-2296
Telephone (703) 285-2355 Fax (703) 285-2767

1 Page(s)

FACSIMILE MESSAGE

July 21, 1993

TO: Homer Wheeler

FROM: Cheryl Richter

SUBJECT: SPS-1 Nomination from Florida

We have received and reviewed PCS/Law's recommendations (attached) regarding the SPS-1 project nominated by the Florida Department of Transportation. Please verify the estimated traffic level, and advise Florida DOT that the project will be approved, as recommended. The official paperwork will be prepared and transmitted upon Mr. Symons' return to the office.

If I can be of any further assistance, please let me know.

RECEIVED SEP 9 2 1993

HNR40-0893-380001

Memorandum

U.S. Department of Transportation
Federal Highway Administration

6300 Georgetown Pike
McLean, Virginia 22101

Subject: ACTION: Specific Pavement Study (SPS-1) - Florida Allocation of Incentive Funds

Date: AUG 30 1993

From: Acting Director, Office of Engineering and Highway Operations Research and Development

Reply to Attn of: HNR-40

To: Mr. Leon N. Larson
Regional Federal Highway Administrator (HEO-04)
Atlanta, Georgia

We have received a nomination from the Florida Department of Transportation (DOT) for an SPS-1 site on the southbound lane of US-27, south of Lake Okeechobee in Palm Beach County. The nomination has been reviewed and is approved for incorporation into the Long-Term Pavement Performance (LTPP) study. This project site has been assigned to the "P" cell of the SPS-1 experimental design. Information obtained from this site will contribute significantly to achieving the goals of the experiment.

The inclusion of this site into the LTPP program allows the Florida DOT to be eligible for special incentive funds for reimbursement of certain expenses associated with the SPS experiment. This memorandum authorizes the obligation of a total of $50,000 of appropriation code 380 funds subject to the following:

1. Florida DOT's continued agreement to conform to all of the design and participation requirements of the experiments.

2. Funds are to be used for reimbursement of costs associated with the SPS site for; (a) the purchase and/or installation of weigh-in-motion and/or automated vehicle classification equipment; (b) conventional sampling and materials testing; and/or (c) traffic control expenditures that are incurred as part of this data collection activity.

The Federal share for the first $50,000 of the above work is 100 percent. Costs in excess of $50,000 may be eligible for reimbursement as part of the regular Federal-aid construction and/or research programs. The appropriation code 380 and the Fiscal Management Information System and regular Federal-aid procedures are to be used to track expenditures. By copy of this memorandum, we are requesting the Program Analysis Division (HFS-30) to increase Florida's obligation limit by $50,000 for the 380 program. These 380 funds do not lapse but are expected to be used within 5 years of this authorization.

Florida DOT's participation in the SPS-1 experiment is greatly appreciated. The interest, cooperation and assistance of the FHWA Region 4 and Florida Division staff in the LTPP program is also appreciated.

Upon receipt of this memorandum, it is expected that the Florida Division Office will officially notify Florida DOT of this allotment and establish the appropriate accounts. Any questions concerning the requirements or this allocation should be directed to Mr. Monte Symons at (703) 285-2730. Question related to the project status, testing, and/or coordination should be directed to either Mr. Symons or Mr. Homer Wheeler, LTPP Southern Regional Engineer. Mr. Wheeler can be reached at (512) 346-7477.

Byron N. Lord

cc: Mr. Homer Wheeler

TECHNICAL SPECIAL PROVISIONS

SECTION 5

CONTROL OF THE WORK

Article 5-7 Engineering and Layout

Subarticle 5-7.3 (Page 27) Layout of work shall be expanded as follows:

The rod and level survey are readings required within the SPS-1 test sections for the subgrade, various base courses and AC surface course. These readings shall be taken at the same stations and offsets for each respective materials layer to allow the calculation of each material layer thickness.

SECTION 160

STABILIZATION TYPE B

160-5.6 FINISH GRADING (For Test Sections)

Subarticle 160-5.6 (Page 147) is to be expanded as follows:

Surface irregularities shall not exceed 1/4 inch between two points longitudinally or transversely using a 10-foot straightedge.The straightedge is to be furnished, operated and maintained by the contractor. Finished subgrade elevations shall not vary from design by more than .04 feet based on rod and level survey readings taken at a minimum of 5 locations per lane (edge, outer wheel path, midlane, inner wheel path and inside edge of lane). The survey readings, which shall be provided by the contractor, shall be taken at longitudinal intervals not greater than 50 feet within each of the 600-foot test sections. The survey readings shall be supplied to the Department for use in the SPS-1 Program.

160-7 BEARING VALUE REQUIREMENTS

Subarticle 160-7.1 (Page 148) shall be expanded as follows:

A minimum of two bearing value samples shall be obtained and tested by the Engineer within each test section. The location of the sampling shall be determined by the Engineer.

160-8.1 DENSITY REQUIREMENTS

Subarticle 160-8.1 (Page 148) shall be expanded as follows:

A minimum of two density tests shall be performed within the limits of each test section. The location of the tests shall be determined by the Engineer.

SECTION 285

OPTIONAL BASE COURSE

285-1 DESCRIPTION

Article 285-1 (Page 200) is to be expanded as follows:

The work specified in this section consists of the construction of 13 test base sections as depicted on Sheet 3 of the plans. The SHRP test base sections are not optional and must be constructed as specified in the plans and these specifications.

There are four special bases to be used in the test base sections. These bases will either be used alone or as part of a composite base as indicated on the table on Sheet 3 of the plans. The following are descriptions of each:

ATB ASPHALT TREATED BASE

The work specified consists of constructing asphalt base course Type 3 in accordance with these specifications and in conformity with the lines, grades, widths and thicknesses shown in the plans.

The work will be accepted on a LOT to LOT basis in accordance with the applicable requirements of Sections 5,6 and 9. The size of the LOT for the bituminous mixture accepted at the plant will be as specified in 331-5 and for the material accepted on the roadway as stipulated in 330-10.

DGAB DENSE GRADED AGGREGATE BASE

The work specified consists of the construction of a base course composed of graded aggregate. It shall be constructed on the prepared subgrade, in accordance with these specifications and in conformity with the lines, grades, notes and typical cross-sections shown in the plans.

ATPB ASPHALT TREATED PERMEABLE BASE

The materials, the composition, and physical test properties for Asphalt Treated Permeable Base are as follows:

All requirements of Section 320 for plant and equipment, and Section 330 for general construction requirements shall apply to this work.

Work will be accepted on a Lot to Lot basis in accordance with the applicable requirements of Sections 5, 6, and 9. The size of the Lot will be as specified in 331-5 for the bituminous mixture accepted at the plant.

OBG9 OPTIONAL BASE GROUP 9

The work specified in this Section consists of the construction of a base course composed of limerock. It shall be constructed on the prepared subgrade, in accordance with these specifications and in conformity with the lines, grades, notes and typical cross sections shown in the plans.

285-2 MATERIALS

Article 285-2 (Page 200) is to be expanded as follows:

The required test bases must meet the following material requirements:

ATB - Asphalt Treated Base

The asphalt cement component shall meet the requirements of ASPHALT BASE COURSE TYPE 3 as specified in Section 280-2, 280-3 and 280-4 with the following exceptions: No recycled asphalt concrete materials shall be used in the ABC-3 mixture. Asphalt Emulsions are not allowed in the mixture.

DGAB - DENSE GRADED AGGREGATE BASE

The Dense Graded Aggregate Base shall meet the materials requirements of Graded Aggregate Base as specified in Section 204-2 with the following exceptions: Only Group I aggregates will be allowed in the test base sections.

ATPB ASPHALT TREATED PERMEABLE BASE

The materials used shall conform with the requirements specified in Division III.

Specific references are as follows:

(1) Asphalt Cement Viscosity Grade AC-30...916-1.

(2) Coarse Aggregate....Section 901, all materials shipped to the asphalt plant will be sampled at their destination.

General Composition of Mixture:

The aggregate shall be combined with 2½ percent paving asphalt by weight of the dry aggregate. After testing samples of the Contractor's proposed aggregate supply, the Engineer may order an increase or decrease in the specified asphalt content (not less than 95 percent of the aggregate shall be coated). If such an increase or decrease is ordered, the bid prices of the mix will be adjusted based on the Asphalt Price Index (API) of the bituminous material plus ten percent of the Index Price. As an example where the asphalt content is determined to be three percent the adjustment shall be calculated:

(.005 X Average Spread Rate divided by 8.5 lb/gal x API X 1.10)

No recycle asphalt concrete materials shall be used in the mixture. Asphalt Emulsions are not allowed in the mixture.

Grading Requirements:

Aggregate for asphalt treated permeable base shall conform to the following grading:

Sieve Sizes	Percent Passing
1"	100
3/4"	90-100
1/2"	35-65
3/8"	20-45
No. 4	0-10
No. 10	0-5
No. 200	0-2

The temperature of the aggregate before adding the binder shall be - not less than 275 deg. F nor more than 325 deg. F.

OBG9 OPTIONAL BASE GROUP 9 (LIMEROCK ONLY)

The Optional Base Group 9 materials requirements shall meet the following Limerock Base Articles:

200-2 Materials.

285-3 SELECTION OF BASE OPTION

Article 285-3 (Page 200) shall be expanded as follows:

There will be no base options permitted within the test sections depicted on Plan Sheet 3; the indicated bases shall conform to the bases shown.

285-4 CONSTRUCTION REQUIREMENTS

Article 285-4 (Page 201) is to be expanded as follows:

ATB ASPHALT TREATED BASE

The Asphalt Treated Base construction requirements shall meet the following Asphalt Base Course articles:

280-5 Contractor Quality Control

280-6 Acceptance of Mixture

Subarticle 280-6.2 (Page 197) Acceptance of Roadway shall be expanded as follows:

> Within the limits of the SPS-1 test sections, finished ATB elevations shall not vary from design by more than .04 feet based on rod and level survey readings taken at a minimum of 5 locations per lane (edge, outer wheel path, midlane, inner wheel path and inside edge of lane). Survey readings, which shall be provided by the contractor, shall be taken at longitudinal intervals not greater than 50 feet within each of the 600-foot test sections. The survey readings shall be supplied to the Department for use in the SPS-1 Program.

280-7 Plant Methods and Equipment

280-8 Construction Requirements

Subarticle 280-8.6 (Page 198) Compacting the mixture, shall be expanded as follows:

A minimum of two density tests shall be performed within the limits of each test section. The location of the tests shall be determined by the Engineer.

DGAB DENSE GRADED AGGREGATE BASE

The Dense Graded Aggregate Base construction requirements shall meet the following Graded Aggregate Base articles and changes to the articles as noted below.

204-3 Equipment

204-4 Transporting Aggregate

204-5 Spreading Aggregate

204-6 Compacting and Finishing

Subarticle 204-6.4 (Page 169) Density Requirements, shall be expanded as follows:

A minimum of two density tests shall be performed per lift within the limits of each test section. The location of the tests shall be determined by the Engineer.

204-7 Testing Surface

Article 204-7 (Page 170) Testing Surface is to be expanded to meet the following requirements:

Within the limits of the SPS-1 test sections, finished DGAB elevations shall not vary from design by more than .04 feet based on rod and level survey readings taken at a minimum of 5 locations per lane (edge, outer wheel path, midlane, inner wheel path and inside edge of lane). Survey readings, which shall be provided by the contractor, shall be taken at longitudinal intervals not greater than 50 feet within each of the 600-foot test sections. The survey readings shall be supplied to the Department for use in the SPS-1 Program.

204-8 Priming and Maintaining

ATPB ASPHALT TREATED PERMEABLE BASE

Contractor's Quality Control

The Contractor shall provide the necessary control of the asphalt treated permeable base and construction in accordance with the applicable provisions of 6-8.4 and 331-4.4.

Acceptance of Mixture

The bituminous mixture will be accepted at the plant with respect to gradation and asphalt content in accordance with the requirements of 331-5. For this mix acceptance will be based on asphalt content, and the No. 4 and No. 200 sieves.

Placing and Compacting

The subgrade on which asphalt treated permeable base is to be placed shall conform to the compaction and elevation tolerances specified for the materials involved and shall be free of loose or extraneous material.

Asphalt treated permeable base stored in excess of two hours shall not be used in the work.

Asphalt treated permeable base shall be spread only when the atmospheric temperature is above 40 deg. F.

Asphalt treated permeable base shall be spread and compacted in one layer. Asphalt treated permeable base shall not be cooled with water.

Asphalt treated permeable base shall be compacted in accordance with one of the following methods, selected by the Contractor. If compaction method (1) below is selected, the asphalt treated permeable base shall be spread at a temperature of not less than 200 deg. F. nor more than 250 deg. F. measured in the hopper of the paving machine.

1. One complete coverage with steel-wheeled, two-axle tandem roller which will produce an operating weight of not more than 110 pounds per linear inch of drum width. Compaction shall begin as soon as the mixture has cooled sufficiently to support the weight of the rolling equipment without undue displacement.

2. One complete coverage with a steel-wheeled, two-axle tandem roller weighing not less than eight tons nor more than 12 tons. Compaction shall begin when the temperature of the base mixture is less than 150 deg. F. and shall be completed before the base mixture temperature is less than 100 deg. F.

Vibratory rollers meeting the above requirements may be used provided the vibratory unit is turned off.

The ATPB surface may not be left exposed for more than four days prior to placement of the next asphalt layer.

Edge Drains

Asphalt treated permeable material for edge drains shall be placed and compacted in accordance with the requirements in 440-5.1 and 440-5.2. The edge drains must be installed immediately prior to the placement of the ATPB.

Geotextile Material

Geotextile shall be placed surrounding the edge drains and transverse drains as shown in the plans. The geotextile fabric shall conform to the requirements for placing geotextile for edge drains.

Surface Requirements

The finished surface of asphalt treated permeable base shall be uniform and shall not vary at any point more than .04-foot above or below the design grade.

Rod and level survey readings shall be taken at a minimum of 5 locations per lane (edge, outer wheel path, midlane, inner wheel path and inside edge of lane). Survey readings, which shall be provided by the contractor, shall be taken at longitudinal intervals not greater than 50 feet within each of the 600-foot test sections. The survey readings shall be supplied to the Department for use in the SPS-1 Program.

Care shall be exercised to prevent contamination of the asphalt treated permeable base. Asphalt treated permeable base which, in the opinion of the Engineer, has been contaminated shall be removed and replaced by the Contractor at his expense.

No traffic or Contractor's equipment will be permitted on the asphalt treated permeable base except for that equipment required to place the permeable base and the subsequent layer of pavement. Haul trucks shall enter onto and exit from the asphalt treated permeable base at the nearest practical point. Damage to the base shall be repaired promptly by the Contractor at his expense, as directed by the Engineer.

Paving Requirements

When asphalt concrete is placed directly upon the asphalt treated permeable base the asphalt concrete shall be placed with a paver equipped with tracks.

In lieu of taking corings within the limits of the SPS-1 test sections, the required rod and level survey readings shall be used to determine the average ATPB thickness of each respective test section.

OBG9 OPTIONAL BASE GROUP 9 (LIMEROCK ONLY)

The Optional Base Group 9 construction requirements shall meet the following Limerock Base Articles:

200-3 Equipment

200-4 Transporting Limerock

200-5 Spreading Limerock

200-6 Compacting and Finishing Base

Subarticle 200-6.4 (Page 164) shall be expanded as follows:

A minimum of two density tests per lift shall be performed within the limits of each test section. The location of the tests shall be determined by the Engineer.

200-7 Testing Surface

Article 200-7 (Page 165) Testing Surface shall be expanded as follows:

Rod and level survey readings shall be taken at a minimum of five locations per lane (edge, outer wheel path, midlane, inner wheel path, and inside edge of lane). Survey readings, which shall be provided by the contractor, shall be taken at longitudinal intervals not greater than 50 feet within each of the 600-foot test sections. The survey readings shall be supplied to the Department for use in the SPS-1 program.

200-8 Priming and Maintaining

285-5 VARIATION IN EARTHWORK QUANTITIES

Article 285-5 (Page 201) is to be expanded as follows:

ATB ASPHALT TREATED BASE

The Asphalt Treated Base Construction requirements shall meet the following Asphalt Base Course Article:

280-9 Correction of Deficient Thickness

Subarticle 280-9.1 (Page 198) Allowable Deficiencies, shall be expanded as follows:

In lieu of taking corings within the limits of the SPS-1 test sections, the required rod and level survey readings shall be used to determine the average ATB thickness of each respective test section.

Additionally, no compensation shall be made for any test base section which is calculated to average outside of the specified .04 foot tolerance.

285-6 THICKNESS REQUIREMENTS

Article 285-6 (Page 201) is to be expanded as follows:

DGAB DENSE GRADED AGGREGATE BASE

The Dense Graded Aggregate Base construction requirements shall meet the following article:

Article 204-9 Thickness Requirements

Subarticle 204-9.1 (Page 170) Measurement, shall be expanded as follows:

In lieu of taking corings within the limits of the SPS-1 test sections, the required rod and level survey readings shall be used to determine the average DGAB thickness of each respective test section.

Subarticle 204-9.2 (Page 171) Areas Requiring Corrections, shall be expanded as follows:

Any areas within the SPS-1 test sections which do not meet the required .04 foot tolerance shall be scarified and material either removed or added and recompacted to the proper density at no additional compensation.

OBG9 OPTIONAL BASE GROUP 9 (LIMEROCK ONLY)

The optional Base Group thickness requirements shall meet the following Limerock Base Articles:

200-9 Thickness Requirements

Subarticle 200-9.1 (Page 165) shall be expanded as follows:

In lieu of boring the base in the area of the limerock test section, the required rod and level survey readings shall be used to determine the average limerock thickness of the test section. Payment for the limerock test section shall be by plan quantity only.

Subarticle 200-9.2 (Page 165) areas requiring correction shall be expanded as follows:

Any areas within the SPS-1 test sections which do not meet the required .04 foot tolerance shall be scarified and material either removed or added and recompacted to the proper density at no additional compensation.

285-7 CALCULATION OF AVERAGE THICKNESS

Article 285-7 (Page 201) is to be expanded as follows:

DGAB Dense Graded Aggregate Base

The Dense Graded Aggregate Base Construction requirements shall meet the following Article:

Article 204-10 (Page 171) Calculation of Average Thickness of Base

Article 204-10 Calculations for Average Thickness of Base shall be expanded as follows:

In lieu of taking corings within the limits of the SPS-1 test sections, the required rod and level survey readings shall be used to determine the DGAB thickness of each respective test section. Payment for DGAB in the test sections will be by plan quantity only.

OBG9 OPTIONAL BASE GROUP 9 (LIMEROCK ONLY)

The Optional Base Group 9 calculation of Average Thickness requirements shall meet the following limerock base articles:

200-10 Calculation for Average Thickness of Base

285-8 METHOD OF MEASUREMENT

Article 285-8, (Page 202) Method of Measurement, is to be expanded as follows:

DGAB DENSE GRADED AGGREGATE BASE

The Dense Graded Aggregate Base Construction requirements shall meet the following Article:

Article 204-11 Method of Measurement

ASPHALT TREATED PERMEABLE BASE

The Asphalt Treated Permeable Base Construction requirements shall meet the following standards:

Measurement:

The quantity of asphalt treated permeable base to be paid for will be measured by the square yard as part of the base composite material. The area to be paid for will be calculated on the basis of the dimensions shown on the plans adjusted by the amount of any change ordered by the Engineer. No allowance will be made for asphalt treated permeable base placed outside said dimensions unless otherwise ordered by the Engineer. Additionally, no compensation shall be made for any test base section which is calculated to average outside of the .04 foot required tolerance.

Asphalt treated permeable material for edge drains installed adjacent to asphalt treated permeable base will be included under the respective composite base pay item.

OBG9 OPTIONAL BASE GROUP 9 (LIMEROCK ONLY)

The Optional Base Group 9 calculation for Method of Measurement requirements shall meet the following limerock base articles.

200-11 Method of Measurement

Subarticle 200-11.1 (Page 171) shall be expanded as follows:

Payment for the limerock test section shall be by plan quantity only.

285-9 BASIS OF PAYMENT

Article 285-9 (Page 202) Basis of Payment Section to be expanded as follows:

ATB ASPHALT TREATED BASE

The Asphalt Treated Base Basis of Payment shall meet the requirements of the following:

Article 280-10 Compensation

Subarticle 280-10.3 (Page 199) Criteria for Calculation, shall be expanded as follows:

The areas within the SPS-1 test sections which are calculated to be outside of the .04 foot required tolerance shall be left in place with no compensation for that base section. All payment on test base sections shall be plan quantity only.

Article 280-10.6 (Page 200) Compensation shall be expanded as follows:

Asphalt Treated Base - when not used alone as a base structure, payment shall be applied as part of the composite base cost for each respective pay item. See below for pay items and thicknesses. Payment for ATB will be by plan quantity only.

DGAB - DENSE GRADED AGGREGATE BASE

The Dense Graded Aggregate Base Basis of Payment shall meet the requirements of the following Article:

Article 204-12 Basis of Payment

Article 204-12 (Page 172) to be expanded as follows:

Dense Graded Aggregate Base - when not used alone as a base structure, payment shall be applied as part of the composite base cost for each respective pay item. See below for pay items and thicknesses. Payment for DGAB in test sections will be by plan quantity only.

ATPB ASPHALT TREATED PERMEABLE BASE

The Asphalt Treated Permeable Base Basis of Payment requirements shall meet the following standards.

The contract price paid per square yard for asphalt treated permeable base shall be full compensation for furnishing all labor, materials (including the asphalt cement in the specified amount, geotextile, and perforated PVC pipe), tools, equipment, and incidentals, and for doing all the work involved in constructing asphalt treated permeable base, complete in place, including geotextile, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer. Asphalt treated permeable base - shall be applied as part of the composite base cost for each respective pay item. See below for pay items and thicknesses.

OBG9 OPTIONAL BASE GROUP 9 (LIMEROCK ONLY)

The Optional Base Group 9 Basis of Payment requirements shall meet the following article.

200-12 Base of Payment

Article 200-12 (Page 166) shall be expanded as follows:

Payment for Optional Base Group 9 within the test section will be by plan quantity. See below for pay item and thickness. The limerock base used in this test section is included in the total quantity for Pay Item 285-709 OPTIONAL BASE GROUP 9.

PAY ITEM	DESCRIPTION				
285-717-1	Optional Base	ATPB	(4")	DGAB (4")	SY
285-717-2	Optional Base	ATPB	(4")	DGAB (8")	SY
285-717-3	Optional Base	ATPB	(4")	DGAB (12")	SY
285-717-4	Optional Base	ATB	(4")	ATPB (4")	SY
285-717-5	Optional Base	ATB	(8")	ATPB (4")	SY
285-717-6	Optional Base	ATB	(12")	ATPB (4")	SY
285-717-7	Optional Base	ATB	(4")	DGAB (4")	SY
285-717-8	Optional Base	ATB	(8")	DGAB (4")	SY
285-717-9	Optional Base	ATB	(8")		SY
285-717-10	Optional Base	ATB	(12")		SY
285-717-11	Optional Base	DGAB	(8")		SY
285-717-12	Optional Base	DGAB	(12")		SY
285-709	Optional Base Group 9	OBG9	Limerock	(10")	SY

SECTION 331

TYPE S ASPHALTIC CONCRETE

REFERRED TO SECTION 330 FOR GENERAL CONSTRUCTION REQUIREMENTS

330-10 COMPACTING MIXTURE

Subarticle 330-10.3 (Page 239) Density Control shall be expanded as follows:

A minimum of two density tests shall be performed per lift within the limits of each test section. The location of the tests shall be determined by the Engineer.

330-12 SURFACE REQUIREMENTS

Subarticle 330-12.3 (Page 242) Acceptance Testing for Surface Tolerance shall be expanded as follows:

For the SPS-1 test sections, finished subgrade elevations shall not vary from design by more than .04 feet based on rod and level survey readings taken at a minimum of 5 locations per lane (edge, outer wheel path, midlane inner wheel path and inside edge of lane). Survey readings shall be taken at longitudinal intervals not greater than 50 feet within each of the 600-foot test sections. The survey readings shall be supplied to the Department for use in the SPS-1 Program.

330-14 CORRECTING DEFICIENT THICKNESS

Subarticle 330-14.1 (Page 244) Allowable Deficiency in Thickness shall be expanded as follows:

No compensation shall be made for asphaltic concrete test sections which are calculated to average outside of the specified .04 foot tolerance.

Article 330-15 (Page 245) Calculation for Thickness of Pavement to be paid for (Applicable Only Where the Pavement Is To Be Paid For By the Square Yard) shall be expanded as follows:

In lieu of taking corings within the limits of the SPS-1 test sections, the required rod and level survey readings taken for the base and surface courses shall be used to determine the asphalt thicknesses. The maximum allowable tolerance from the specified asphalt thickness shall be $\pm$.25 inches.

SECTION 514

PLASTIC FILTER FABRIC GEOTEXTILE

514-1 Description

Article 514-1 is to be expanded as follows:

Filter fabric (or geotextiles) shall be used in sections where the PATB layer is placed directly above the subgrade to prevent the clogging of the permeable layer due to the migration of fine material from the subgrade.

514-2 Material

Article 514-2 shall be deleted and the following new section is substituted:

The filter fabrics used in these test sections shall conform to recommendations of AASHTO-ABC-ARBTA Task Force 25 and the following requirements:

- Nonwoven or woven geotextile materials which conform to recommendations for Class B drainage applications where installation stresses are low will be used in edge drains. Fabric used where the PATB is constructed as the first layer of the subgrade and for the transverse interceptor drains shall meet Class A requirements. The following are the physical requirements on an average per roll basis sampled in accordance with ASTM D4354:

Property	Minimum Value		Test Method
	Class A	Class B	
Grab Strength (lbs)	180	80	ASTM D 4632
Puncture Strength (lbs)	80	25	ASTM D 751
Trapezoid Tear (lbs)	50	25	ASTM D 4533
Burst Strength (lb/in²)	290	130	ASTM D 3787
Permeability	k (fabric)> k (soil)		ASTM D 4491
Apparent Opening Size			ASTM D 4751
1. Soil with ≤50% passing No. 200 sieve.	AOS < 0.6mm > #30 US std. sieve		
2. Soil with > 50% passing No. 200 sieve.	AOS < 0.3 mm > #50 US std. sieve		

- The fabric must be resistant to heat and temperature range expected during placement of the PATB.

514-3 Construction Methods

Article 514-3 is to be expanded as follows:

Filter fabrics shall be installed directly beneath the PATB layer and extend around the outside edge drain trench across the travel lanes and around the inside edge drain trench.

683-107

COMMUNICATIONS EQUIPMENT: MODEM

A remote communications device (MODEM) shall be supplied for this installation which allows communication from the electronics units to the VAX 4000 system. Only one modem will be required per site. The modem shall be a model CM9600 as supplied by:

In-Vision Systems
806 Geraldine Drive
P.O. Box 7973
Incline Village, NV 89452-7973

or equivalent and have the following specifications:

- Up to 12VDC operation with DC/DC regulated power supply
- Baud Rates: 1200-9600 auto adjustable
- RS232 Serial, Support MNP 2-5
- Standard AT Command Set Compatibility
- Be equipped with output Splitter and connecting cables to each unit (if more than 1 unit is required at the site)
- Be equipped with RJ11 connector box (wall mounted) and cables
- Conform to the environmental requirements of the Standard Specifications, Section 615-4 through 615-6
- Shelf Mountable
- Size not to exceed 2.5" X 2.4" X 2.4"
- Supported Data Rates and Formats
  - CCITT V.32 (9600 trellis coded, 9600 uncoded, 4800 bps)
  - CCITT V.22 bis (2400 bps)
  - CCITT V.22, Bell 212A(1200 bps) and Bell 103j (300 bps)
- 2 Storable configuration profiles
- Auto Answer/Auto Dial
- LED Indications for SD, DCD, OH, MR, RD, DTR, EC, LB
- Built in speaker
- Echo cancellation ability
- Port Speeds to 38,400 bps
- Flow Control: Xon/Xoff and RTS/CTS

The modem shall be powered either by the WIM electronics unit internal battery or power regulated from the external battery.

It shall be the CONTRACTORS responsibility to provide all necessary cables and connectors, including from the RJ11 connector box to the telephone service point. The cable shall be industry approved exterior grade copper pair telephone cable installed in Schedule 40 conduit, clamped to the pole and attached into the bottom of the service box. The cable shall exit the pole from a field drilled hole. Alternate means of connection to the service box, shall be approved by the ENGINEER.

RECEIVED MAR 2 8 1994

dj

STONE & WEBSTER ENGINEERING CORPORATION

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March 22, 1994

STATE PROJECT NO. 93160-3520
W.P.I. No. 4118192
Federal Aid Project No. ACSU-403-2(56)
Contract No. 18,582
County: Palm Beach
PRE-CONSTRUCTION CONFERENCE

A pre-construction conference to discuss the above referenced Project has been scheduled as follows:

Date:	Tuesday, April 5, 1994
Time:	9:00 A.M.
Location:	Florida Department of Transportation 3400 W. Commercial Blvd. Ft. Lauderdale, Fla. 33309 Auditorium (lst Fl.) (305) 777-4130

Project Description: The Project consists of converting the existing two lane highway facility at US 27 to a multi-lane divided highway between STA 645+00 (MP 11.91) and STA 849+00 (MP 15.88). This Project includes the Strategic Highway Research Program (SHRP) Experiment.

Project Duration: 430 Days

You are hereby invited to attend this meeting to participate in the applicable Agenda items (see attached).

1889 · STONE & WEBSTER · 1989 100

Should you require any additional information, please contact me at (407) 996-1411.

Sincerely,

A.C. Rodriguez, P.E.
Resident Engineer

ACR/th
cc: Patrick M. McCann, FDOT District 4 CEI Program Manager

Enclosures: Agenda
List of Requested Attendees

AGENDA
for
PRE-CONSTRUCTION CONFERENCE

STATE PROJECT NO. 93160-3520
W.P.I. No. 4118192
FEDERAL AID PROJECT NO. ACSU-403-2(56)
CONTRACT NO.: 18,582

CONTRACTOR: RANGER CONSTRUCTION

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 4 OFFICE
3400 W. COMMERCIAL BLVD.,
FT. LAUDERDALE, FLA. 33309

TUESDAY, APRIL 5, 1994
9:00 A.M.

1). **OPENING COMMENTS**
- Tim Sears P.E., Resident Engineer

2) **PROJECT DESCRIPTION**
- Brief Overview
- Strategic Highway Research Program (SHRP) Experiment

3) **INTRODUCTIONS**
- Stone & Webster CEI Team
- Florida Department of Transportation Organization
- Ranger Construction Organization
- Self-Introductions by all Attendees

4) **DELINEATION OF RESPONSIBILITIES/LINES OF AUTHORITY/EMERGENCY PHONE NUMBERS**
- Stone & Webster Engineering Corporation
- Ranger Construction
- Florida Department of Transportation
- Routing of Correspondence

5) **CONTRACTOR'S FIELD OPERATIONS**
- Field Office Location
- Working Hours
- Contractor's Affidavit - Vehicle Registration
- Notice of Rental Agreements

6) **SCHEDULE**
- Notice to Proceed to Contractor
- Start Date of Construction
- Sub-Contractor/Start Date
- Schedule of MOT Phases
- Schedule of Work on Pump Basins; Tractor Cross Overs
- CPM Review Procedures/Progress Chart Submittals
- Work Plan Submittals - Controlling Items of Work
- Progress Meetings - Weekly Intervals

7) **UTILITIES**
- Utilities at Site
- Contractor to call for Locations

8) **PERMITS**
- Erosion Control and Water Pollution Prevention Plans per Special Provisions Article 26 NPDES
- Army Corps of Engineers Permit
- SFWMD Permit 50-00002-D (dredge fill)
- SFWMD Permit 50-03053-S (Surface water)
- SFWMD Occupancy Permit 7028

9) **MINORITY PROGRAMS**

- Equal Employment Opportunity
- Affirmative Action
- DBE Hiring Goals=12%
- Wage Rates
- Posters
- Payrolls
- On the Job Training
- Affidavits of Motor Vehicle Registration
- Subletting Work/DBE
- Other Minority Program Topics

10) **MAINTENANCE OF TRAFFIC**
- Contractor Acceptance of Traffic Control Plan (TCP) Shown on Plans
- Temporary Signs - Contractor to Install Only Regulatory Signs, Other Projects to Modify MOT Signs
- Phases of MOT - Special Detour
- Access to Existing Drives to be Maintained at all Times
- Construction Zone Accident Reports

11) **SPECIAL PROJECT REQUIREMENTS**
- Maintaining Irrigation Water Flow to Adjacent Farmers
- Special Detour and Construction of Box Culvert at Sta. 733

12) **STRATEGIC RESEARCH PROGRAM (SHRP) EXPERIMENT**
- Slide Presentation
- Other Discussions

13) **CONCRETE**
- Concrete Quality Control Plans - to be Submitted by Contractor
- Mix Design Approval

14) **DRAINAGE STRUCTURE**
- Contractor's Method of Installation
- Sequence of Work
- Sheet Piling

15) **ASPHALT PAVING/MILLING/RESURFACING**
- Contractor's Work Plan for Asphalt Paving
- Pre-paving Meeting - a Must
- Contractor's Proposed Quality Control Plan

16) **ERRORS/OMISSIONS TO PLAN**
- Contractor to Discuss any Errors or Omissions to Plan, if any

17) **OTHER PROJECT CONSTRUCTION MATTERS**
- Survey - Baseline Survey and Benchmarks
  - Original Terrain
  - Bottom of Excavation
- Source of Embankment Material

18) **QUESTIONS/ANSWERS**

LIST OF REQUESTED ATTENDEES FOR
PRE-CONSTRUCTION CONFERENCE

STATE PROJECT NO. 93160-3520
F.A.P. No. ACSU-403-2(56)
W.P.I. No. 4118192
CONTRACT NO. 18,582

FDOT

Florida Department of Transportation
3400 West Commercial Boulevard
Fort Lauderdale, FL 33309
Attention:
Mr. Manny Then, P.E., District 4 Construction Engineer
Mr. Pat McCann, P.E., District 4 CEI Program Manager
Mr. Patrick Glass, P.E., Design Program Manager
Mr. Eghbal (J) Jalali, Construction Program Manager
Mr. Richard Miller, Environmental Engineer
Mr. Rocco DePrimo, District Utility Engineer
Mr. Ed Frazier, District 4 Contract Compliance Officer
Ms. Joyce Holland, District 4 Environmental Engineer
Mr. Lincoln Morgado, P.E., District Materials Engineer

FHWA

Mr. Clifford Holler, P.E.
Transportation Engineer
Mail Station 29
Federal Highway Administration
227 North Bronough Street
Room 2015
Tallahassee, FL 32301
(904) 942-9597
(904) 681-7613 (FAX)(904) 372-5304

GAINESVILLE TESTING LAB

Mr. Ron McNemara - Pavement Conditioning Engr.
Gainesville Testing Lab - FDOT
2006 Waldo Road
Gainesville, FL 32609
(904) 372-5304

Mr. Bill Miley - Special Projects Engineer
Gainesville Testing Lab - FDOT
2006 Waldo Road
Gainesville, FL 32609

CONTRACTOR

Mr. Miguel Correa
Vice President
Ranger Construction Industries Inc.
101 Sansbury's Way
West Palm Beach, Fla. 33416
(407) 793-9400

UTILITIES/COUNTY

Mr. Larry Mayernik
Associate Manager
Southern Bell
326 Fern Street
Room 501
West Palm Beach, FL 33401
(407) 837-6404
(407) 640-833-9898 (FAX)

Mr. Leonard Chiocca
FPL
DOT Relocation Coordinator
P.O. Box 078768
West Palm Beach, FL 33407
(407) 640-2330
(407) 640-2312 (FAX)

Mr. Javier Lopez, P.E.
Program Manager Roadway Production
Palm Beach County
P.O. Box 21229
West Palm Beach, FL 33416-1229
(407) 684-4154
(407) 684-4123 (FAX)

DESIGNER OF RECORD

Mr. Steven B. Carrier
Adair & Brady Inc.
1958 South Congress Avenue
West Palm Beach, FL 33406

PERMITTING AUTHORITIES/FLORIDA HIGHWAY PATROL

Mr. Vince Katilius - R/W Occupancy
Supervisor Professional - Enforcement/Compliance
South Florida Water Management District
P.O. Box 24680
West Palm Beach, FL 33416-4680
(407) 687-6436

Mr. Tony Waterhouse
Area Manager - Regulation - Drainage
South Florida Water Management District
P.O. Box 24680
West Palm Beach, FL 33416-4680
(407) 687-6896

Mr. Chuck Schnepel
Corps of Engineers
8410 NW 53 Terrace
Suite 225
Miami, FL 33166-4565
(305) 591-1302
(305) 591-1310 (FAX)

Captain Richard D. Carpenter
FHP Troop L
P.O. Box 8148
Lantana, FL 33465
(407) 588-8545
(407) 588-9486

CEI SURVEYORS

Mr. Ernesto Espinoza, P.S.A.
Chief of Surveyors
Weidener Surveying
10418 NW 31 Terrace
Miami, FL 33172
(305) 599-6381

DESIGN CONSULTANTS FOR SHRP EXPERIMENT

Mr. Mark Seargent
Brent Rauhut Engineers
8240 Mopac - Suite 220
Austin, Texas 78759
(512) 346-0870
(512) 346-8750

PROPERTY OWNERS;

Ms. Ana Escagedo
Florida Ranch Industries
(305) 667-0467
(305) 858-8138

Mr. Ray Caruthers
President
Multi-Turf
275 SW 3rd Avenue
South Bay, FL 33493
(407) 996-6716
(407) 996-2236 (FAX)

Mr. Noel Shapiro
Star Ranch
950 South Dixie Highway
Box 2001
Hollywood, FL 33022
(305) 920-7711 (Broward)
(305) 947-3941 (Dade)

DBE SUB-CONTRACTORS:

Mill-It Corporation
9630 Discovery Court
Altamonte Springs, FL 32714

H.S. Thompson Construction
3213 W. 13th St.
St. Cloud, FL 34769

Advance Barricades & Signing
P.O. Box 1745
Jupiter, FL 33468

Siboney Contracting Co.
P.O. Box 6665
West Palm Beach, FL 33405

Brent Rauhut Engineering Inc.

October 28, 1994

Mr. Patrick Glass
District Four
Florida Department of Transportation
3400 W. Commercial Blvd.
Ft. Lauderdale, Florida 33309-3421

Subject: SPS-1 Weather Station Information.

Dear Patrick,

Attached is information regarding the weather station, per our conversation. Within this packet of information is a listing of weather station data collection capabilities. Also within the weather station packet is a diagram which outlines the positioning of concrete pedestals, location of anchor bolts, etc.

If you have any questions regarding the above, please call.

Sincerely,

Mark D. Sargent
Project Engineer, SRCO

MDS:dmj

Attachment: As stated.

8240 Mopac, Suite 220 • Austin, Texas (512) 346-0870 • FAX (512) 346-8750

Brent Rauhut Engineering Inc.

October 28, 1994

Timothy H. Sears, P.E.
Resident Engineer
Stone & Webster Engineering Corporation
150 South Pine Island Road
Plantation, Florida 33324

Subject: SPS-1 Material Sampling & Field Testing Plan.

Dear Tim,

Please find attached a revised page 35 to the Florida SPS-1 Materials Sampling and Field Testing Plan, per our conversation on October 26, 1994. The revisions reflected are corrected stationing for nuclear density tests T49, T50 and T51, to be performed on the dense aggregate base for test section 120109.

If you have any questions regarding the above subject, please call.

Sincerely,

Mark D. Sargent
Project Engineer, SRCO

MDS:dmj

Attachment: As stated.

cc.w/Att: Bill Miley, FL-DOT/Gainesville
Ron McNamara, FL-DOT/Gainesville
Greg Landgraf, Stone & Webster/Plantation, FL

8240 Mopac, Suite 220 • Austin, Texas (512) 346-0870 • FAX (512) 346-8750

Brent Rauhut Engineering Inc.

December 20, 1994

Mr. Timothy H. Sears, P.E.
Resident Engineer
Stone & Webster Engineering Corporation
20803 Biscayne Boulevard, Suite 303
North Miami Beach, Florida 33180

Subject: Data Collection and Construction Guidelines

Dear Tim,

Enclosed is a copy of the Data Collection and Construction Guidelines, per your request. I would like to emphasize that these documents are used by this office as a guideline instrument only and that each project is tailored individually with a specific material sampling plan, such as the one that you now have for the SPS-1 project on US-27. Also, state specifications and plans must prevail if questions regarding the construction guidelines should arise.

If you have any questions regarding the above subject, please call.

Sincerely,

Mark D. Sargent
Project Engineer, SRCO

MDS:dmj

Enclosures: As stated.

c.w/o Enc: Bill Miley, FL-DOT
Ron McNamara, FL-DOT

8240 Mopac, Suite 220 • Austin, Texas (512) 346-0870 • FAX (512) 346-8750

RECEIVED APR 14 1995

dj

STONE & WEBSTER ENGINEERING CORPORATION

20803 BISCAYNE BOULEVARD, SUITE 303

AVENTURA, FLORIDA 33180

TELEPHONE 305-682-3800 FAX: 302-682-3850 / 3870

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OAK RIDGE, TN
PLEASANTON CA
PORTLAND, OR
RICHLAND, WA
RICHMOND VA
TAMPA, FL
WASHINGTON, D C

MG
DS
File: 120

M E M O R A N D U M

DATE: April 6, 1995

TO: Messrs: Bill Miley, Gale Page, Bob Ho, Lincoln Morgado, Scott Cushing, J. Jalali

FROM: T.H. Sears, P.E., Project Resident Engineer

Copies:

P. Glass	(District IV Design)
H. Goodwin	(State Materials)
R. Macnamara	(State Materials)
M. Parlade	(District Materials)
P. McCann	(District Construction)
M. Croft	(District Construction)
M. Sargent	(Brent Rauhut Engineering)
M. Correa	(Ranger Construction Ind.)
G. Cooper	(Ranger Construction Ind.)

Subject:

State Project No.:	93160-3520
W.P.I. No.:	4118192
F.A.P. No.:	ACSU-403-2(56) (FHWA Oversight)
Contract No.:	18,582
County:	Palm Beach
Description:	Reconstruction of US 27 to a divided highway from MP 11.91 to MP 15.88

SHRP FLORIDA SPS-1 (TEST SECTION #120108)

This memo is to define that the limits for SHRP Experimental Test Section #120108 identified on Sheet #3 (Sta. 666+00 to Sta. 676+00) have been revised to (Sta. 665+00 to Sta. 675+00). All station references in the Florida SPS-1 Project 120100 Material Sampling and Testing Plan and on Sheet 3A will shift similarly.

The intent of this change is to move the test area 100′ to the south of the Star Ranch Access Road located at Sta. 675+50± so as to accommodate construction of the transition area without interference from farm equipment traffic.

This change, initiated by the C.E.I. Team and concurred with by the Contractor, has been reviewed and approved by F.D.O.T. District Design, and Brent Rauhut Engineering, Inc. - SHRP Coordination Office.

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STONE & WEBSTER ENGINEERING CORPORATION

20803 BISCAYNE BLVD. SUITE 303
Aventura, Florida 33180
US 27 FIELD OFFICE TEL. # (407) 996-1411
FAX (407) 996-2995

LETTER of TRANSMITTAL

TO: F.D.O.T. Design

FAX #: 305-777-4634 DATE: 11/01/95

TRANS LET# SW/DOT-T-165

SWEC JOB # 04504.10

ATTENTION: Pat Glass

RE: Rain Fall US 27
SR 25 (US 27) M.P. 11.91 to 15.88
State Project No. 93160-3520
F.A. Proj. No. ACSU-403-2-(56)
W.P.I. # 4118192
Contract No. 18,582
Palm Beach County

FROM: Tim Sears, P.E.
STONE & WEBSTER ENGINEERING CORP
SR # 25 Field Office

Review of our N.P.D.E.S. Reports has shown the total rain fall for the period 4/24/94 thru 10/31/95.

SPN 93160-3506	Milepost 4.3	150" Rain
SPN 93160-3520	Milepost 14.6	133" Rain

If you would like detail daily rain event information I will send it to you. The rain amounts did vary on a day-to-day basis, however the overall variance is within 10%. There was one unusual event on SPN 93160-3506 from 12/3/94 → 12/4/94 when 12" was recorded, and only 3½" was recorded on SPN 93160-3520.

I hope this information will help you in your selection of weather station site.

The one location "On-Site" we recommend is on the Departments parcel of land for the access road at Sta. 699+35.

Please review and advise.

Distribution:

[X] N [ ]
[ ] M. SARGENT [ ]
[ ] [ ]
[ ] [ ]

[X] File: 1.7 19.1

SIGNED Timothy A. Hilsen

Circulate/Review
TS HH
RD NK
TH

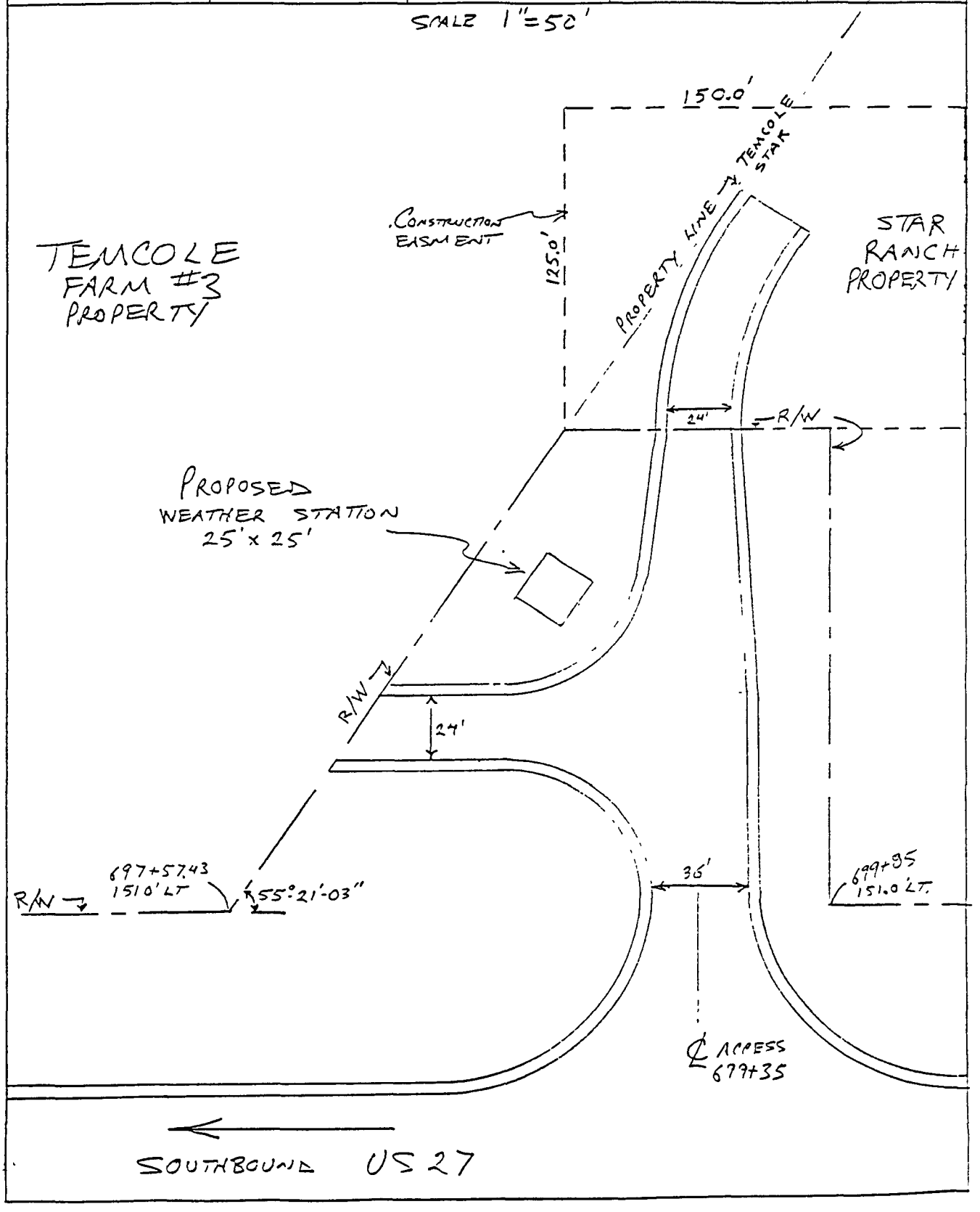
SHEETS ATTACHED:

STONE & WEBSTER ENGINEERING PORATION

CALCULATION SHEET

▲ 5010 65

CALCULATION IDENTIFICATION NUMBER				
J.O. OR W.O. NO.	DIVISION & GROUP	CALCULATION NO.	OPTIONAL TASK CODE	PAGE 1
93160-3520	ACCESS RD			11-1-95



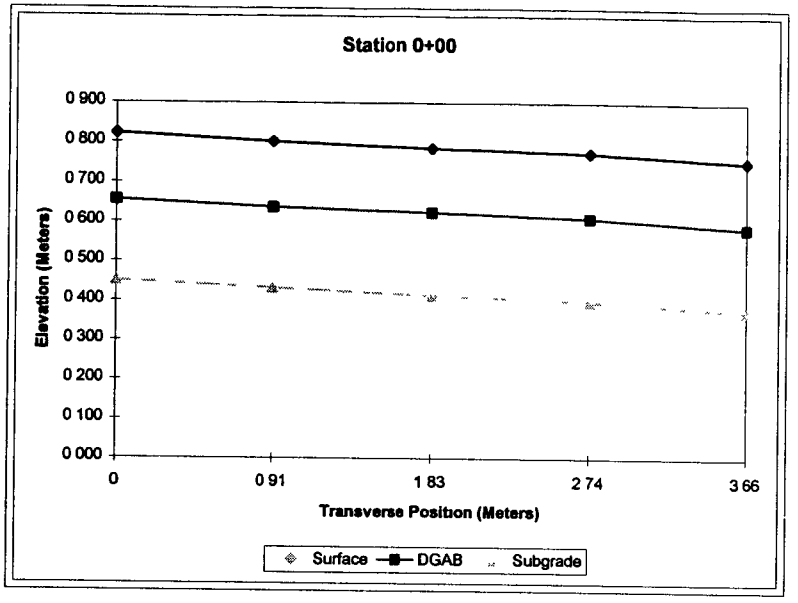
APPENDIX B

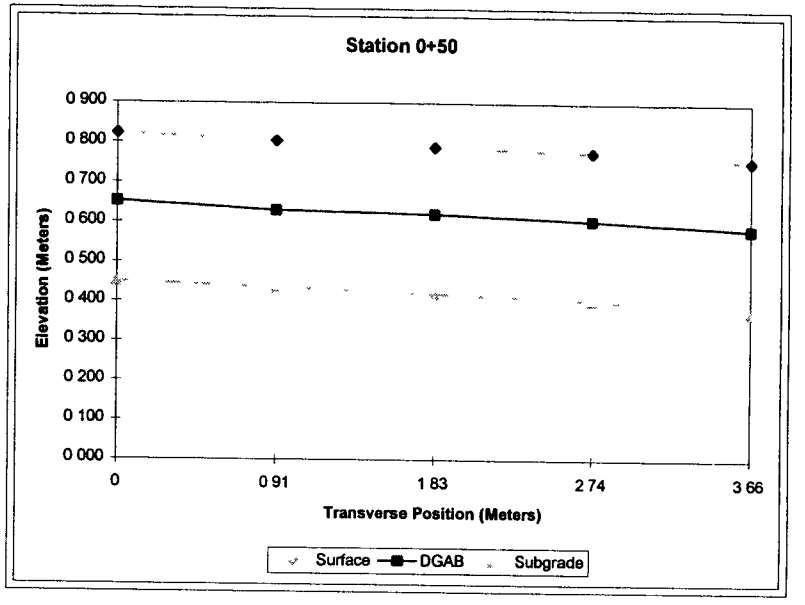
LAYER THICKNESS

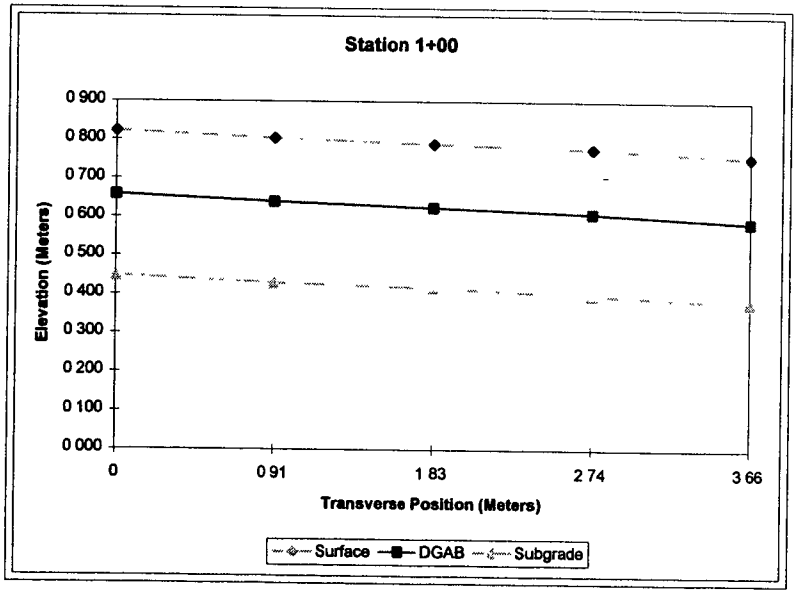
Florida, SPS-1 Project (120101)

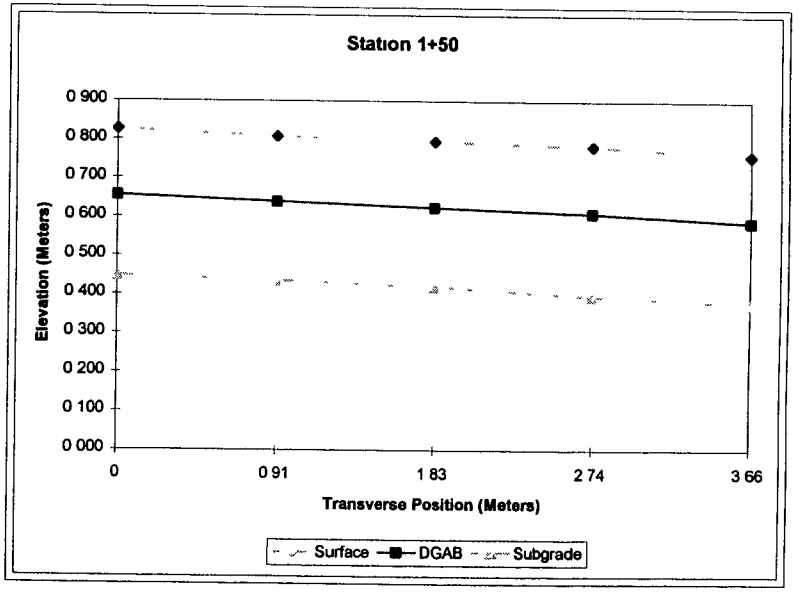
Transverse Offset 3 LAYERS		ELEVATION 0 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1 83 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2 74 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters
0+00	Surface	0 823	0 168	0 204	0 802	0 165	0 204	0 786	0 162	0 210	0 774	0 165	0 210	0.753	0 168	0 210
	DGAB	0 655			0 637			0 625			0 610			0 585		
	Subgrade	0 451			0 433			0 415			0 399			0 375		
0+50	Surface	0 823	0 171	0 201	0 805	0 174	0 195	0 789	0 168	0 201	0 777	0 171	0 201	0 756	0 171	0 207
	DGAB	0 652			0 631			0 622			0 607			0 585		
	Subgrade	0 451			0 436			0 421			0 405			0 378		
1+00	Surface	0 823	0 165	0 210	0 805	0 165	0 210	0 789	0 165	0 207	0 777	0 168	0 210	0 756	0 168	0 207
	DGAB	0 658			0 640			0 625			0 610			0 588		
	Subgrade	0 448			0 430			0 418			0 399			0 381		
1+50	Surface	0 826	0 171	0 207	0 808	0 168	0 204	0 796	0 171	0 204	0 783	0 174	0 213	0 759	0 171	0 210
	DGAB	0 655			0 640			0 625			0 610			0 588		
	Subgrade	0 448			0 436			0 421			0 396			0 378		
2+00	Surface	0 823	0 165	0 204	0 802	0 168	0 198	0 786	0 168	0 198	0 774	0 165	0 204	0 753	0 168	0 204
	DGAB	0 658			0 634			0 619			0 610			0 585		
	Subgrade	0 454			0 436			0 421			0 405			0 381		
2+50	Surface	0 826	0 171	0 201	0 808	0 171	0 204	0 792	0 168	0 207	0 780	0 174	0 204	0 759	0 177	0 204
	DGAB	0 655			0 637			0 625			0 607			0 582		
	Subgrade	0 454			0 433			0 418			0 402			0 378		
3+00	Surface	0 826	0 171	0 198	0 805	0 168	0 207	0 792	0 168	0 207	0 777	0 168	0 204	0 759	0 174	0 201
	DGAB	0 655			0 637			0 625			0 610			0 585		
	Subgrade	0 457			0 430			0 418			0 405			0 384		
3+50	Surface	0 820	0 162	0 207	0 802	0 162	0 204	0 786	0 162	0 204	0 774	0 168	0 201	0 756	0 171	0 201
	DGAB	0 658			0 640			0 625			0 607			0 585		
	Subgrade	0 451			0 436			0 421			0 405			0 384		
4+00	Surface	0 820	0 165	0 198	0 799	0 158	0 207	0 786	0 162	0 207	0 774	0 165	0 207	0 756	0 177	0 201
	DGAB	0 655			0 640			0 625			0 610			0 579		
	Subgrade	0 457			0 433			0 418			0 402			0 378		
4+50	Surface	0 826	0 168	0 210	0 808	0 168	0 210	0 792	0 168	0 210	0 780	0 171	0 210	0 759	0 171	0 219
	DGAB	0 658			0 640			0 625			0 610			0 588		
	Subgrade	0 448			0 430			0 415			0 399			0 369		
5+00	Surface	0 826	0 171	0 210	0 808	0 171	0 213	0 792	0 168	0 216	0 777	0 168	0 216	0 759	0 177	0 216
	DGAB	0 655			0 637			0 625			0 610			0 582		
	Subgrade	0 445			0 424			0 408			0 393			0 366		
	AVG		0.168	0.205		0 167	0 206		0 166	0 208		0 169	0 208		0 172	0 208
	MAX		0.171	0.210		0 174	0 213		0 171	0.216		0.174	0 216		0 177	0.219
	MIN		0.171	0.210		0 174	0 213		0 171	0.216		0.174	0 216		0 177	0 219
	STD		0.003	0.005		0 004	0.005		0 003	0 004		0.003	0 005		0 003	0.006

Florida, SPS-1 Project (120101)

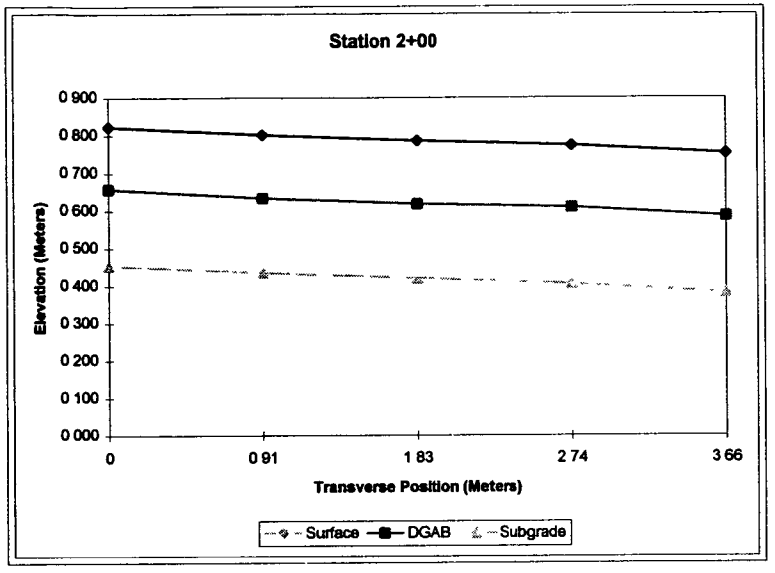


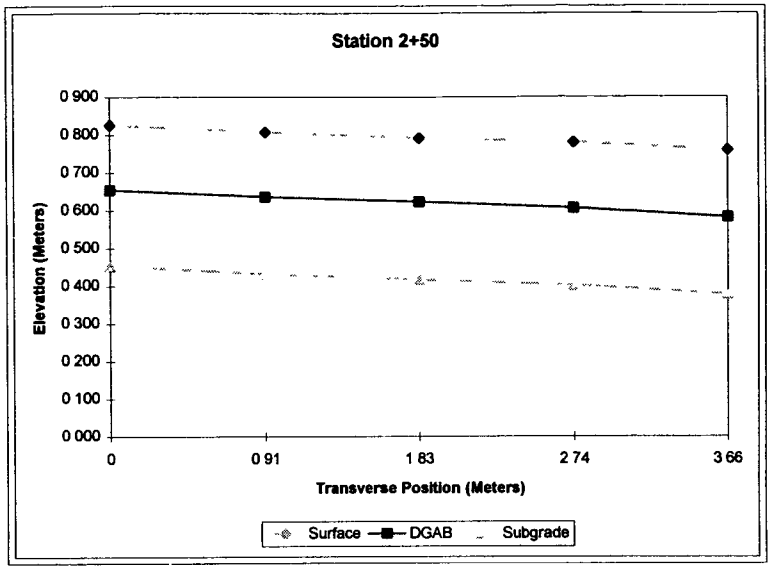


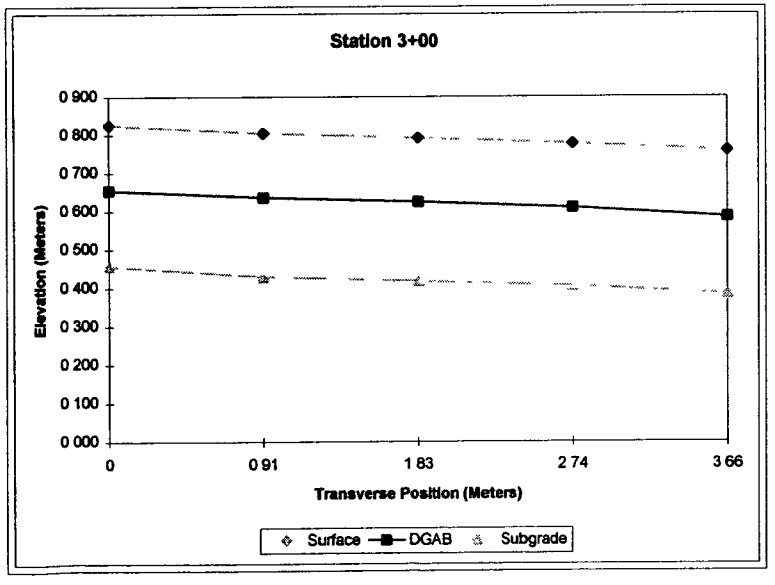


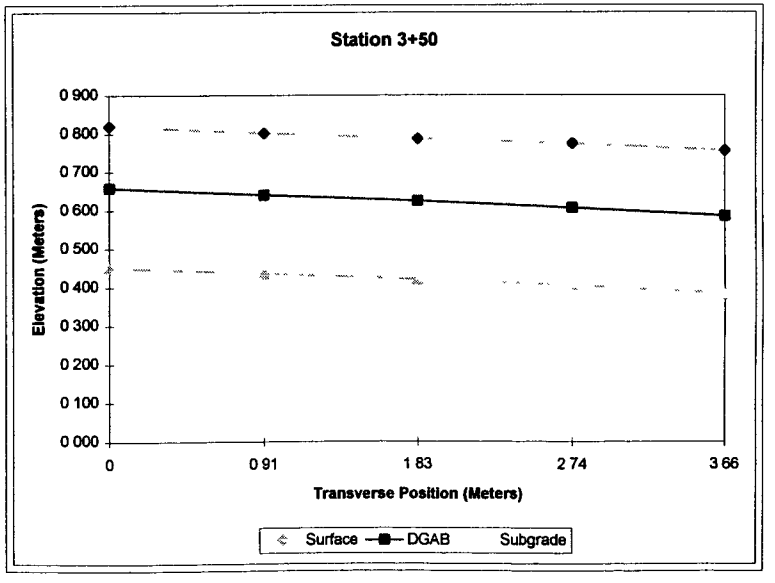


Florida, SPS-1 Project (120101)

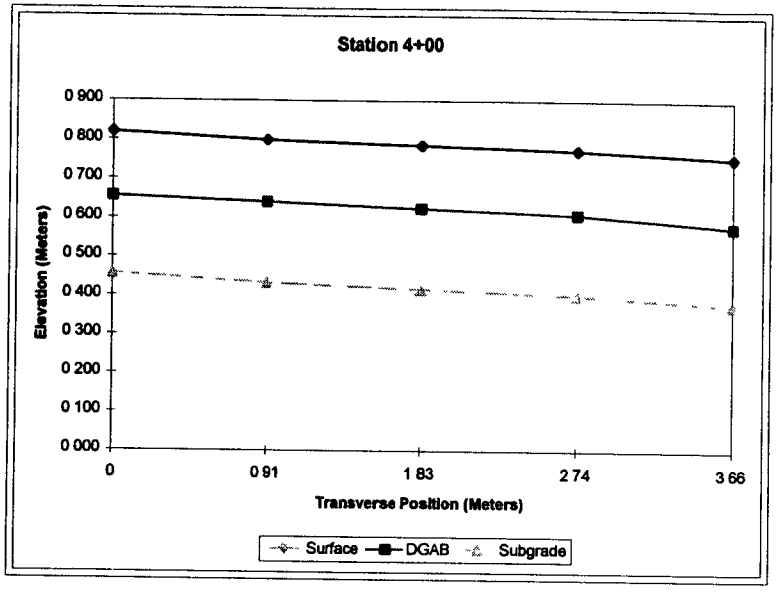


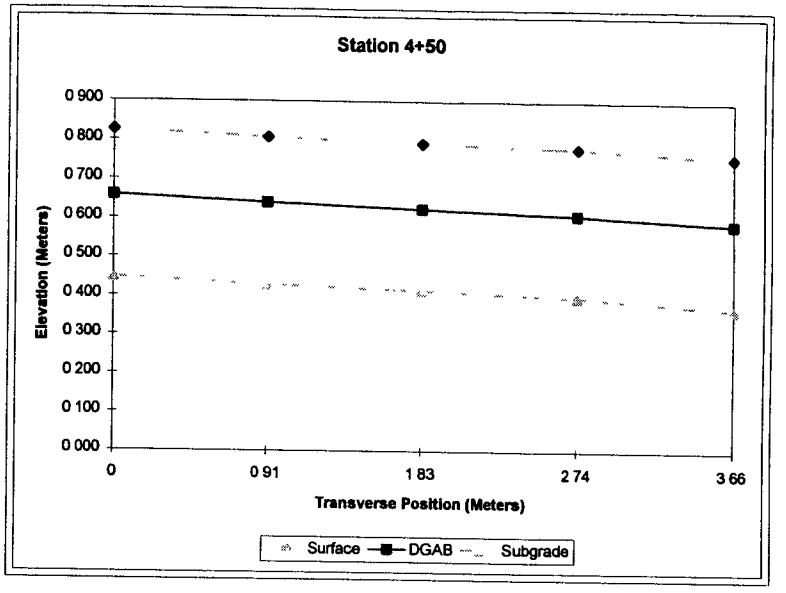


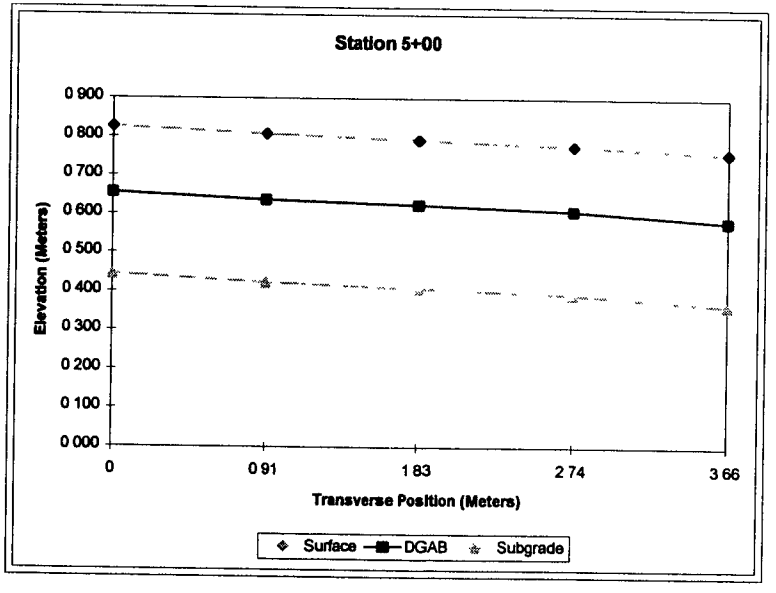




Florida, SPS-1 Project (120101)



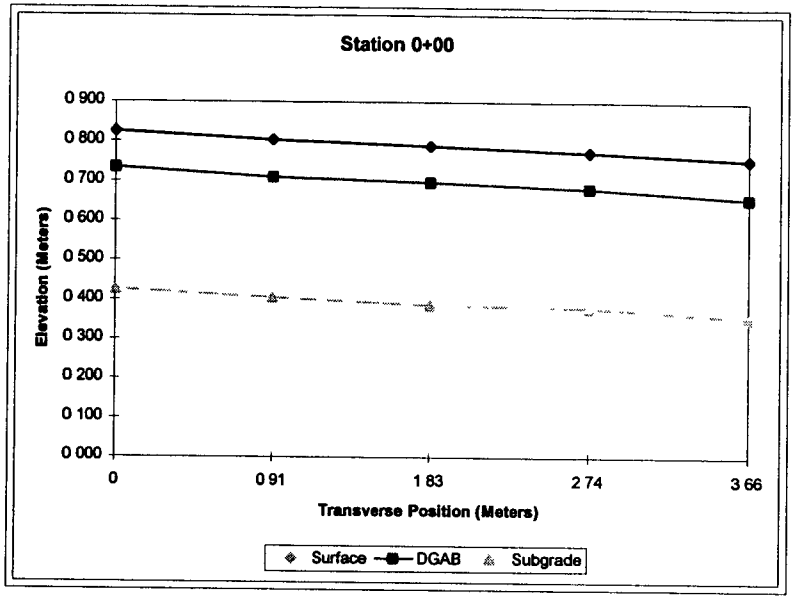


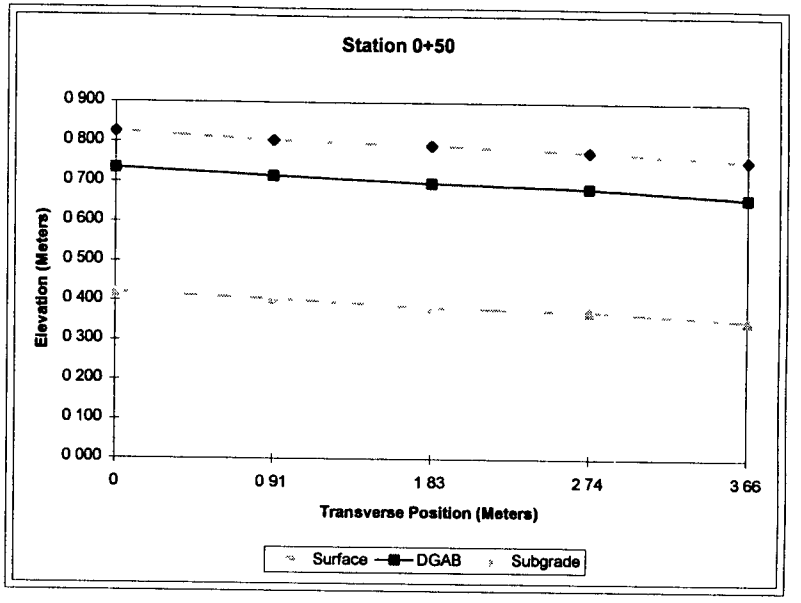


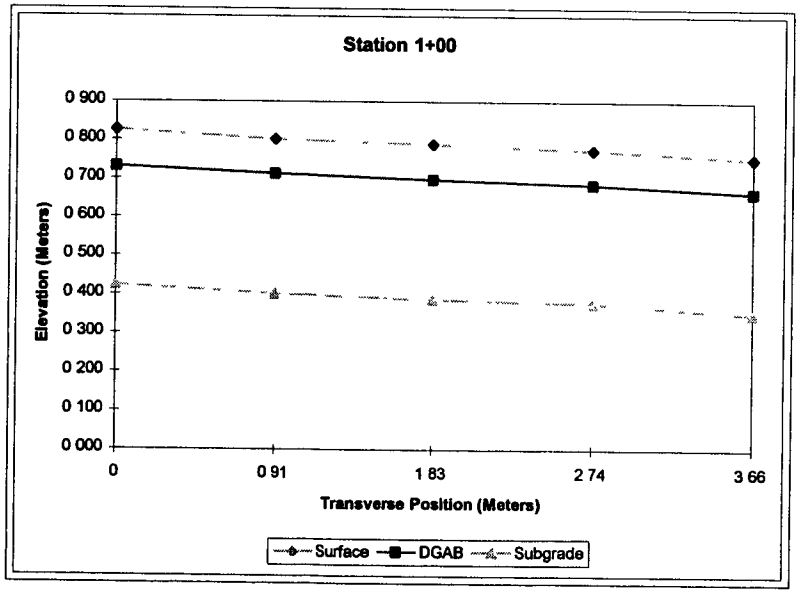
Florida, SPS-1 Project (120102)

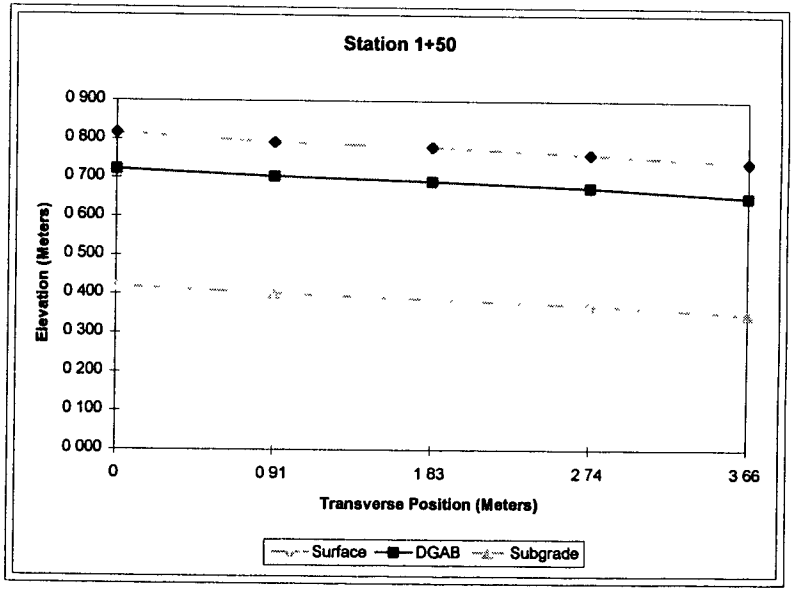
Transverse Offset	3 LAYERS	ELEVATION 0 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1.83 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	DGAB THICKNESS Meters
0+00	Surface	0.826	0.091	0 308	0 805	0 094	0 305	0 789	0 091	0 311	0 774	0 091	0 302	0 756	0 098	0 302
	DGAB	0 735			0 710			0 698			0 683			0 658		
	Subgrade	0 427			0 405			0 387			0 381			0 357		
0+50	Surface	0 826	0 091	0 314	0 805	0 088	0 311	0 792	0 094	0 314	0 777	0 091	0 311	0 756	0 094	0 308
	DGAB	0.735			0 716			0 698			0 686			0 661		
	Subgrade	0 421			0 405			0 384			0 375			0 354		
1+00	Surface	0 826	0 094	0 308	0 802	0 088	0 311	0 789	0 091	0 311	0 774	0 088	0 308	0 753	0 088	0 314
	DGAB	0 732			0 713			0 698			0 686			0 664		
	Subgrade	0 424			0 402			0 387			0 378			0 351		
1+50	Surface	0 817	0 094	0 302	0 792	0 088	0 302	0 780	0 088	0 305	0 762	0 085	0 305	0 741	0 088	0 302
	DGAB	0 722			0 704			0 692			0 677			0 652		
	Subgrade	0 421			0 402			0 387			0 372			0 351		
2+00	Surface	0 820	0 091	0 311	0 805	0 094	0 308	0 792	0 094	0 308	0 780	0 098	0 311	0 759	0 098	0 317
	DGAB	0 728			0 710			0 698			0 683			0 661		
	Subgrade	0 418			0 402			0 390			0 372			0 344		
2+50	Surface	0 817	0 091	0 311	0 799	0 091	0 311	0 786	0 098	0 308	0 771	0 094	0 308	0 756	0 098	0 302
	DGAB	0.725			0 707			0 689			0 677			0 658		
	Subgrade	0 415			0 396			0 381			0 369			0 357		
3+00	Surface	0 826	0 101	0 308	0 805	0 094	0 308	0 789	0 088	0 314	0 774	0 091	0 308	0 756	0 094	0 308
	DGAB	0 725			0 710			0 701			0 683			0 661		
	Subgrade	0 418			0 402			0 387			0 375			0 354		
3+50	Surface	0 820	0 094	0 207	0 802	0 091	0 311	0 789	0 098	0 305	0 774	0 094	0 308	0 756	0 094	0 311
	DGAB	0 725			0 710			0 692			0 680			0 661		
	Subgrade	0 518			0 399			0 387			0 372			0 351		
4+00	Surface	0 823	0 094	0 302	0 802	0 088	0 305	0 789	0 091	0 302	0 774	0 091	0 302	0 759	0 104	0 302
	DGAB	0 728			0 713			0 698			0 683			0 655		
	Subgrade	0 427			0 408			0 396			0 381			0 354		
4+50	Surface	0 820	0 094	0 305	0 802	0 091	0 308	0 786	0 091	0 308	0 774	0 094	0 308	0 756	0 098	0 311
	DGAB	0 725			0 710			0 695			0 680			0 658		
	Subgrade	0 421			0 402			0 387			0 372			0 347		
5+00	Surface	0 820	0 085	0 332	0 799	0 091	0 323	0 786	0 098	0 320	0 774	0 101	0 320	0 753	0 110	0 308
	DGAB	0.735			0 707			0 689			0 674			0 643		
	Subgrade	0 402			0 384			0 369			0 354			0 335		
	AVG		0 093	0.300		0 091	0 309		0.093	0 310		0 092	0 308		0 097	0.307
	MAX		0.101	0 332		0.094	0 323		0.098	0.320		0 101	0.320		0 110	0 314
	MIN		0.101	0.332		0 094	0 323		0.098	0 320		0 101	0.320		0.110	0 314
	STD		0.004	0 032		0 002	0 005		0 003	0 005		0 004	0.005		0.006	0 004

Florida, SPS-1 Project (120102)

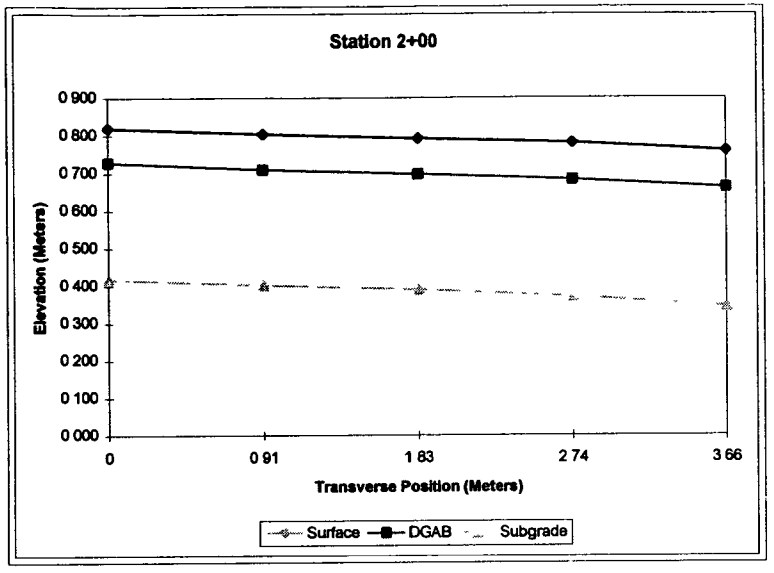


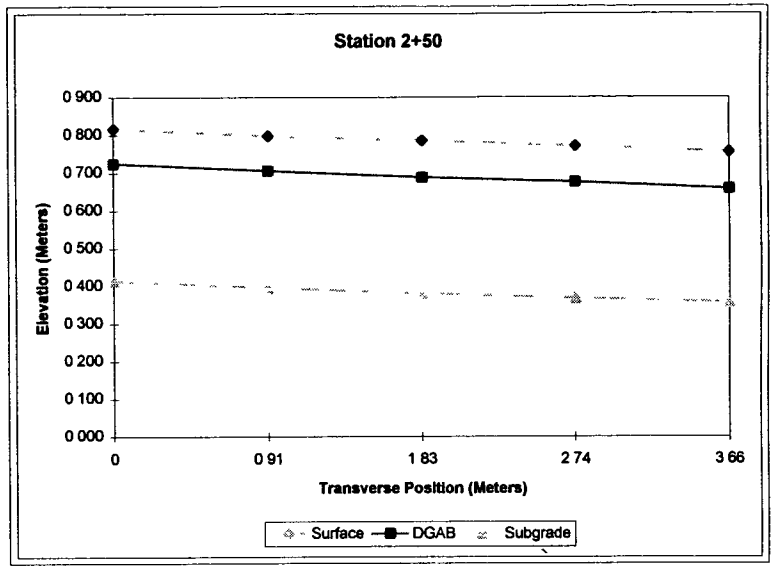


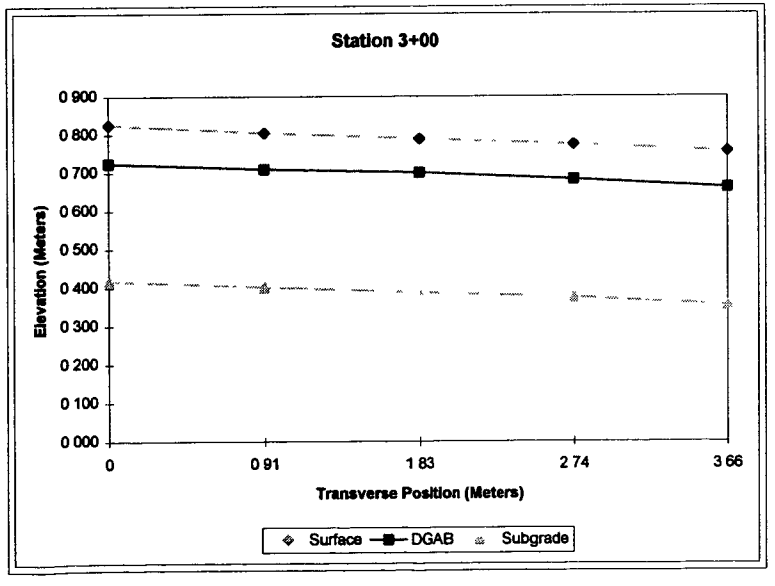


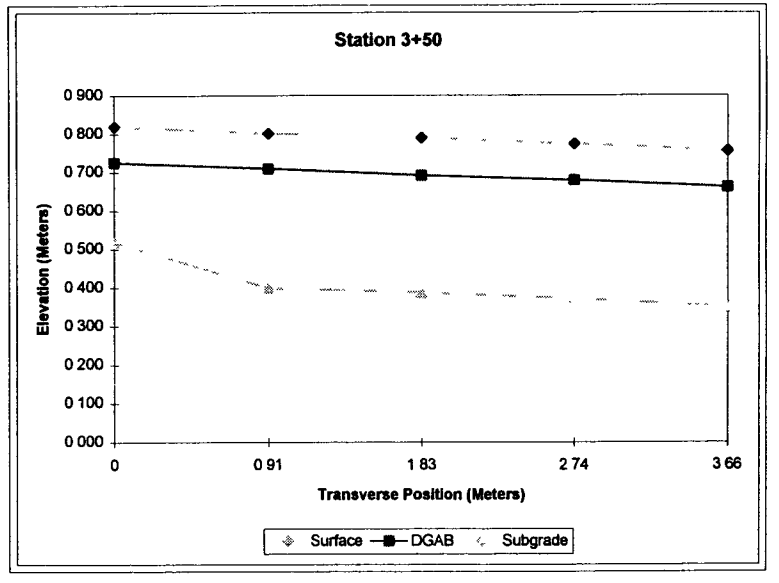


Florida, SPS-1 Project (120102)

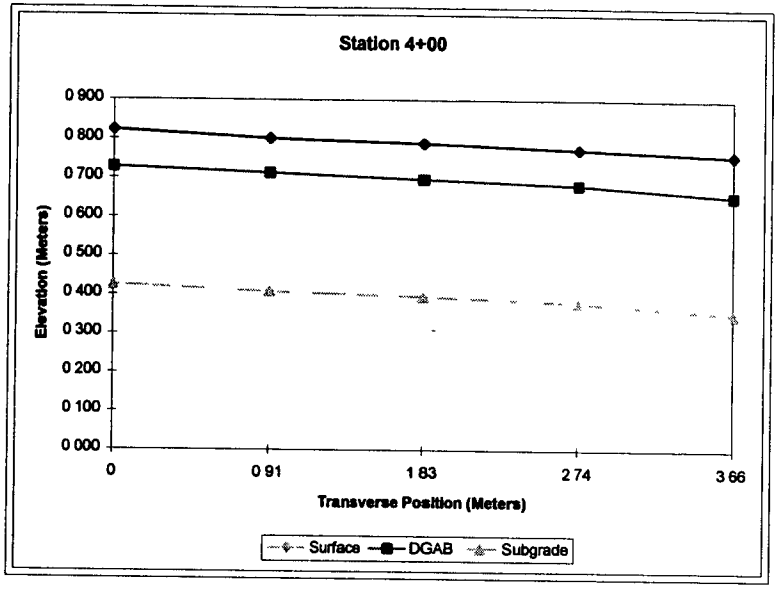


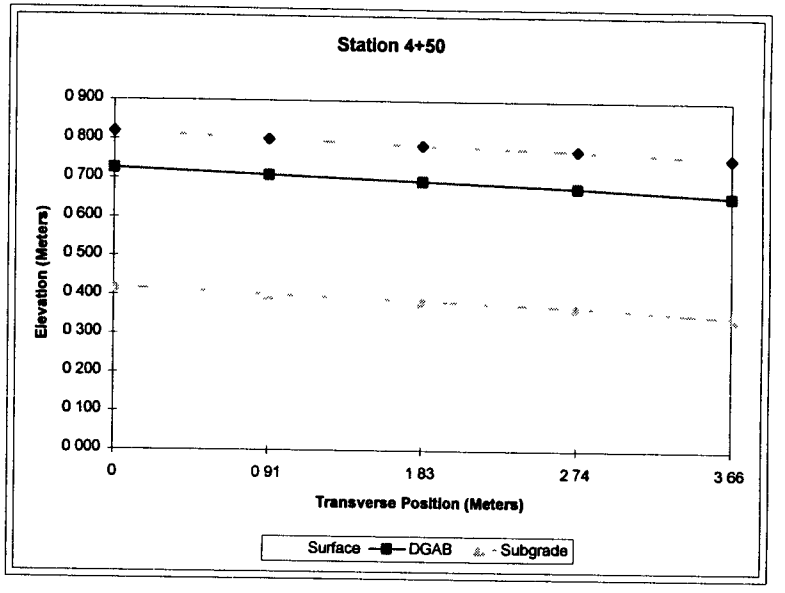


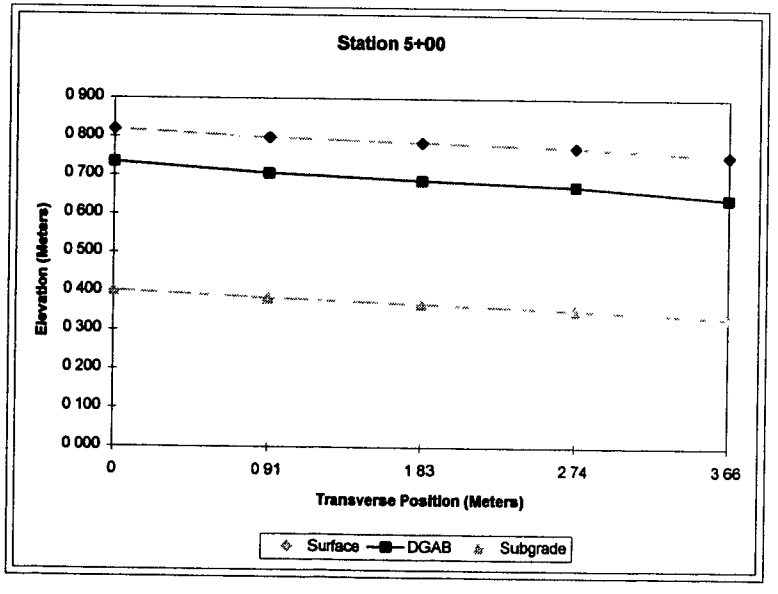




Florida, SPS-1 Project (120102)



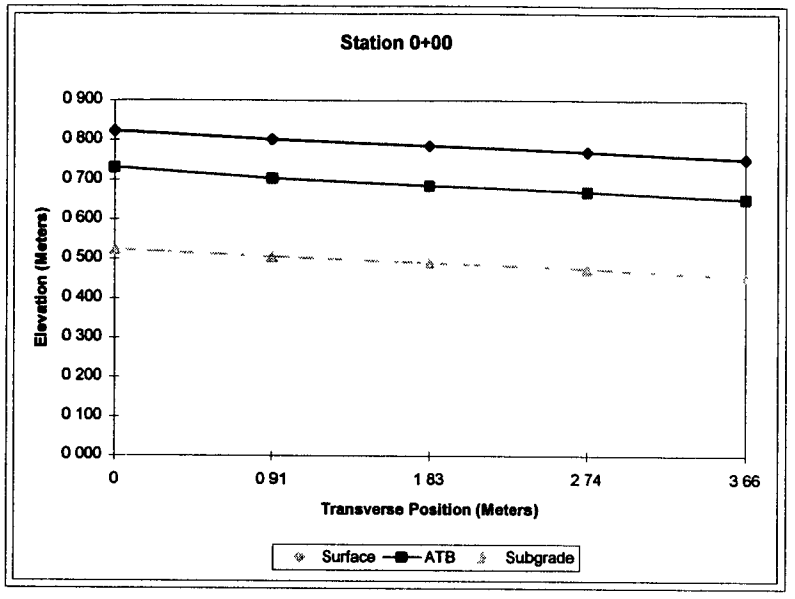


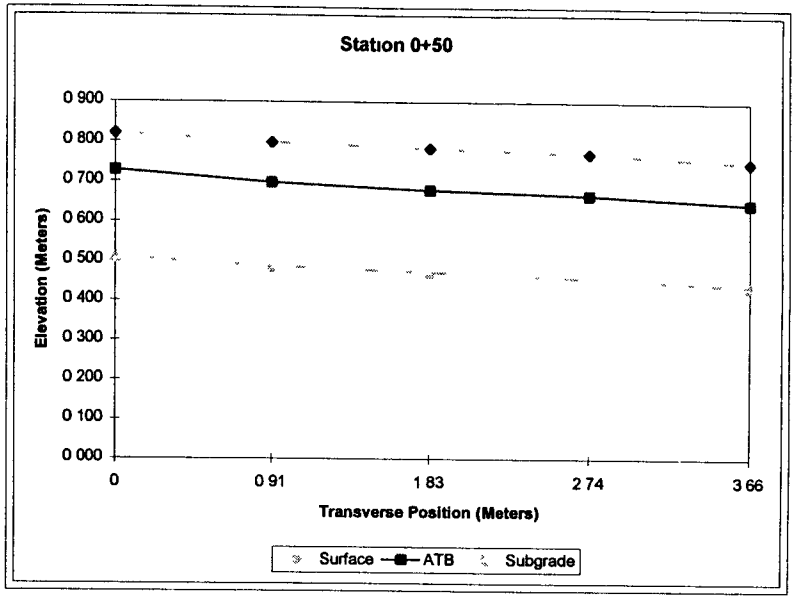


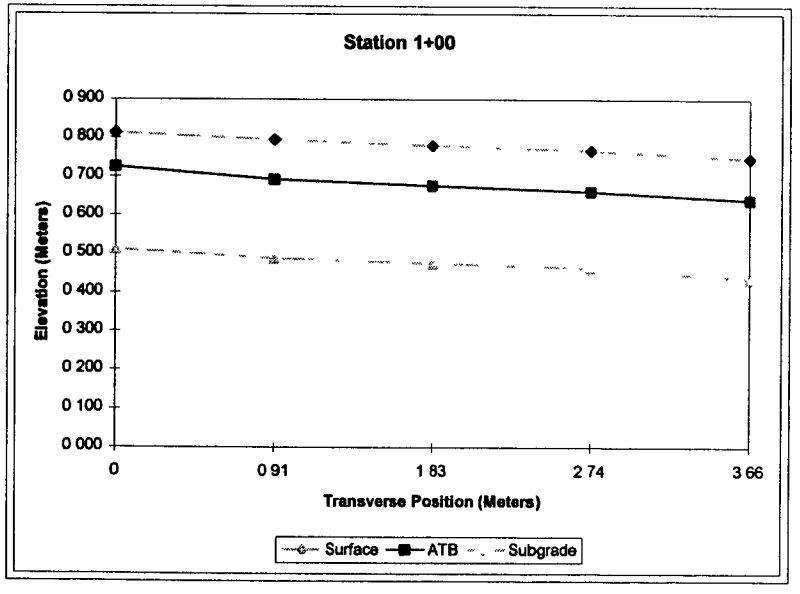
Florida, SPS-1 Project (120103)

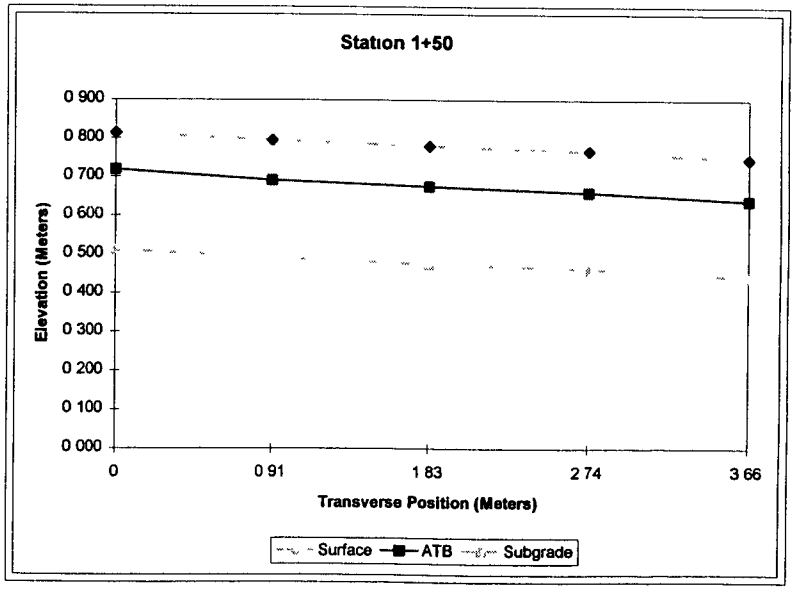
Transverse Offset	3 LAYERS	ELEVATION 0 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	ELEVATION 1 83 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	ELEVATION 2 74 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	ELEVATION 3 66 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters
0+00	Surface	0 823	0 091	0 207	0 802	0 098	0 198	0 786	0 101	0 195	0 771	0 101	0 195	0 753	0 101	0 198
	ATB	0 732			0 704			0 686			0 671			0 652		
	Subgrade	0 524			0 506			0 491			0 475			0 454		
0+50	Surface	0 820	0 091	0 219	0 799	0 101	0 210	0 783	0 104	0 207	0 771	0 104	0 210	0 750	0 104	0 207
	ATB	0 728			0 698			0 680			0 668			0 646		
	Subgrade	0 509			0 488			0 472			0 457			0 439		
1+00	Surface	0 814	0 088	0 213	0 796	0 104	0 204	0 780	0 104	0 201	0 768	0 107	0 198	0 747	0 107	0 204
	ATB	0 725			0 692			0 677			0 661			0 640		
	Subgrade	0 512			0 488			0 475			0 463			0 436		
1+50	Surface	0 814	0 094	0 207	0 796	0 104	0 201	0 780	0 104	0 201	0 768	0 107	0 198	0 747	0 107	0 198
	ATB	0 719			0 692			0 677			0 661			0 640		
	Subgrade	0 512			0 491			0 475			0 463			0 442		
2+00	Surface	0 817	0 091	0 204	0 796	0 098	0 195	0 783	0 101	0 195	0 771	0 101	0 198	0 753	0 101	0 201
	ATB	0 725			0 698			0 683			0 671			0 652		
	Subgrade	0 521			0 503			0 488			0 472			0 451		
2+50	Surface	0 820	0 091	0 210	0 796	0 098	0 201	0 780	0 101	0 201	0 765	0 101	0 201	0 744	0 101	0 201
	ATB	0 728			0 698			0 680			0 664			0 643		
	Subgrade	0 518			0 497			0 479			0 463			0 442		
3+00	Surface	0 826	0 094	0 210	0 805	0 104	0 198	0 786	0 101	0 198	0 771	0 101	0 198	0 750	0 098	0 201
	ATB	0 732			0 701			0 686			0 671			0 652		
	Subgrade	0 521			0 503			0 488			0 472			0 451		
3+50	Surface	0 823	0 098	0 210	0 802	0 107	0 201	0 786	0 107	0 198	0 768	0 098	0 204	0 750	0 101	0 204
	ATB	0 725			0 695			0 680			0 671			0 649		
	Subgrade	0 515			0 494			0 482			0 466			0 445		
4+00	Surface	0 823	0 101	0 204	0 805	0 107	0 204	0 789	0 107	0 204	0 774	0 107	0 204	0 753	0 101	0 207
	ATB	0 722			0 698			0 683			0 668			0 652		
	Subgrade	0 518			0 494			0 479			0 463			0 445		
4+50	Surface	0 823	0 098	0 213	0 802	0 101	0 204	0 786	0 104	0 201	0 771	0 101	0 207	0 753	0 104	0 210
	ATB	0 725			0 701			0 683			0 671			0 649		
	Subgrade	0 512			0 497			0 482			0 463			0 439		
5+00	Surface	0 823	0 098	0 210	0 802	0 107	0 207	0 786	0 107	0 201	0 771	0 101	0 204	0 753	0 101	0 207
	ATB	0 725			0 695			0 680			0 671			0 652		
	Subgrade	0 515			0 488			0 479			0 466			0 445		
	AVG		0.094	0 211		0 103	0 203		0 104	0 201		0 102	0 202		0 102	0 204
	MAX		0.101	0 219		0.107	0 210		0 107	0 207		0 107	0.210		0 107	0.210
	MIN		0.101	0.219		0 107	0 210		0 107	0 207		0 107	0 210		0.107	0 210
	STD		0.004	0 004		0 003	0.004		0 002	0.003		0 003	0 005		0 003	0 004

Florida, SPS-1 Project (120103)

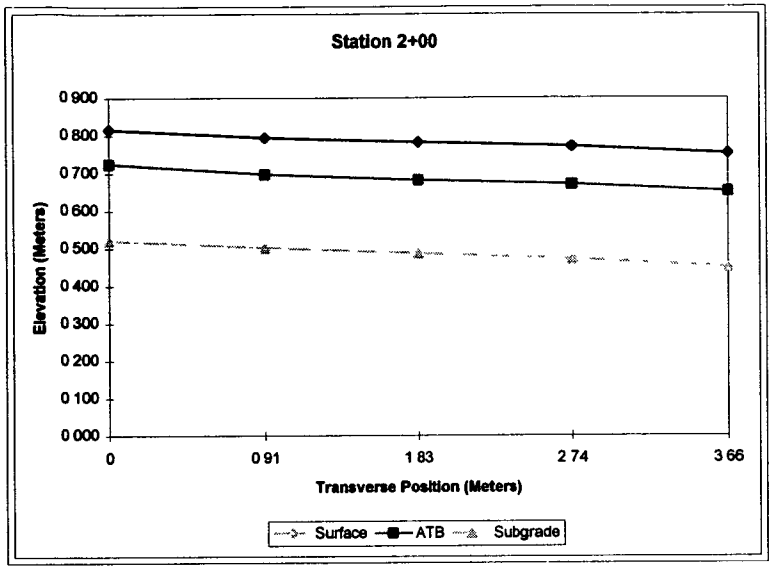


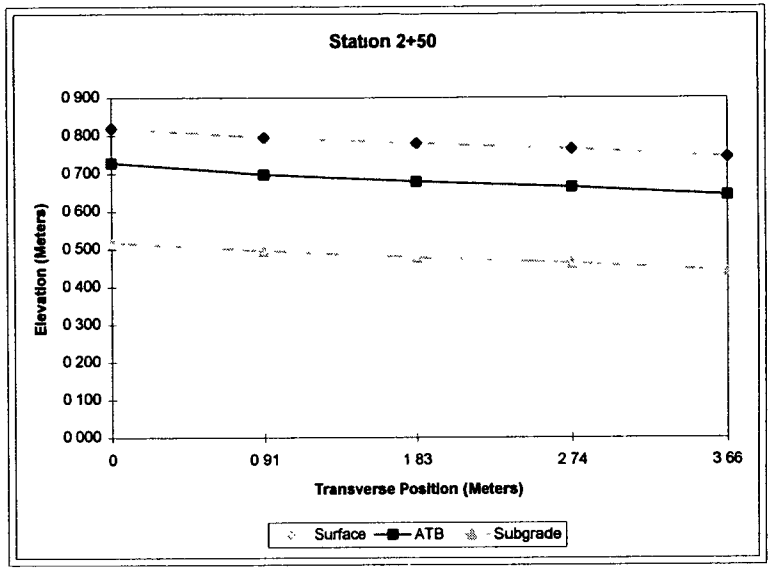


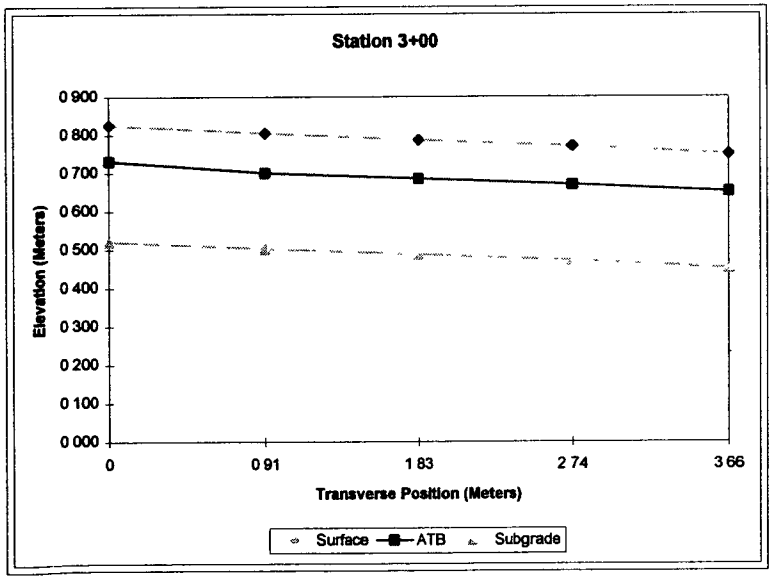


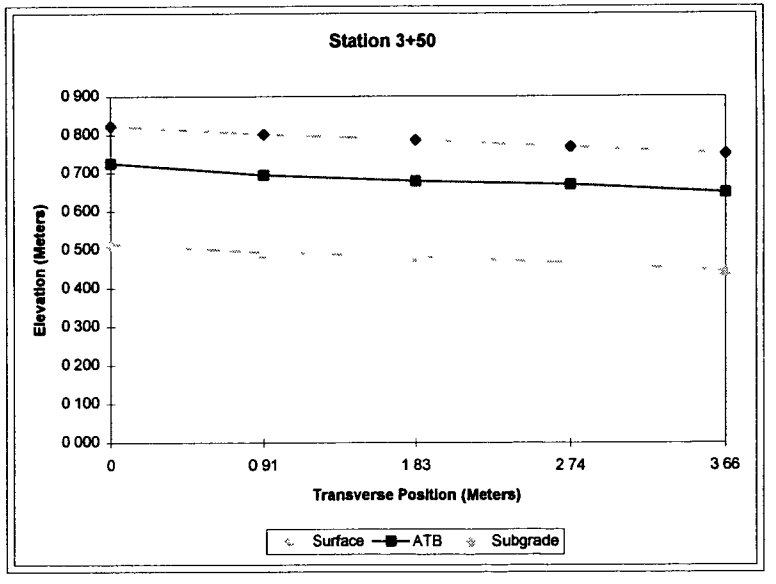


Florida, SPS-1 Project (120103)

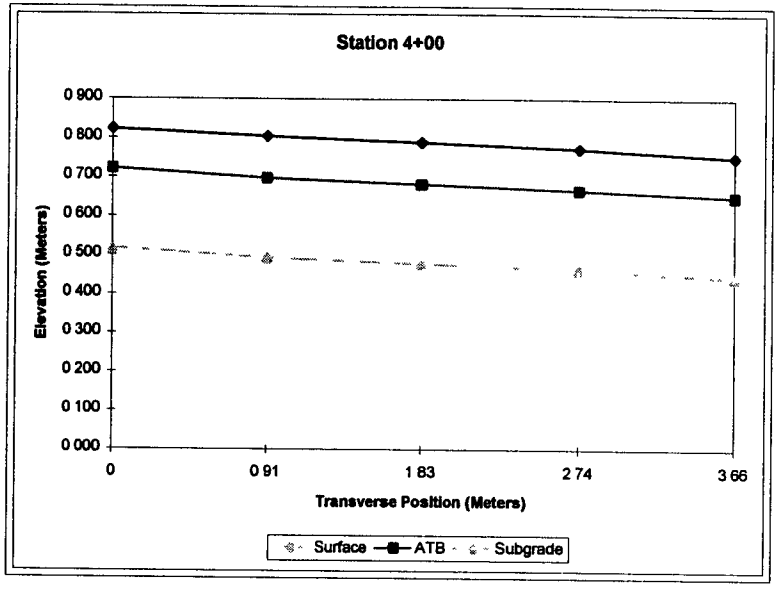


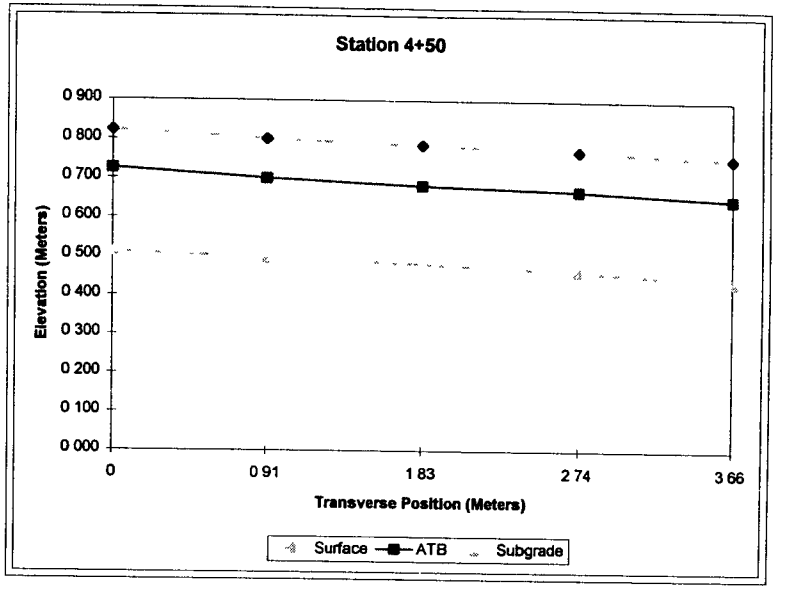


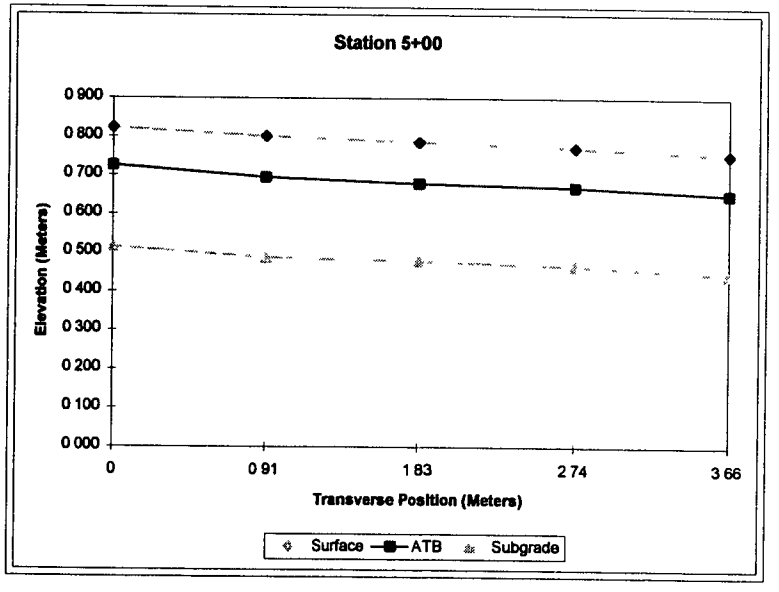




Florida, SPS-1 Project (120103)



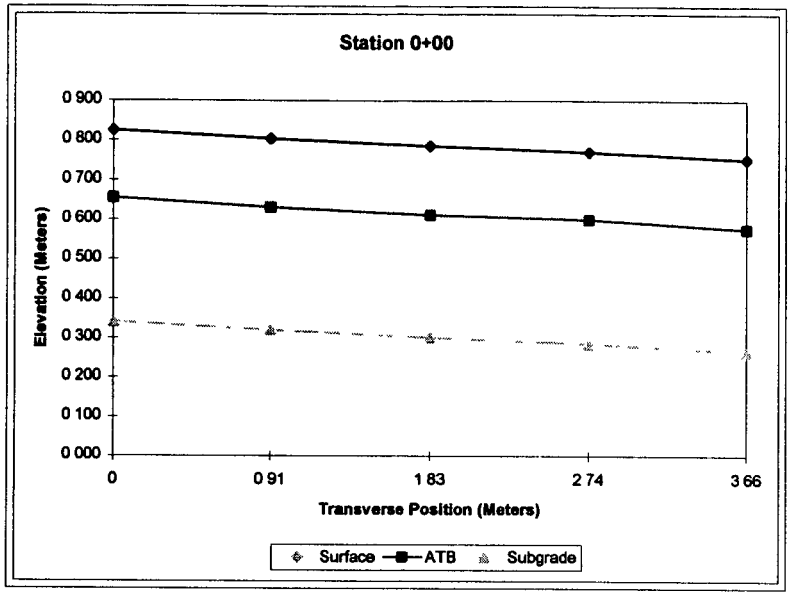


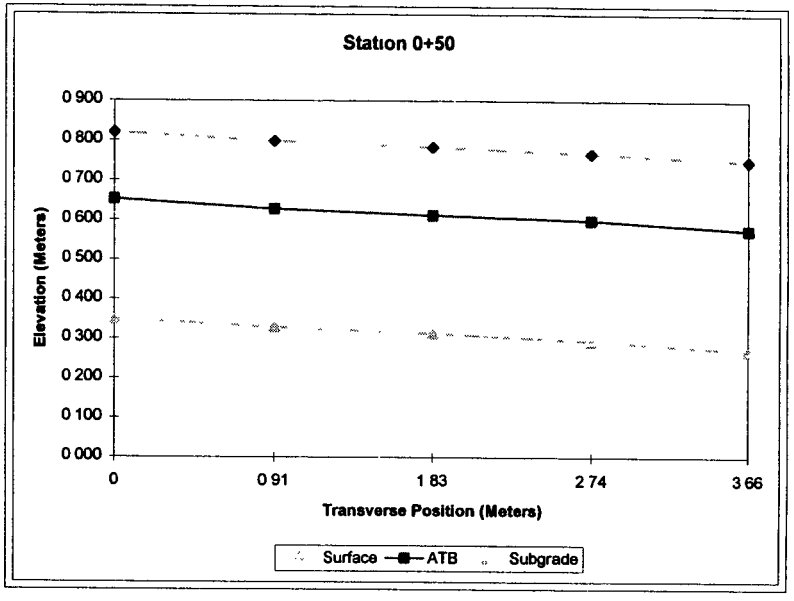


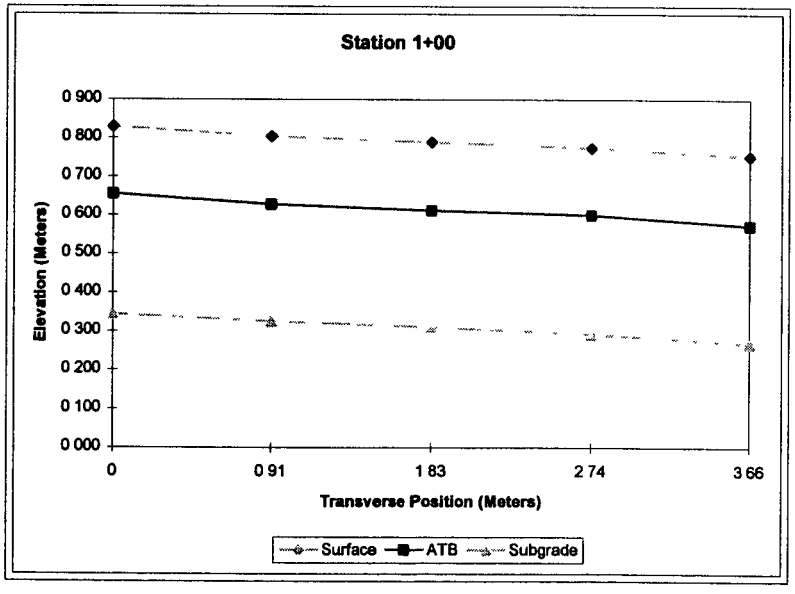
Florida, SPS-1 Project (120104)

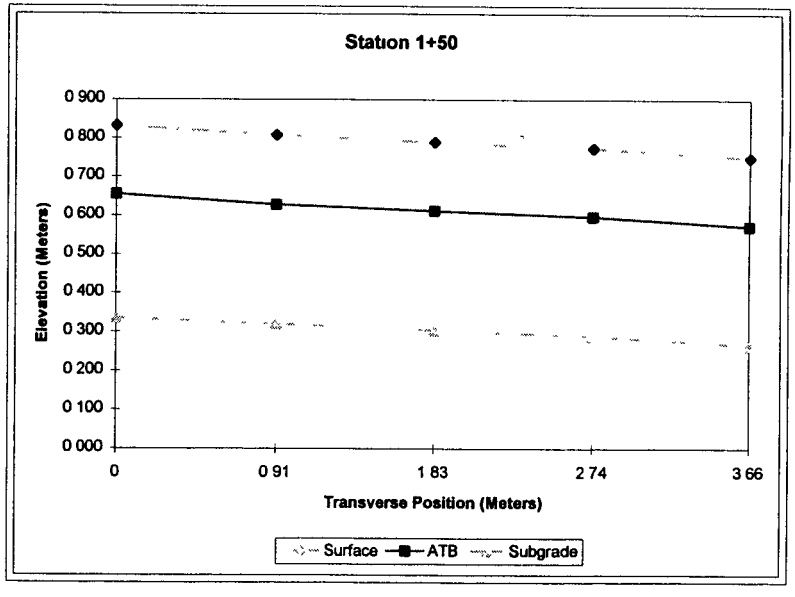
Transverse Offset	3 LAYERS	ELEVATION 0 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	ELEVATION 0 91 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	ELEVATION 1 83 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	ELEVATION 2 74 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	ELEVATION 3 86 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters
0+00	Surface	0 826	0 171	0 314	0 805	0 174	0 311	0 786	0 174	0 311	0 771	0 171	0 314	0 753	0 177	0 311
	ATB	0 655			0 631			0 613			0 600			0 576		
	Subgrade	0 341			0 320			0 302			0 287			0 265		
0+50	Surface	0 820	0 168	0 302	0 799	0 171	0 299	0 783	0 171	0 299	0 768	0 168	0 305	0 750	0 174	0 305
	ATB	0 652			0 628			0 613			0 600			0 576		
	Subgrade	0 351			0 329			0 314			0 296			0 271		
1+00	Surface	0 829	0 174	0 311	0 805	0 177	0 302	0 789	0 177	0 302	0 774	0 174	0 308	0 753	0 180	0 305
	ATB	0 655			0 628			0 613			0 600			0 573		
	Subgrade	0 344			0 326			0 311			0 293			0 268		
1+50	Surface	0 832	0 177	0 320	0 808	0 180	0 308	0 789	0 177	0 308	0 774	0 177	0 308	0 750	0 177	0 308
	ATB	0 655			0 628			0 613			0 597			0 573		
	Subgrade	0 335			0 320			0 305			0 290			0 265		
2+00	Surface	0 826	0 174	0 305	0 805	0 177	0 299	0 789	0 180	0 296	0 774	0 180	0 299	0 753	0 183	0 302
	ATB	0 652			0 628			0 610			0 594			0 570		
	Subgrade	0 347			0 329			0 314			0 296			0 268		
2+50	Surface	0 826	0 177	0 308	0 805	0 177	0 305	0 786	0 177	0 302	0 771	0 174	0 311	0 750	0 177	0 311
	ATB	0 649			0 628			0 610			0 597			0 573		
	Subgrade	0 341			0 323			0 308			0 287			0 262		
3+00	Surface	0 826	0 174	0 311	0 805	0 177	0 302	0 789	0 180	0 305	0 774	0 177	0 317	0 753	0 180	0 314
	ATB	0 652			0 628			0 610			0 597			0 573		
	Subgrade	0 341			0 326			0 305			0 280			0 259		
3+50	Surface	0 823	0 174	0 305	0 805	0 180	0 305	0 789	0 180	0 314	0 774	0 177	0 323	0 753	0 180	0 314
	ATB	0 649			0 625			0 610			0 597			0 573		
	Subgrade	0 344			0 320			0 296			0 274			0 259		
4+00	Surface	0 826	0 177	0 314	0 805	0 177	0 311	0 786	0 174	0 314	0 771	0 171	0 317	0 750	0 174	0 314
	ATB	0 649			0 628			0 613			0 600			0 576		
	Subgrade	0 335			0 317			0 299			0 283			0 262		
4+50	Surface	0 823	0 174	0 314	0 796	0 171	0 308	0 783	0 174	0 314	0 765	0 168	0 314	0 744	0 171	0 314
	ATB	0 649			0 625			0 610			0 597			0 573		
	Subgrade	0 335			0 317			0 296			0 283			0 259		
5+00	Surface	0 823	0 171	0 314	0 805	0 174	0 308	0 789	0 174	0 305	0 774	0 171	0 308	0 750	0 174	0 311
	ATB	0 652			0 631			0 616			0 604			0 576		
	Subgrade	0 338			0 323			0 311			0 296			0 265		
	AVG		0.173	0 311		0 176	0 306		0 176	0 307		0 173	0 312		0 176	0 311
	MAX		0 177	0 320		0.180	0 311		0 180	0 314		0.177	0 323		0 180	0 314
	MIN		0.177	0.320		0 180	0 311		0.180	0 314		0 177	0 323		0 180	0.314
	STD		0.003	0.005		0 003	0 004		0 003	0 005		0 003	0 005		0 003	0.003

Florida, SPS-1 Project (120104)

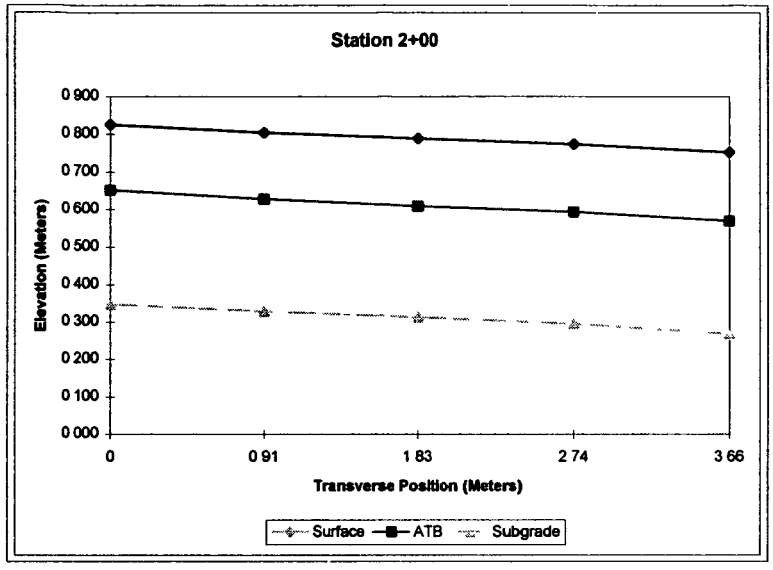


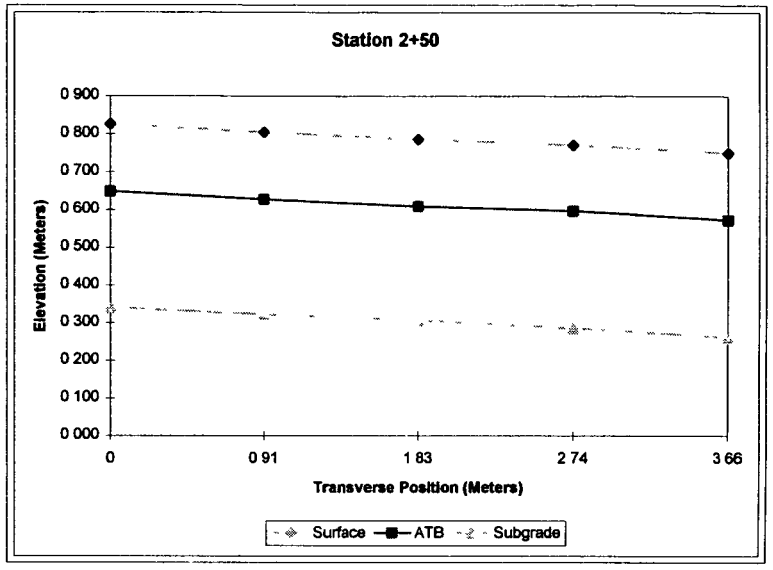


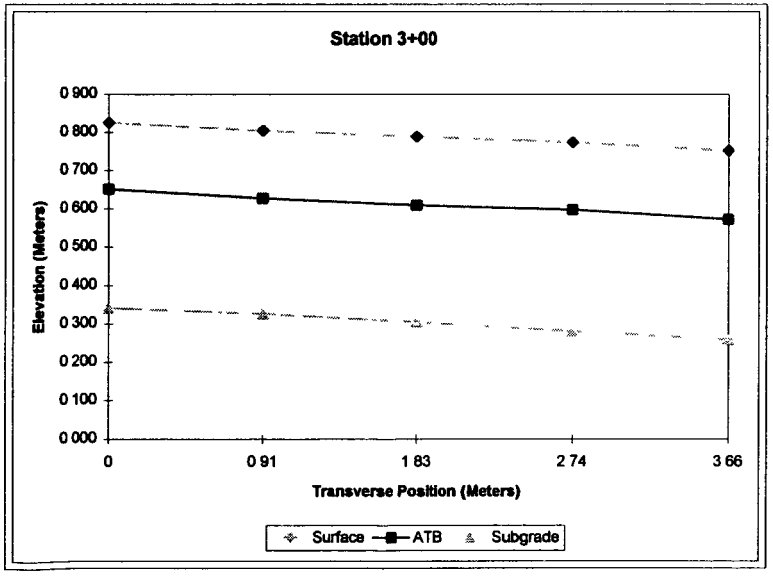


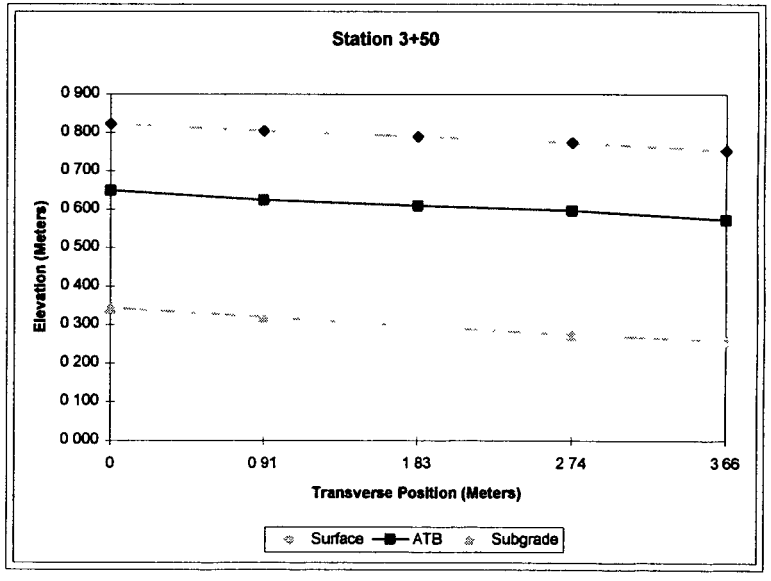


Florida, SPS-1 Project (120104)

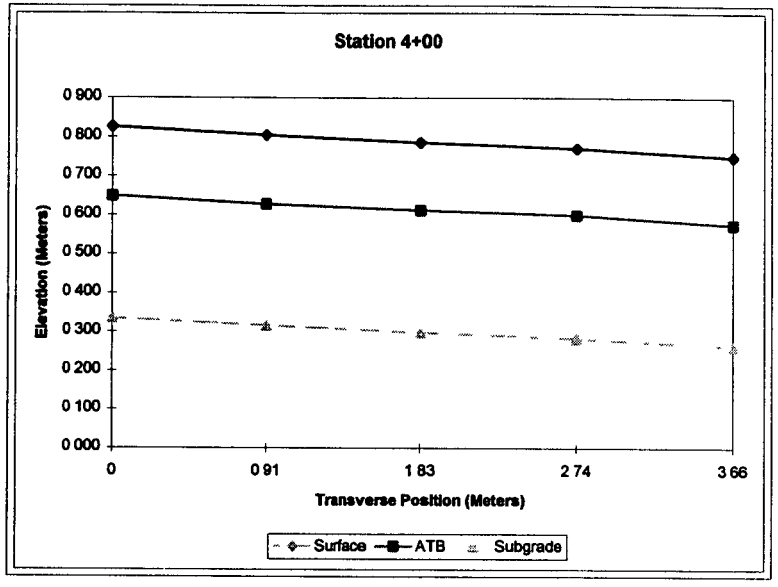


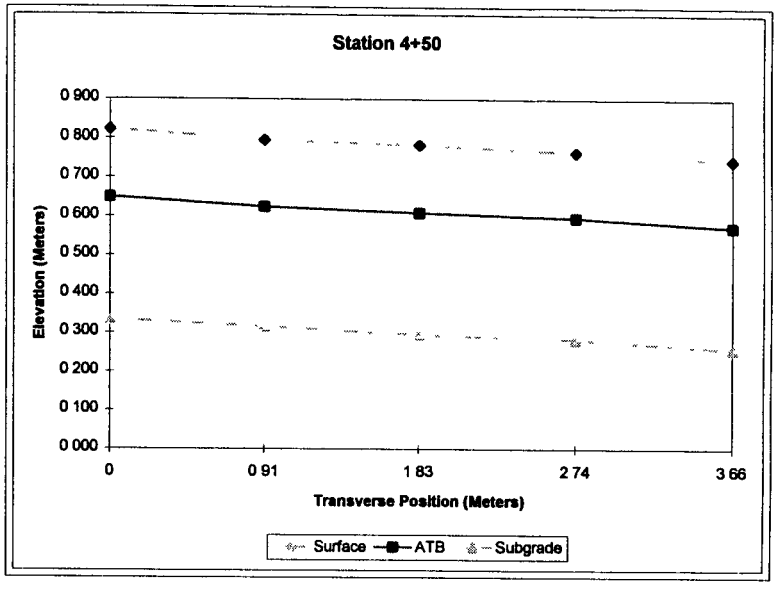


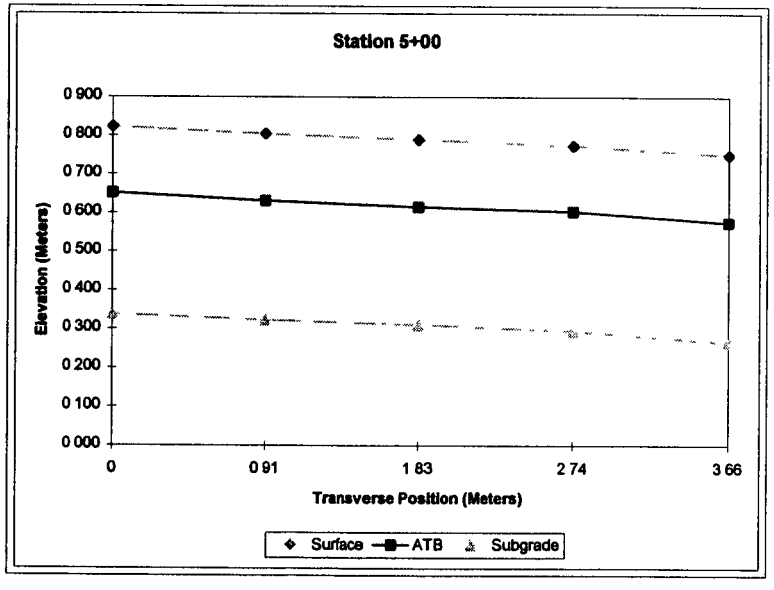




Florida, SPS-1 Project (120104)



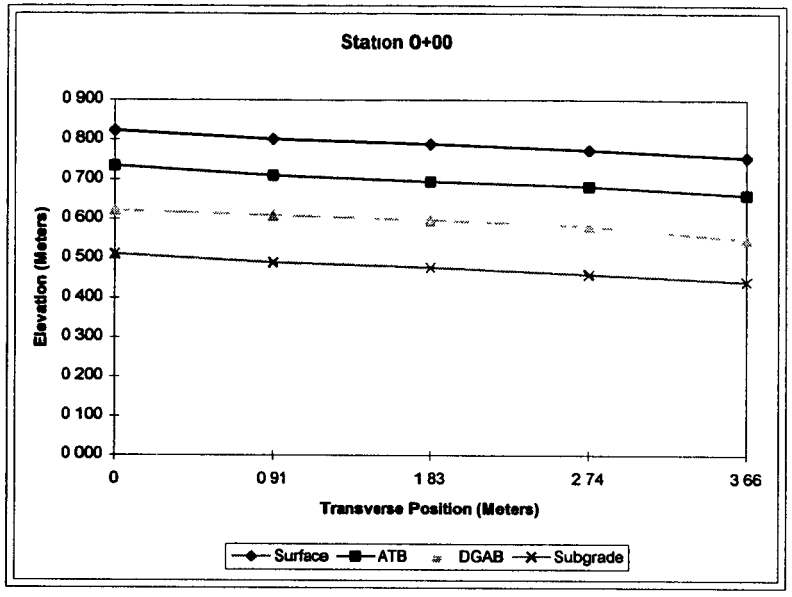


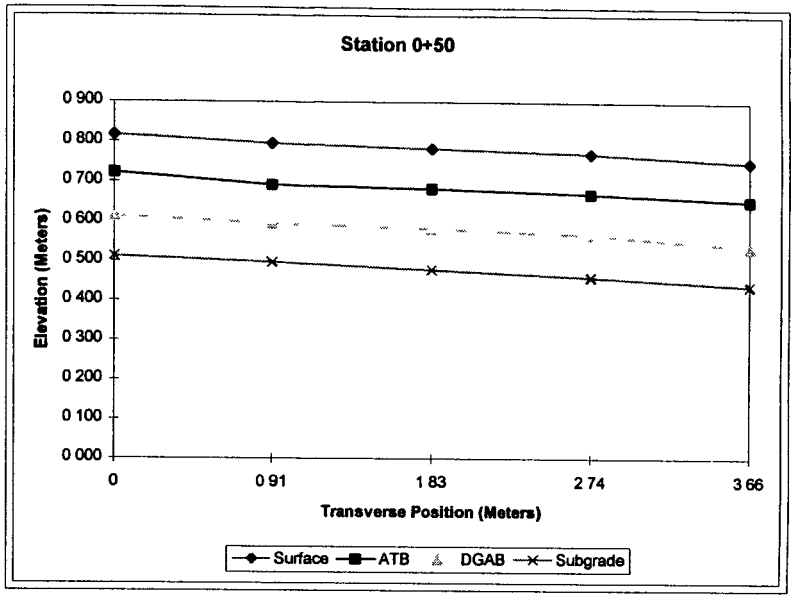


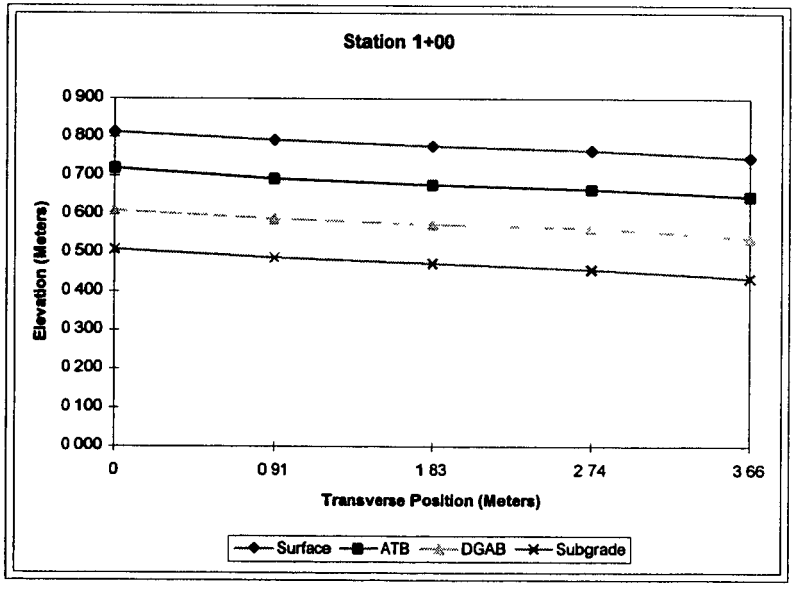
Florida, SPS-1 Project (120105)

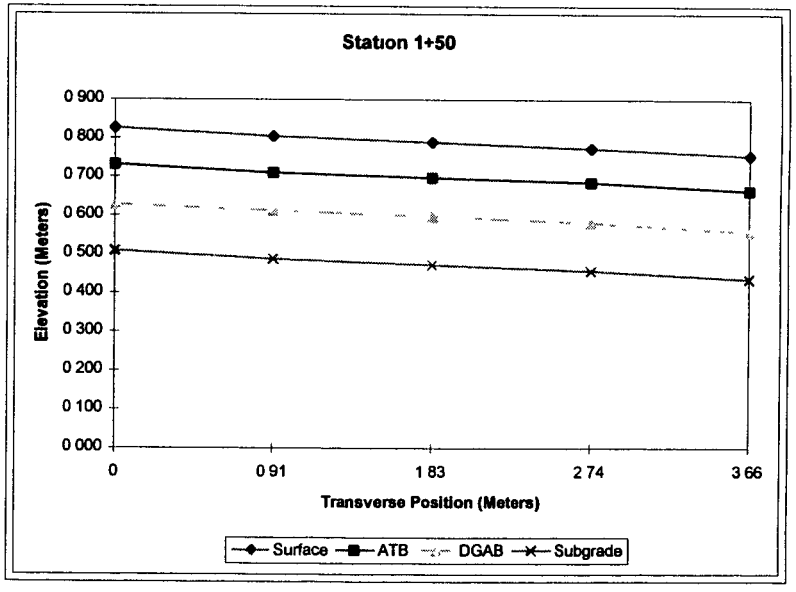
Transverse Offset	4 LAYERS	ELEVATION 0 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1.83 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters
0+00	Surface	0 823	0 088	0 113	0 110	0 802	0 091	0 101	0 119	0 789	0 094	0 098	0 119	0 774	0 091	0 101	0 122	0 756	0 094	0 113	0 107
	ATB	0 735				0 710				0 695				0 683				0 661			
	DGAB	0 622				0 610				0 597				0 582				0 549			
	Subgrade	0 512				0 491				0 479				0 460				0 442			
0+50	Surface	0 817	0 094	0 110	0 101	0 796	0 104	0 098	0 098	0 783	0 101	0 101	0 104	0 771	0 101	0 104	0 107	0 750	0 098	0 116	0 098
	ATB	0 722				0 692				0 683				0 671				0 652			
	DGAB	0 613				0 594				0 582				0 567				0 536			
	Subgrade	0 512				0 497				0 479				0 460				0 439			
1+00	Surface	0 814	0 094	0 110	0 101	0 792	0 101	0 104	0 101	0 777	0 101	0 104	0 101	0 765	0 101	0 101	0 107	0 747	0 101	0 107	0 104
	ATB	0 719				0 692				0 677				0 664				0 646			
	DGAB	0 610				0 588				0 573				0 564				0 539			
	Subgrade	0 509				0 488				0 472				0 457				0 436			
1+50	Surface	0 826	0 094	0 104	0 119	0 805	0 094	0 098	0 125	0 789	0 091	0 101	0 125	0 774	0 088	0 104	0 125	0 756	0 091	0 107	0 122
	ATB	0 732				0 710				0 698				0 686				0 664			
	DGAB	0 628				0 613				0 597				0 582				0 558			
	Subgrade	0 509				0 488				0 472				0 457				0 436			
2+00	Surface	0 826	0 098	0 107	0 107	0 805	0 104	0 094	0 110	0 789	0 101	0 098	0 107	0 774	0 098	0 101	0 107	0 753	0 094	0 113	0 094
	ATB	0 728				0 701				0 689				0 677				0 658			
	DGAB	0 622				0 607				0 591				0 576				0 546			
	Subgrade	0 515				0 497				0 485				0 469				0 451			
2+50	Surface	0 823	0 088	0 104	0 110	0 802	0 094	0 098	0 104	0 786	0 091	0 101	0 101	0 774	0 091	0 104	0 101	0 759	0 098	0 110	0 091
	ATB	0 735				0 707				0 695				0 683				0 661			
	DGAB	0 631				0 610				0 594				0 579				0 552			
	Subgrade	0 521				0 506				0 494				0 479				0 460			
3+00	Surface	0 814	0 088	0 104	0 101	0 796	0 098	0 098	0 091	0 780	0 098	0 094	0 091	0 771	0 101	0 101	0 088	0 750	0 104	0 107	0 079
	ATB	0 725				0 698				0 683				0 671				0 646			
	DGAB	0 622				0 600				0 588				0 570				0 539			
	Subgrade	0 521				0 509				0 497				0 482				0 460			
3+50	Surface	0 814	0 094	0 107	0 094	0 796	0 104	0 098	0 091	0 780	0 104	0 098	0 088	0 768	0 104	0 101	0 088	0 750	0 107	0 107	0 079
	ATB	0 719				0 692				0 677				0 664				0 643			
	DGAB	0 613				0 594				0 579				0 564				0 536			
	Subgrade	0 518				0 503				0 491				0 475				0 457			
4+00	Surface	0 826	0 101	0 107	0 091	0 805	0 101	0 101	0 094	0 789	0 101	0 098	0 098	0 774	0 094	0 101	0 101	0 753	0 101	0 104	0 088
	ATB	0 725				0 704				0 689				0 680				0 652			
	DGAB	0 619				0 604				0 591				0 579				0 549			
	Subgrade	0 527				0 509				0 494				0 479				0 460			
4+50	Surface	0 826	0 098	0 101	0 101	0 808	0 098	0 098	0 101	0 792	0 094	0 101	0 104	0 780	0 094	0 104	0 104	0 759	0 098	0 104	0 098
	ATB	0 728				0 710				0 698				0 686				0 661			
	DGAB	0 628				0 613				0 597				0 582				0 558			
	Subgrade	0 527				0 512				0 494				0 479				0 460			
5+00	Surface	0 829	0 094	0 107	0 101	0 808	0 094	0 107	0 098	0 796	0 094	0 104	0 104	0 780	0 094	0 104	0 104	0 765	0 104	0 107	0 101
	ATB	0 735				0 713				0 701				0 686				0 661			
	DGAB	0 628				0 607				0 597				0 582				0 555			
	Subgrade	0 527				0 509				0 494				0 479				0 454			
	AVG	0 094	0 106	0 103		0 098	0 100	0 102		0 097	0 100	0 103		0 096	0 102	0 105		0 099	0 108	0 097	
	MAX	0 101	0 113	0 119		0 104	0 107	0 125		0 104	0 104	0 125		0 104	0 104	0 125		0 107	0 116	0 122	
	MIN	0 101	0 113	0 119		0.104	0 107	0 125		0 104	0 104	0 125		0 104	0 104	0 125		0 107	0 116	0 122	
	STD	0 004	0 003	0 008		0 004	0 003	0 011		0 004	0 003	0 011		0 005	0 002	0 011		0 004	0 004	0 012	

Florida, SPS-1 Project (120105)

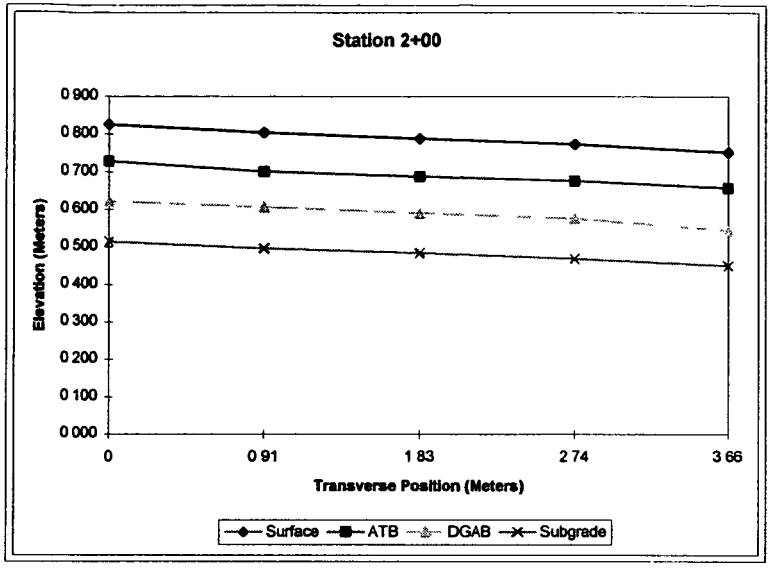


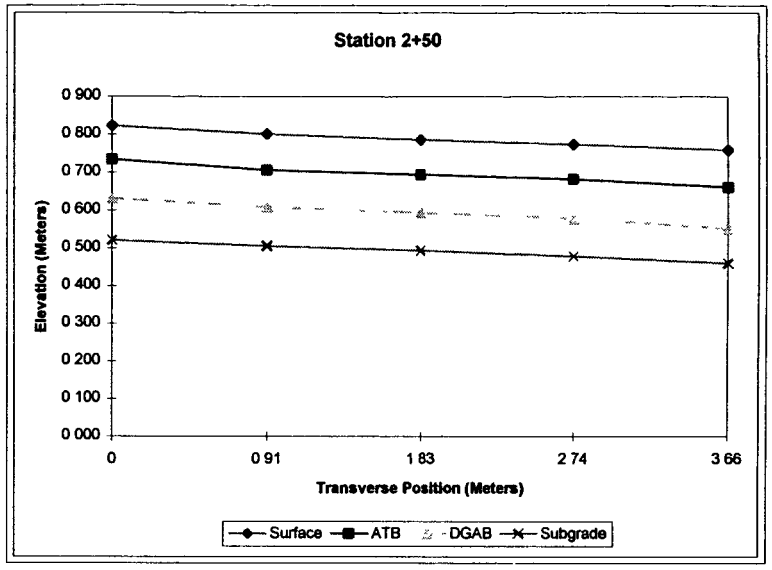


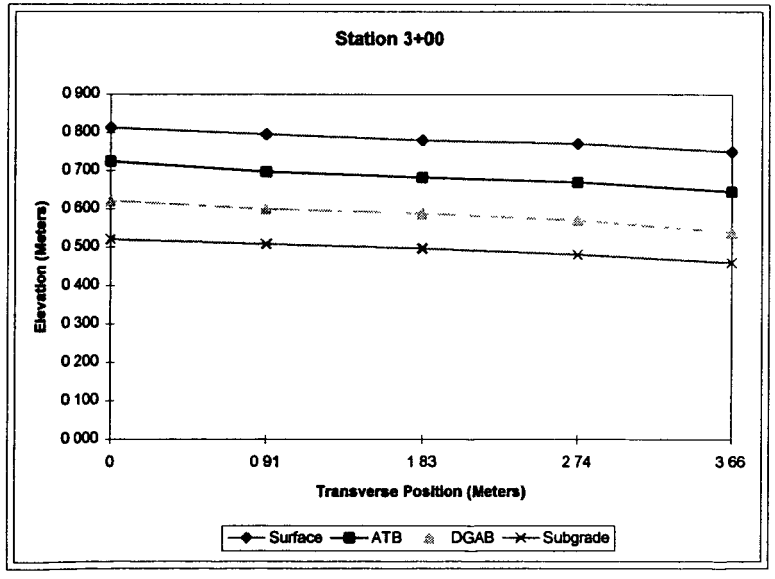


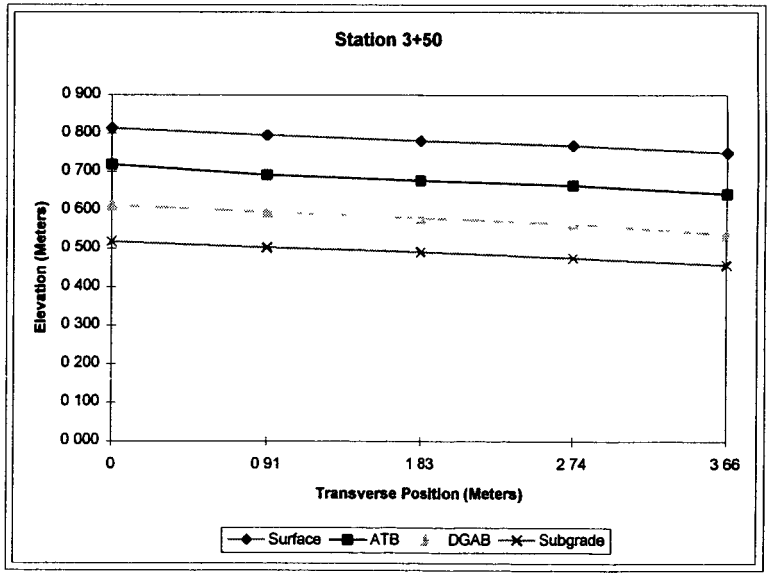


Florida, SPS-1 Project (120105)

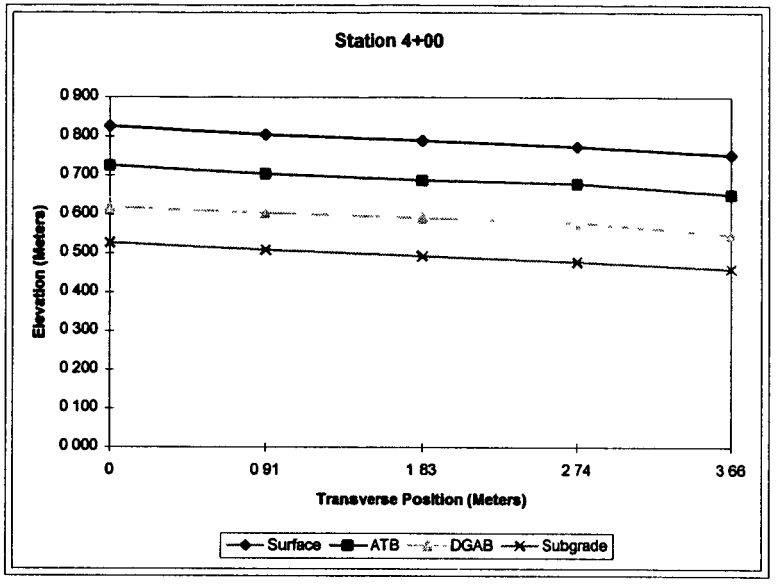


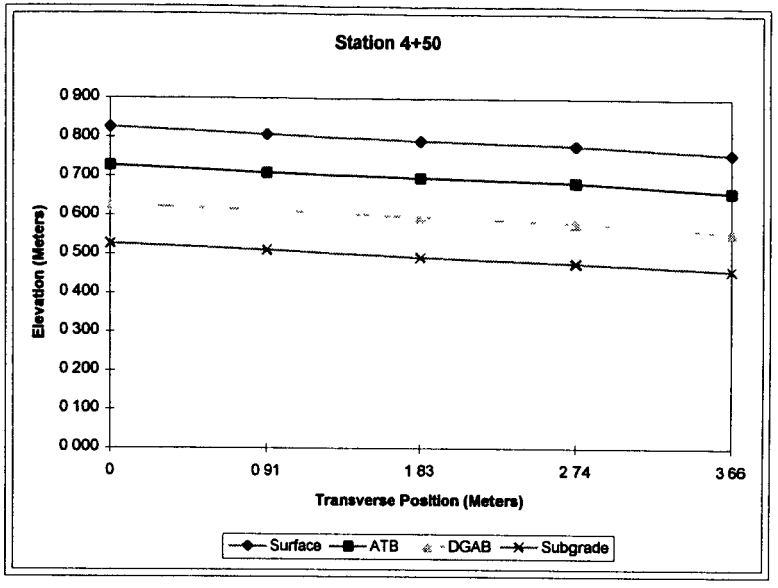


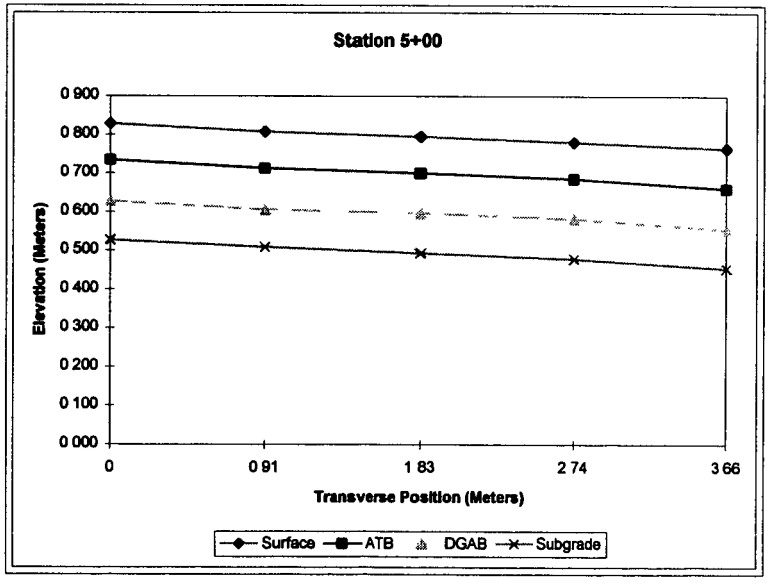




Florida, SPS-1 Project (120105)



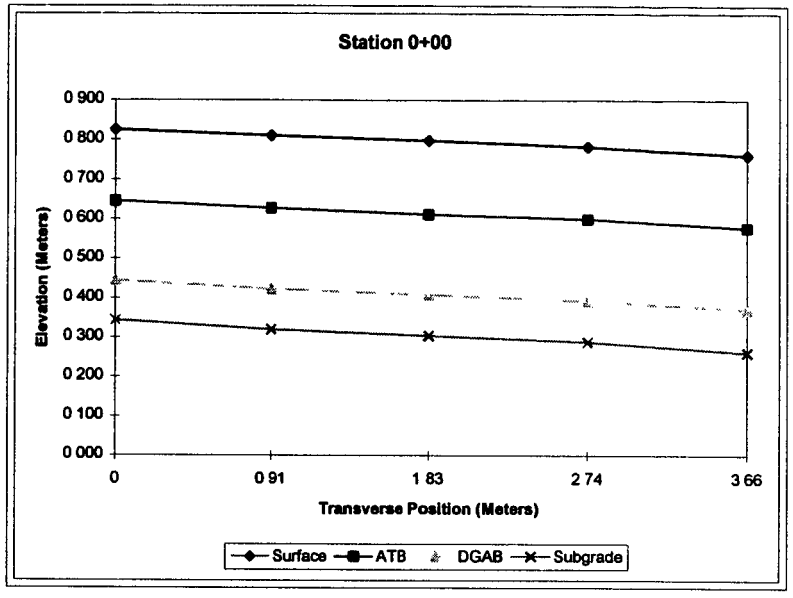


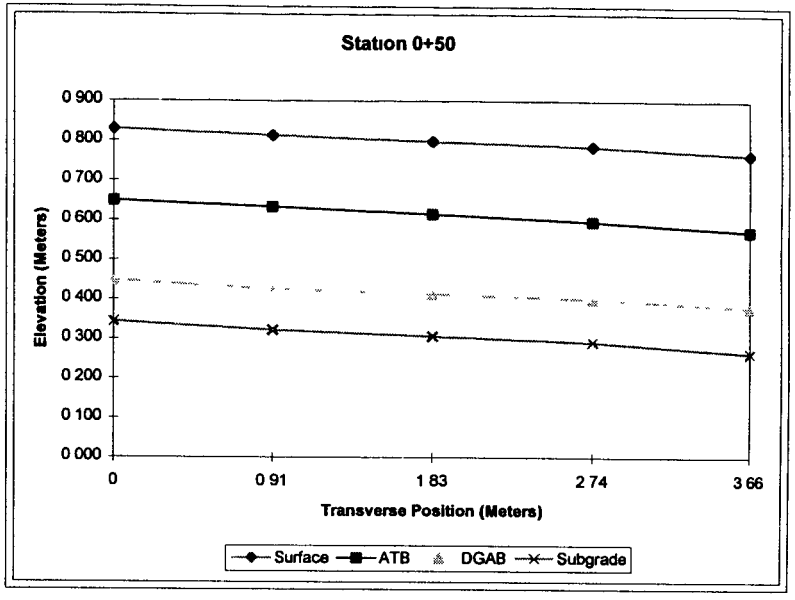


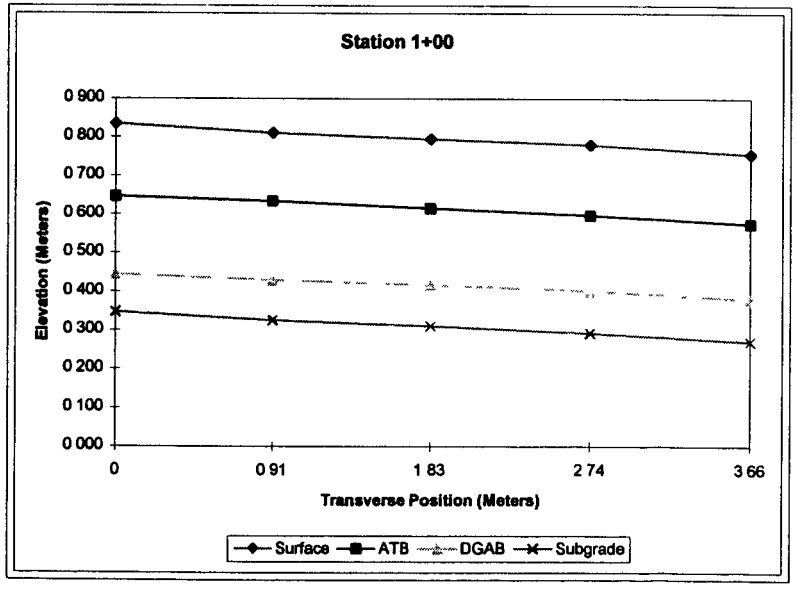
Florida, SPS-1 Project (120106)

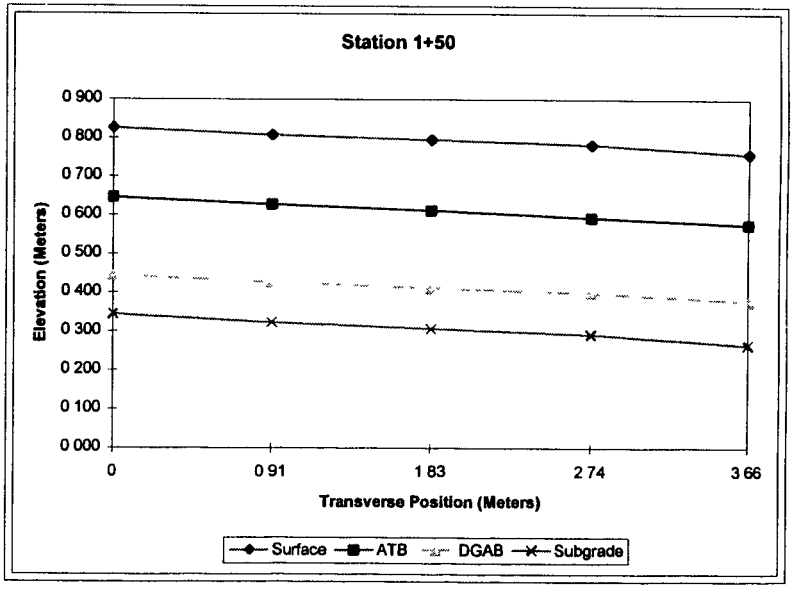
Transverse Offset	LAYERS	ELEVATION 0 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1.83 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	DGAB THICKNESS Meters
0+00	Surface	0 826	0 180	0 201	0 101	0 811	0 183	0 204	0 104	0 799	0 186	0 204	0 104	0 783	0 183	0 207	0 104	0 762	0 183	0 207	0 110
	ATB	0 646				0 628				0 613				0 600				0 579			
	DGAB	0 445				0 424				0 408				0 393				0 372			
	Subgrade	0 344				0 320				0 305				0 290				0 262			
0+50	Surface	0 829	0 180	0 201	0 104	0 814	0 180	0 207	0 104	0 799	0 183	0 201	0 107	0 786	0 189	0 195	0 110	0 765	0 192	0 192	0 116
	ATB	0 649				0 634				0 616				0 597				0 573			
	DGAB	0 448				0 427				0 415				0 402				0 381			
	Subgrade	0 344				0 323				0 308				0 293				0 265			
1+00	Surface	0 835	0 189	0 201	0 098	0 811	0 177	0 204	0 104	0 796	0 180	0 198	0 107	0 780	0 183	0 195	0 110	0 756	0 180	0 195	0 110
	ATB	0 646				0 634				0 616				0 597				0 576			
	DGAB	0 445				0 430				0 418				0 402				0 381			
	Subgrade	0 347				0 326				0 311				0 293				0 271			
1+50	Surface	0 826	0 180	0 201	0 101	0 808	0 180	0 201	0 104	0 796	0 183	0 201	0 104	0 783	0 189	0 195	0 107	0 759	0 183	0 198	0 113
	ATB	0 646				0 628				0 613				0 594				0 576			
	DGAB	0 445				0 427				0 411				0 399				0 378			
	Subgrade	0 344				0 323				0 308				0 293				0 265			
2+00	Surface	0 829	0 183	0 201	0 101	0 805	0 174	0 201	0 104	0 796	0 183	0 201	0 101	0 780	0 183	0 198	0 107	0 756	0 180	0 201	0 113
	ATB	0 646				0 631				0 613				0 597				0 576			
	DGAB	0 445				0 430				0 411				0 399				0 375			
	Subgrade	0 344				0 326				0 311				0 293				0 262			
2+50	Surface	0 823	0 177	0 207	0 101	0 799	0 171	0 207	0 098	0 786	0 177	0 204	0 101	0 774	0 183	0 201	0 101	0 750	0 177	0 201	0 107
	ATB	0 646				0 628				0 610				0 591				0 573			
	DGAB	0 439				0 421				0 405				0 390				0 372			
	Subgrade	0 338				0 323				0 305				0 290				0 265			
3+00	Surface	0 826	0 174	0 213	0 094	0 805	0 171	0 219	0 088	0 789	0 174	0 219	0 085	0 774	0 177	0 210	0 091	0 750	0 177	0 201	0 101
	ATB	0 652				0 634				0 616				0 597				0 573			
	DGAB	0 439				0 415				0 396				0 387				0 372			
	Subgrade	0 344				0 326				0 311				0 296				0 271			
3+50	Surface	0 832	0 174	0 219	0 094	0 805	0 168	0 216	0 098	0 789	0 174	0 207	0 101	0 771	0 174	0 204	0 101	0 747	0 177	0 198	0 104
	ATB	0 658				0 637				0 616				0 597				0 570			
	DGAB	0 439				0 421				0 408				0 393				0 372			
	Subgrade	0 344				0 323				0 308				0 293				0 268			
4+00	Surface	0 820	0 165	0 210	0 101	0 802	0 168	0 210	0 101	0 786	0 171	0 207	0 101	0 774	0 177	0 204	0 101	0 753	0 180	0 201	0 107
	ATB	0 655				0 634				0 616				0 597				0 573			
	DGAB	0 445				0 424				0 408				0 393				0 372			
	Subgrade	0 344				0 323				0 308				0 293				0 265			
4+50	Surface	0 823	0 174	0 198	0 107	0 802	0 171	0 204	0 104	0 786	0 177	0 198	0 104	0 774	0 186	0 201	0 094	0 750	0 183	0 201	0 098
	ATB	0 649				0 631				0 610				0 588				0 567			
	DGAB	0 451				0 427				0 411				0 387				0 366			
	Subgrade	0 344				0 323				0 308				0 293				0 268			
5+00	Surface	0 826	0 168	0 213	0 101	0 808	0 171	0 213	0 101	0 792	0 174	0 213	0 098	0 777	0 177	0 210	0 098	0 756	0 180	0 207	0 101
	ATB	0 658				0 637				0 619				0 600				0 576			
	DGAB	0 445				0 424				0 405				0 390				0 369			
	Subgrade	0 344				0 323				0 308				0 293				0 268			
	AVG		0 177	0 207	0 100		0 174	0 209	0 100		0 178	0 205	0 101		0 182	0 202	0 101		0 181	0 200	0 106
	MAX		0 189	0 219	0 107		0 183	0 219	0 104		0 186	0 219	0 107		0 189	0 210	0 110		0 192	0 207	0 116
	MIN		0 189	0 219	0 107		0 183	0 219	0 104		0 186	0 219	0 107		0 189	0 210	0 110		0 192	0 207	0 116
	STD		0 007	0 007	0 004		0 005	0 006	0 005		0 005	0 006	0 006		0 005	0 006	0 006		0 004	0 005	0 006

Florida, SPS-1 Project (120106)

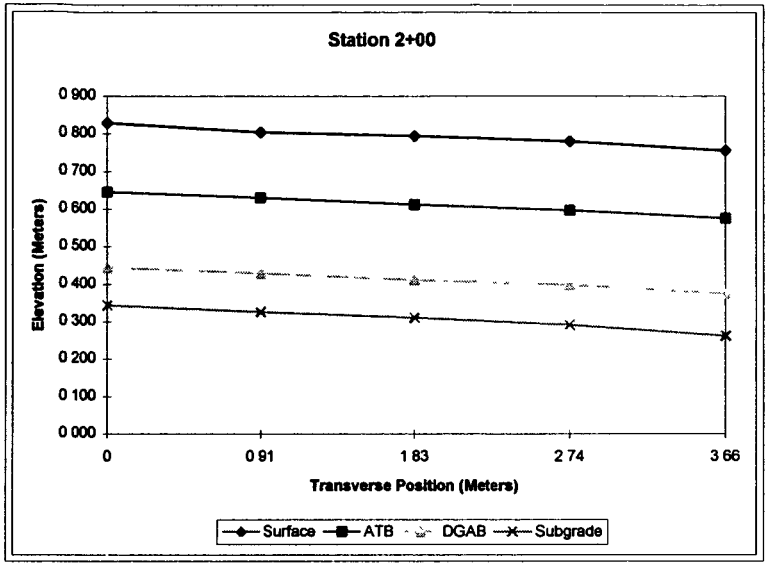


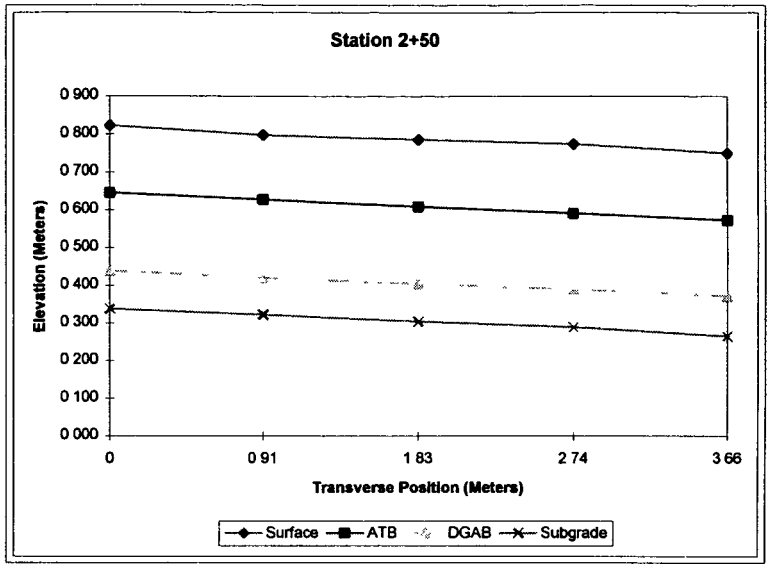


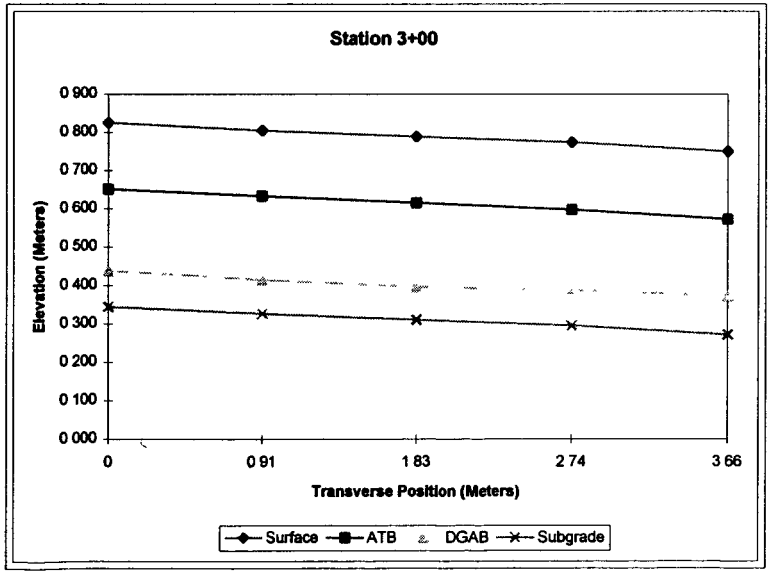


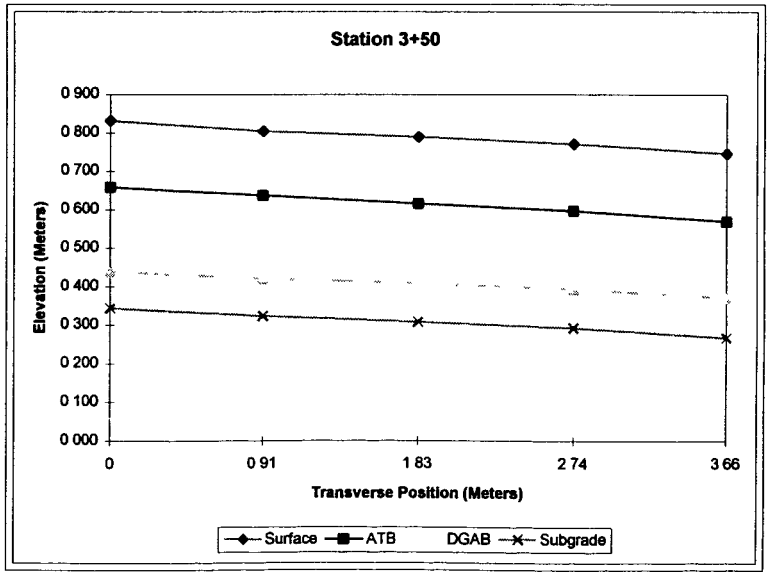


Florida, SPS-1 Project (120106)

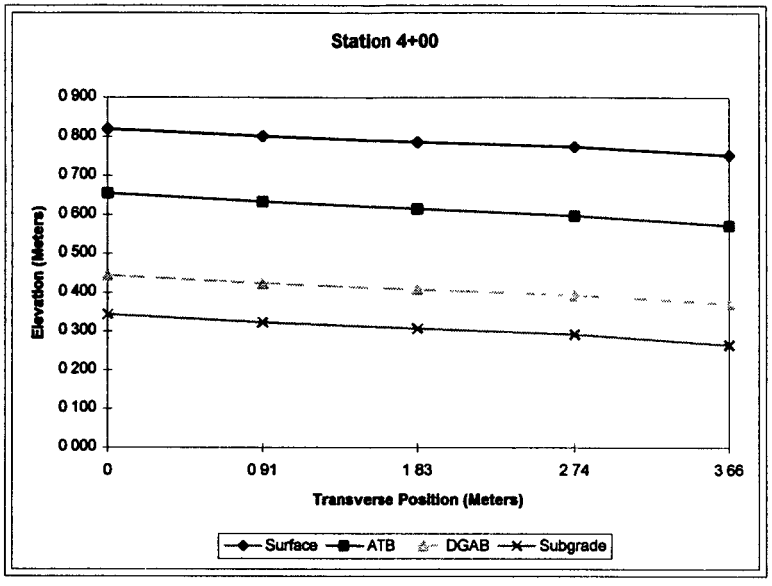


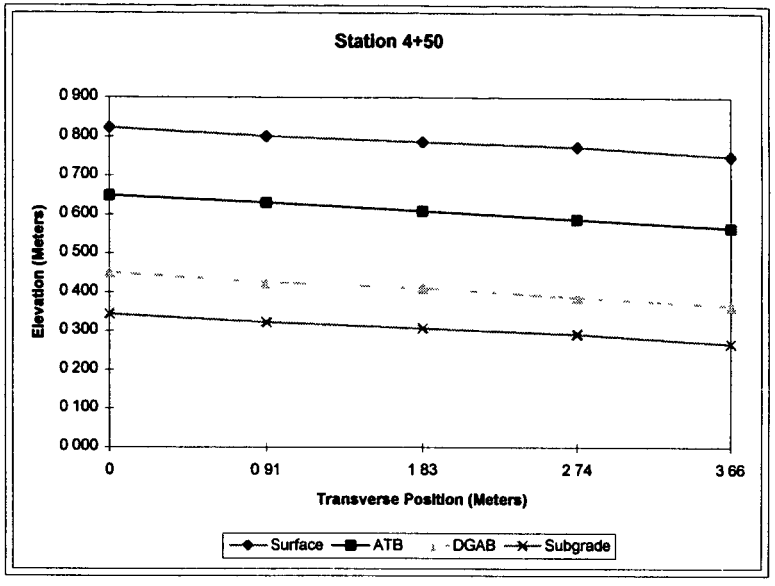


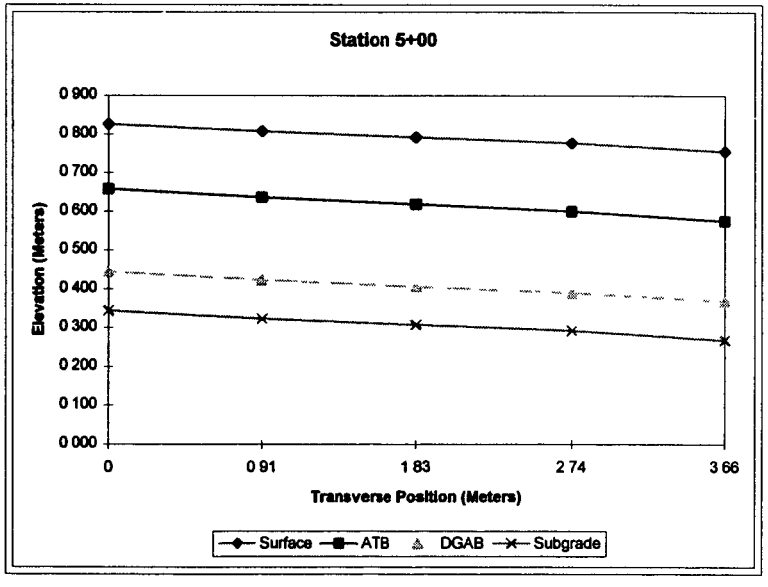




Florida, SPS-1 Project (120106)



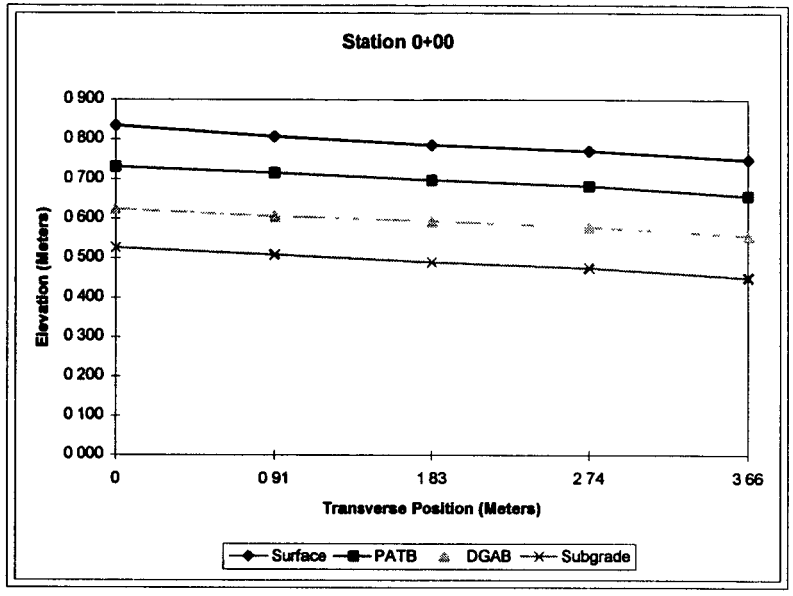


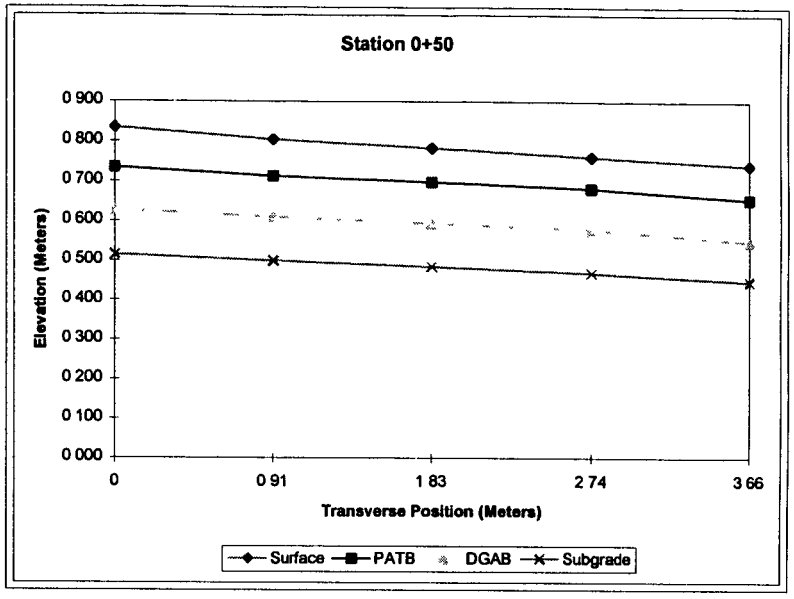


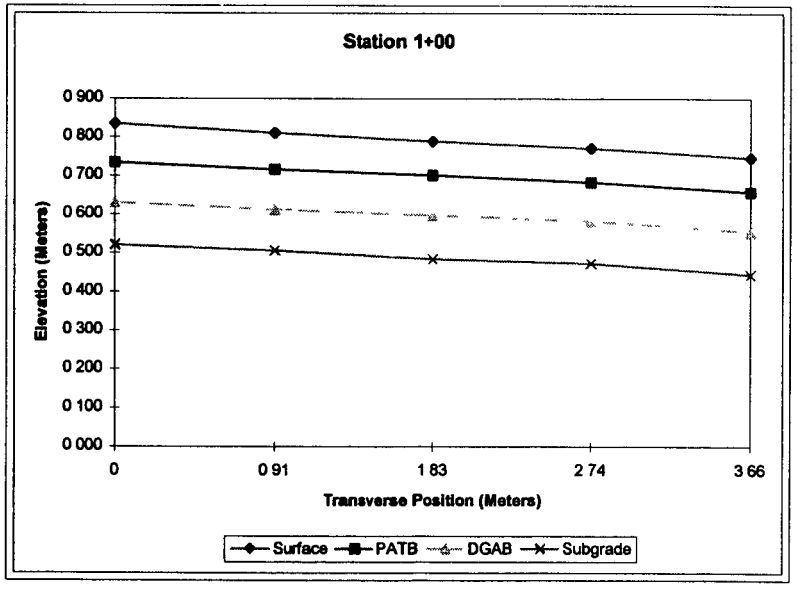
Florida, SPS-1 Project (120107)

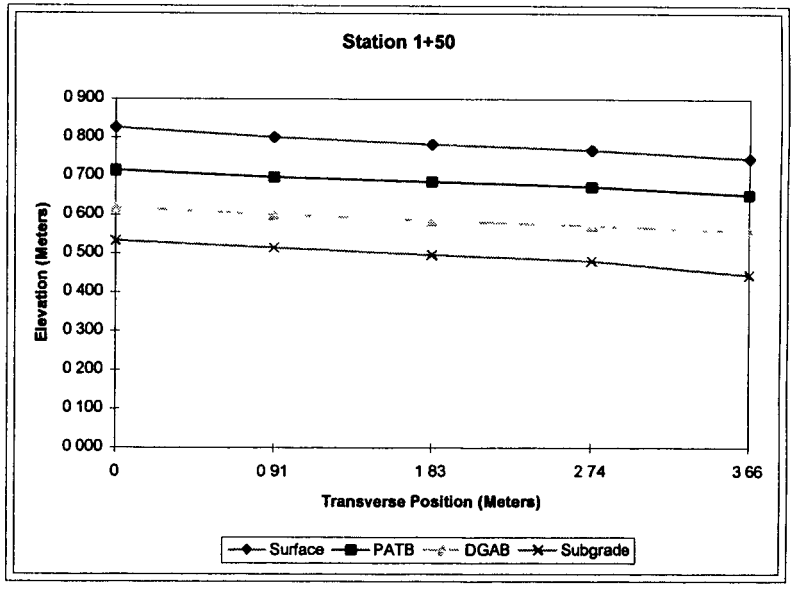
Transverse Offset	LAYERS	ELEVATION 0 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1.83 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters
0+00	Surface	0 835	0.104	0 107	0 098	0 808	0 091	0 110	0 098	0 786	0 088	0 104	0 104	0 771	0 088	0 104	0 104	0 750	0 091	0 101	0 107
	PATB	0 732				0 716				0 698				0 683				0 658			
	DGAB	0 625				0 607				0 594				0 579				0 558			
	Subgrade	0 527				0 509				0 491				0 475				0 451			
0+50	Surface	0 835	0 101	0 107	0 113	0 805	0 091	0 104	0 110	0 783	0 085	0 104	0 110	0 762	0 079	0 104	0 110	0 741	0 085	0 107	0 101
	PATB	0 735				0 713				0 698				0 683				0 655			
	DGAB	0 628				0 610				0 594				0 579				0 549			
	Subgrade	0 515				0 500				0 485				0 469				0 448			
1+00	Surface	0 835	0 101	0 104	0 110	0 811	0 094	0 104	0 107	0 789	0 088	0 104	0 113	0 771	0 088	0 101	0 110	0 747	0 088	0 104	0 110
	PATB	0 735				0 716				0 701				0 683				0 658			
	DGAB	0 631				0 613				0 597				0 582				0 555			
	Subgrade	0 521				0 506				0 485				0 472				0 445			
1+50	Surface	0 826	0 110	0 098	0 085	0 802	0 104	0 098	0 085	0 783	0 098	0 101	0 088	0 768	0 094	0 101	0 091	0 747	0 094	0 094	0 113
	PATB	0 716				0 698				0 686				0 674				0 652			
	DGAB	0 619				0 600				0 585				0 573				0 558			
	Subgrade	0 533				0 515				0 497				0 482				0 445			
2+00	Surface	0 826	0 091	0 107	0 101	0 802	0 088	0 104	0 101	0 786	0 088	0 104	0 098	0 771	0 085	0 107	0 098	0 753	0 091	0 104	0 107
	PATB	0 735				0 713				0 698				0 686				0 661			
	DGAB	0 628				0 610				0 594				0 579				0 558			
	Subgrade	0 527				0 509				0 497				0 482				0 451			
2+50	Surface	0 835	0 098	0 110	0 104	0 814	0 098	0 104	0 104	0 792	0 091	0 104	0 104	0 777	0 094	0 101	0 101	0 756	0 094	0 101	0 104
	PATB	0 738				0 716				0 701				0 683				0 661			
	DGAB	0 628				0 613				0 597				0 582				0 561			
	Subgrade	0 524				0 509				0 494				0 482				0 457			
3+00	Surface	0 835	0 107	0 104	0 107	0 811	0 098	0 104	0 107	0 789	0 091	0 104	0 104	0 771	0 088	0 104	0 104	0 750	0 088	0 101	0 107
	PATB	0 728				0 713				0 698				0 683				0 661			
	DGAB	0 625				0 610				0 594				0 579				0 561			
	Subgrade	0 518				0 503				0 491				0 475				0 454			
3+50	Surface	0 829	0 094	0 107	0 110	0 805	0 088	0 107	0 107	0 786	0 085	0 104	0 116	0 771	0 085	0 104	0 116	0 750	0 088	0 101	0 125
	PATB	0 735				0 716				0 701				0 686				0 661			
	DGAB	0 628				0 610				0 597				0 582				0 561			
	Subgrade	0 518				0 503				0 482				0 466				0 436			
4+00	Surface	0 829	0 110	0 098	0 098	0 802	0 110	0 098	0 085	0 777	0 098	0 091	0 098	0 762	0 094	0 101	0 088	0 741	0 098	0 107	0 085
	PATB	0 719				0 692				0 680				0 668				0 643			
	DGAB	0 622				0 594				0 588				0 567				0 536			
	Subgrade	0 524				0 509				0 491				0 479				0 451			
4+50	Surface	0 838	0 101	0 104	0 104	0 811	0 094	0 110	0 094	0 786	0 085	0 110	0 101	0 765	0 082	0 113	0 101	0 741	0 088	0 110	0 101
	PATB	0 738				0 716				0 701				0 683				0 652			
	DGAB	0 634				0 607				0 591				0 570				0 543			
	Subgrade	0 530				0 512				0 491				0 469				0 442			
5+00	Surface	0 829	0 098	0 101	0 104	0 805	0 088	0 107	0 107	0 789	0 088	0 110	0 104	0 771	0 085	0 107	0 107	0 753	0 088	0 107	0 119
	PATB	0 732				0 716				0 701				0 686				0 664			
	DGAB	0 631				0 610				0 591				0 579				0 558			
	Subgrade	0 527				0 503				0 488				0 472				0 439			
	AVG	0 101	0 104	0 103		0 096	0 104	0 100		0 090	0 103	0 104		0 088	0 104	0 103		0 091	0 103	0 107	
	MAX	0 110	0 110	0.113		0 110	0 110	0 110		0 098	0 110	0 116		0 094	0 113	0 116		0 098	0 110	0 125	
	MIN	0 110	0 110	0 113		0 110	0 110	0 110		0 098	0 110	0 116		0 094	0 113	0 116		0 098	0 110	0 125	
	STD	0 006	0 004	0 008		0 006	0 004	0 009		0 004	0 005	0 007		0 005	0 004	0 008		0 004	0 004	0 010	

Florida, SPS-1 Project (120107)

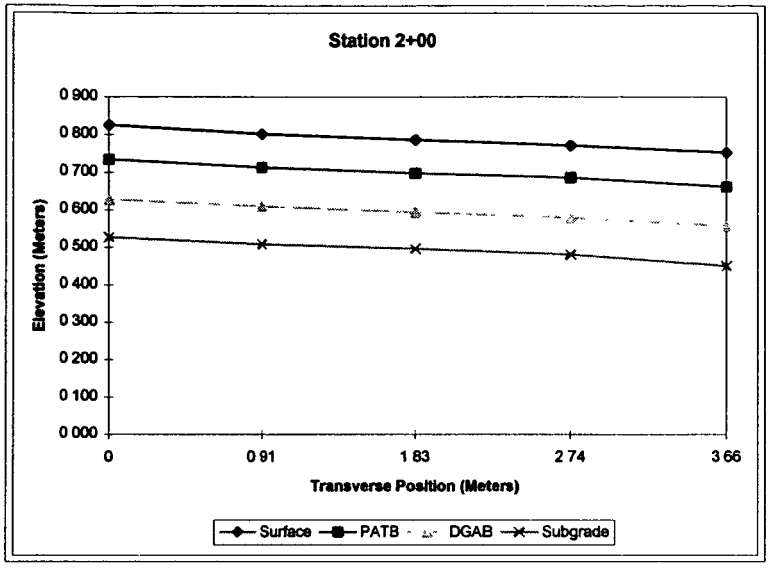


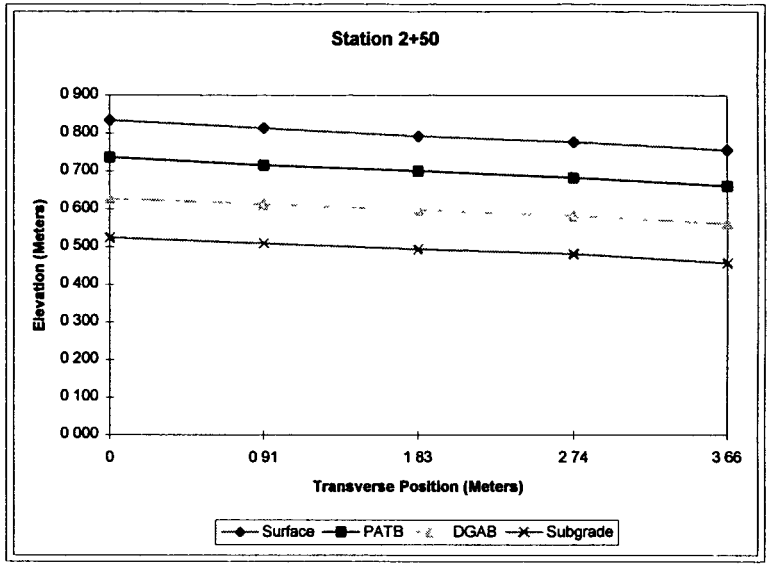


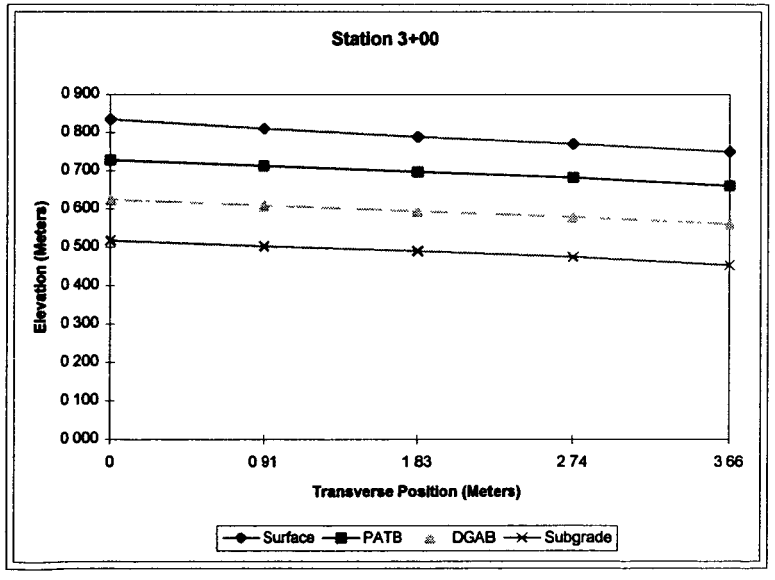


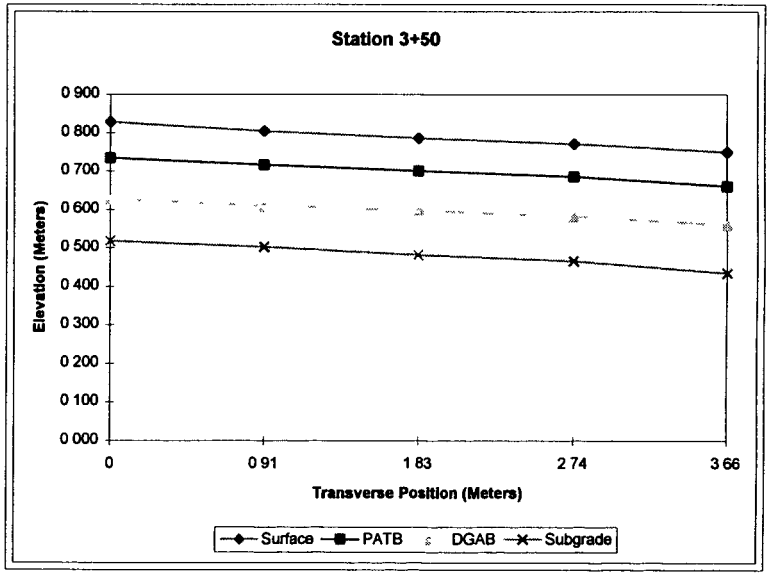


Florida, SPS-1 Project (120107)

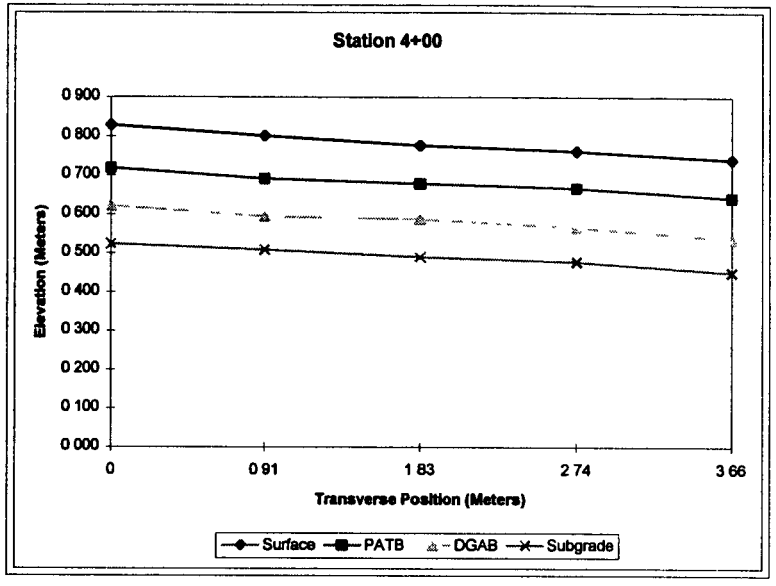


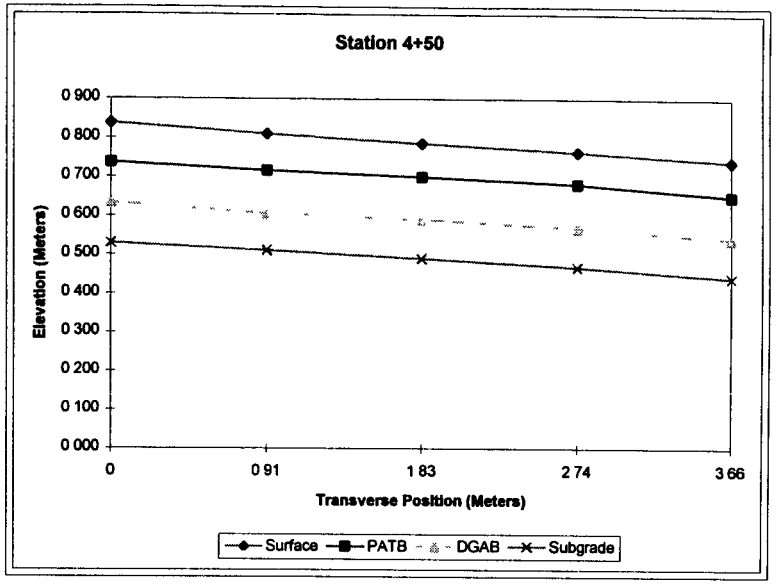


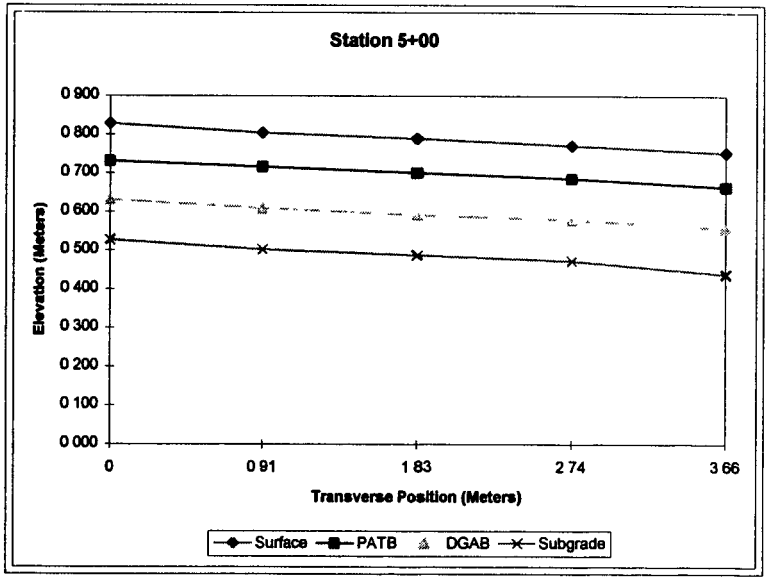




Florida, SPS-1 Project (120107)



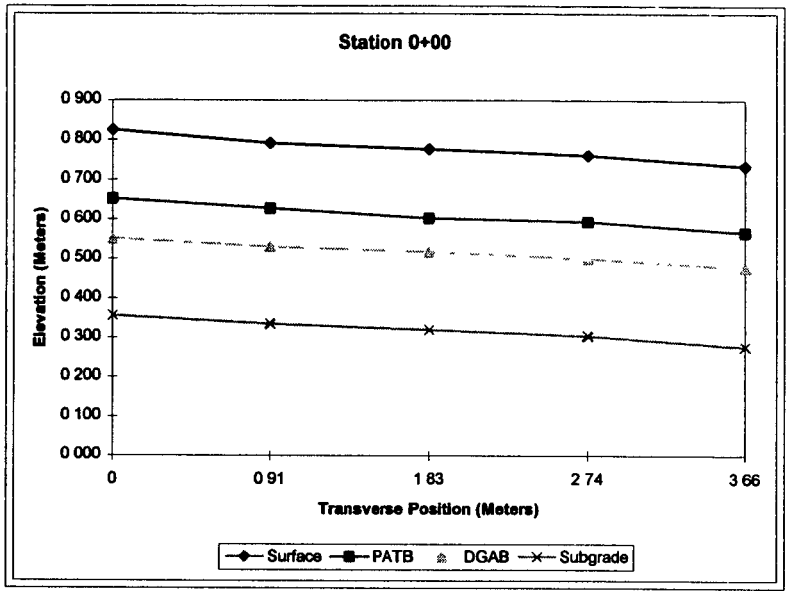


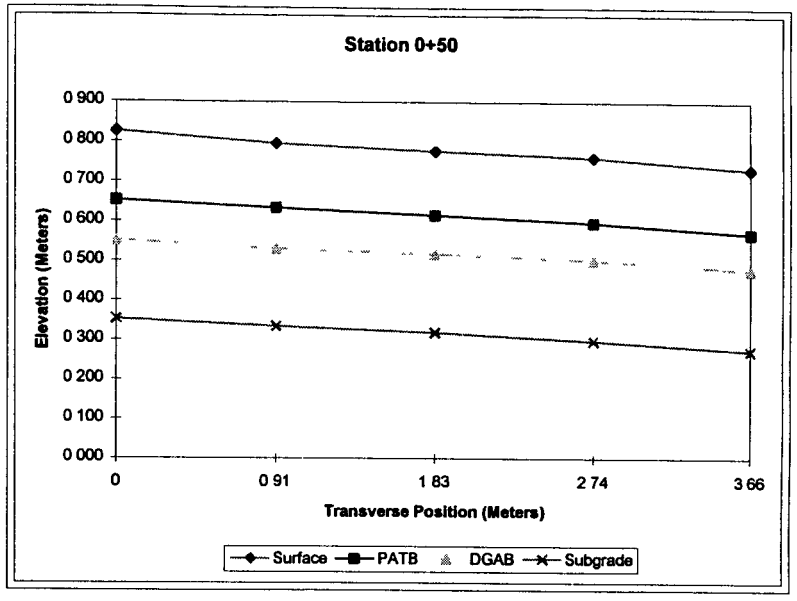


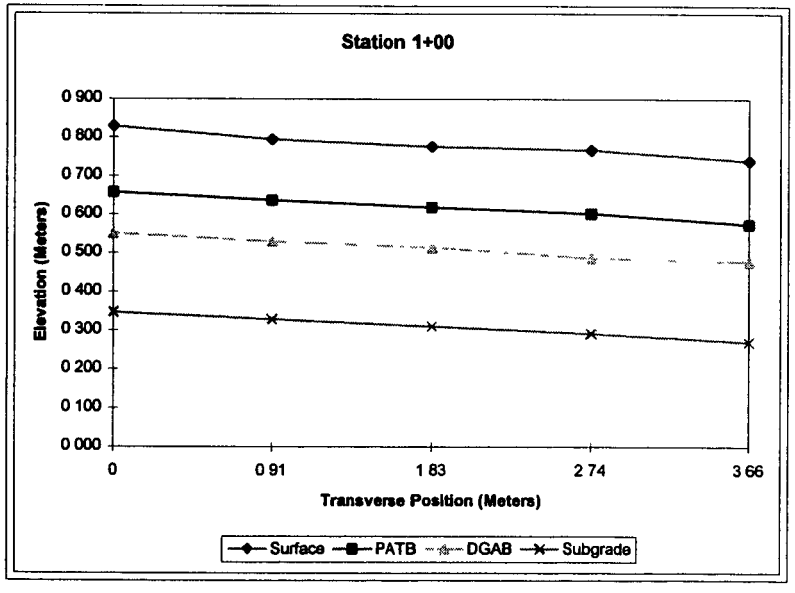
Florida, SPS-1 Project (120108)

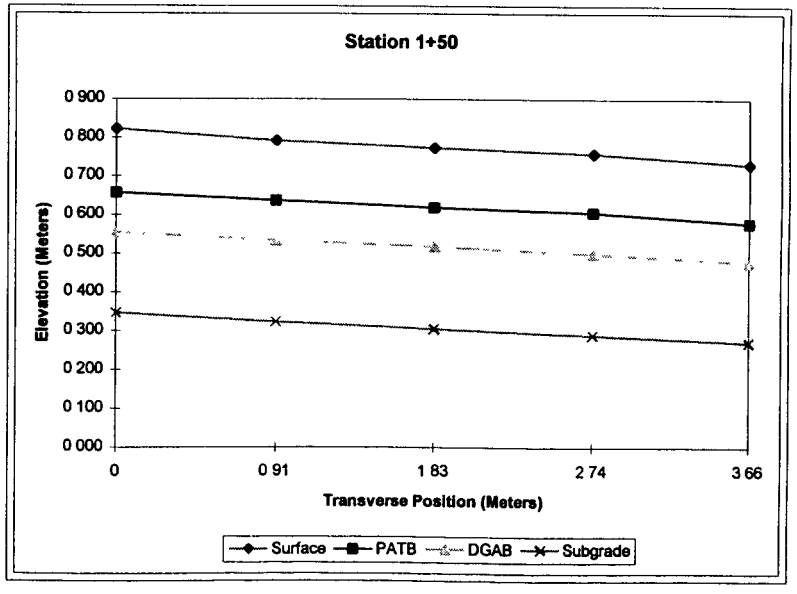
Transverse Offset	LAYER	ELEVATION 0.0 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1.83 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters
0+00	Surface	0 826	0 174	0 101	0 195	0 792	0 165	0 098	0 195	0 777	0 174	0 085	0 198	0 762	0 168	0 094	0 195	0 735	0 168	0 088	0 201
	PATB	0 652				0 628				0 604				0 594				0 567			
	DGAB	0 552				0 530				0 518				0 500				0 479			
	Subgrade	0 357				0 335				0 320				0 305				0 277			
0+50	Surface	0 826	0 174	0 101	0 198	0 796	0 162	0 104	0 195	0 777	0 162	0 098	0 198	0 762	0 165	0 094	0 204	0 732	0 162	0 091	0 204
	PATB	0 652				0 634				0 616				0 597				0 570			
	DGAB	0 552				0 530				0 518				0 503				0 479			
	Subgrade	0 354				0 335				0 320				0 299				0 274			
1+00	Surface	0 829	0 171	0 107	0 204	0 796	0 158	0 107	0 201	0 777	0 158	0 104	0 204	0 768	0 165	0 116	0 195	0 741	0 165	0 098	0 207
	PATB	0 658				0 637				0 619				0 604				0 576			
	DGAB	0 552				0 530				0 515				0 488				0 479			
	Subgrade	0 347				0 329				0 311				0 293				0 271			
1+50	Surface	0 823	0 165	0 104	0 207	0 792	0 155	0 104	0 210	0 774	0 155	0 101	0 213	0 759	0 152	0 107	0 210	0 732	0 152	0 101	0 207
	PATB	0 658				0 637				0 619				0 607				0 579			
	DGAB	0 555				0 533				0 518				0 500				0 479			
	Subgrade	0 347				0 323				0 305				0 290				0 271			
2+00	Surface	0 826	0 168	0 107	0 198	0 796	0 158	0 107	0 195	0 780	0 158	0 104	0 198	0 765	0 158	0 107	0 195	0 741	0 162	0 101	0 198
	PATB	0 658				0 637				0 622				0 607				0 579			
	DGAB	0 552				0 530				0 518				0 500				0 479			
	Subgrade	0 354				0 335				0 320				0 305				0 280			
2+50	Surface	0 823	0 168	0 101	0 210	0 792	0 155	0 101	0 207	0 777	0 162	0 094	0 204	0 765	0 158	0 101	0 207	0 741	0 162	0 098	0 204
	PATB	0 655				0 637				0 616				0 607				0 579			
	DGAB	0 555				0 536				0 521				0 506				0 482			
	Subgrade	0 344				0 329				0 317				0 299				0 277			
3+00	Surface	0 823	0 165	0 101	0 210	0 796	0 158	0 098	0 207	0 780	0 162	0 094	0 204	0 768	0 158	0 101	0 204	0 741	0 158	0 094	0 207
	PATB	0 658				0 637				0 619				0 610				0 582			
	DGAB	0 558				0 539				0 524				0 509				0 488			
	Subgrade	0 347				0 332				0 320				0 305				0 280			
3+50	Surface	0 823	0 174	0 104	0 201	0 786	0 155	0 104	0 198	0 768	0 155	0 101	0 195	0 753	0 155	0 101	0 195	0 732	0 165	0 094	0 195
	PATB	0 649				0 631				0 613				0 597				0 567			
	DGAB	0 546				0 527				0 512				0 497				0 472			
	Subgrade	0 344				0 329				0 317				0 302				0 277			
4+00	Surface	0 826	0 171	0 104	0 198	0 799	0 162	0 104	0 198	0 780	0 155	0 110	0 195	0 768	0 158	0 107	0 198	0 744	0 158	0 107	0 195
	PATB	0 655				0 637				0 625				0 610				0 585			
	DGAB	0 552				0 533				0 515				0 503				0 479			
	Subgrade	0 354				0 335				0 320				0 305				0 283			
4+50	Surface	0 832	0 174	0 107	0 201	0 802	0 165	0 104	0 198	0 783	0 158	0 107	0 198	0 765	0 155	0 107	0 201	0 741	0 162	0 101	0 198
	PATB	0 658				0 637				0 625				0 610				0 579			
	DGAB	0 552				0 533				0 518				0 503				0 479			
	Subgrade	0 351				0 335				0 320				0 302				0 280			
5+00	Surface	0 823	0 168	0 107	0 192	0 796	0 158	0 107	0 195	0 780	0 158	0 104	0 198	0 765	0 162	0 101	0 198	0 741	0 168	0 094	0 195
	PATB	0 655				0 637				0 622				0 604				0 573			
	DGAB	0 549				0 530				0 518				0 503				0 479			
	Subgrade	0 357				0 335				0 320				0 305				0 283			
	AVG	0 170	0 103	0 202		0 159	0 103	0 201		0 160	0 100	0 201		0 160	0 103	0 201		0 162	0 097	0 201	
	MAX	0 174	0 107	0 210		0 165	0 107	0 210		0 174	0 110	0 213		0 168	0 116	0 210		0 168	0 107	0 207	
	MIN	0 174	0 107	0 210		0 165	0 107	0 210		0 174	0 110	0 213		0 168	0 116	0 210		0 168	0 107	0 207	
	STD	0 003	0 003	0 006		0 003	0 003	0 005		0 005	0 007	0 005		0 005	0 006	0 005		0 004	0 005	0 005	

Florida, SPS-1 Project (120108)

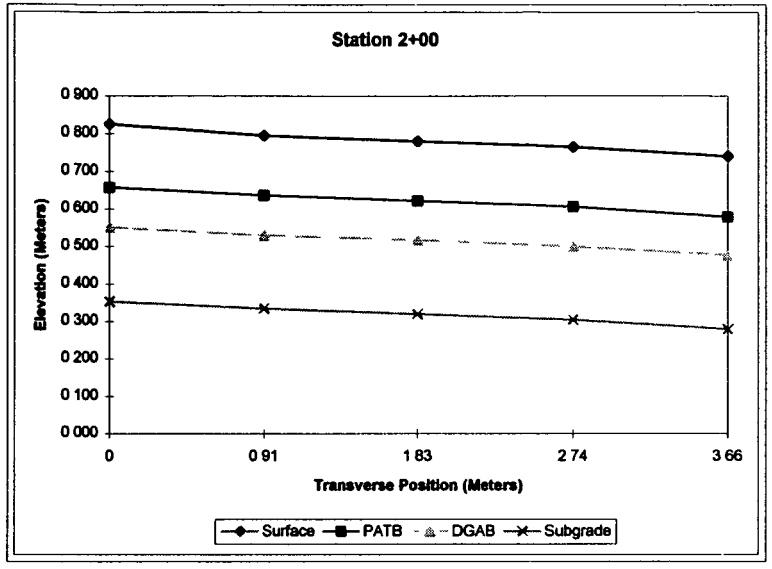


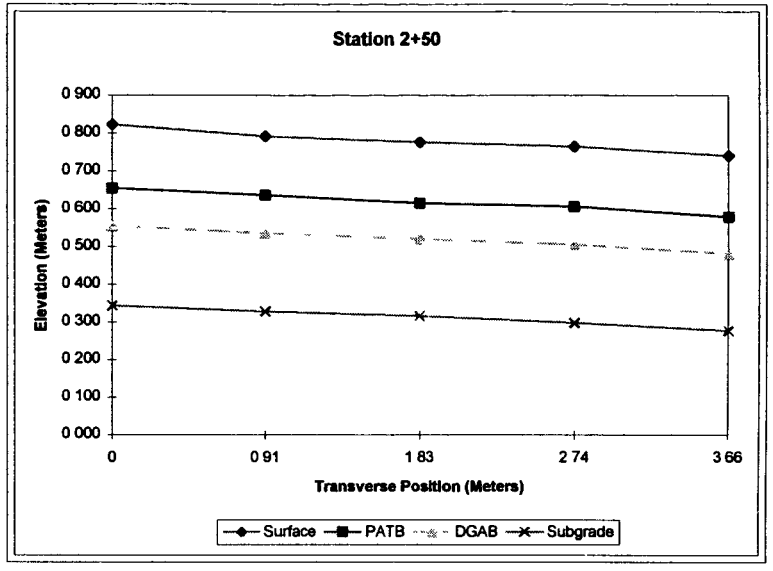


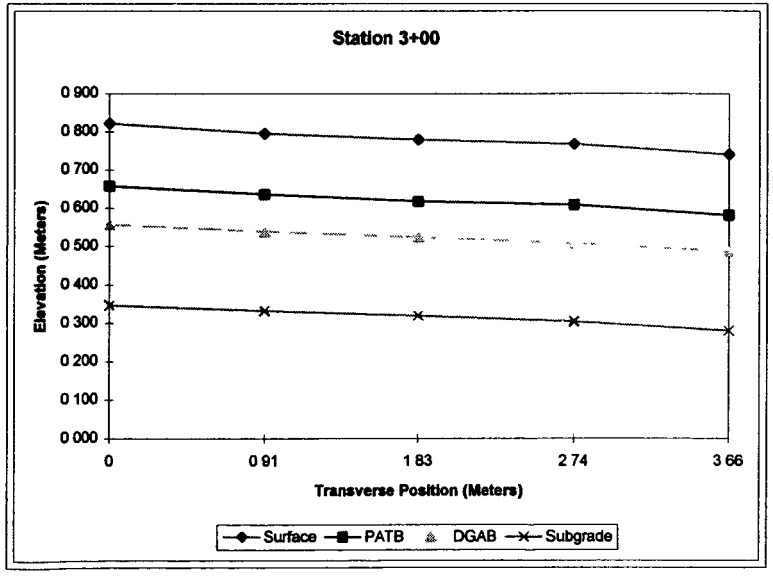


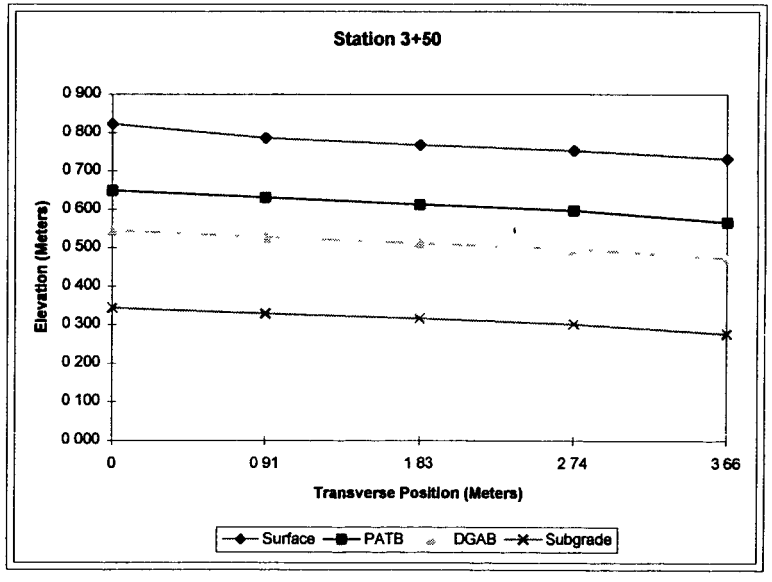


Florida, SPS-1 Project (120108)

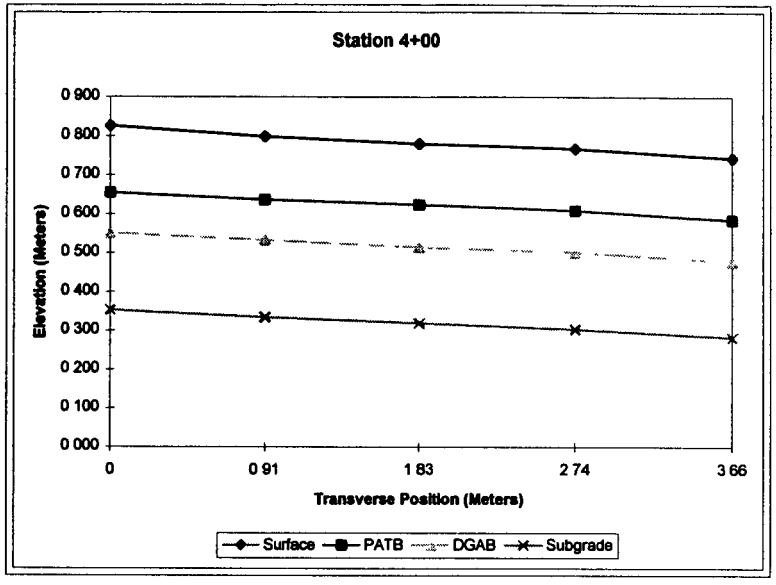


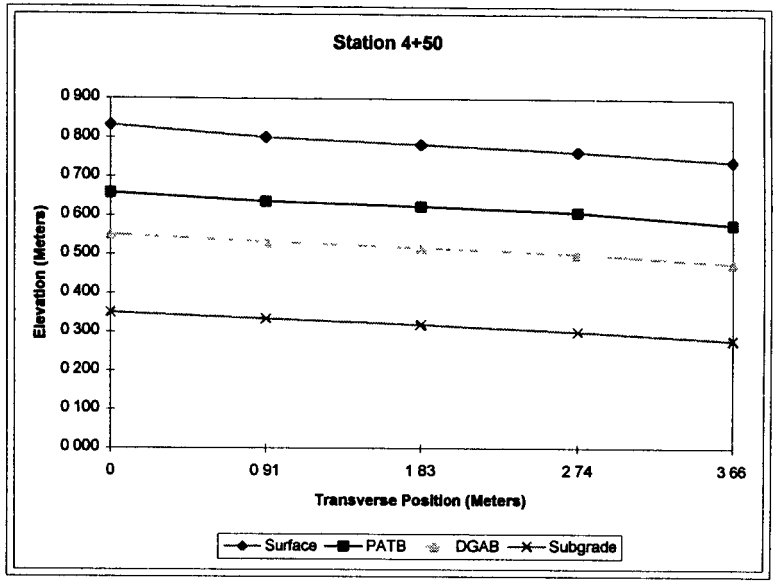


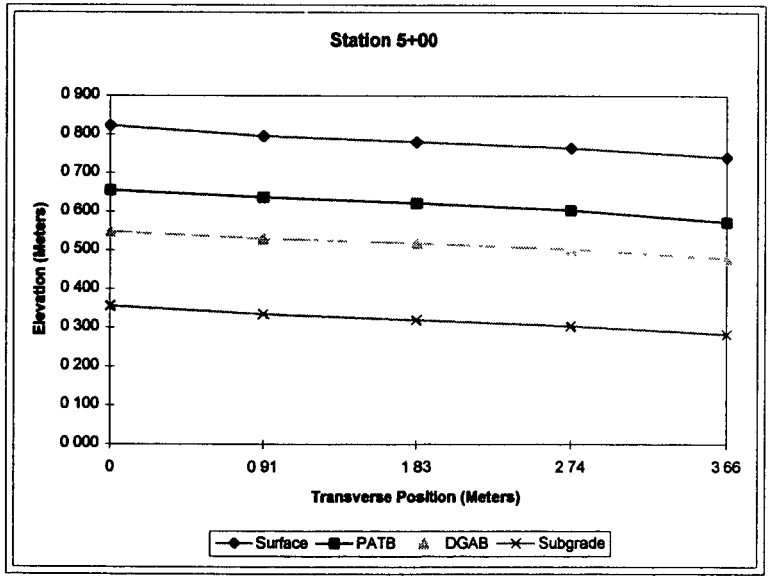




Florida, SPS-1 Project (120108)



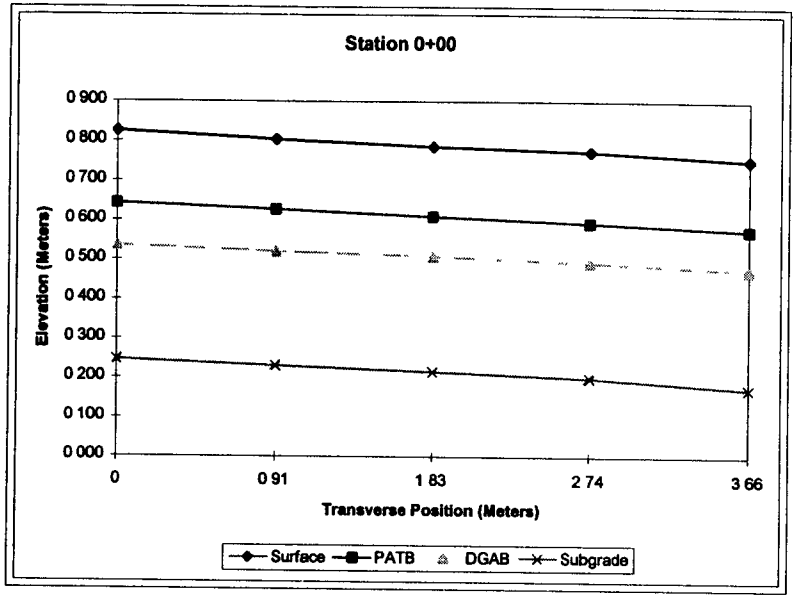


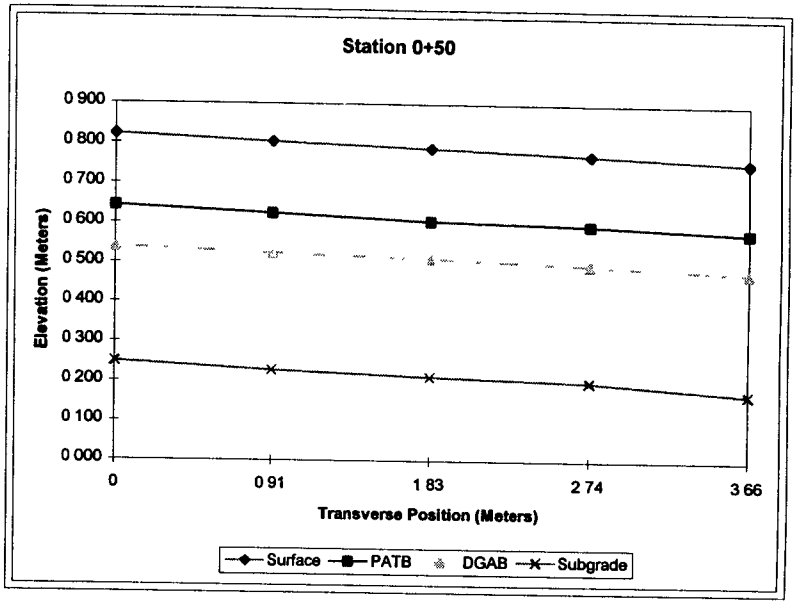


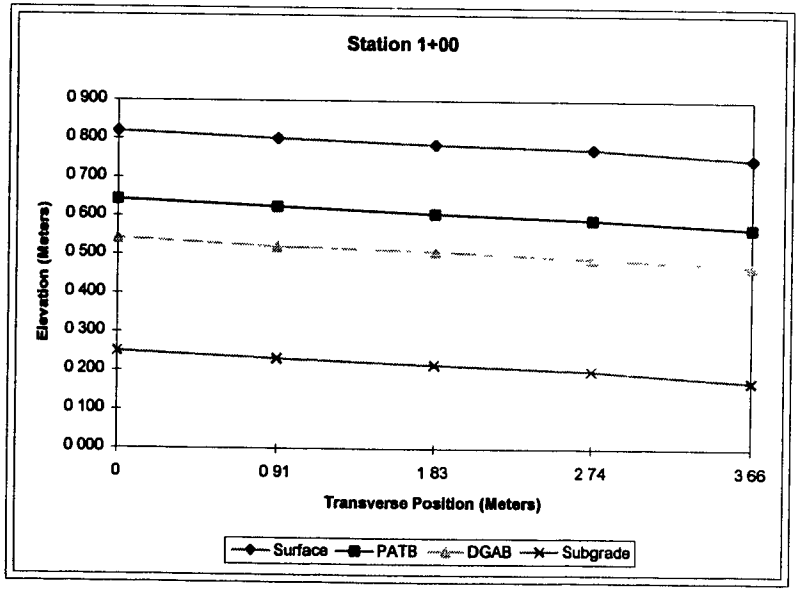
Florida, SPS-1 Project (120109)

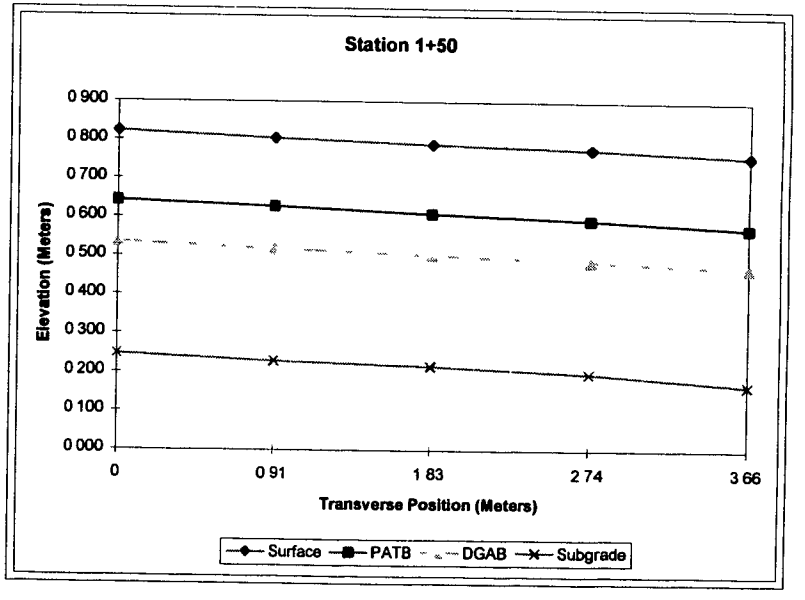
Transverse Offset	4 LAYERS	ELEVATION 0.0 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1.83 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	PATB THICKNESS Meters	DGAB THICKNESS Meters
0+00	Surface	0.826	0.183	0.107	0.290	0.805	0.177	0.107	0.290	0.786	0.177	0.101	0.293	0.774	0.180	0.101	0.293	0.753	0.177	0.101	0.302
	PATB	0.643				0.628				0.610				0.594				0.576			
	DGAB	0.536				0.521				0.509				0.494				0.475			
	Subgrade	0.247				0.232				0.216				0.201				0.174			
0+50	Surface	0.823	0.180	0.104	0.290	0.805	0.180	0.101	0.296	0.789	0.183	0.094	0.299	0.774	0.177	0.101	0.296	0.756	0.177	0.101	0.308
	PATB	0.643				0.625				0.607				0.597				0.579			
	DGAB	0.539				0.524				0.512				0.497				0.479			
	Subgrade	0.250				0.229				0.213				0.201				0.171			
1+00	Surface	0.820	0.177	0.101	0.293	0.802	0.177	0.104	0.290	0.786	0.180	0.098	0.293	0.774	0.183	0.101	0.290	0.750	0.180	0.098	0.299
	PATB	0.643				0.625				0.607				0.591				0.570			
	DGAB	0.543				0.521				0.509				0.491				0.472			
	Subgrade	0.250				0.232				0.216				0.201				0.174			
1+50	Surface	0.823	0.180	0.107	0.290	0.805	0.177	0.110	0.290	0.789	0.180	0.107	0.287	0.777	0.183	0.107	0.290	0.759	0.186	0.104	0.302
	PATB	0.643				0.628				0.610				0.594				0.573			
	DGAB	0.536				0.518				0.503				0.488				0.469			
	Subgrade	0.247				0.229				0.216				0.198				0.168			
2+00	Surface	0.826	0.177	0.110	0.290	0.811	0.186	0.104	0.290	0.796	0.186	0.101	0.293	0.780	0.186	0.104	0.290	0.759	0.189	0.098	0.296
	PATB	0.649				0.625				0.610				0.594				0.570			
	DGAB	0.539				0.521				0.509				0.491				0.472			
	Subgrade	0.250				0.232				0.216				0.201				0.177			
2+50	Surface	0.829	0.186	0.098	0.296	0.811	0.186	0.101	0.293	0.796	0.186	0.101	0.293	0.780	0.183	0.104	0.296	0.762	0.186	0.104	0.305
	PATB	0.643				0.625				0.610				0.597				0.576			
	DGAB	0.546				0.524				0.509				0.494				0.472			
	Subgrade	0.250				0.232				0.216				0.198				0.168			
3+00	Surface	0.829	0.180	0.104	0.299	0.811	0.174	0.110	0.305	0.799	0.183	0.104	0.299	0.783	0.183	0.107	0.302	0.762	0.183	0.107	0.308
	PATB	0.649				0.637				0.616				0.600				0.579			
	DGAB	0.546				0.527				0.512				0.494				0.472			
	Subgrade	0.247				0.223				0.213				0.192				0.165			
3+50	Surface	0.829	0.183	0.101	0.302	0.808	0.174	0.107	0.305	0.796	0.180	0.107	0.302	0.780	0.183	0.104	0.305	0.762	0.183	0.107	0.311
	PATB	0.646				0.634				0.616				0.597				0.579			
	DGAB	0.546				0.527				0.509				0.494				0.472			
	Subgrade	0.244				0.223				0.207				0.189				0.162			
4+00	Surface	0.826	0.177	0.104	0.299	0.811	0.174	0.110	0.305	0.796	0.180	0.104	0.302	0.780	0.183	0.107	0.299	0.762	0.186	0.107	0.305
	PATB	0.649				0.637				0.616				0.597				0.576			
	DGAB	0.546				0.527				0.512				0.491				0.469			
	Subgrade	0.247				0.223				0.210				0.192				0.165			
4+50	Surface	0.820	0.174	0.104	0.296	0.808	0.177	0.107	0.296	0.796	0.183	0.104	0.293	0.780	0.183	0.104	0.296	0.762	0.183	0.107	0.302
	PATB	0.646				0.631				0.613				0.597				0.579			
	DGAB	0.543				0.524				0.509				0.494				0.472			
	Subgrade	0.247				0.229				0.216				0.198				0.171			
5+00	Surface	0.826	0.180	0.098	0.302	0.808	0.174	0.104	0.308	0.799	0.183	0.098	0.305	0.786	0.186	0.094	0.308	0.762	0.177	0.104	0.311
	PATB	0.646				0.634				0.616				0.600				0.585			
	DGAB	0.549				0.530				0.518				0.506				0.482			
	Subgrade	0.247				0.223				0.213				0.198				0.171			
	AVG		0.180	0.102	0.295		0.177	0.106	0.297		0.181	0.101	0.296		0.182	0.103	0.297		0.182	0.104	0.305
	MAX		0.186	0.107	0.302		0.186	0.110	0.308		0.186	0.107	0.305		0.186	0.107	0.308		0.186	0.107	0.311
	MIN		0.186	0.107	0.302		0.186	0.110	0.308		0.186	0.107	0.305		0.186	0.107	0.308		0.186	0.107	0.311
	STD		0.003	0.003	0.005		0.004	0.003	0.007		0.002	0.004	0.005		0.002	0.004	0.006		0.004	0.003	0.004

Florida, SPS-1 Project (120109)

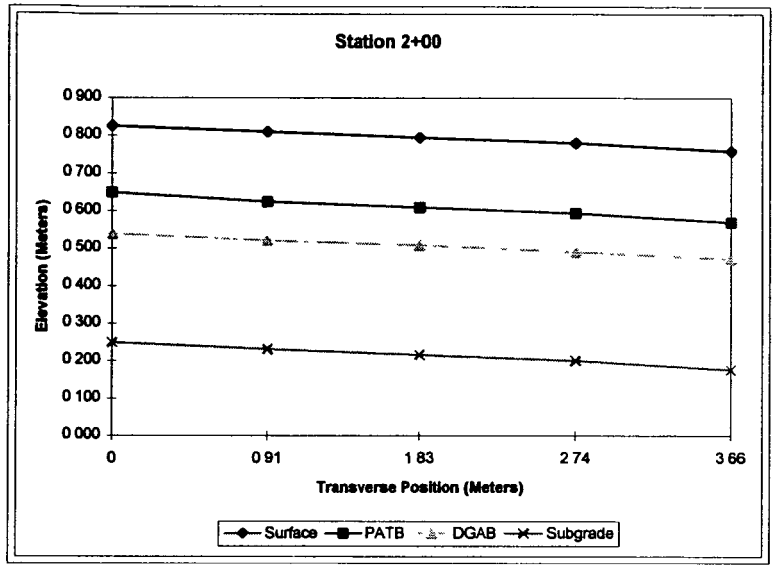


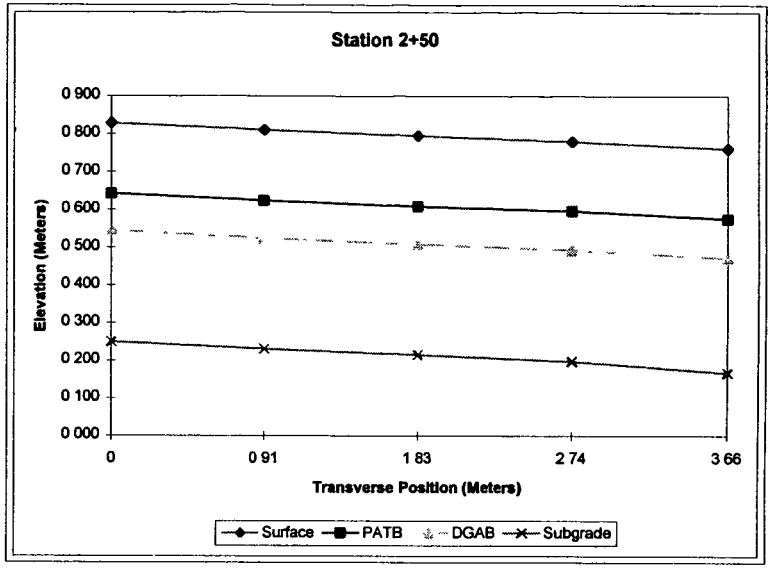


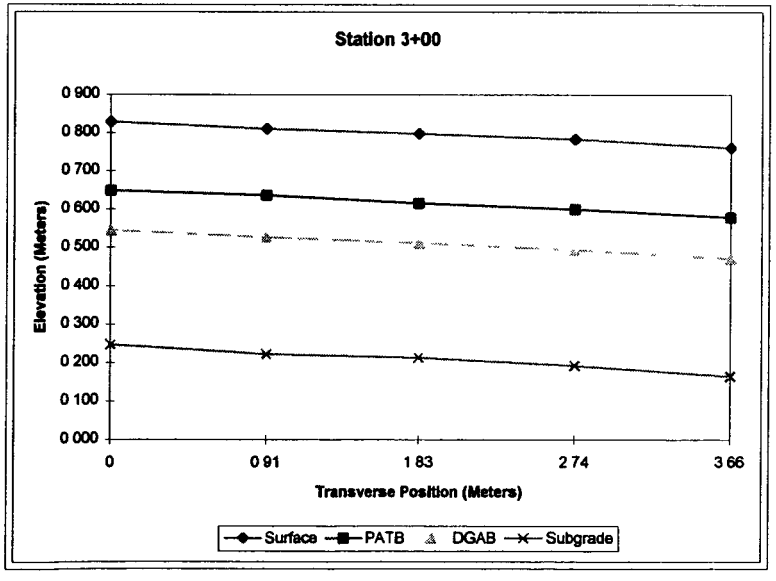


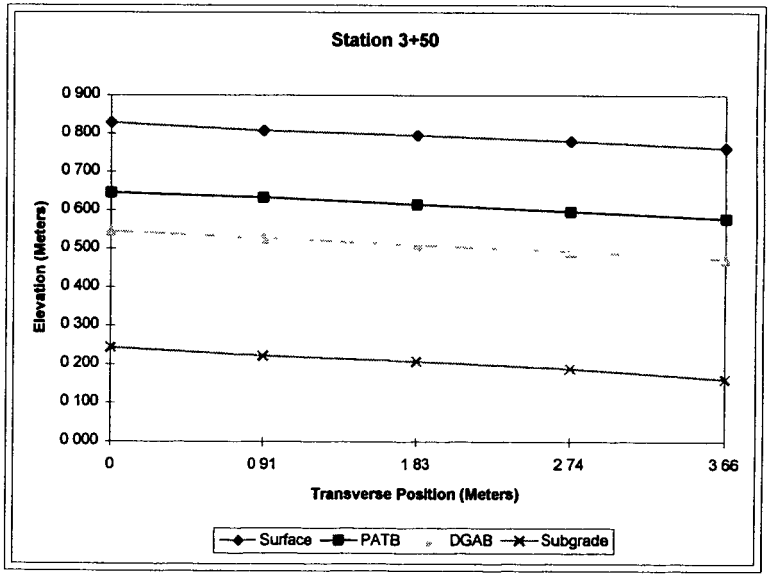


Florida, SPS-1 Project (120109)

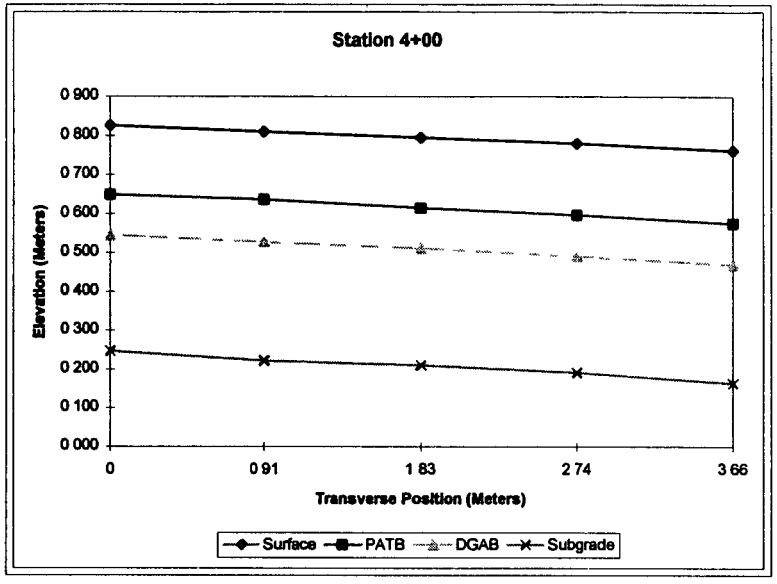


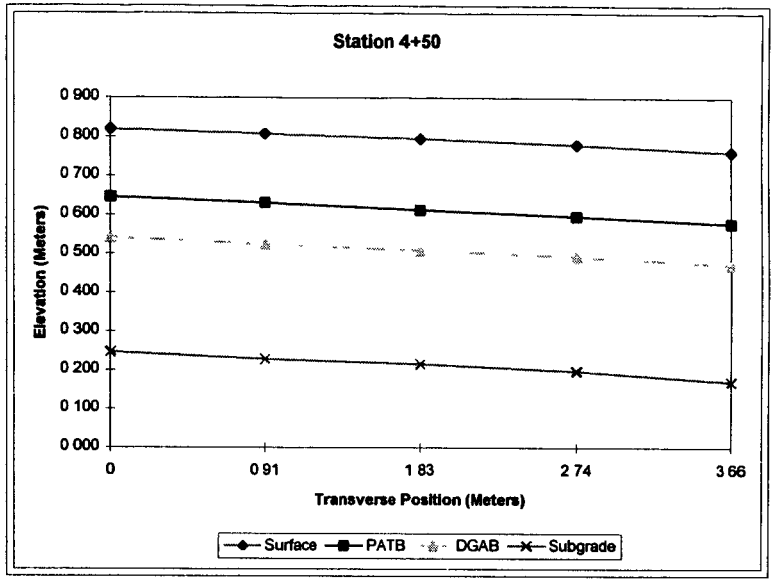


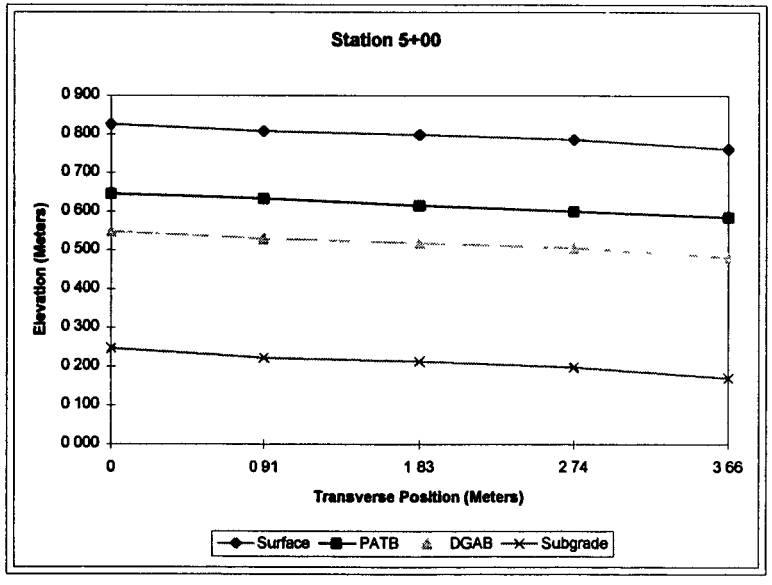




Florida, SPS-1 Project (120109)



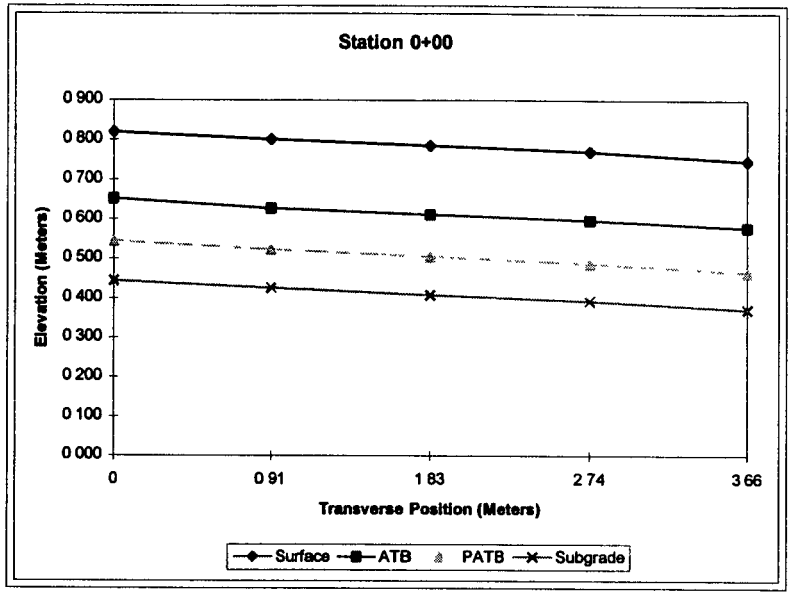


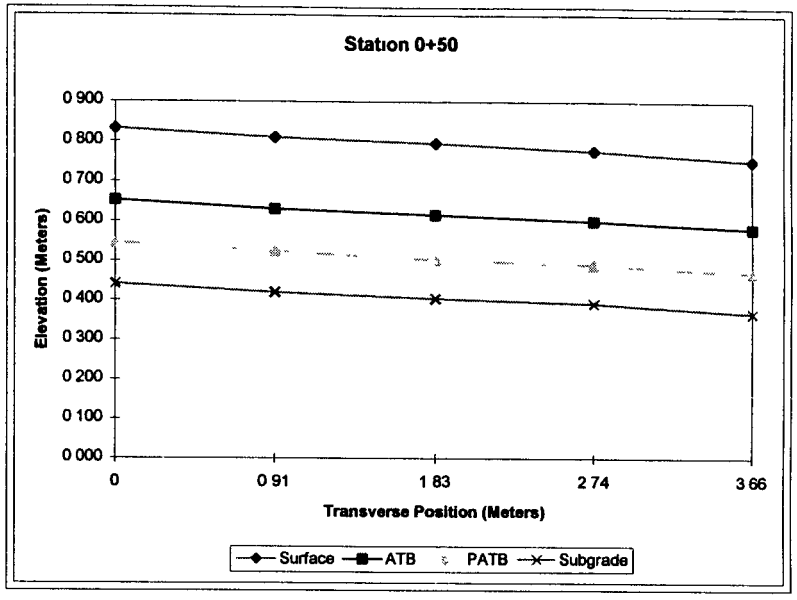


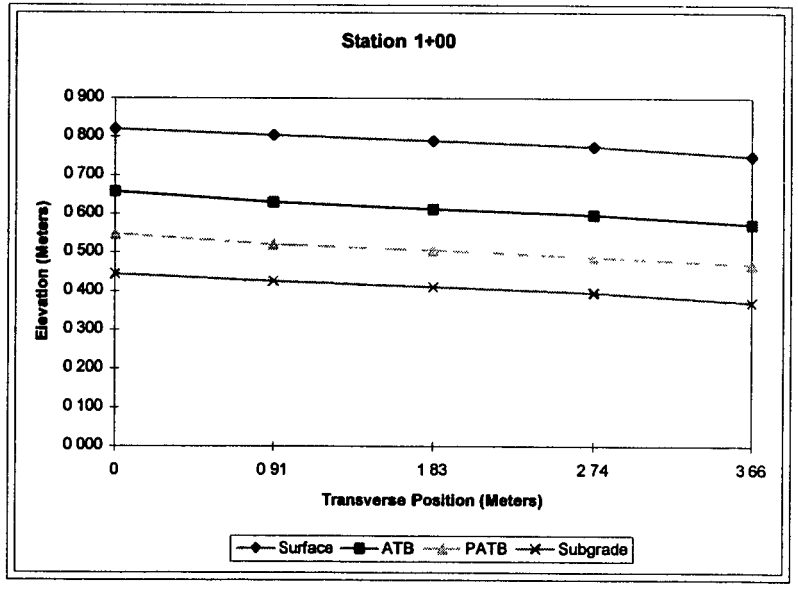
Florida, SPS-1 Project (120110)

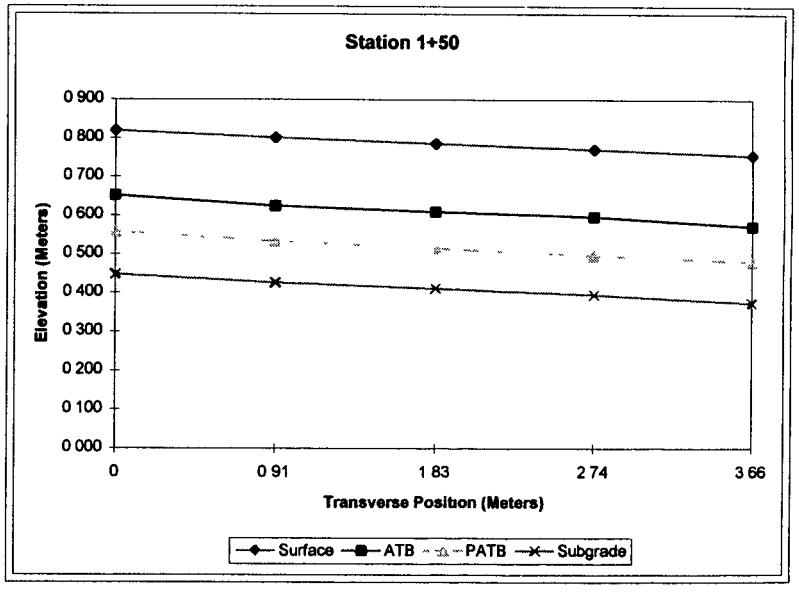
Transverse Offset	4 LAYERS	ELEVATION 0 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 1.83 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 2.74 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters
0+00	Surface	0 820	0 168	0 107	0 101	0 802	0 174	0 104	0 098	0 786	0 174	0 107	0 098	0 771	0 174	0 110	0 094	0 747	0 168	0 113	0 094
	ATB	0 652				0 628				0 613				0 597				0 579			
	PATB	0 546				0 524				0 506				0 488				0 466			
	Subgrade	0 445				0 427				0 408				0 393				0 372			
0+50	Surface	0 832	0 180	0 107	0 104	0 811	0 180	0 107	0 104	0 796	0 180	0 113	0 098	0 777	0 177	0 110	0 098	0 753	0 171	0 113	0 101
	ATB	0 652				0 631				0 616				0 600				0 582			
	PATB	0 546				0 524				0 503				0 491				0 469			
	Subgrade	0 442				0 421				0 405				0 393				0 369			
1+00	Surface	0 820	0 162	0 110	0 104	0 805	0 174	0 110	0 094	0 789	0 177	0 107	0 094	0 774	0 177	0 110	0 091	0 750	0 177	0 104	0 098
	ATB	0 658				0 631				0 613				0 597				0 573			
	PATB	0 549				0 521				0 506				0 488				0 469			
	Subgrade	0 445				0 427				0 411				0 396				0 372			
1+50	Surface	0 820	0 168	0 094	0 110	0 802	0 177	0 091	0 107	0 786	0 177	0 094	0 104	0 771	0 174	0 101	0 101	0 756	0 183	0 091	0 107
	ATB	0 652				0 625				0 610				0 597				0 573			
	PATB	0 558				0 533				0 515				0 497				0 482			
	Subgrade	0 448				0 427				0 411				0 396				0 375			
2+00	Surface	0 829	0 177	0 101	0 110	0 811	0 183	0 104	0 104	0 796	0 183	0 104	0 101	0 777	0 183	0 098	0 104	0 753	0 180	0 098	0 104
	ATB	0 652				0 628				0 613				0 594				0 573			
	PATB	0 552				0 524				0 509				0 497				0 475			
	Subgrade	0 442				0 421				0 408				0 393				0 372			
2+50	Surface	0 823	0 174	0 091	0 113	0 808	0 186	0 088	0 107	0 792	0 183	0 091	0 107	0 774	0 177	0 094	0 107	0 750	0 180	0 091	0 104
	ATB	0 649				0 622				0 610				0 597				0 570			
	PATB	0 558				0 533				0 518				0 503				0 479			
	Subgrade	0 445				0 427				0 411				0 396				0 375			
3+00	Surface	0 823	0 165	0 107	0 104	0 808	0 180	0 091	0 107	0 792	0 180	0 098	0 101	0 777	0 180	0 094	0 104	0 753	0 180	0 098	0 098
	ATB	0 658				0 628				0 613				0 597				0 573			
	PATB	0 552				0 536				0 515				0 503				0 475			
	Subgrade	0 448				0 430				0 415				0 399				0 378			
3+50	Surface	0 826	0 174	0 094	0 113	0 808	0 186	0 091	0 104	0 796	0 186	0 094	0 101	0 777	0 186	0 091	0 101	0 753	0 186	0 085	0 107
	ATB	0 652				0 622				0 610				0 591				0 567			
	PATB	0 558				0 530				0 515				0 500				0 482			
	Subgrade	0 445				0 427				0 415				0 399				0 375			
4+00	Surface	0 823	0 171	0 094	0 113	0 808	0 180	0 091	0 110	0 792	0 180	0 091	0 110	0 777	0 180	0 091	0 110	0 750	0 174	0 094	0 107
	ATB	0 652				0 628				0 613				0 597				0 576			
	PATB	0 558				0 538				0 521				0 506				0 482			
	Subgrade	0 445				0 427				0 411				0 396				0 375			
4+50	Surface	0 829	0 177	0 094	0 110	0 808	0 180	0 091	0 110	0 792	0 183	0 091	0 104	0 774	0 180	0 094	0 107	0 750	0 180	0 091	0 104
	ATB	0 652				0 628				0 610				0 594				0 570			
	PATB	0 558				0 536				0 518				0 500				0 479			
	Subgrade	0 448				0 427				0 415				0 393				0 375			
5+00	Surface	0 826	0 165	0 104	0 113	0 811	0 177	0 098	0 110	0 792	0 174	0 098	0 110	0 777	0 177	0 098	0 107	0 750	0 174	0 091	0 113
	ATB	0 661				0 634				0 619				0 600				0 576			
	PATB	0 558				0 536				0 521				0 503				0 485			
	Subgrade	0 445				0 427				0 411				0 396				0 372			
	AVG	0 171	0 100	0 108		0 179	0 096	0 105		0 179	0 098	0 102		0 178	0 099	0 102		0 177	0 097	0 103	
	MAX	0 180	0 110	0 113		0 186	0 110	0 110		0 186	0 113	0 110		0 186	0 110	0 110		0 186	0 113	0 113	
	MIN	0 180	0 110	0 113		0 186	0 110	0 110		0 186	0 113	0 110		0 186	0 110	0 110		0 186	0 113	0 113	
	STD	0 006	0 007	0 005		0 004	0 007	0 005		0 004	0 007	0 005		0 003	0 007	0 006		0 005	0 009	0 005	

Florida, SPS-1 Project (120110)

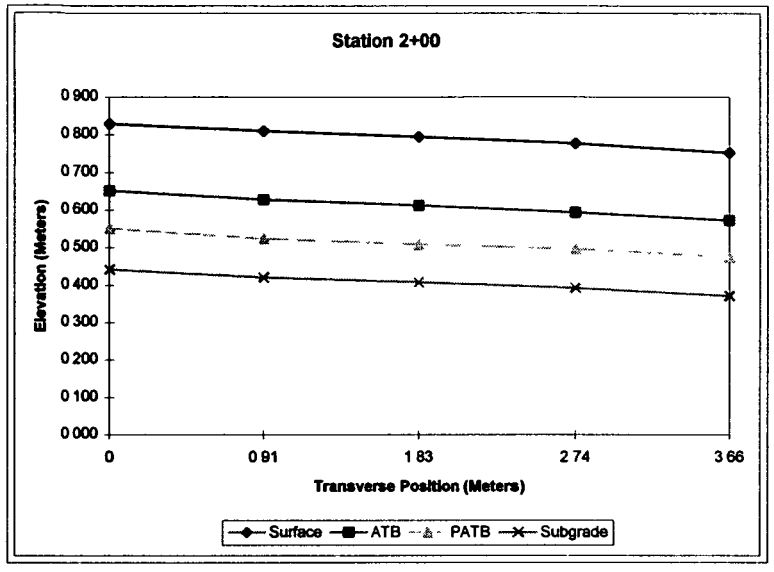


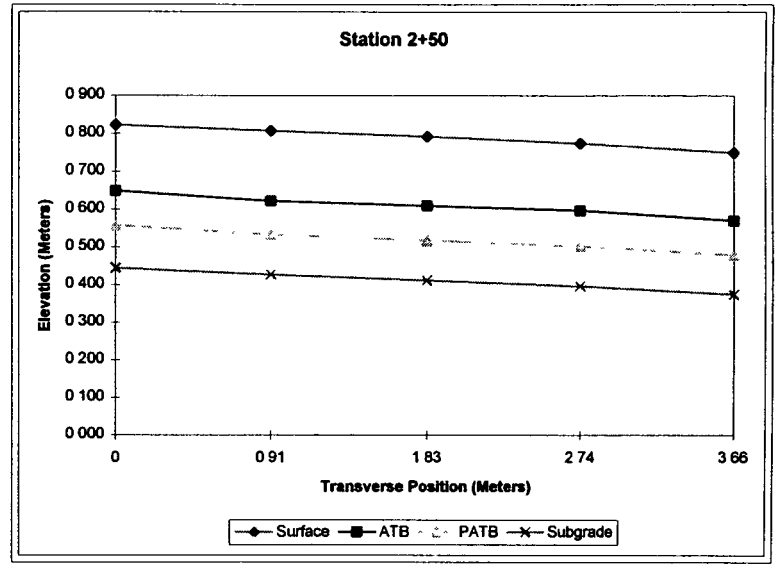


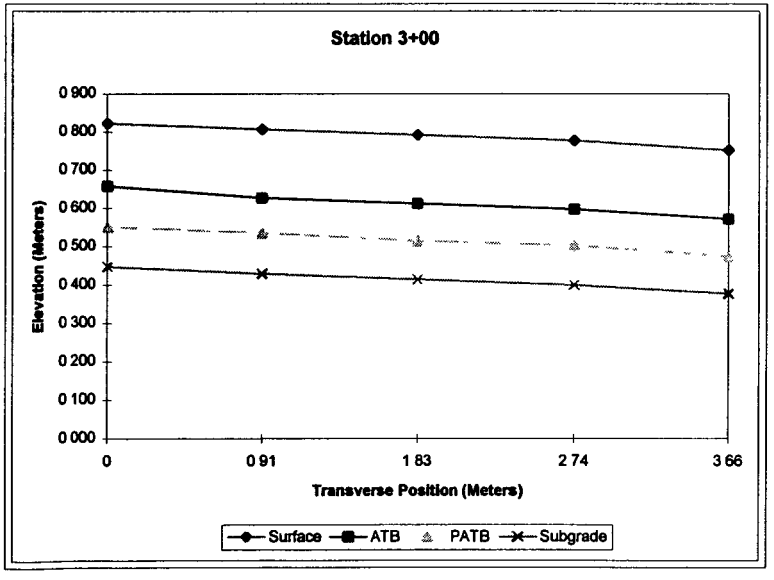


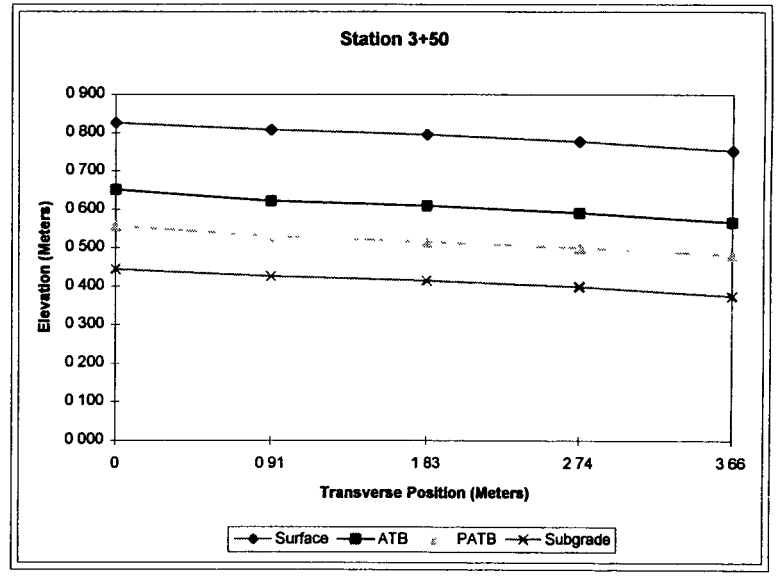


Florida, SPS-1 Project (120110)

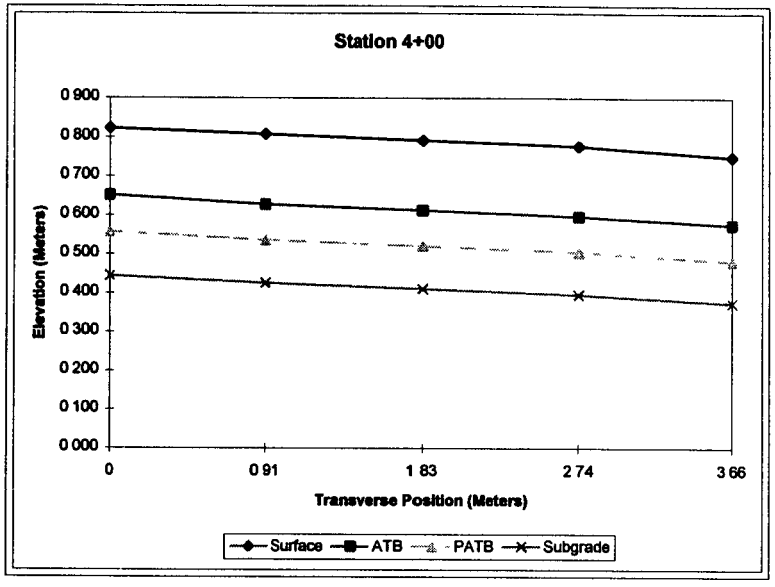


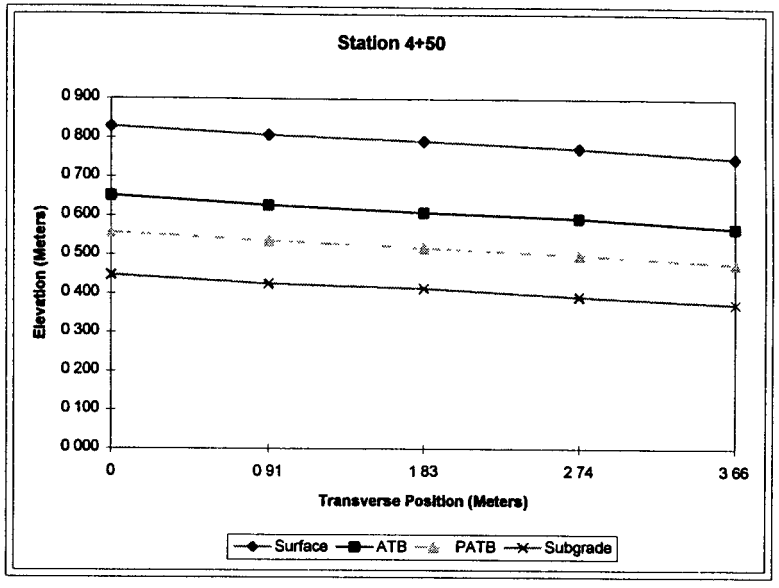


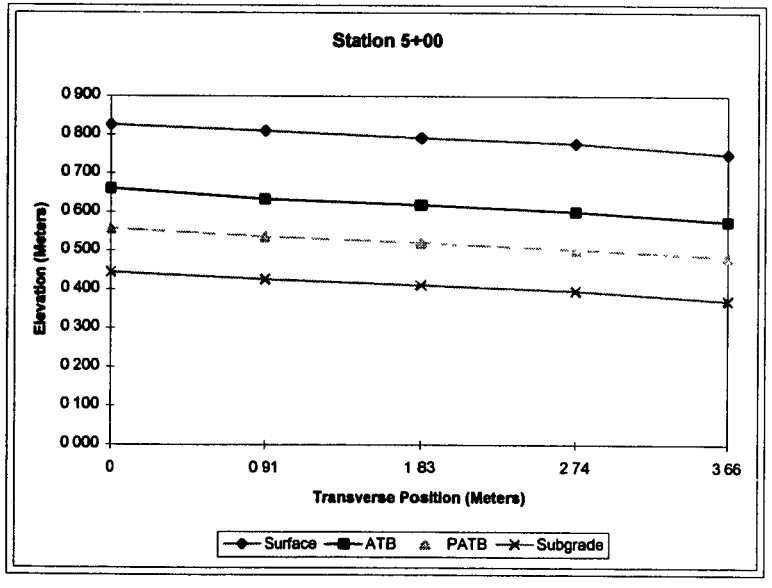




Florida, SPS-1 Project (120110)



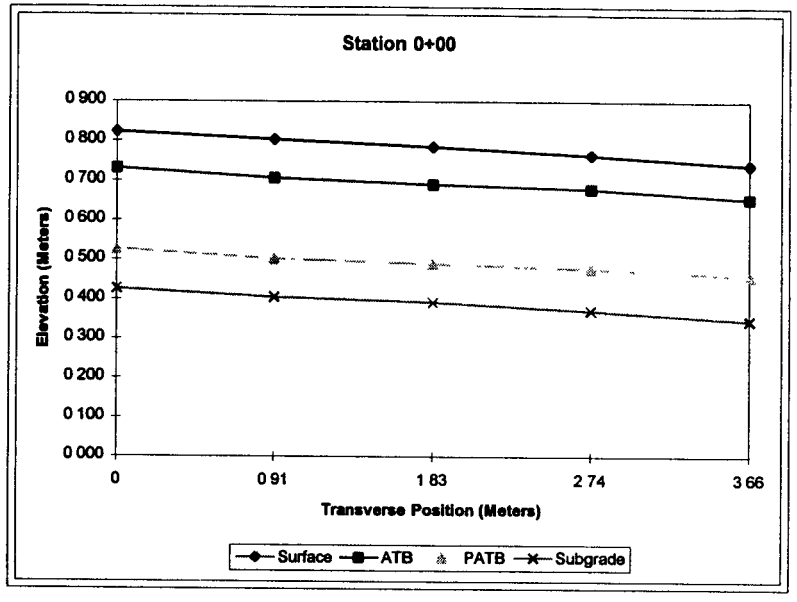


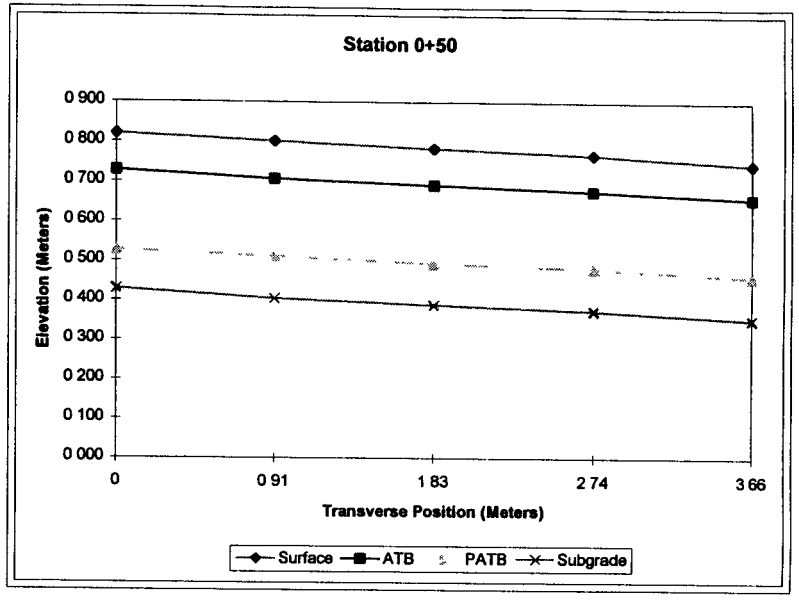


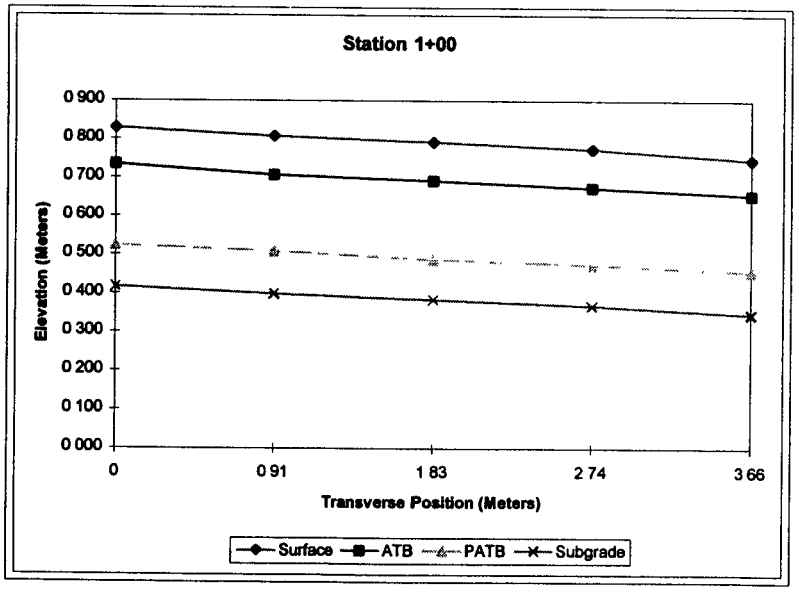
Florida, SPS-1 Project (120111)

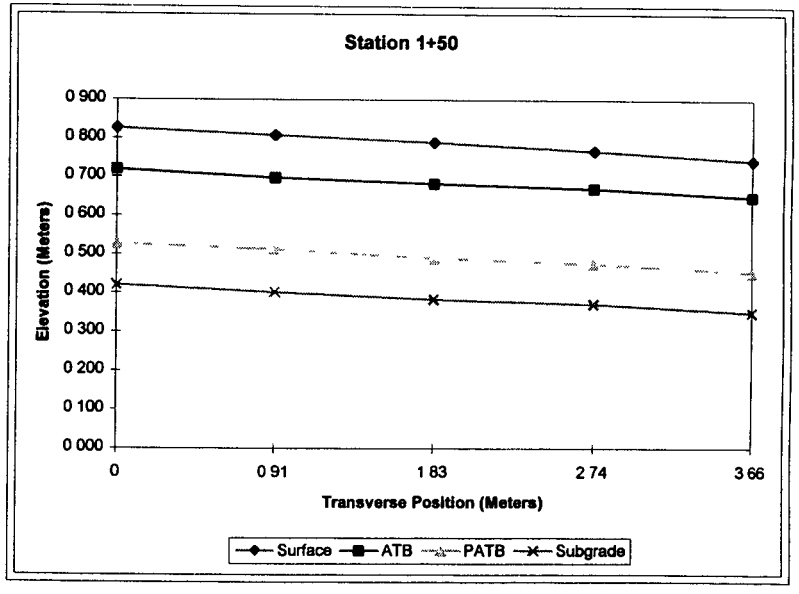
Transverse Offset 4 LAYERS		ELEVATION 0 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 1.83 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 2.74 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters
0+00	Surface	0 823	0 091	0 204	0 101	0 805	0 098	0 204	0 098	0 786	0 094	0 201	0 098	0 765	0 085	0 201	0 107	0 741	0 085	0 195	0 113
	ATB	0 732				0 707				0 692				0 680				0 655			
	PATB	0 527				0 503				0 491				0 479				0 460			
	Subgrade	0 427				0 405				0 393				0 372				0 347			
0+50	Surface	0 820	0 091	0 201	0 098	0 802	0 094	0 195	0 107	0 783	0 091	0 198	0 104	0 768	0 091	0 195	0 107	0 744	0 085	0 198	0 107
	ATB	0 728				0 707				0 692				0 677				0 658			
	PATB	0 527				0 512				0 494				0 482				0 460			
	Subgrade	0 430				0 405				0 390				0 375				0 354			
1+00	Surface	0 829	0 094	0 210	0 107	0 808	0 101	0 198	0 110	0 792	0 101	0 204	0 104	0 774	0 101	0 198	0 107	0 747	0 091	0 198	0 110
	ATB	0 735				0 707				0 692				0 674				0 655			
	PATB	0 524				0 509				0 488				0 475				0 457			
	Subgrade	0 418				0 399				0 384				0 369				0 347			
1+50	Surface	0 826	0 107	0 192	0 107	0 808	0 110	0 186	0 110	0 789	0 107	0 192	0 107	0 768	0 098	0 195	0 104	0 744	0 094	0 195	0 104
	ATB	0 719				0 698				0 683				0 671				0 649			
	PATB	0 527				0 512				0 491				0 475				0 454			
	Subgrade	0 421				0 402				0 384				0 372				0 351			
2+00	Surface	0 823	0 098	0 201	0 098	0 805	0 104	0 192	0 107	0 789	0 101	0 198	0 104	0 774	0 101	0 195	0 107	0 750	0 094	0 195	0 110
	ATB	0 725				0 701				0 689				0 674				0 655			
	PATB	0 524				0 509				0 491				0 479				0 460			
	Subgrade	0 427				0 402				0 387				0 372				0 351			
2+50	Surface	0 826	0 101	0 201	0 104	0 808	0 110	0 195	0 104	0 792	0 110	0 198	0 101	0 771	0 101	0 204	0 098	0 744	0 098	0 198	0 104
	ATB	0 725				0 698				0 683				0 671				0 646			
	PATB	0 524				0 503				0 485				0 466				0 448			
	Subgrade	0 421				0 399				0 384				0 369				0 344			
3+00	Surface	0 829	0 104	0 198	0 104	0 814	0 113	0 192	0 107	0 796	0 107	0 198	0 101	0 777	0 101	0 198	0 104	0 756	0 101	0 195	0 110
	ATB	0 725				0 701				0 689				0 677				0 655			
	PATB	0 527				0 509				0 491				0 479				0 460			
	Subgrade	0 424				0 402				0 390				0 375				0 351			
3+50	Surface	0 826	0 101	0 201	0 098	0 808	0 107	0 195	0 101	0 789	0 104	0 198	0 094	0 771	0 101	0 201	0 088	0 750	0 098	0 198	0 101
	ATB	0 725				0 701				0 686				0 671				0 652			
	PATB	0 524				0 506				0 488				0 469				0 454			
	Subgrade	0 427				0 405				0 393				0 381				0 354			
4+00	Surface	0 829	0 104	0 195	0 107	0 808	0 107	0 192	0 104	0 789	0 104	0 198	0 098	0 771	0 098	0 204	0 094	0 744	0 091	0 207	0 098
	ATB	0 725				0 701				0 686				0 674				0 652			
	PATB	0 530				0 509				0 488				0 469				0 445			
	Subgrade	0 424				0 405				0 390				0 375				0 347			
4+50	Surface	0 823	0 091	0 207	0 104	0 805	0 104	0 195	0 107	0 786	0 101	0 201	0 101	0 771	0 098	0 207	0 098	0 750	0 101	0 207	0 101
	ATB	0 732				0 701				0 686				0 674				0 649			
	PATB	0 524				0 506				0 485				0 466				0 442			
	Subgrade	0 421				0 399				0 384				0 369				0 341			
5+00	Surface	0 826	0 098	0 198	0 110	0 808	0 104	0 195	0 113	0 789	0 107	0 198	0 101	0 771	0 094	0 213	0 098	0 747	0 094	0 216	0 091
	ATB	0 728				0 704				0 683				0 677				0 652			
	PATB	0 530				0 509				0 485				0 463				0 436			
	Subgrade	0 421				0 396				0 384				0 366				0 344			
	AVG	0 098	0.201	0 104		0 105	0 195	0 106		0 102	0 199	0 101		0 097	0 202	0 100		0 094	0 201	0 104	
	MAX	0 107	0 210	0 110		0 113	0 204	0 113		0 110	0 204	0 107		0 101	0 213	0 107		0 101	0 216	0 113	
	MIN	0 107	0.210	0 110		0 113	0 204	0 113		0 110	0 204	0 107		0 101	0 213	0 107		0 101	0 216	0 113	
	STD	0 005	0.005	0 004		0 005	0 004	0 004		0 005	0 003	0 003		0 005	0 005	0 006		0 005	0 007	0 006	

Florida, SPS-1 Project (120111)

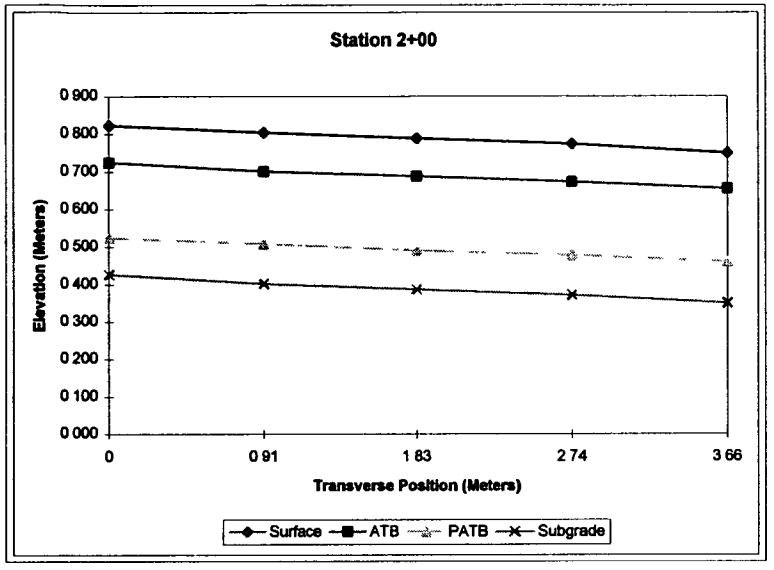


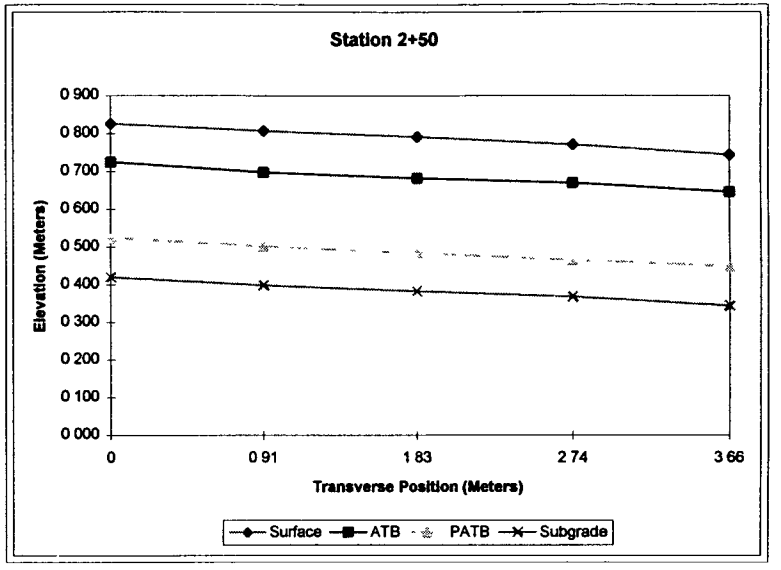


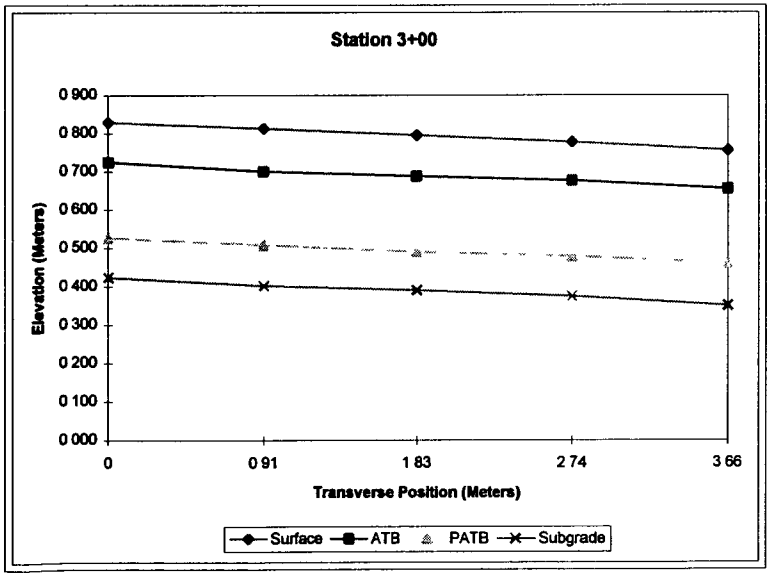


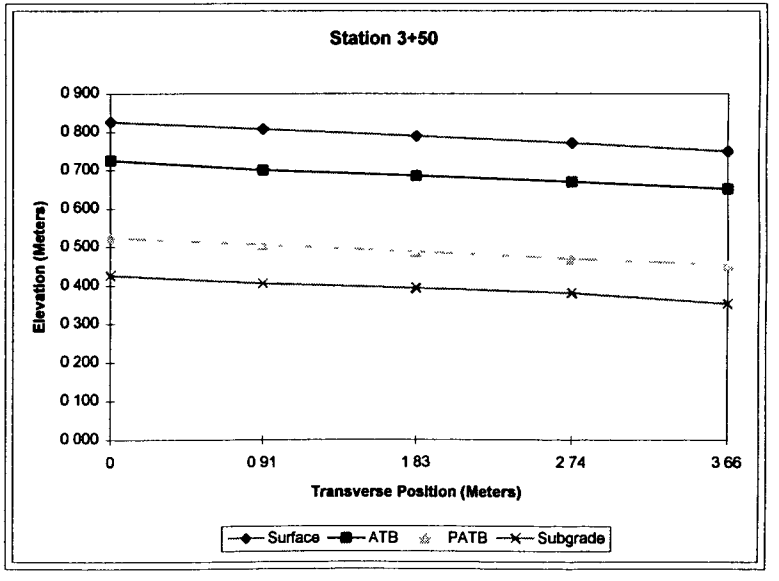


Florida, SPS-1 Project (120111)

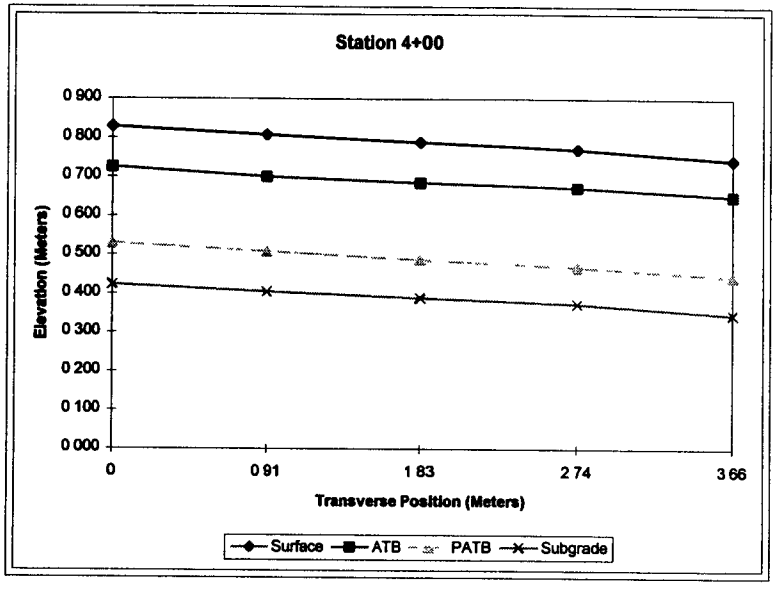


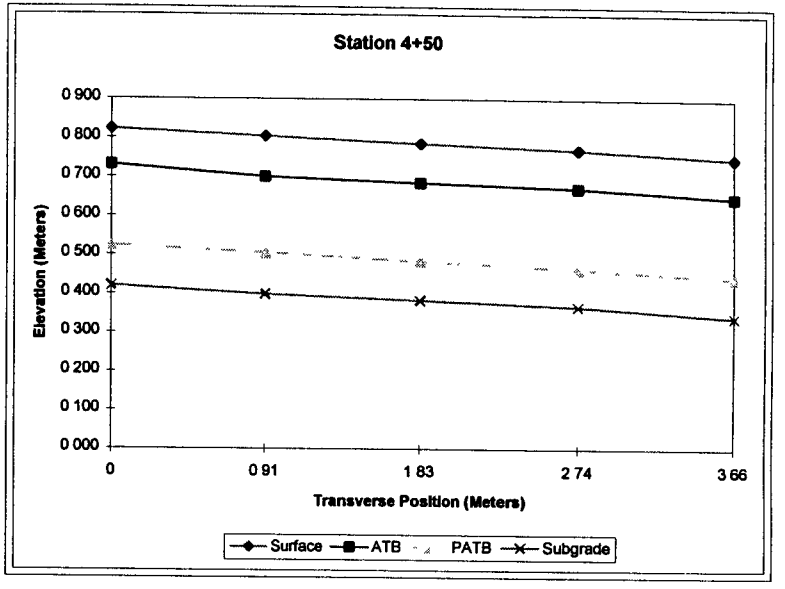


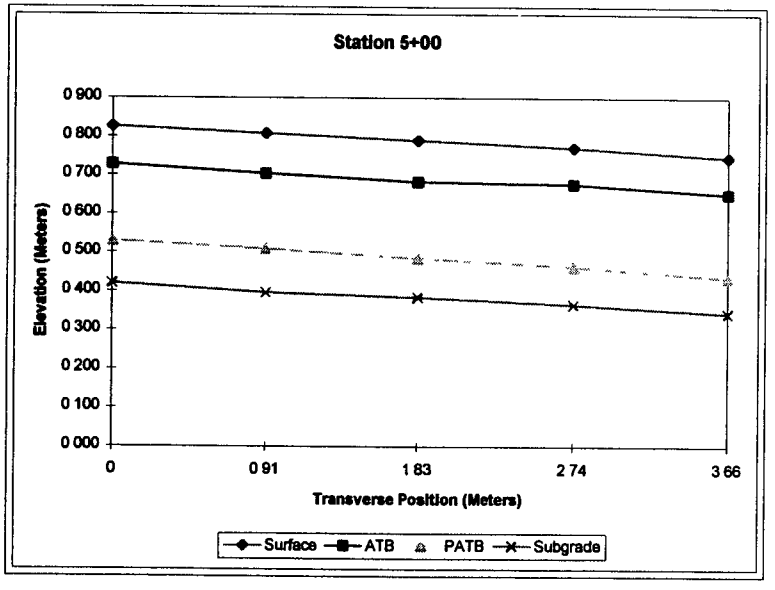




Florida, SPS-1 Project (120111)



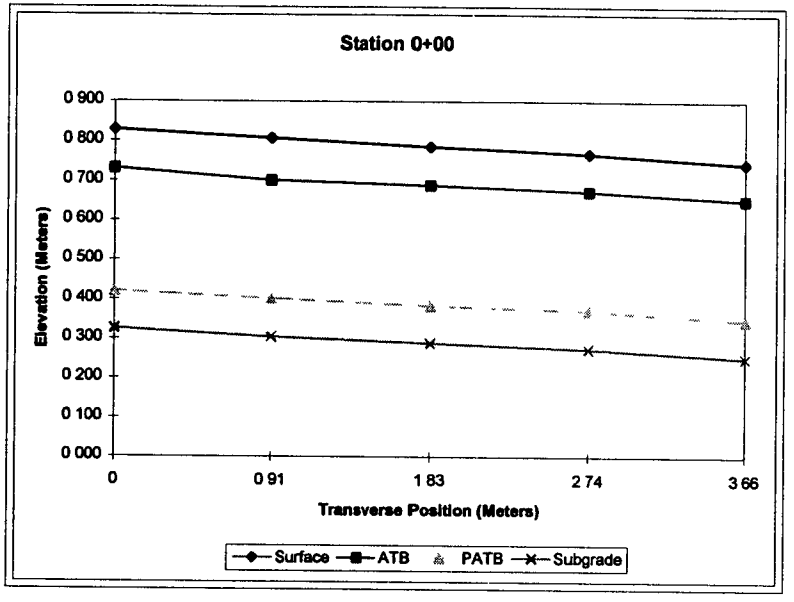


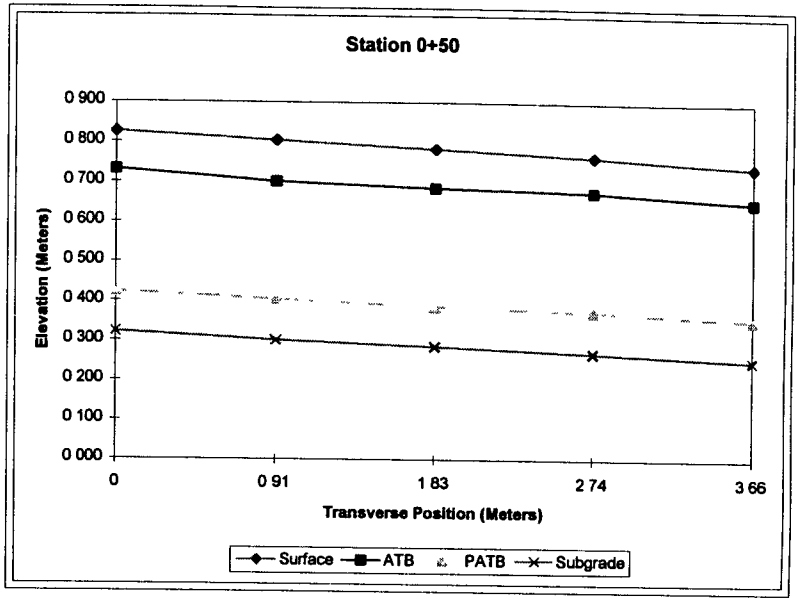


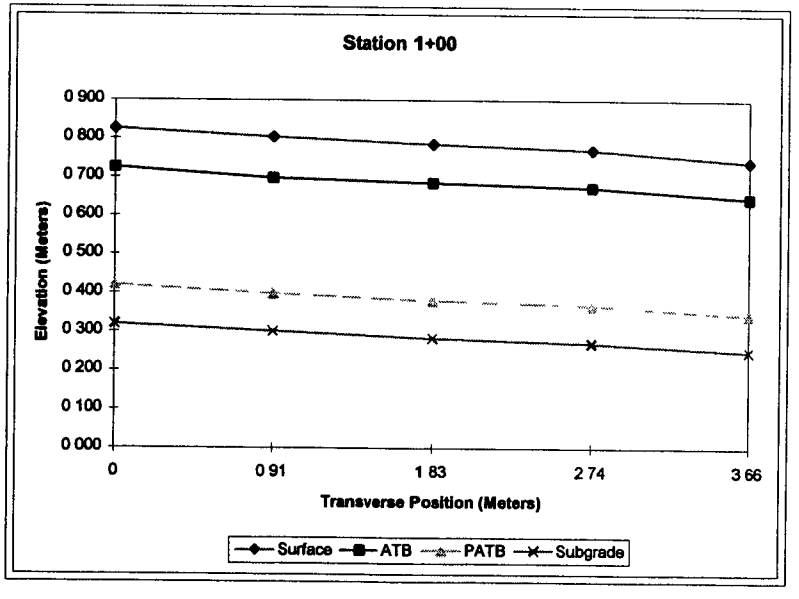
Florida, SPS-1 Project (120112)

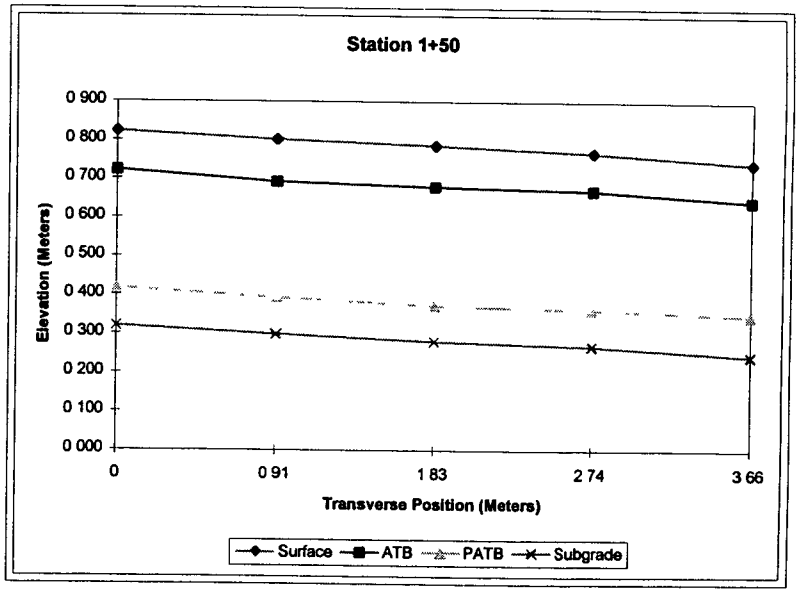
Transverse Offset 4	LAYERS	ELEVATION 0 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 0.91 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 1.83 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 2.74 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	ATB THICKNESS Meters	PATB THICKNESS Meters
0+00	Surface	0 829	0 098	0 311	0 094	0 808	0 107	0 299	0 098	0 786	0 098	0 305	0 094	0 768	0 094	0 302	0 098	0 744	0 091	0 305	0 094
	ATB	0 732				0 701				0 689				0 674				0 652			
	PATB	0 421				0 402				0 384				0 372				0 347			
	Subgrade	0 326				0 305				0 290				0 274				0 253			
0+50	Surface	0 826	0 094	0 308	0 101	0 805	0 104	0 296	0 104	0 783	0 098	0 299	0 101	0 765	0 088	0 302	0 104	0 741	0 088	0 296	0 104
	ATB	0 732				0 701				0 686				0 677				0 652			
	PATB	0 424				0 405				0 387				0 375				0 357			
	Subgrade	0 323				0 302				0 287				0 271				0 253			
1+00	Surface	0 826	0 101	0 305	0 101	0 805	0 107	0 299	0 098	0 786	0 101	0 305	0 098	0 771	0 098	0 305	0 098	0 741	0 094	0 302	0 094
	ATB	0 725				0 698				0 686				0 674				0 646			
	PATB	0 421				0 399				0 381				0 369				0 344			
	Subgrade	0 320				0 302				0 283				0 271				0 250			
1+50	Surface	0 823	0 101	0 305	0 098	0 802	0 110	0 299	0 094	0 786	0 107	0 308	0 091	0 768	0 098	0 308	0 094	0 741	0 098	0 296	0 104
	ATB	0 722				0 692				0 680				0 671				0 643			
	PATB	0 418				0 393				0 372				0 363				0 347			
	Subgrade	0 320				0 299				0 280				0 268				0 244			
2+00	Surface	0 823	0 104	0 302	0 101	0 805	0 104	0 308	0 098	0 789	0 107	0 305	0 098	0 771	0 098	0 308	0 101	0 747	0 094	0 311	0 094
	ATB	0 719				0 701				0 683				0 674				0 652			
	PATB	0 418				0 393				0 378				0 366				0 341			
	Subgrade	0 317				0 296				0 280				0 265				0 247			
2+50	Surface	0 829	0 107	0 290	0 110	0 808	0 107	0 299	0 101	0 786	0 101	0 302	0 098	0 768	0 091	0 308	0 094	0 741	0 088	0 308	0 091
	ATB	0 722				0 701				0 686				0 677				0 652			
	PATB	0 433				0 402				0 384				0 369				0 344			
	Subgrade	0 323				0 302				0 287				0 274				0 253			
3+00	Surface	0 823	0 101	0 299	0 101	0 802	0 104	0 299	0 098	0 786	0 107	0 296	0 098	0 768	0 098	0 302	0 094	0 744	0 094	0 296	0 104
	ATB	0 722				0 698				0 680				0 671				0 649			
	PATB	0 424				0 399				0 384				0 369				0 354			
	Subgrade	0 323				0 302				0 287				0 274				0 250			
3+50	Surface	0 826	0 104	0 299	0 098	0 808	0 107	0 299	0 101	0 789	0 101	0 305	0 094	0 768	0 091	0 308	0 094	0 747	0 091	0 308	0 094
	ATB	0 722				0 701				0 689				0 677				0 655			
	PATB	0 424				0 402				0 384				0 369				0 347			
	Subgrade	0 326				0 302				0 290				0 274				0 253			
4+00	Surface	0 823	0 104	0 296	0 098	0 802	0 107	0 293	0 098	0 786	0 107	0 293	0 098	0 768	0 098	0 293	0 104	0 741	0 088	0 299	0 101
	ATB	0 719				0 695				0 680				0 671				0 652			
	PATB	0 424				0 402				0 387				0 378				0 354			
	Subgrade	0 326				0 305				0 290				0 274				0 253			
4+50	Surface	0 826	0 107	0 299	0 094	0 808	0 110	0 296	0 101	0 789	0 107	0 299	0 098	0 774	0 104	0 299	0 101	0 744	0 094	0 296	0 098
	ATB	0 719				0 698				0 683				0 671				0 649			
	PATB	0 421				0 402				0 384				0 372				0 354			
	Subgrade	0 326				0 302				0 287				0 271				0 256			
5+00	Surface	0 826	0 101	0 311	0 091	0 808	0 104	0 308	0 098	0 789	0 104	0 314	0 088	0 771	0 098	0 311	0 094	0 744	0 098	0 302	0 098
	ATB	0 725				0 704				0 686				0 674				0 646			
	PATB	0 415				0 396				0 372				0 363				0 344			
	Subgrade	0 323				0 299				0 283				0 268				0 247			
	AVG		0 102	0 302	0 098		0.106	0 298	0 099		0 103	0 302	0 096		0 096	0 304	0 098		0 093	0 301	0 098
	MAX		0 107	0 311	0 110		0.110	0 308	0 104		0 107	0 314	0 101		0 104	0 311	0 104		0 098	0 308	0 104
	MIN		0 107	0 311	0 110		0.110	0 308	0 104		0 107	0 314	0 101		0 104	0 311	0 104		0 098	0 308	0 104
	STD		0 004	0 007	0 005		0.002	0 004	0 002		0 004	0 006	0 003		0 004	0 005	0 004		0 003	0 005	0 004

Florida, SPS-1 Project (120112)

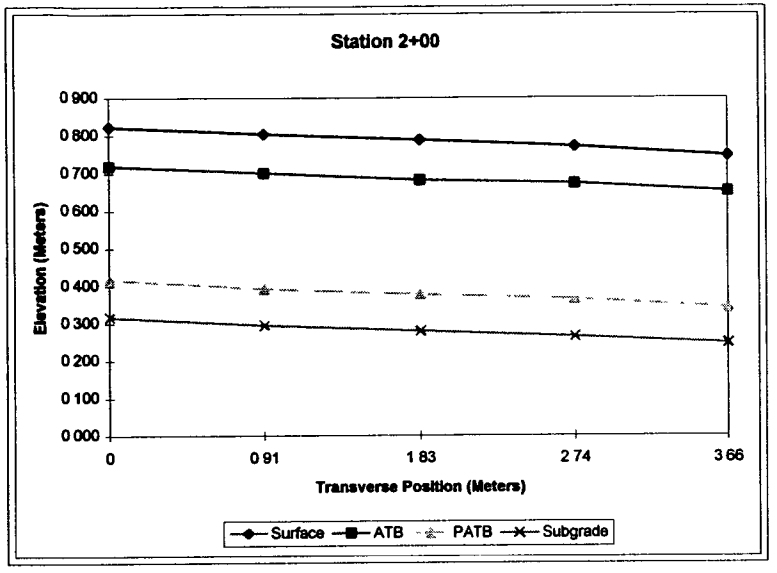


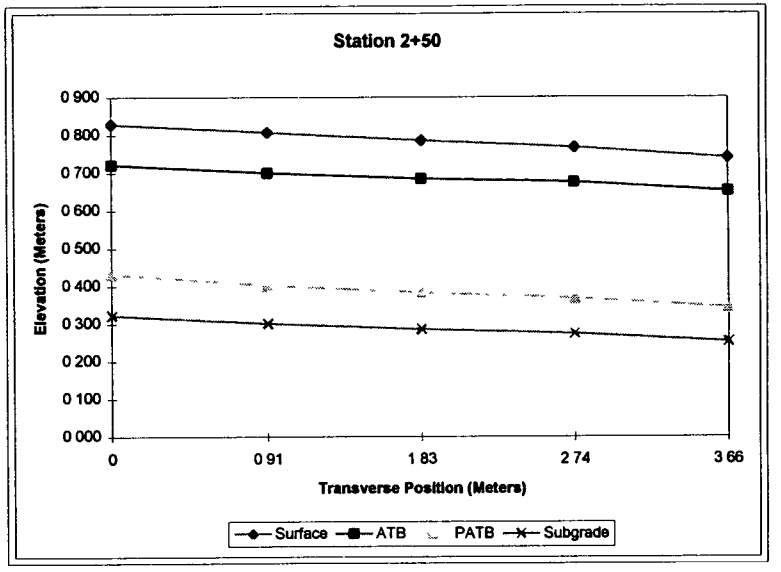


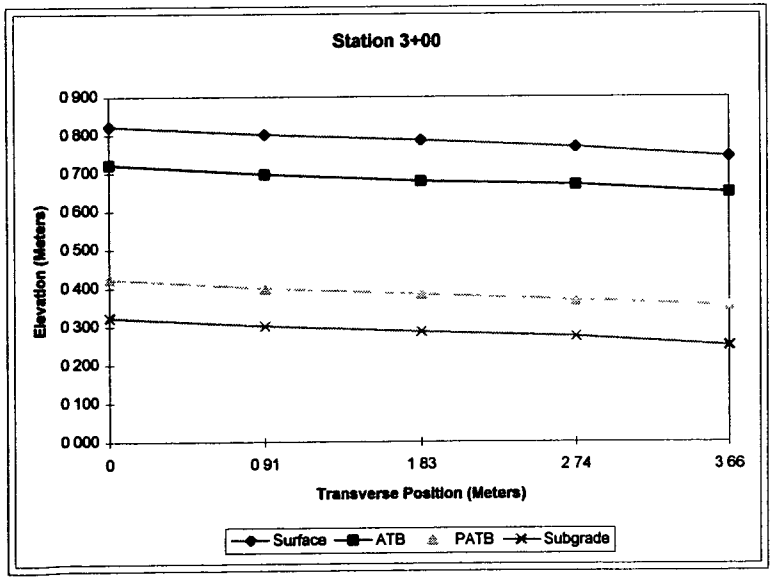


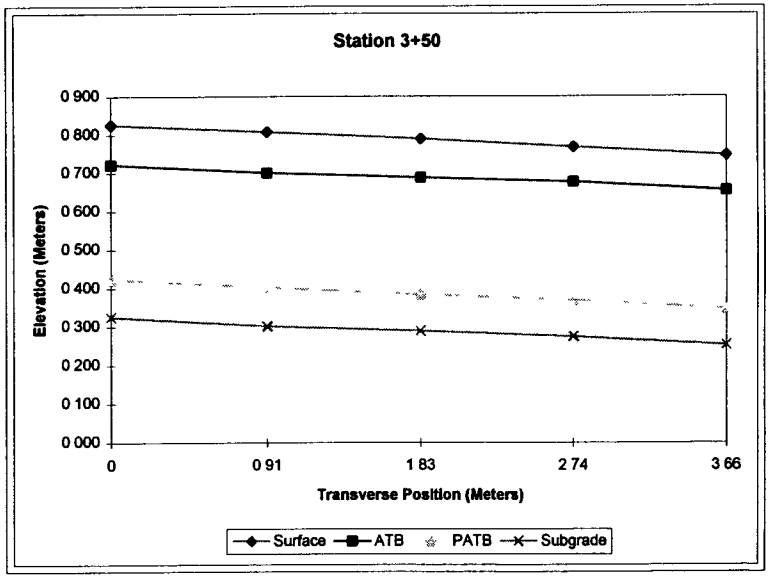


Florida, SPS-1 Project (120112)

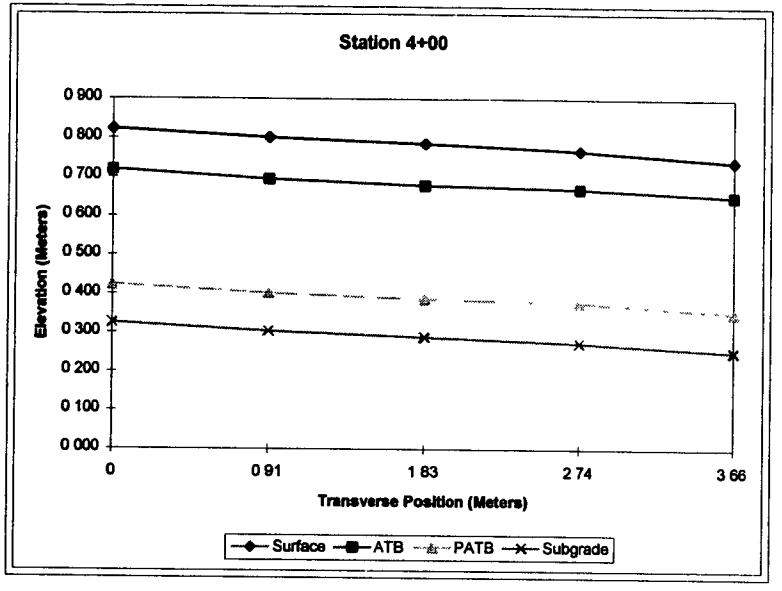


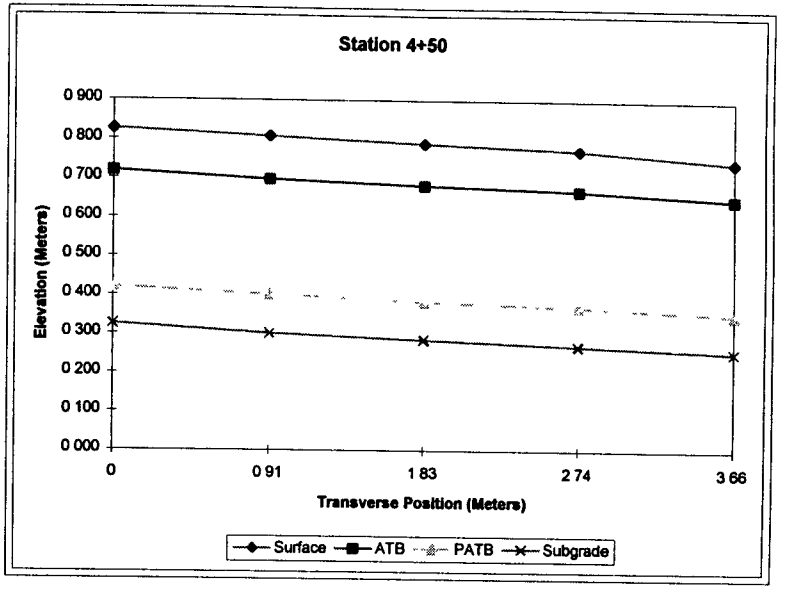


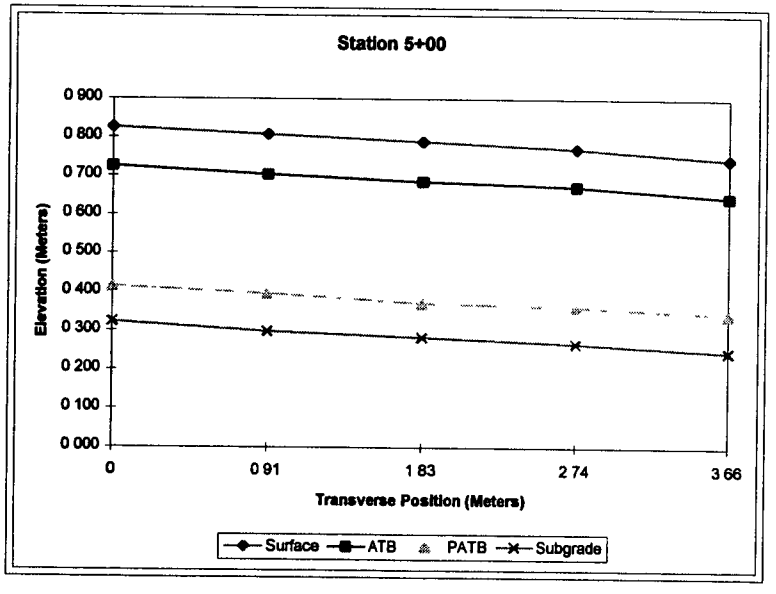




Florida, SPS-1 Project (120112)



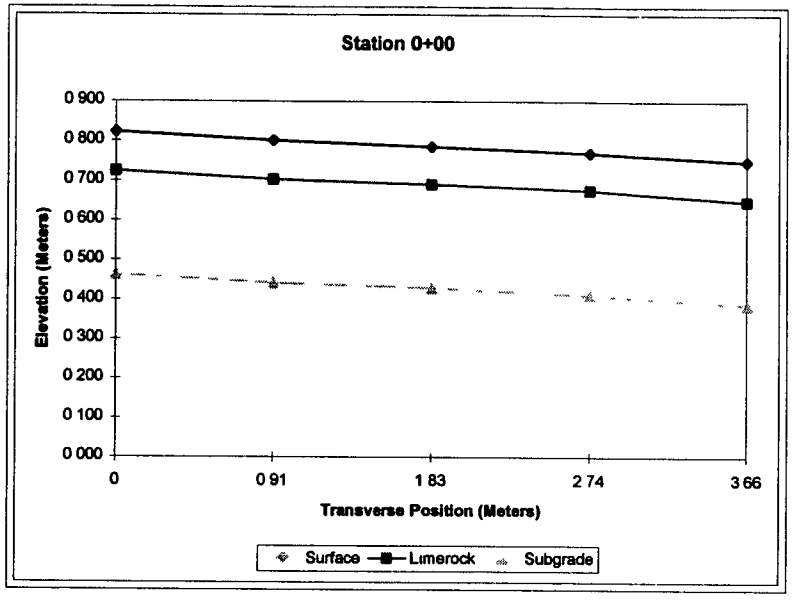


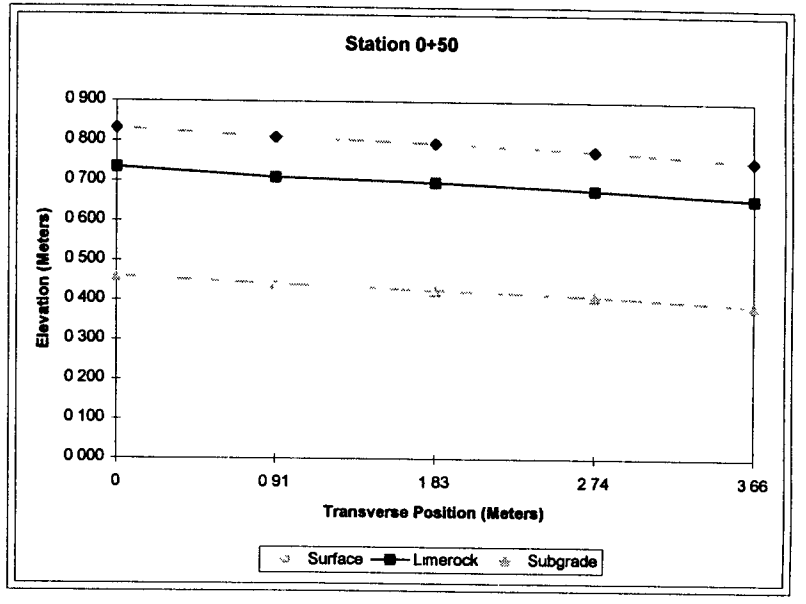


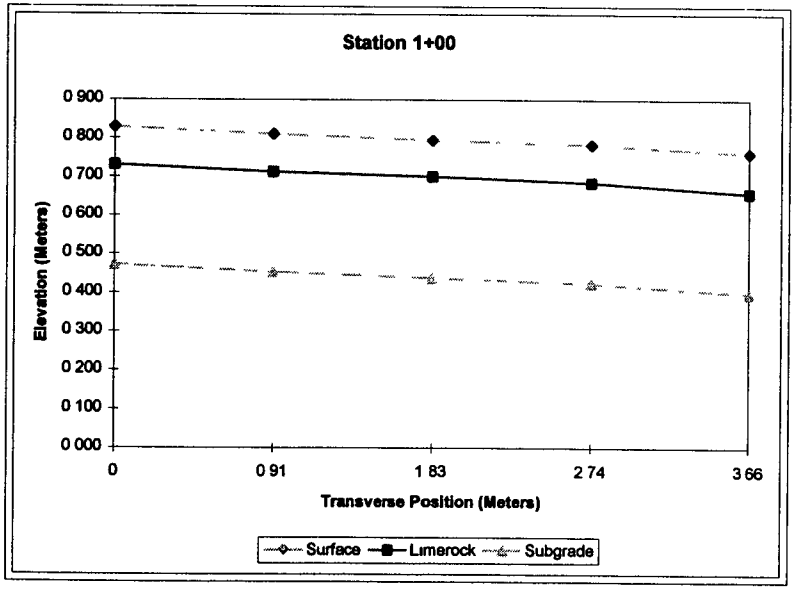
Florida, SPS-1 Project (120161)

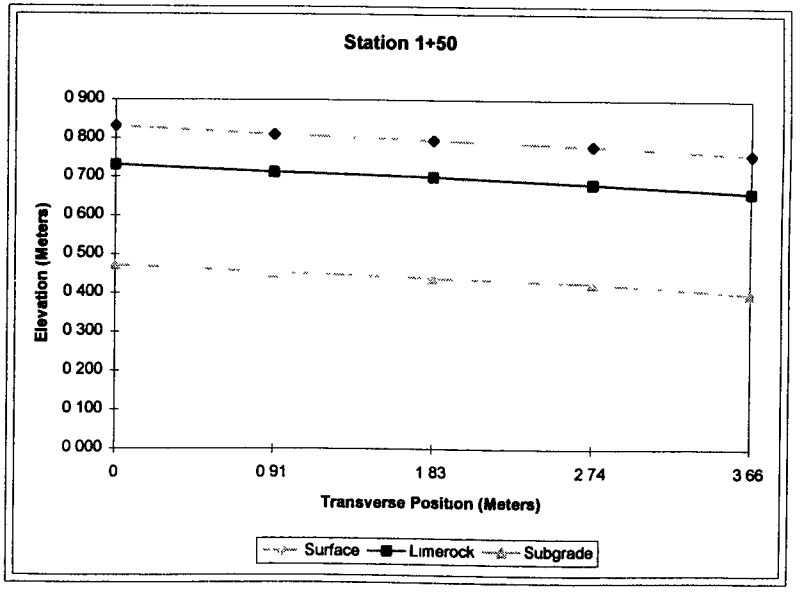
Transverse Offset	3 LAYERS	ELEVATION 0 Meters	Surface THICKNESS Meters	Limerock THICKNESS Meters	ELEVATION 0 91 Meters	Surface THICKNESS Meters	Limerock THICKNESS Meters	ELEVATION 1 83 Meters	Surface THICKNESS Meters	Limerock THICKNESS Meters	ELEVATION 2 74 Meters	Surface THICKNESS Meters	Limerock THICKNESS Meters	ELEVATION 3.66 Meters	Surface THICKNESS Meters	Limerock THICKNESS Meters
0+00	Surface	0.823	0 098	0 262	0 802	0 098	0 262	0 786	0 094	0 262	0 771	0 094	0 265	0 750	0 101	0 262
	Limerock	0 725			0 704			0 692			0 677			0 649		
	Subgrade	0 463			0 442			0 430			0 411			0 387		
0+50	Surface	0 832	0 098	0 274	0 811	0 101	0 268	0 796	0 098	0 271	0 777	0 098	0 268	0 753	0 094	0 268
	Limerock	0 735			0 710			0 698			0 680			0 658		
	Subgrade	0.460			0 442			0 427			0 411			0 390		
1+00	Surface	0 829	0.098	0 259	0 811	0 098	0 259	0 796	0 094	0 262	0 783	0 098	0 262	0 762	0 104	0 259
	Limerock	0 732			0 713			0 701			0 686			0 658		
	Subgrade	0 472			0 454			0 439			0 424			0 399		
1+50	Surface	0 832	0.101	0 259	0 811	0 098	0 259	0 796	0 094	0 262	0 780	0 098	0 256	0 759	0 098	0 262
	Limerock	0.732			0 713			0 701			0 683			0 661		
	Subgrade	0.472			0 454			0 439			0 427			0 399		
2+00	Surface	0 829	0 094	0 259	0 811	0 098	0 256	0 796	0 098	0 253	0 780	0 098	0 253	0 756	0 098	0 250
	Limerock	0 735			0 713			0 698			0 683			0 658		
	Subgrade	0 475			0 457			0 445			0 430			0 408		
2+50	Surface	0 829	0 098	0 262	0 805	0 091	0 262	0 789	0 091	0 262	0 774	0 091	0 265	0 750	0 098	0 253
	Limerock	0 732			0 713			0 698			0 683			0 652		
	Subgrade	0 469			0 451			0 436			0 418			0 399		
3+00	Surface	0 823	0.098	0.262	0 802	0 098	0 259	0 783	0 094	0 256	0 768	0 094	0 259	0 744	0 098	0 253
	Limerock	0 725			0 704			0 689			0 674			0 646		
	Subgrade	0 463			0 445			0 433			0 415			0 393		
3+50	Surface	0 823	0 098	0 262	0 802	0 091	0 265	0 786	0 091	0 262	0 771	0 088	0 268	0 747	0 094	0 256
	Limerock	0 725			0 710			0 695			0 683			0 652		
	Subgrade	0 463			0 445			0 433			0 415			0 396		
4+00	Surface	0 820	0 094	0 262	0 802	0 094	0 259	0 786	0 094	0 256	0 771	0 094	0 262	0 747	0 094	0 253
	Limerock	0 725			0 707			0 692			0 677			0 652		
	Subgrade	0 463			0 448			0 436			0 415			0 399		
4+50	Surface	0 817	0 094	0 259	0 799	0 094	0 256	0 786	0 098	0 253	0 771	0 094	0 256	0 750	0 101	0 250
	Limerock	0 722			0 704			0 689			0 677			0 649		
	Subgrade	0 463			0 448			0 436			0 421			0 399		
5+00	Surface	0 826	0 091	0 268	0 805	0 088	0 265	0 789	0 091	0 259	0 777	0 091	0 262	0 756	0 098	0 253
	Limerock	0 735			0 716			0 698			0 686			0 658		
	Subgrade	0 466			0 451			0 439			0 424			0 405		
	AVG		0.096	0.263		0.095	0.262		0 094	0 261		0 094	0 262		0 098	0 257
	MAX		0.101	0.274		0.101	0.268		0 098	0 271		0 098	0 268		0 104	0.268
	MIN		0.101	0.274		0.101	0.268		0 098	0 271		0 098	0 268		0 104	0.268
	STD		0.002	0.005		0.004	0.004		0 002	0.005		0 003	0.004		0 003	0.005

Florida, SPS-1 Project (120161)

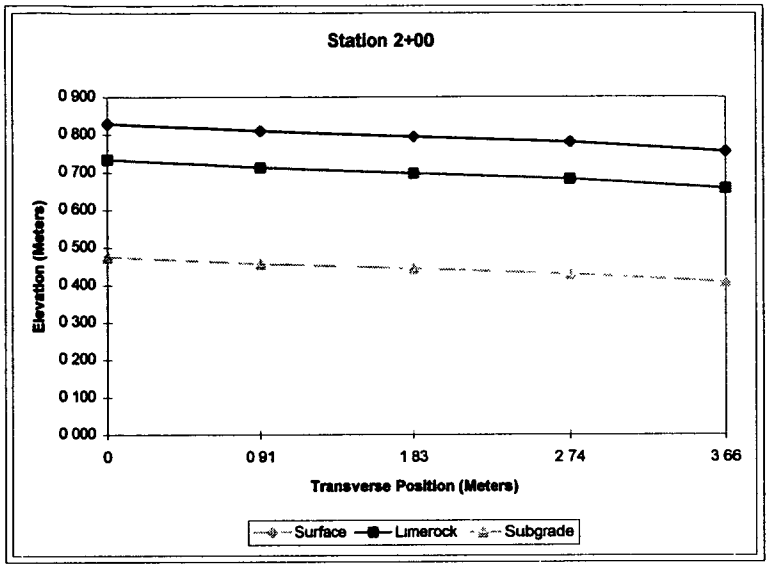


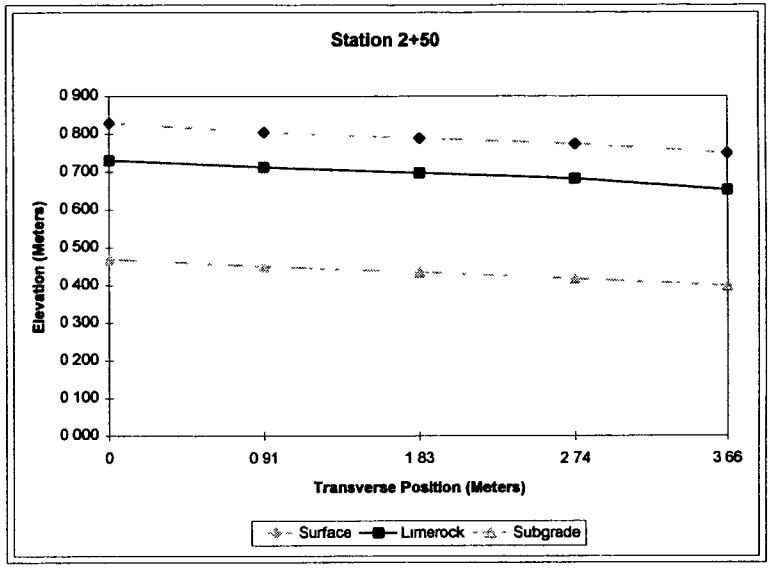


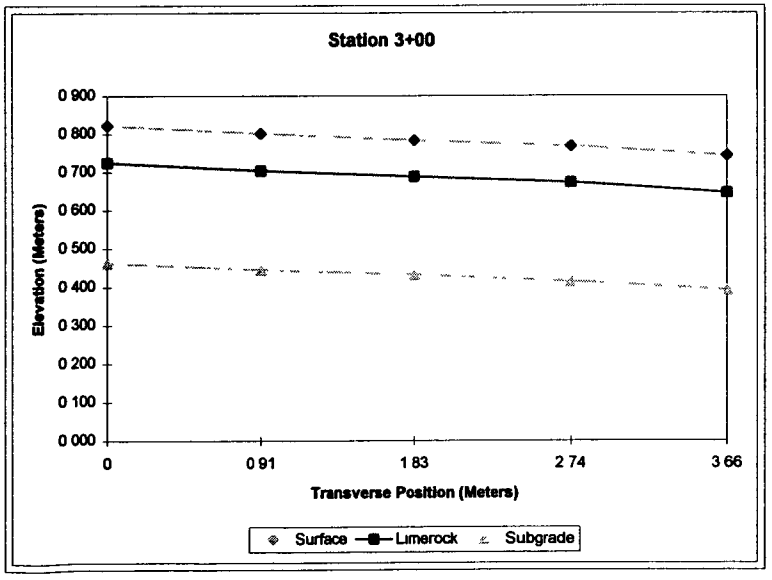


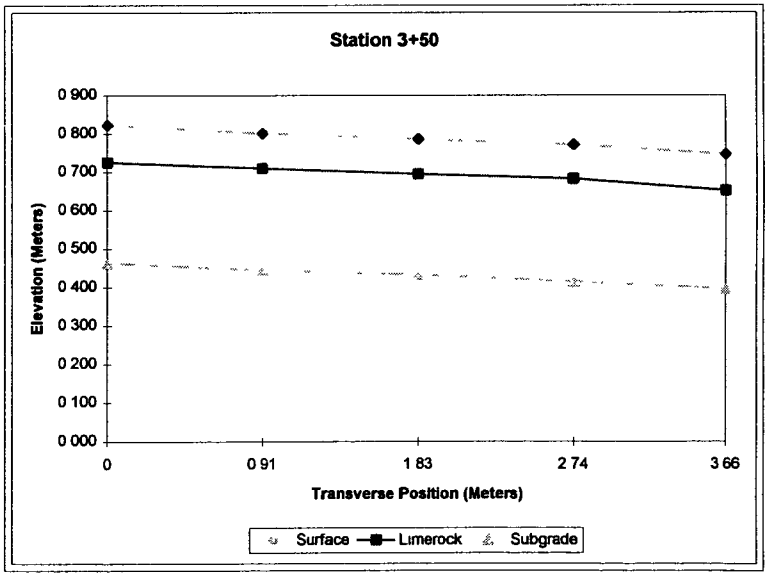


Florida, SPS-1 Project (120161)

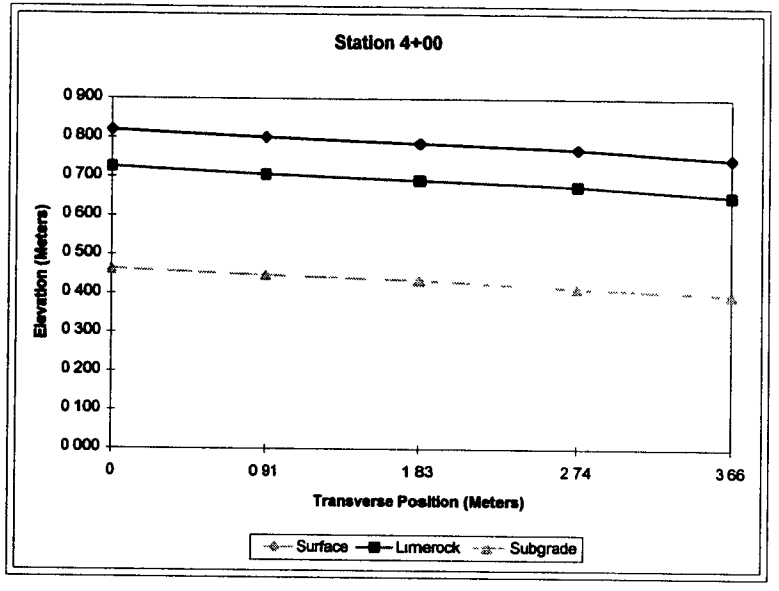


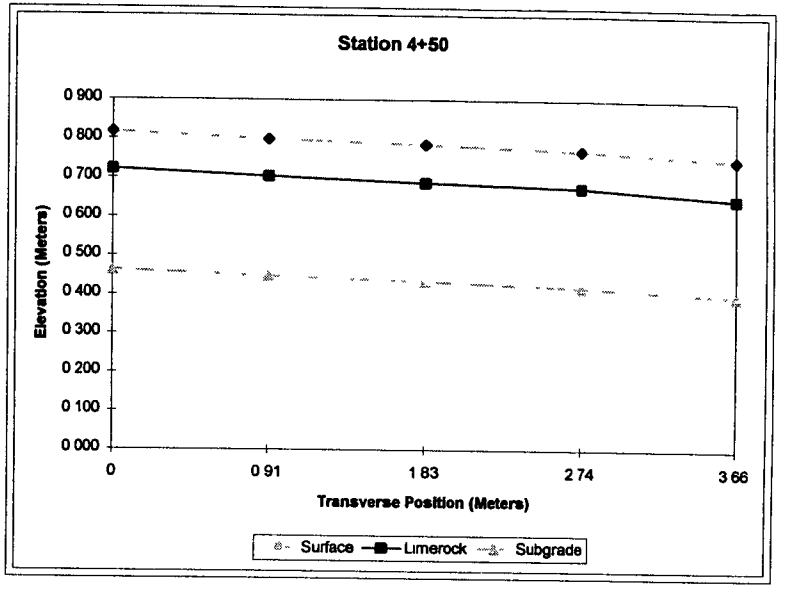


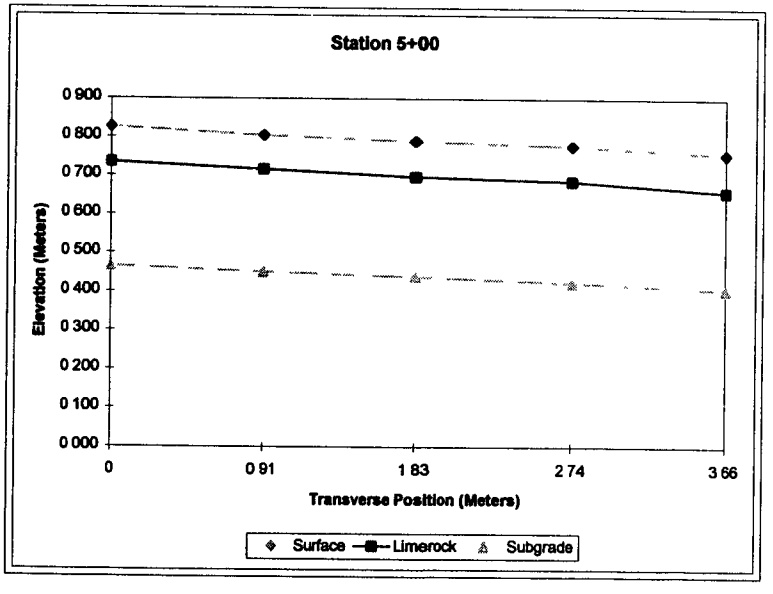




Florida, SPS-1 Project (120161)







APPENDIX C

MATERIAL SAMPLING AND FIELD TESTING PLAN

Brent Rauhut Engineering Inc.

22 August 1996

Mr. Monte Symons
Pavement Performance Division - LTPP
Federal Highway Administration
Turner-Fairbanks Highway Research Center
6300 Georgetown Pike, Room F-215
McLean, Virginia 22101

Subject: Revised Sampling Plan for Florida SPS-1 Project on US-27

Dear Monte,

Enclosed is a copy of the revised Material Sampling and Field Testing Plan for the Florida SPS-1 project, located on US-27 in Palm Beach County, Florida. This revised plan reflects changes made in test section locations during construction and the associated changes in sampling locations.

Construction of this SPS project is essentially complete, with only placement of the friction course remaining. Once the surface is completed, section marking and final data collection (FWD, profile, etc.) will be scheduled.

Please contact me if you have any questions regarding this plan.

Sincerely,

Mark P. Gardner, P.E.
Project Engineer, SRCO

MPG:dmj

Enclosure: As stated.

c.w/Enc: Jamshid Armaghani, FLDOT
William Miley, FLDOT
John Miller, PCS/LAW
Ron McNamara, FLDOT
Tim Sears, Stone & Webster

c.w/o Enc: Morris Reinhardt, RE/SRCO

MATERIAL SAMPLING
AND
FIELD TESTING PLAN

FLORIDA SPS-1 PROJECT 120100
US-27 SBL, PALM BEACH COUNTY, FLORIDA

PREPARED BY:

BRENT RAUHUT ENGINEERING INC.
SHRP SOUTHERN REGION COORDINATION OFFICE
8240 MOPAC, SUITE 220
AUSTIN, TEXAS 78759

REVISED AUGUST 1996

FLORIDA SPS-1 PROJECT (120100)

MATERIALS SAMPLING AND FIELD TESTING PLAN

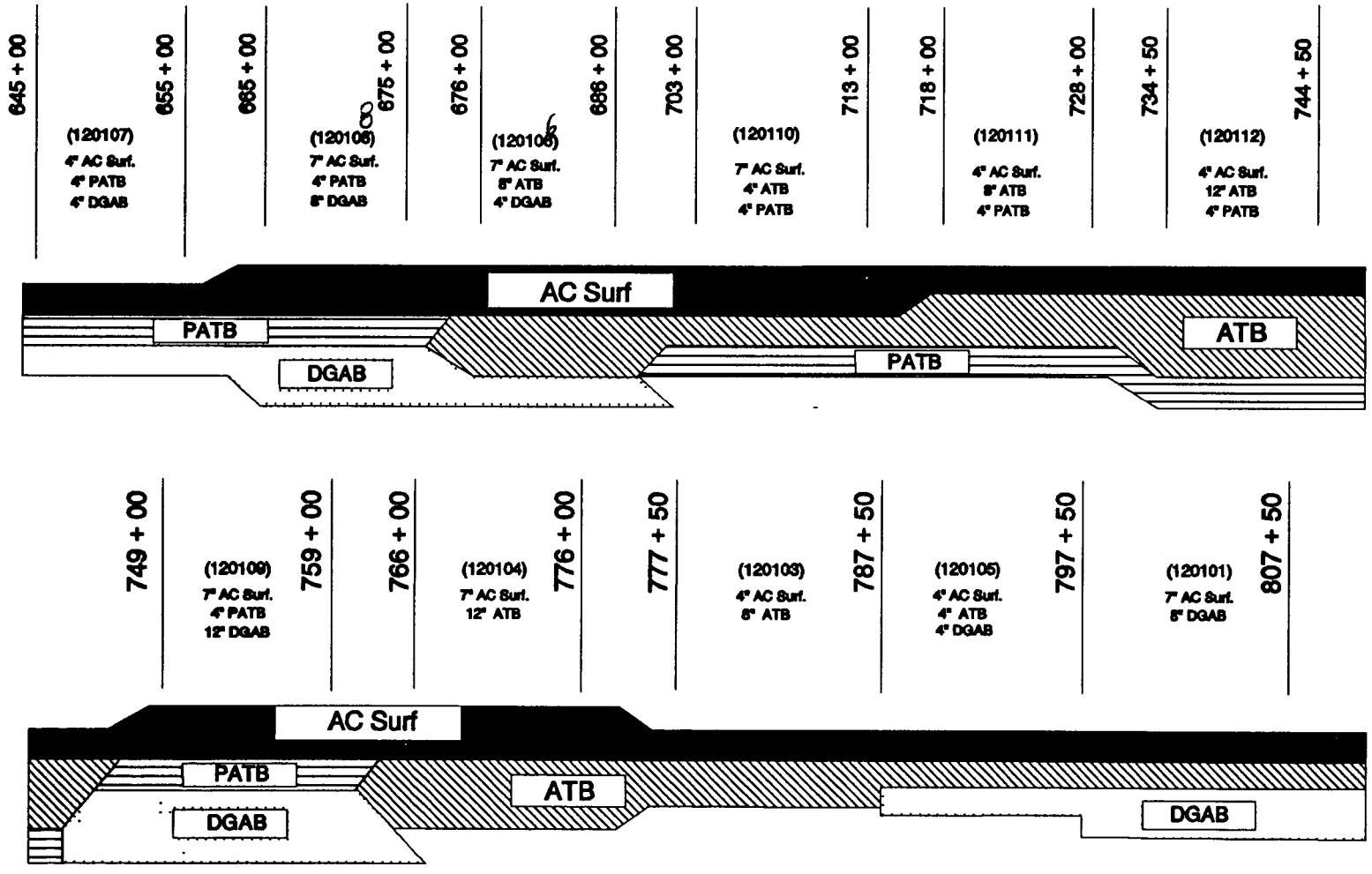
TABLE OF CONTENTS

	Page
Test Section Layout/Description	1
Site Profile/Cross Sectional Side View	2
Scope of Material Sampling	4
Scope of Field Testing	5
Field and Laboratory Materials Testing Outline	6
Material Sampling/SHRP Research	12
Test Section/Sampling Area Layout	13
Sampling and Testing Locations for Embankment	14
Sampling and Testing Locations for DGAB	15
Sampling and Testing Locations for ATB	16
Sampling and Testing Locations for AC Surface	17
Site Layer Configuration/Test Type	18
Subgrade Materials Field Sampling/Testing	31
DGAB Materials Field Sampling/Testing	35
ATB Materials Field Sampling/Testing	37
AC Surface Materials Field Sampling/Testing	39
State Sample Location/Number and Shipping Destination	43
FHWA/LTPP Sample Location/Number and Shipping Destination	48
Itemized Laboratory Material Testing Layout	Section A

PROPOSED TEST SECTION LAYOUT SITES WITH SUBSURFACE DRAINAGE

Section	Cross Section	Begin Station	End Station	Transition (Ft.)
120107 (P7)	4″ AC Surf. 4″ PATB 4″ Cr. Agg.	645+00	655+00	1100
120108 (P8)	7″ AC Surf. 4″ PATB 8″ Cr. Agg.	665+00	675+00	0
120106 (P6)	7″ AC Surf. 8″ AC Base 4″ Cr. Agg.	676+00	686+00	1700
120110 (P10)	7″ AC Surf. 4″ AC Base 4″ PATB	703+00	713+00	500
120111 (P101	4″ AC Surf. 8″ AC Base 4″ PATB	718+00	728+00	650
120112 (P12)	4″ AC Surf. 12″ AC Base 4″ PATB	734+50	744+50	450
120109 (P9)	7″ AC Surf. 4″ PATB 12″ Cr. Agg.	749+00	759+00	700
120104 (P4)	7″ AC Surf. 12″ AC Base	766+00	776+00	150
120103 (P3)	4″ AC Surf. 8″ AC Base	777+50	787+50	0
120105 (P5)	4″ AC Surf. 4″ AC Base 4″ Cr. Agg.	787+50	797+50	0
120101 (P1)	7″ AC Surf. 8″ Cr. Agg.	797+50	807+50	350
120102 (P2)	4″ AC Surf. 12″ Cr. Agg.	811+00	821+00	1600
120161 (Suppl.)	4″ AC Surf. 10″ Limerock	837+00	847+00	- - -

SPS-1 Florida US-27 SBL
West Palm County, Florida

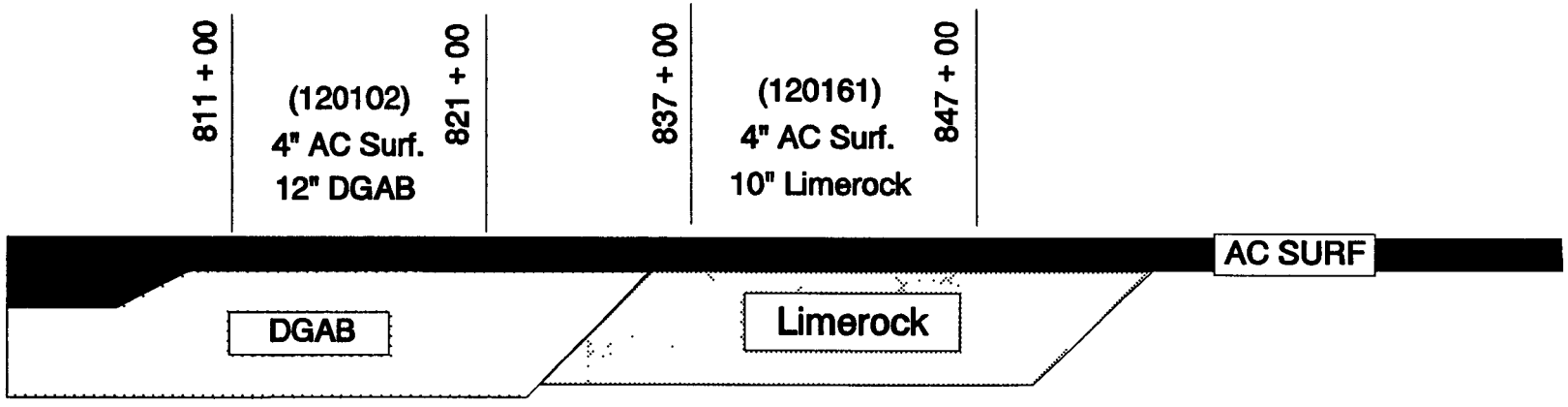


Final Project Construction

AC Surface - Surface and Binder layers
ATB - Asphalt Treated Base

PATB - Permeable Asphalt Treated Base
DGAB - Dense Graded Aggregate Base

SPS - 1 FLORIDA US-27 SBL
West Palm County, Florida



AC SURF - Asphalt Surface and Binder layers
ATB - Asphalt Treated Base
DGAB - Dense Graded Aggregate Base

Final Project Construction

SCOPE OF MATERIALS SAMPLING

Material and Sample Description	Number Of Tests	Sample Location
Asphalt Concrete		
Coring - 4" Diameter Cores	64	C1-C64
Bulk Sampling (200 Lbs. Per Sample, Uncompacted)	3	B16, B17, B18 (From Plant)
Asphalt Treated Base		
Coring - 4" Diameter Cores	34	C11-C30,C37-C50
Bulk Sampling (200 Lbs. Per Sample, Uncompacted)	3	B13, B14, B15 (From Plant)
Permeable Asphalt Treated Base		
Bulk Sampling (200 Lbs. Per Sample, Uncompacted)	3	B10, B11, B12 (From Plant)
Unbound Base/Subbase Layers (Per Layer)		
Bulk Sampling	3	B7-B9, B22
Moisture Content Samples	3	B7-B9, B22
Embankment/Subgrade		
Splitspoon Sampling	30	A1-A15
Thin-Walled Tube Sampling (*2 Tubes or 2 Spoons or Combination Per Hole)	30	A1-A15
Bulk Sampling (400 Lbs. Each Sample)	6	B1-B6
Moisture Content Samples	21	A1-A15, B1-B6
Permeability	3	A3, A7, A13
Shoulder Auger Probes (Depth to Rigid Layer)	13	S1-S13
Asphalt Cement (5 Gallons Each Sample)	3	B19, B20, B21 (From Plant)

NOTE: If different AC mixes are used for the surface course and binder course, bulk samples should be obtained from each mix.

Bulk samples shall be accompanied by a nuclear density test. A moisture jar sample shall also be obtained from each bulk sample location.

SCOPE OF FIELD TESTING

Material And Sample Description	Number Of Tests	Sample Location
Asphalt Concrete In Situ Density	65	T85-T123, SA1-SA26 (T140-T165)
Asphalt Treated Base In Situ Density	37	T64-T84 SA1-SA6 (T124-T139), SA13, SA14,SA19-SA24
Unbound Base/Subbase Layers (Per Layer) In Situ Density, Moisture Content (Nuclear Gauge) Moisture Content Samples	 28 4	 T40-T63, T172-T175 B7-B9, B22
Embankment/Subgrade In Situ Density, Moisture Content (Nuclear Gauge)	45	T1-T39, B1-B6

FIELD AND LABORATORY MATERIALS TESTING PLAN

Material Type and Properties	SHRP Des.	SHRP Protocol	Tests	Material Source/ Test Location
Embankment/Subgrade				
Sieve Analysis	SS01	P51	6	B1-B6
Hydrometer to 0.01mm	SS02	P42	6	B1-B6
Atterberg Limits	SS03	P43	6	B1-B6
Classification	SS04	P52	21	B1-B6, A1-A15 --- Note 1
Moisture-Density Relations	SS05	P55	6	B1-B6
Resilient Modulus (At In-Situ Density and Moisture)	SS07	P46	5	A2, A5, A9, A11, A15
Unit Weight	SS08	P56	5	A1, A4, A8, A11, A14
Natural Moisture Content	SS09	P49	6	B1-B6
Unconfined Comp. Strength	SS10	P54	5	A1, A4, A8, A11, A14
In-Place Density		SHRP-LTPP Method	45	T1-T39, B1-B6 (T166-T171)
Depth to Rigid Layer		SHRP-LTPP Method	13	S1-S13
Permeability	SS11	P57	6	B1-B6
Permeability	UG09	P48	3	A3, A7, A13
Unbound Granular Base				
Particle Size Analysis	UG01	P41	3	B7, B8, B9, B22
Sieve Analysis (Washed)	UG02	P41	3	B7, B8, B9, B22
Atterberg Limits	UG04	P43	3	B7, B8, B9, B22
Moisture-Density Relations	UG05	P44	3	B7, B8, B9, B22
Resilient Modulus (At In-Situ Density and Moisture)	UG07	P46	3	B7, B8, B9, B22
Classification	UG08	P47	3	B7, B8, B9, B22
Permeability	UG09	P48	3	B7, B8, B9, B22
Natural Moisture Content	UG10	P49	3	B7, B8, B9, B22
In-Place Density and Moisture		SHRP-LTPP Method	21	T40-T63

FIELD AND LABORATORY MATERIALS TESTING PLAN (CONTINUED)

Material Type and Properties	SHRP Des.	SHRP Protocol	Tests	Material Source/ Test Location
Permeable Treated Asphalt Base				
Asphalt Content (Extraction)	AC04	P04	3	B10,B11,B12 - From Plant
Extracted Aggregate-				
Gradation of Aggregate	AG04	P14	3	B10,B11,B12
Asphalt Cement -				
Abson Recovery	AE01	P21	3	BT19*,B20*,B21*
Penetration at 50F, 77F, 90F	AE02	P22	3	BT19*,B20*,B21*
Specific Gravity (60F)	AE03	P23	3	BT19*,B20*,B21*
Viscosity at 77F	AE04	P24	3	BT19*,B20*,B21*
Viscosity at 140F, 275F	AE05	P25	3	BT19*,B20*,B21*

* Other AC bulk samples may apply if more than one grade is utilized for the SPS-1 experiment.

FIELD AND LABORATORY MATERIALS TESTING PLAN (CONTINUED)

Material Type and Properties	SHRP Des.	SHRP Protocol	Tests	Material Source/ Test Location
Asphalt Treated Base				
Core Examination/Thickness	AC01	P01	34	C11-C30,C37-C50
Bulk Specific Gravity	AC02	P02	34	C11-C30,C37-C50
Maximum Specific Gravity	AC03	P03	3	B13, B14, B15
Asphalt Content (Extraction)	AC04	P04	3	B13, B14, B15
Moisture Susceptibility	AC05	P05	1	B14
Resilient Modulus	AC07	P07	9	C11-C13, C25-C27, C47-C49
Tensile Strength	AC07	P07	12	C11-C14, C25-C28, C47-C50
In-Place Density		SHRP-LTPP Method	40	T64-T84, SA1-SA6(T124-T137) SA19-SA24, SA13,SA14
Extracted Aggregate -				
Specific Gravity:				
Coarse Aggregate	AG01	P11	3	B13, B14, B15
Fine Aggregate	AG02	P12	3	B13, B14, B15
Type and Classification:				
Coarse Aggregate	AG03	P13	3	B13, B14, B15
Fine Aggregate	AG03	P13	3	B13, B14, B15
Gradation of Aggregate	AG04	P14	3	B13, B14, B15
NAA Test for Fine Aggregate Particle Shape	AG05	P14A	3	B13, B14, B15
Coarse Aggregate Shape	AG06	P14B	3	B13, B14, B15
Asphalt Cement -				
Abson Recovery	AE01	P21	3	B19*, B20*, B21*
Penetration at 50F, 77F, 90F	AE02	P22	3	B19*, B20*, B21*
Specific Gravity (60F)	AE03	P23	3	B19*, B20*, B21*
Viscosity at 77F	AE04	P24	3	B19*, B20*, B21*
Viscosity at 140F, 275F	AE05	P25	3	B19*, B20*, B21*

* Other AC bulk samples may apply if more than one grade is utilized for the SPS-1 experiment.

FIELD AND LABORATORY MATERIALS TESTING PLAN (CONTINUED)

Material Type and Properties	SHRP Des.	SHRP Protocol	Tests	Material Source/ Test Location
Asphalt Treated Base (Continued)				
Asphalt Cement (From Tanker) -				
Penetration at 50F, 77F, 90F	AE02	P22	3	B19*, B20*, B21* - From Plant
Specific Gravity (60F)	AE03	P23	3	B19*, B20*, B21* - From Plant
Viscosity at 77F	AE04	P24	3	B19*, B20*, B21* - From Plant
Viscosity at 140F, 275F	AE05	P25	3	B19*, B20*, B21* - From Plant

* Other AC bulk samples may apply if more than one grade is utilized for the SPS-1 experiment.

FIELD AND LABORATORY MATERIALS TESTING PLAN (CONTINUED)

Material Type and Properties	SHRP Des.	SHRP Protocol	Tests	Material Source/ Test Location
Asphaltic Concrete Surface and Binder				
Core Examination/Thickness	AC01	P01	64	C1-C64 --- Note 4
Bulk Specific Gravity	AC02	P02	64	C1-C64
Maximum Specific Gravity	AC03	P03	3	B16, B17, B18 - From Plant
Asphalt Content (Extraction)	AC04	P04	3	B16, B17, B18 - From Plant
Moisture Susceptibility	AC05	P05	3	B16, B17, B18 - From Plant
Creep Modulus	AC06	P06	1	C3, C23, C46
Resilient Modulus	AC07	P07	18	C1-C3, C11-C13, C25-C27, C40-C42, C51-C53, C61-C63,
Tensile Strength	AC07	P07	20	C1-C4, C11-C14, C25-C28, C40-C43, C51-C54 (C61-64)
In-Place Density		SHRP-LTPP Method	65	SA1-SA26 (T140-T165), T85-T123
Extracted Aggregate -				
Bulk Specific Gravity:				
Coarse Aggregate	AG01	P11	3	B16, B17, B18
Fine Aggregate	AG02	P12	3	B16, B17, B18
Type and Classification:				
Coarse Aggregate	AG03	P13	3	B16, B17, B18
Fine Aggregate	AG03	P13	3	B16, B17, B18
Gradation of Aggregate	AG04	P14	3	B16, B17, B18
NAA Test for Fine Aggregate Particle Shape	AG05	P14A	3	B16, B17, B18
Coarse Aggregate Shape	AG06	P14B	3	B16, B17, B18

FIELD AND LABORATORY MATERIALS TESTING PLAN (CONTINUED)

Material Type and Properties	SHRP Des.	SHRP Protocol	Tests	Material Source/ Test Location
Asphaltic Concrete Surface and Binder (Continued)				
Asphalt Cement -				
Abson Recovery	AE01	P21	3	B19*, B20*, B21*
Penetration at 50F, 77F, 90F	AE02	P22	3	B19*, B20*, B21*
Specific Gravity (60F)	AE03	P23	3	B19*, B20*, B21*
Viscosity at 77F	AE04	P24	3	B19*, B20*, B21*
Viscosity at 140F, 275F	AE05	P25	3	B19*, B20*, B21*

NOTE 1 - Visual-manual classification ONLY.
NOTE 2 - Laboratory permeability test to be developed.
NOTE 3 - Revision to existing P07 protocol or develop new protocol P09.
NOTE 4 - Does NOT include cores or bulk sampling requirements for SHRP Asphalt Research Program.

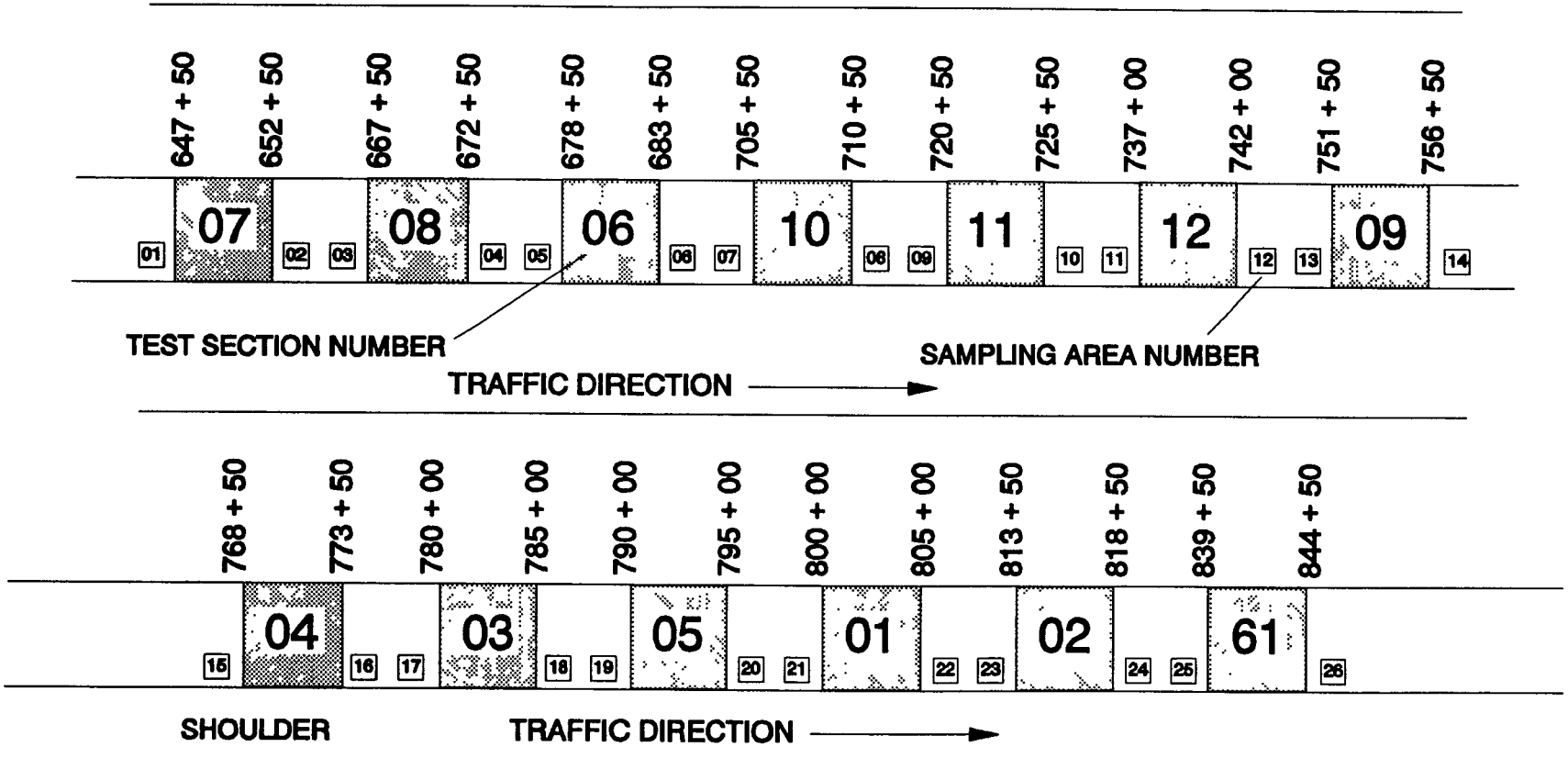
* Other AC bulk samples may apply if more than one grade is utilized for the SPS-1 experiment.

MATERIAL SAMPLING FOR SHRP ASPHALT RESEARCH PROGRAM

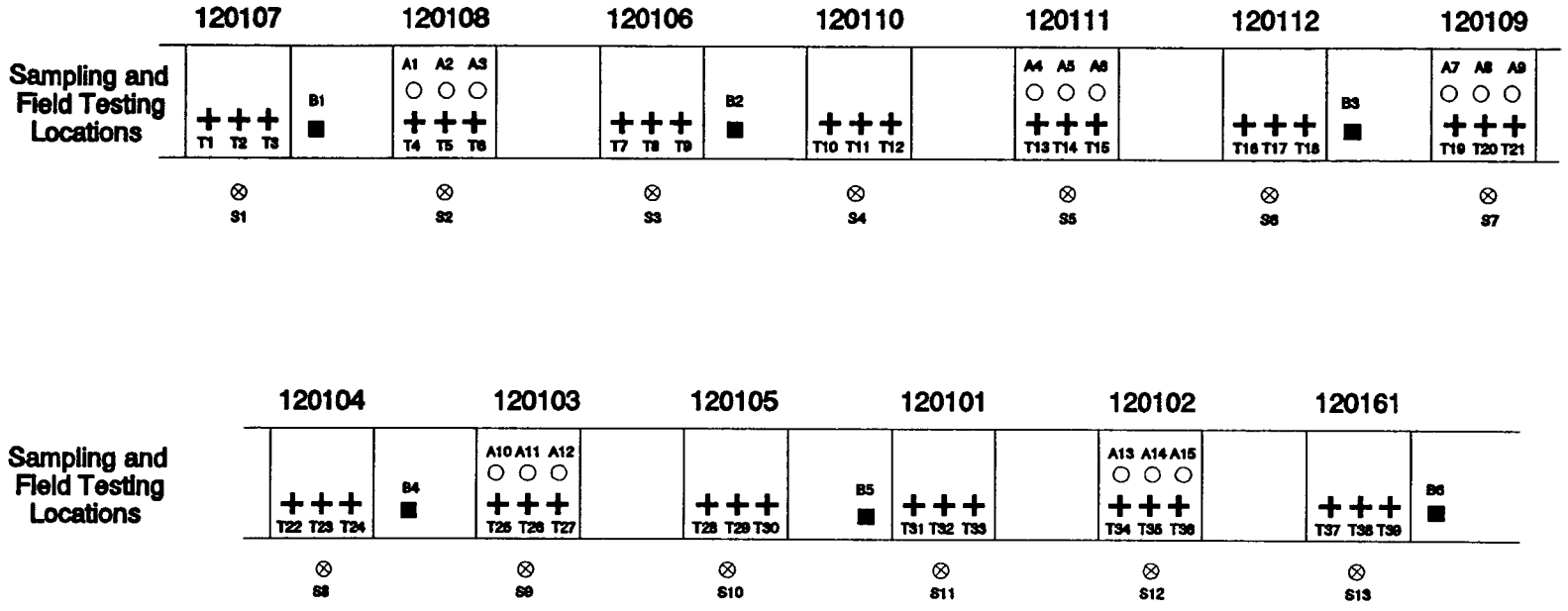
Material and Sample Description	Number Of Samples	Material Source
Asphalt Cement (5-Gallon Containers)	11	Plant
Aggregate (55-Gallon Drums)	2*	Plant
Finished Asphaltic Concrete Mix (200 Lbs. Each - Surface, Binder, ATB, PATB)	4	Plant

* Two 55-gallon drums to contain a blended aggregate representation for each mix type (ie., PATB, ATB, BINDER, SURFACE, etc.). If the mix design for the ATB is the same as for the binder, then only two 55-gallon drums of blended aggregate would be required to represent these mix types.

Florida SPS-1 US-27 SBL,
Palm Beach County, Florida



SITE LAYOUT WITH SAMPLING AREAS



■ 2 x 2 bulk sampling location *(B1-B6) to 12" below top of Embankment

○ Shelby Tube/Split Spoon to 4' below top of embankment (A1-A15)

⊗ Shoulder probe (S1-S13)

+ Location of field testing (T1-T39, T166-T171)

* Includes jar samples + nuclear density tests

Sampling and Testing Locations for Embankment/Subgrade

Stage of Construction	DGAB Prep. Sg.		DGAB Prep. Sg.		DGAB Prep. Sg.								DGAB Prep. Sg.	
Section No.	120107		120108		120106		120110		120111		120112		120109	
Sampling and Field Testing Locations	+ + + T40 T41 T42		+ + + T43 T44 T45	B7 ■	+ + + T46 T47 T48		N/A		N/A		N/A	B8 ■	+ + + T49 T50 T51	

Stage of Construction					DGAB Prep. Sg.		DGAB Prep. Sg.		DGAB Prep. Sg.		Limerock Prep. Sg.		
Section No.	120104		120103		120105		120101		120102		120161		
Sampling and Field Testing Locations	N/A		N/A		+ + + T52 T53 T54		+ + + T55 T56 T57	B9 ■	+ + + T58 T59 T60		+ + + T61 T62 T63	B22 ■	

LEGEND

+ Location of field testing(T40 - T63)

■ Location of bulk sampling of DGAB *(B7 - B9, B22)

* Includes jar samples (moisture) + nuclear density tests (T172 - T175)

Prep. Sg. -Prepared Subgrade

PATB - Permeabel Asphalt Treated Base

DGAB - Dense Graded Aggregate Base

Sampling and Testing Locations for DGAB

Stage of Construction					ATB DGAB Prep. Sg.		ATB PATB Prep. Sg.		ATB PATB Prep. Sg.		ATB PATB Prep. Sg.		
Section No.	120107		120106		120106		120110		1210111		120112		120109
Sampling and Field Testing Locations	N/A		N/A		+++ T61 T62 T63		+++ T64 T65 T66		+++ T67 T68 T69		+++ T70 T71 T72		N/A

Stage of Construction	ATB Prep. Sg.		ATB Prep. Sg.		ATB DGAB Prep. Sg.								
Section No.	120104		120103		120105		120101		120102		120161		
Sampling and Field Testing Locations	+++ T73 T74 T75		+++ T76 T77 T78		+++ T79 T80 T81		N/A		N/A		N/A		

LEGEND

+ Location fo field testing (T61-T84, T124-T139)

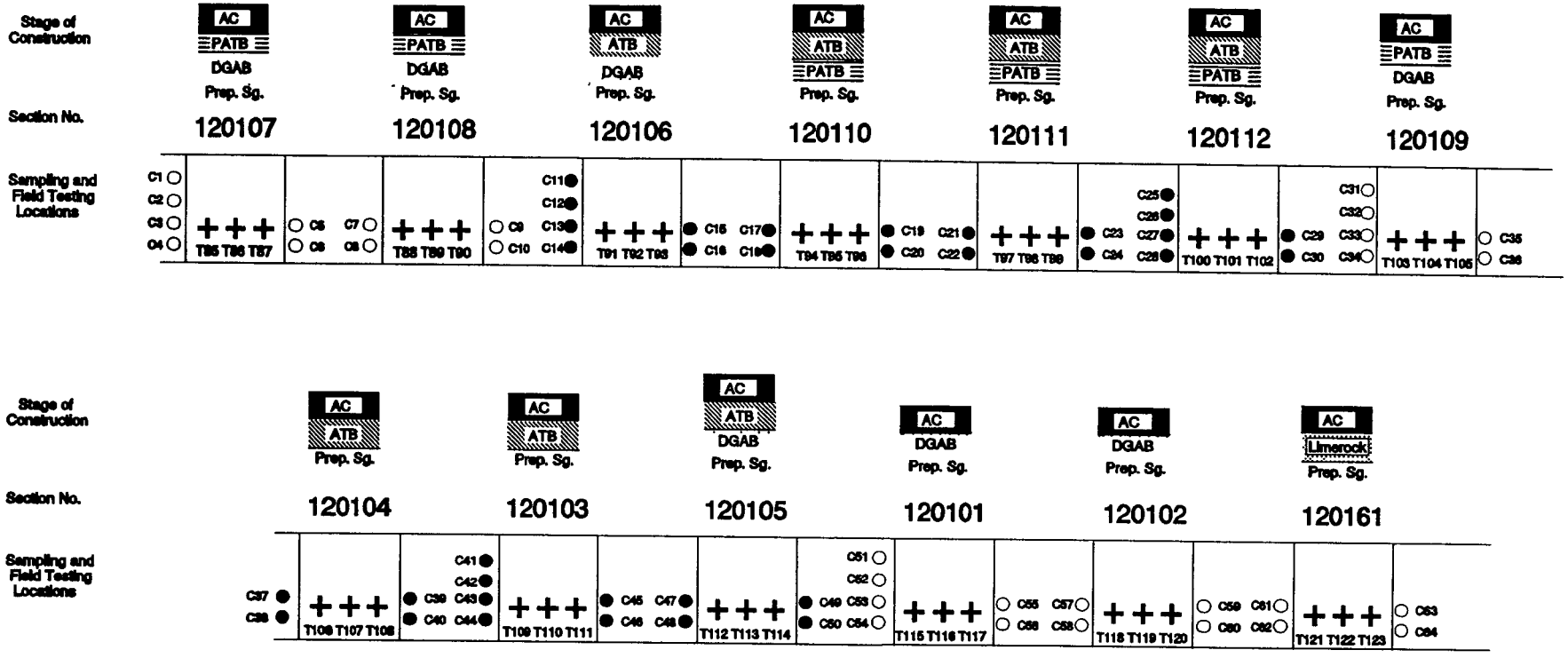
Prep. Sg. - Prepared Subgrade

PATB - Permeable Asphalt Treated Base

DGAB - Dense Graded Aggregate Base

ATB - Asphalt Treated Base

Testing Locations for ATB



LEGEND

- ○ 4" OD Core of Asphalt Concrete Surface (C1 - C10, C31 - C36, C51 - C64)
- ● 4" OD Core of Asphalt Concrete Surface and Treated Base (C11 - C30, C37 - C50)
- + Location of field testing within sections (T85 - T123, T140 - T165)

Prep. Sg. - Prepared Subgrade

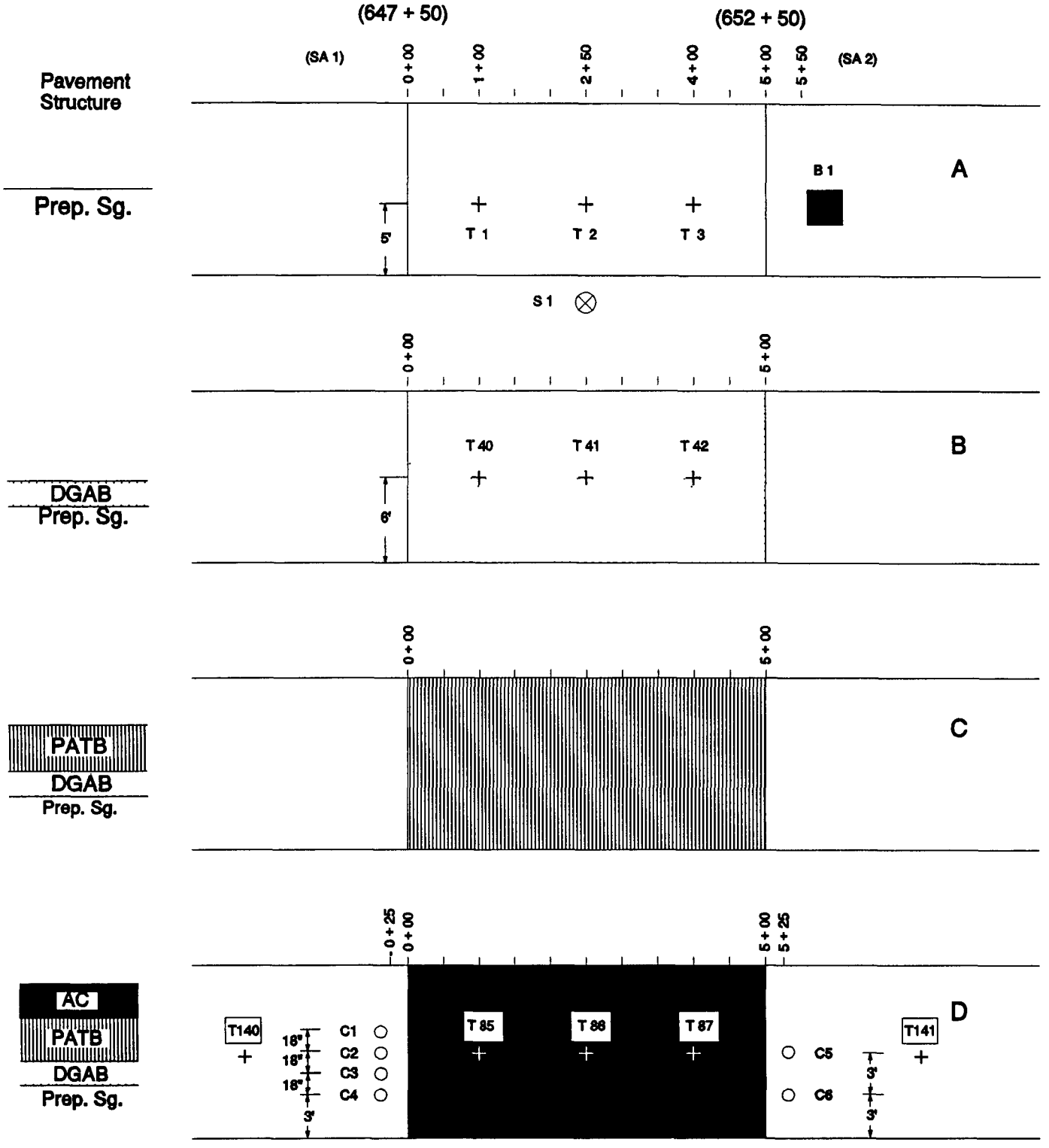
PATB - Permeable Asphalt Treated Base

DGAB - Dense Graded Aggregate Base

ATB - Asphalt Treated Base

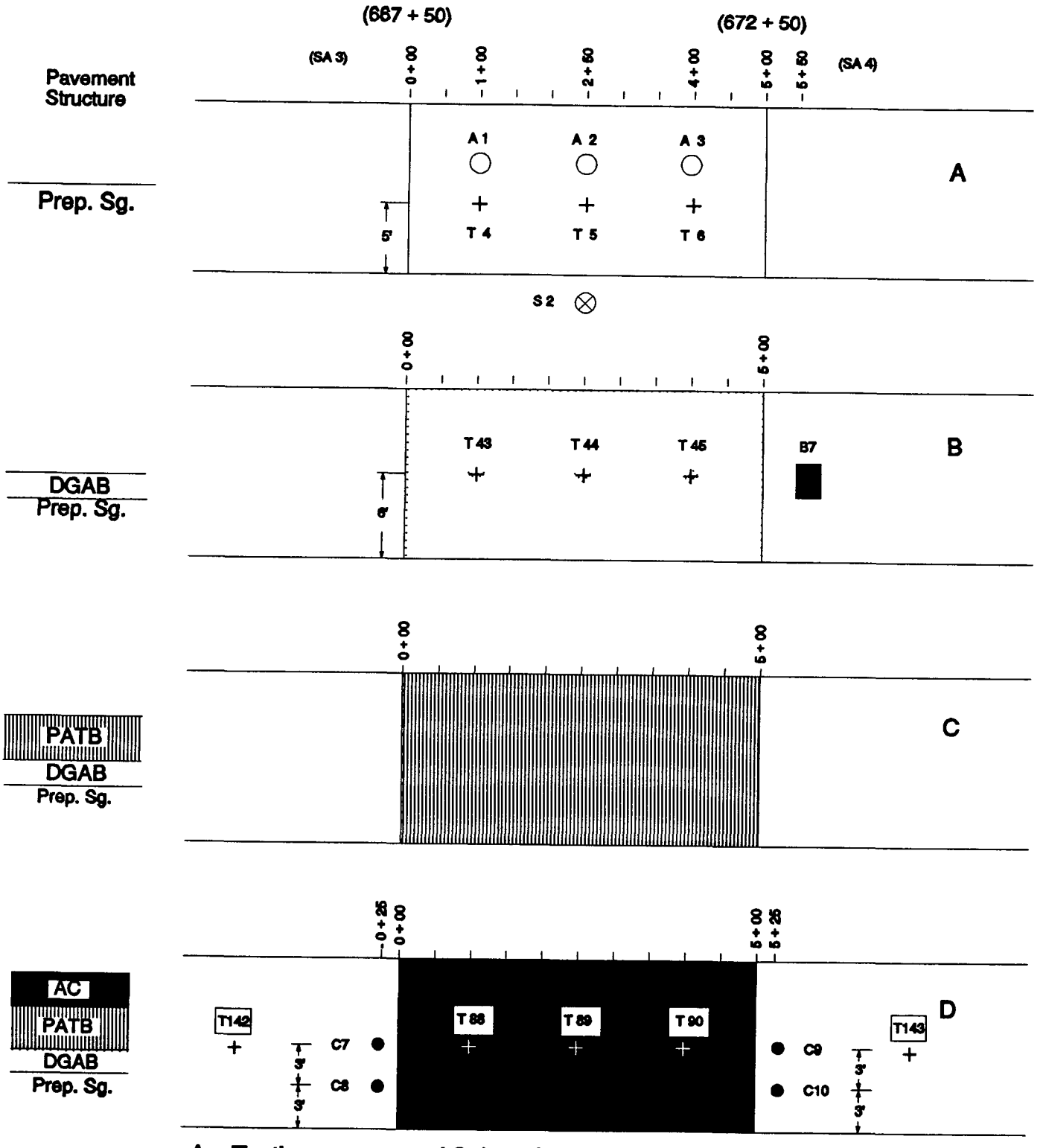
AC - Asphalt Concrete Surface

Sampling and Testing Locations for AC Surface



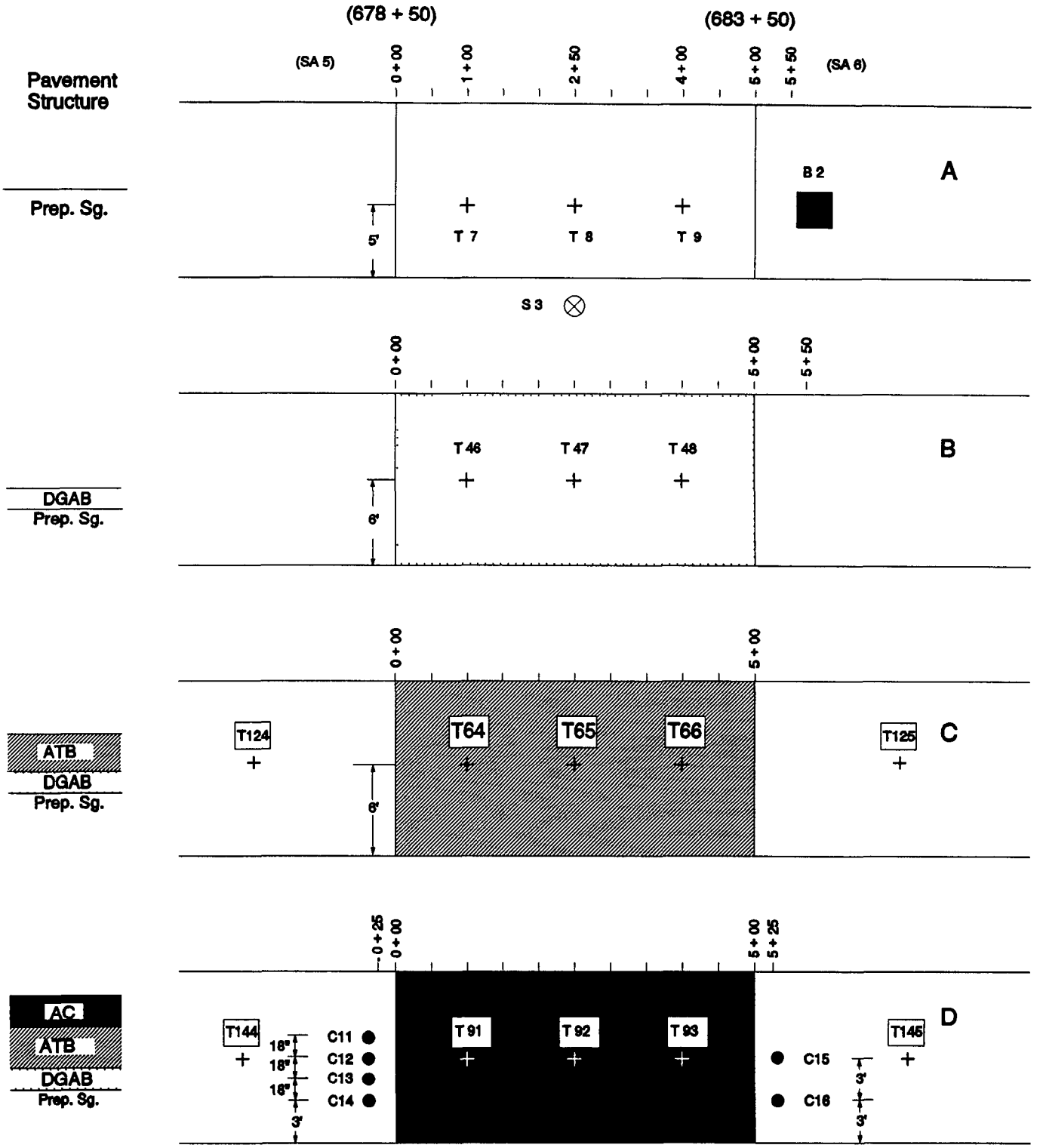
A Testing on prepared Subgrade (T1 - T3, B1, S1)
B Testing on compacted DGAB (T40 - T42,)
C No testing on compacted PATB
D Testing on finished AC Surface (T85 - T87, T140, T141)
E Coring AC Surface layers Only (C1 - C6)

Sampling and Testing Plan for Test Section 7



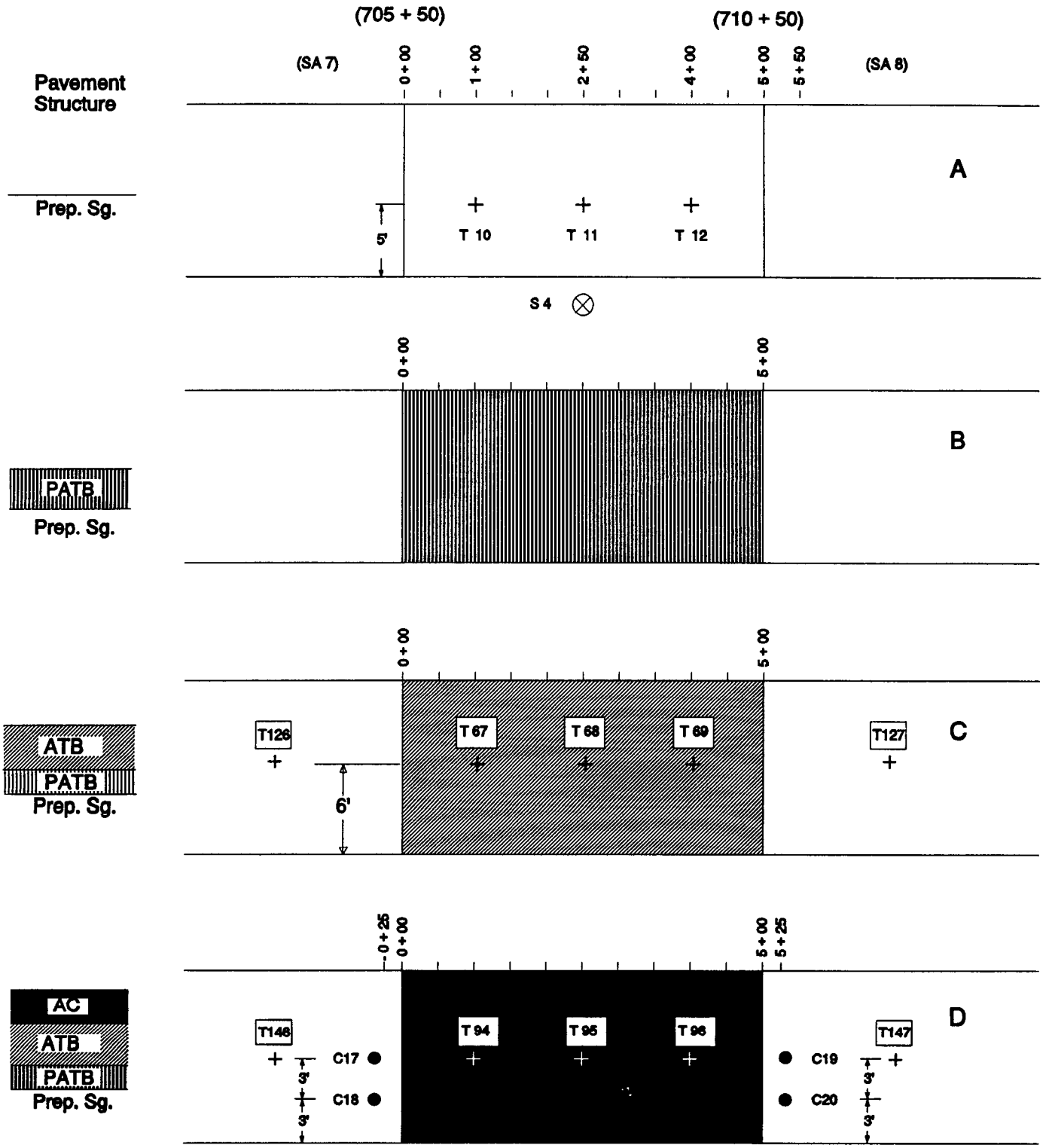
A Testing on prepared Subgrade (A1 - A3, T4 - T6, S2)
B Testing on compacted DGAB (T43 - T45, B7)
C No testing on compacted PATB
D Testing on finished AC Surface (T88 - T90, T142,T142)
E Coring AC Surface and bound layers (C7 - C10)

Sampling and Testing Plan for Test Section 8



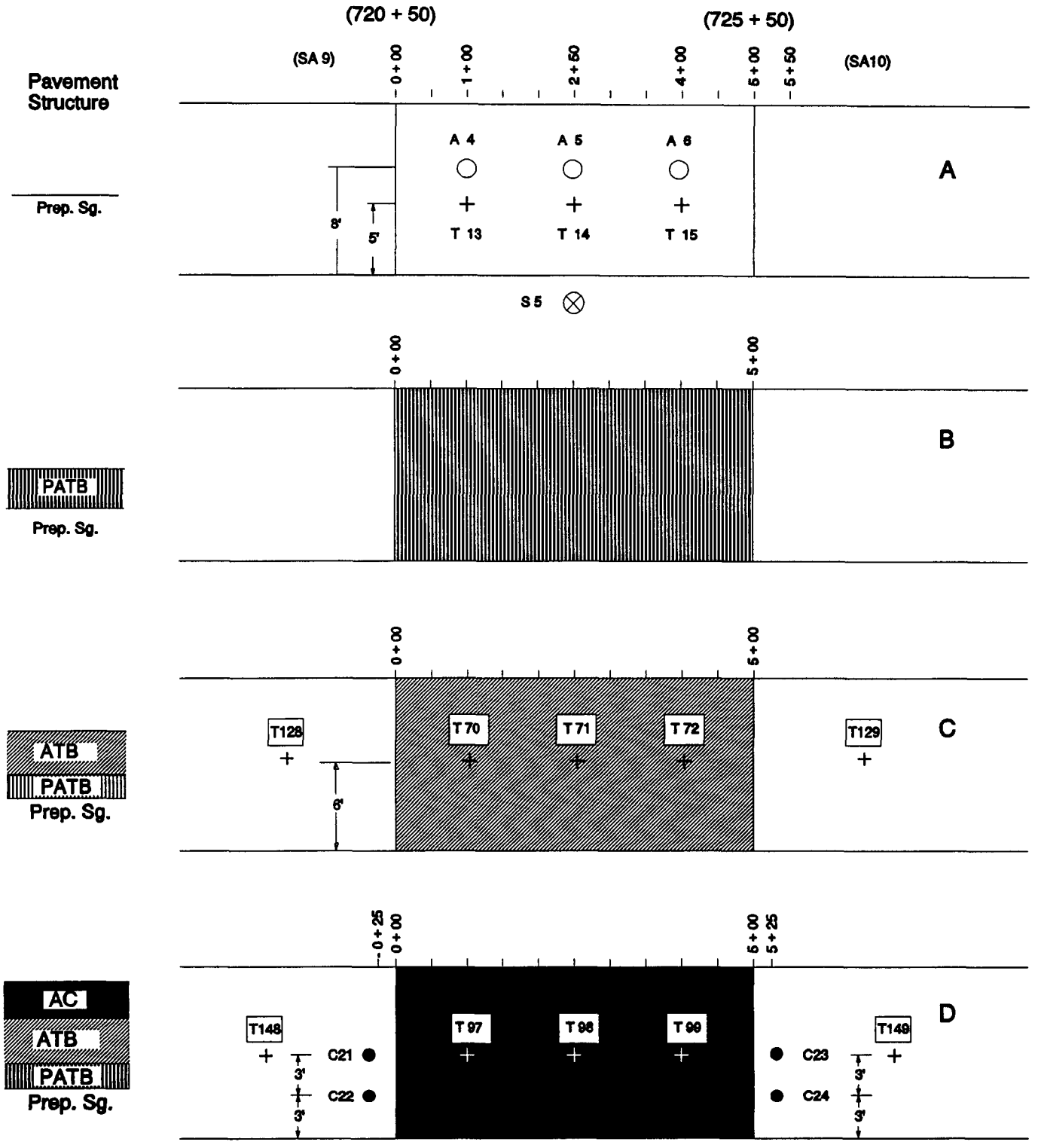
A Testing on prepared Subgrade (T7 - T9, B2, S3)
B Testing on compacted DGAB (T46 - T48,)
C Testing on compacted ATB (T64 - T66, T124, T125)
D Testing on finished AC Surface (T91 - T93, T144, T145)
E Coring AC Surface and bound layers (C11 - C16)

Sampling and Testing Plan for Test Section 6



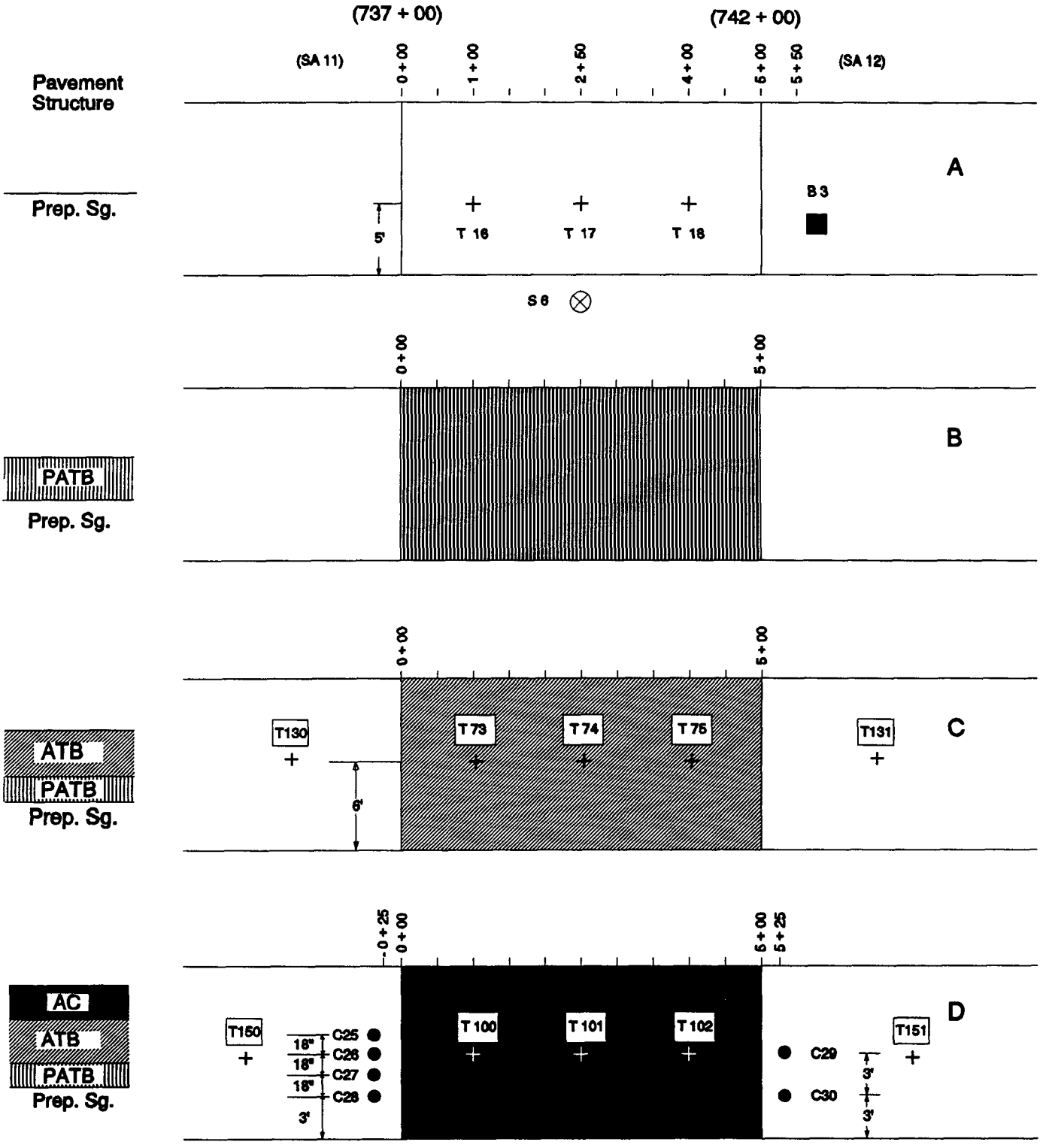
A Testing on prepared Subgrade (T10 - T12, S4)
B No testing on compacted PATB
C Testing on compacted ATB (T67 - T69, T126, T127)
D Testing on finished AC Surface (T94 - T96, T146, T147)
E Coring AC Surface and bound layers (C17 - C20)

Sampling and Testing Plan for Test Section 10



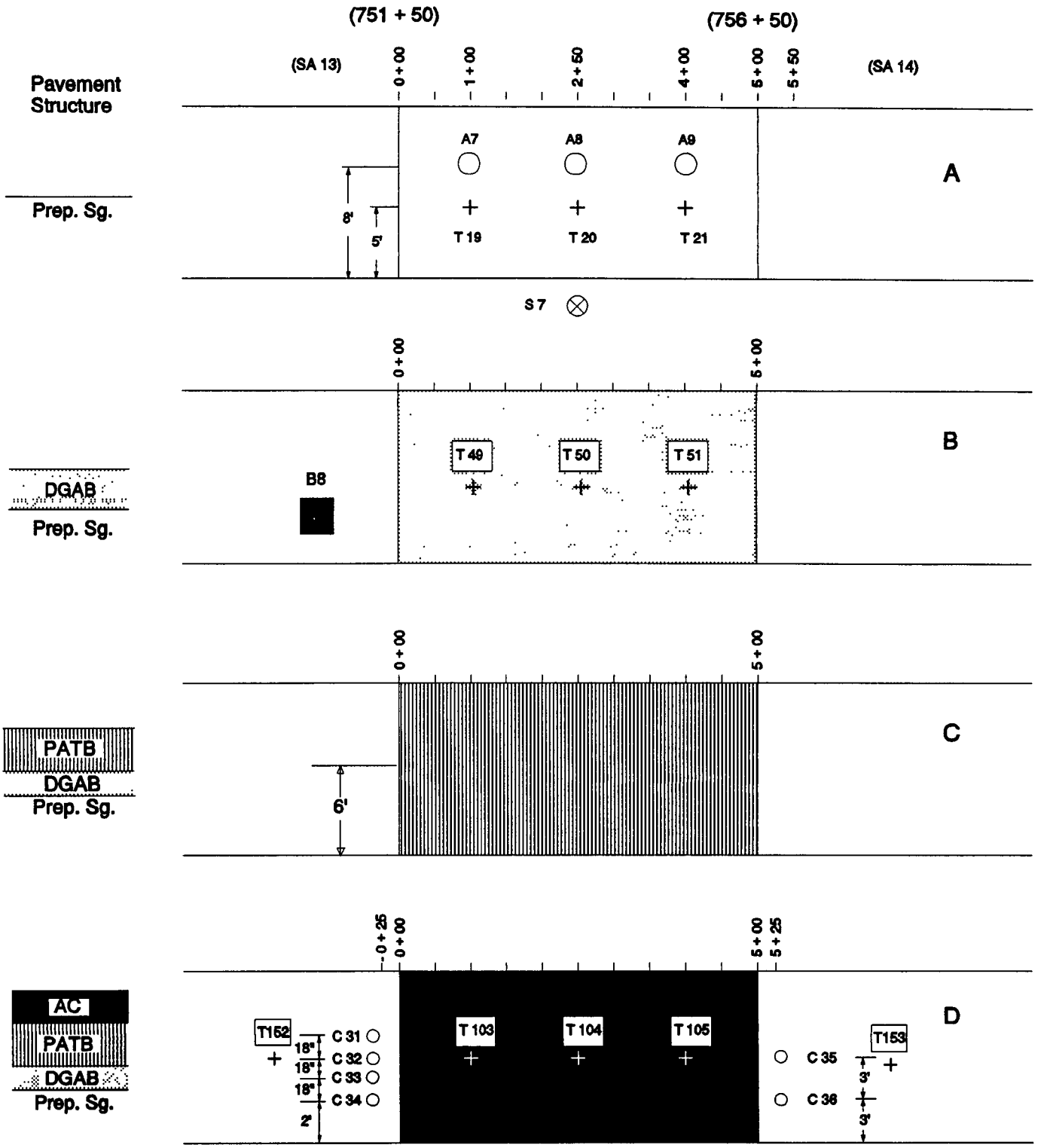
A Testing on prepared Subgrade (A4 - A6, T13 - T15, S5)
B No testing on compacted PATB
C Testing on compacted ATB(T70 - T72, T128, T129)
D Testing on finished AC Surface (T97 - T99, T148, T149)
E Coring AC Surface and bound layers (C21 - C24)

Sampling and Testing Plan for Test Section 11



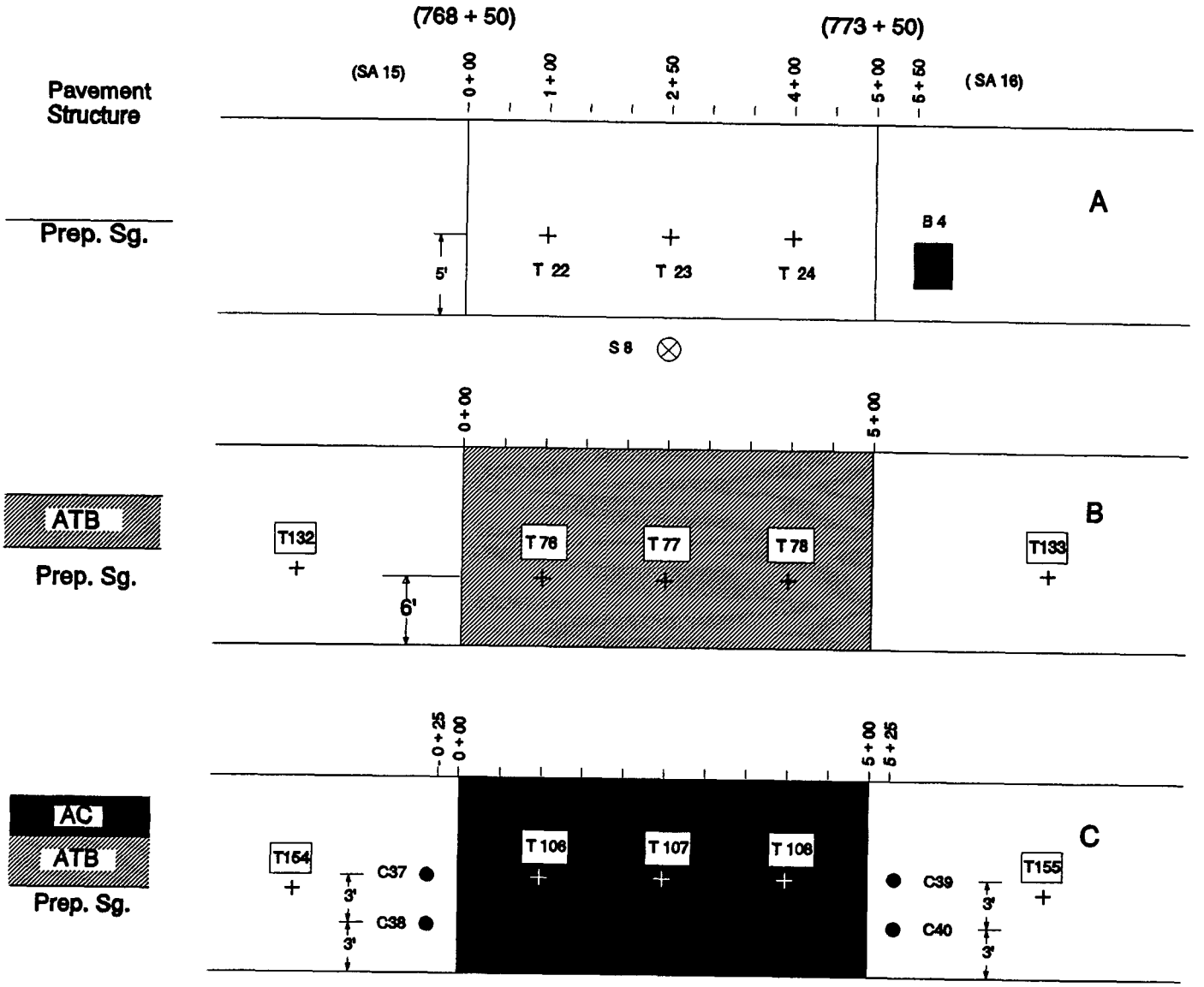
A Testing on prepared Subgrade (T16 - T18, B3, S6)
B No testing on compacted PATB
C Testing on compacted ATB (T73 - T75, T130, T131)
D Testing on finished AC Surface (T100 - T102, T150, T151)
Coring AC Surface and bound layers (C25 - C30)

Sampling and Testing Plan for Test Section 12



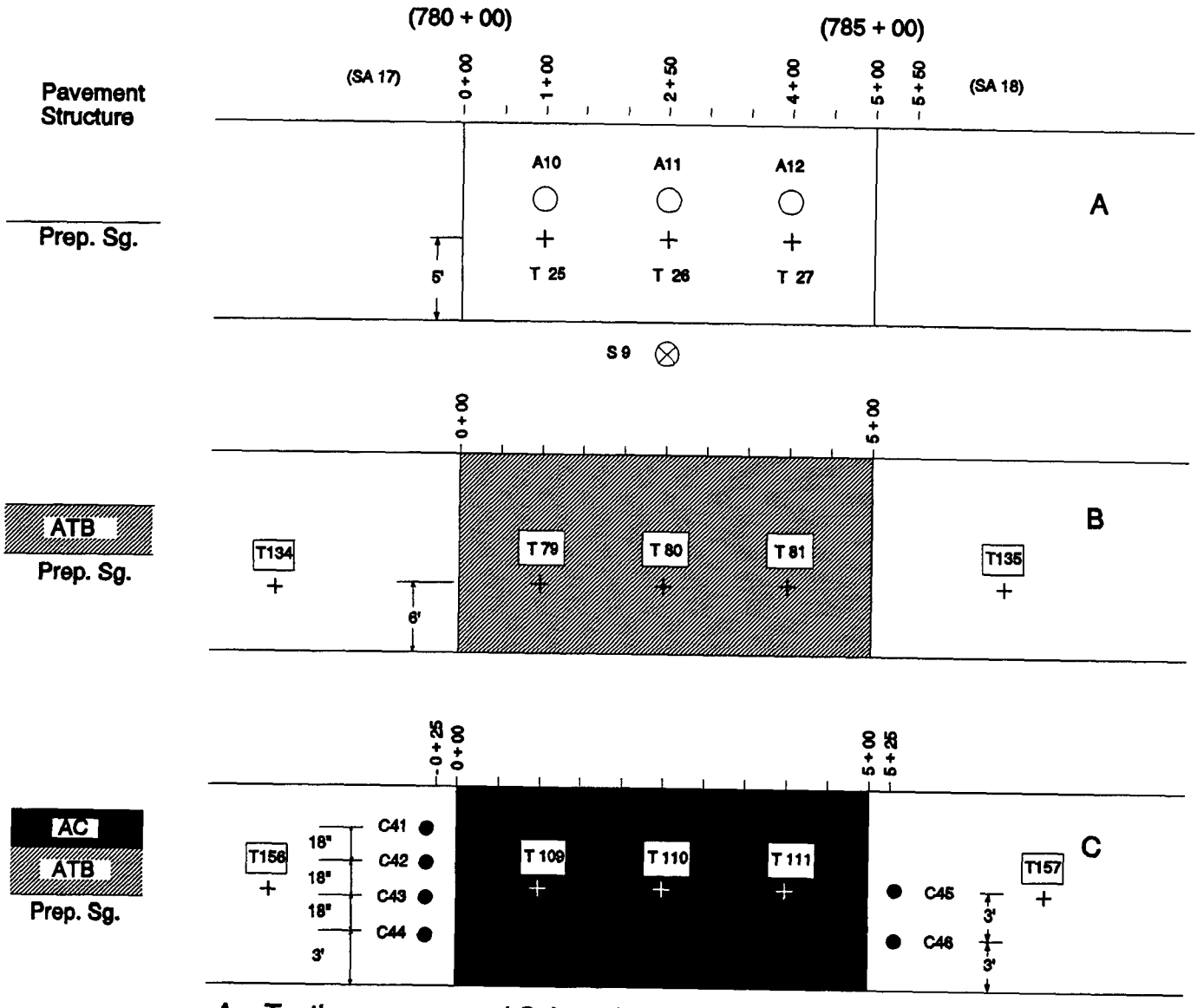
A Testing on prepared Subgrade (T19 - T21, A7- A9, S7)
B Testing on compacted DGAB (T49 - T51, B8)
C No testing on compacted PATB
D Testing on finished AC Surface (T103 - T105, T152, T153)
E Coring AC Surface layers Only (C31 - C36)

Sampling and Testing Plan for Test Section 9



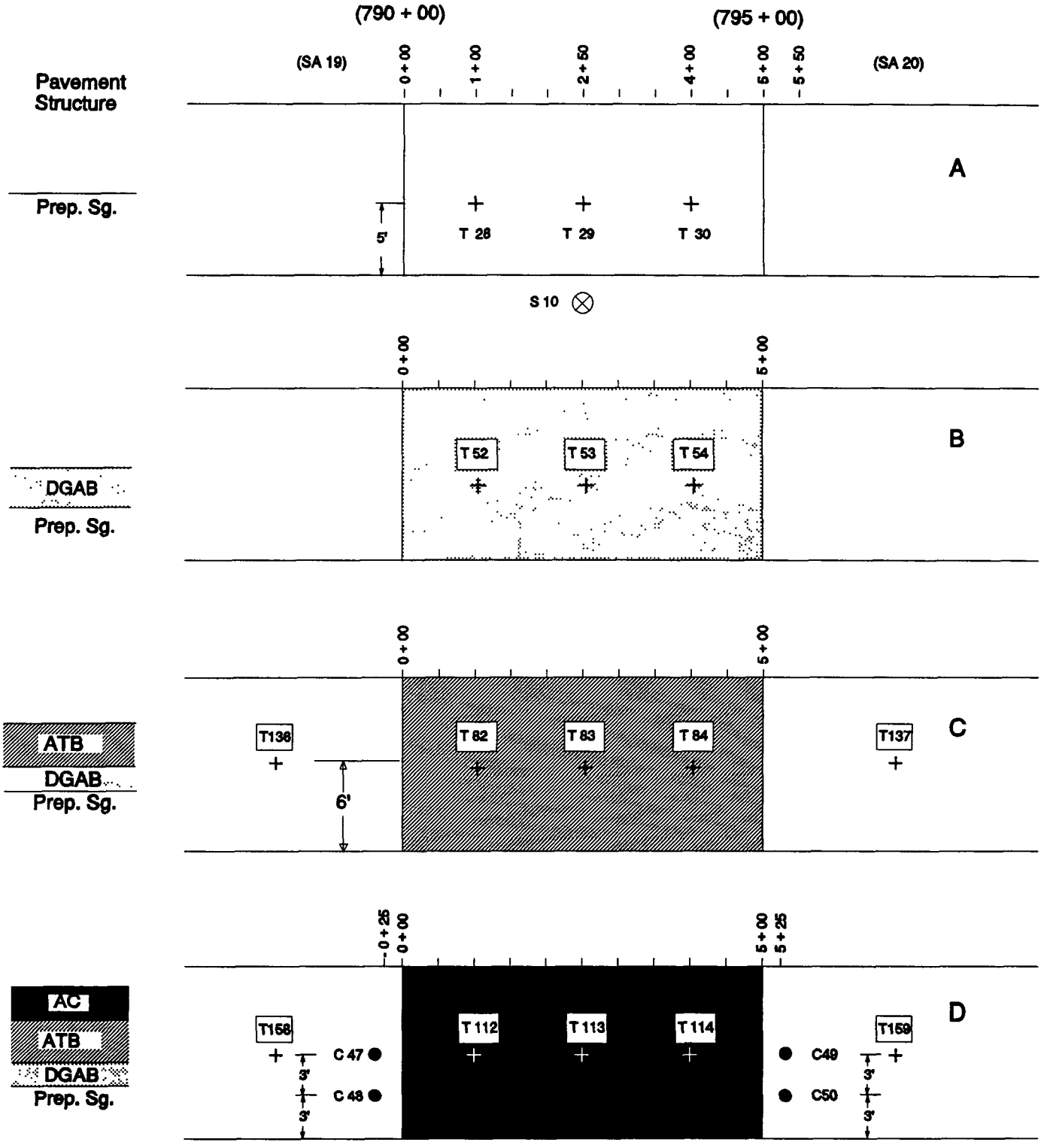
A Testing on prepared Subgrade (T22 - T24, B4, S9)
B Testing on compacted ATB (T76 - T78, T132, T135)
C Testing on finished AC Surgace (T106 - T108, T154, T155)
D Coring AC Surface and bound layers (C37 - C40)

Sampling and Testing Plan for Test Section 4



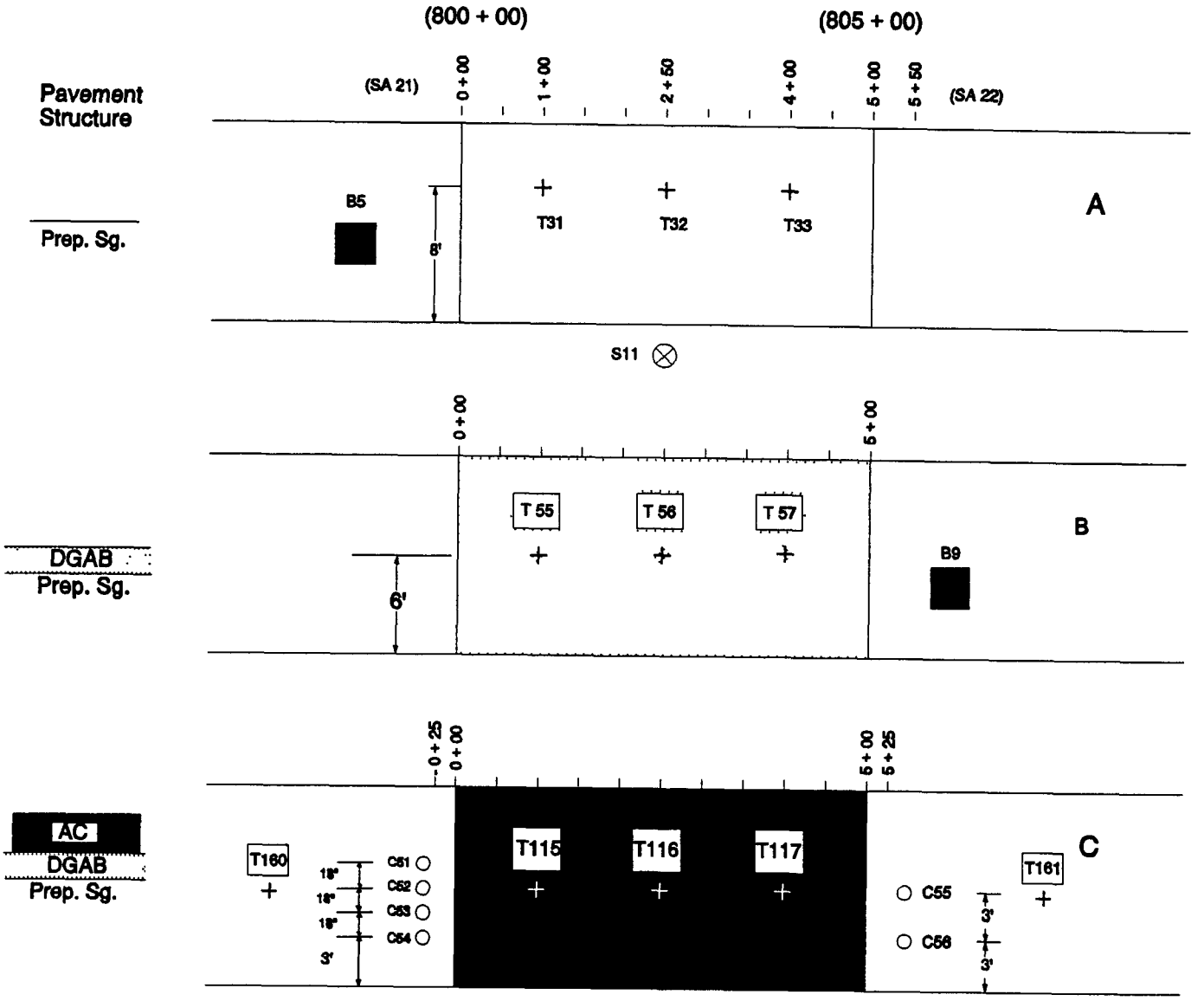
A Testing on prepared Subgrade (T25 - T27, A10 - A12, S9)
B Testing on compacted ATB (T79 - T81, T134, T135)
C Testing on finished AC Surgace (T109 - T111, T156, T157)
Coring AC Surface and bound layers (C41 - C46)

Sampling and Testing Plan for Test Section 3



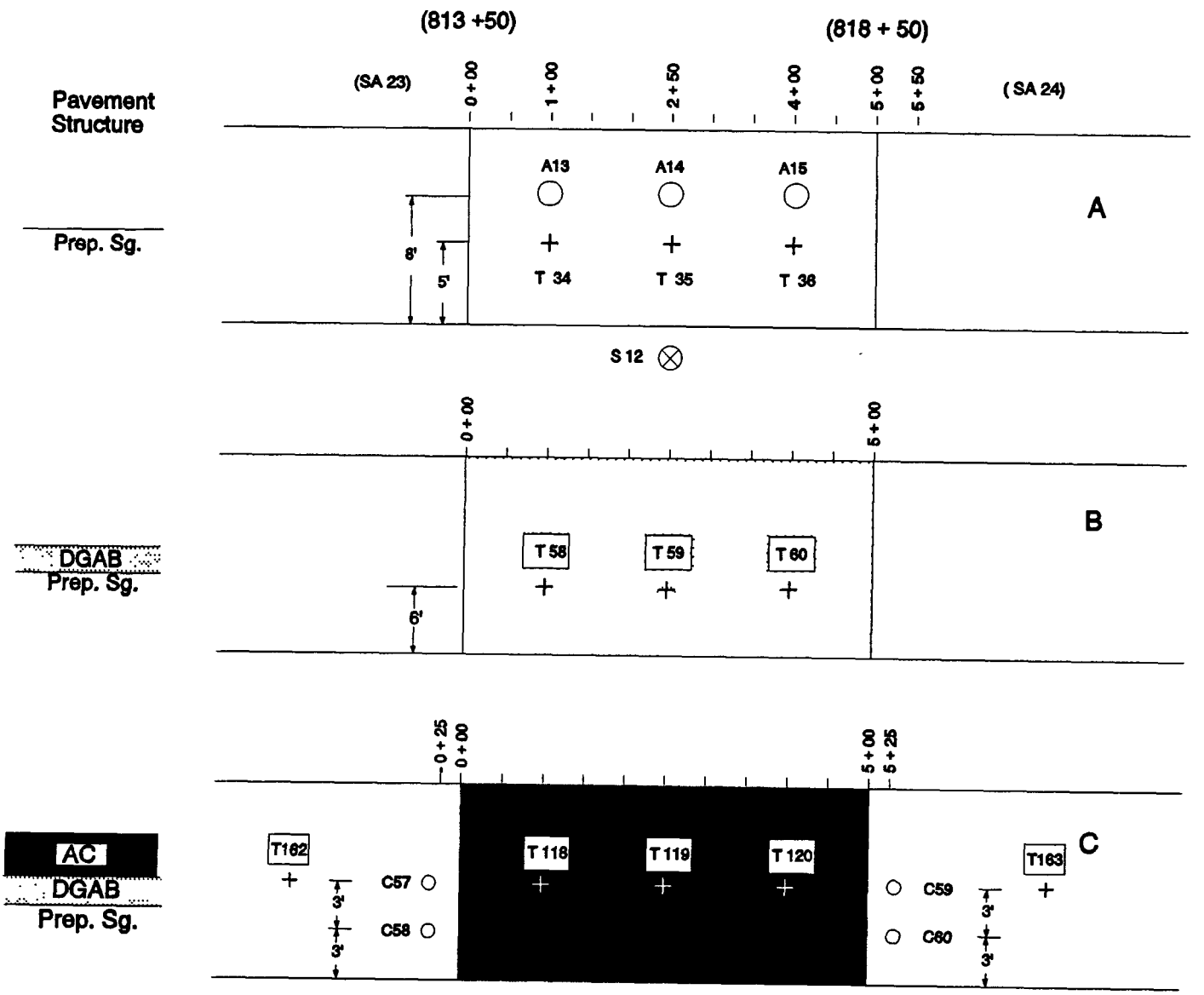
A Testing on prepared Subgrade (T28 - T30, S10)
B Testing on compacted DGAB (T52 - T54)
C Testing on compacted ATB (T82 - T84, T136, T137)
D Testing on finished AC Surface (T112 - T114, T158, T159)
Coring AC Surface and bound layers (C47 - C50)

Sampling and Testing Plan for Test Section 5



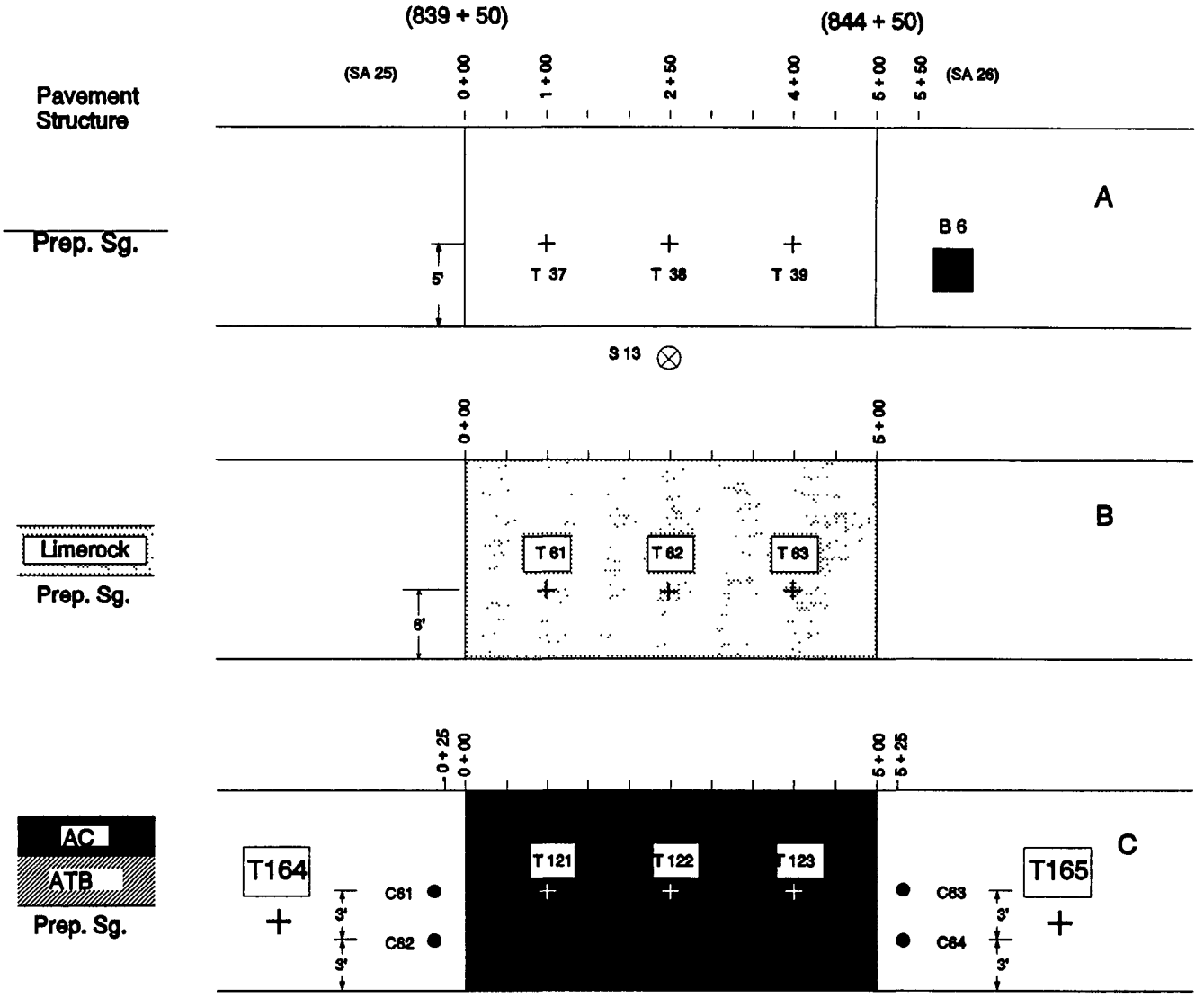
A Testing on prepared Subgrade (T31 - T33, B5, S11)
B Testing on compacted ATB (T55 - T57, B9)
C Testing on finished AC Surface (T115 - T117, T160, T161)
D Coring AC Surface only (C51 - C56)

Sampling and Testing Plan for Test Section 1



A Testing on prepared Subgrade (T34 - T36, A13 - A15, S12)
B Testing on compacted ATB (T58 - T60,)
C Testing on finished AC Surgace (T118 - T120, T162, T163)
Coring AC Surface only (C57 - C60)

Sampling and Testing Plan for Test Section 2



A Testing on prepared Subgrade (T37 - T39, S13, B6)
B Testing on compacted Limerock (T61 - T63)
C Testing on finished AC Surgace (T121 - T123), T164, T165)
D Coring AC Surface and bound layers (C61 - C64)

Sampling and Testing Plan for Test Section 61 Supplement

SUBGRADE/EMBANKMENT MATERIALS FIELD SAMPLING AND TESTING

Approx. ℄ Sta.	Offset (Ft.)	Section ID Nº.	Section Sta.	O/S From Lane Edge	Sample ID Nº.	Sample Type
653+00	52.5	120107	5+50	5′ Lt	B1	*Bulk
684+00	52.5	120106	5+50	5′ Lt	B2	*Bulk
742+50	52.5	120112	5+50	5′ Lt	B3	*Bulk
774+00	52.5	120104	5+50	5′ Lt	B4	*Bulk
799+50	52.5	120101	-50	5′ Lt	B5	*Bulk
845+00	52.5	120161	5+50	5′ Lt	B6	*Bulk
668+50	52.5	120108	1+00	8′ Lt	A1	Shelby Tube
670+00	52.5	120108	2+50	8′ Lt	A2	Shelby Tube
671+50	52.5	120108	4+00	8′ Lt	A3	Shelby Tube
721+50	52.5	120111	1+00	8′ Lt	A4	Shelby Tube
723+00	52.5	120111	2+50	8′ Lt	A5	Shelby Tube
724+50	52.5	120111	4+00	8′ Lt	A6	Shelby Tube
752+50	52.5	120109	1+00	8′ Lt	A7	Shelby Tube
754+00	52.5	120109	2+50	8′ Lt	A8	Shelby Tube
755+50	52.5	120109	4+00	8′ Lt	A9	Shelby Tube
781+00	52.5	120103	1+00	8′ Lt	A10	Shelby Tube
782+50	52.5	120103	2+50	8′ Lt	A11	Shelby Tube
784+00	52.5	120103	4+00	8′ Lt	A12	Shelby Tube
814+50	52.5	120102	1+00	8′ Lt	A13	Shelby Tube
816+00	52.5	120102	2+50	8′ Lt	A14	Shelby Tube
817+50	52.5	120102	4+00	8′ Lt	A15	Shelby Tube
650+00	52.5	120107	2+50	9′ Rt	S1	Shoulder Probe
670+00	52.5	120108	2+50	9′ Rt	S2	Shoulder Probe
681+00	52.5	120106	2+50	9′ Rt	S3	Shoulder Probe

* Each bulk sample to include a jar moisture sample.

SUBGRADE/EMBANKMENT MATERIALS FIELD SAMPLING AND TESTING (Continued)

Approx. ℄ Sta.	Offset (Ft.)	Section ID Nº.	Section Sta.	O/S From Lane Edge	Sample ID Nº.	Sample Type
708+00	52.5	120110	2+50	9′ Rt	S4	Shoulder Probe
724+50	65.5	120111	2+50	9′ Rt	S5	Shoulder Probe
739+50	65.5	120112	2+50	9′ Rt	S6	Shoulder Probe
754+00	65.5	120109	2+50	9′ Rt	S7	Shoulder Probe
771+00	65.5	120104	2+50	9′ Rt	S8	Shoulder Probe
782+50	65.5	120103	2+50	9′ Rt	S9	Shoulder Probe
792+50	65.5	120105	2+50	9′ Rt	S10	Shoulder Probe
802+50	65.5	120101	2+50	9′ Rt	S11	Shoulder Probe
816+00	65.5	120102	2+50	9′ Rt	S12	Shoulder Probe
642+00	65.5	120161	2+50	9′ Rt	S13	Shoulder Probe
648+50	52.5	120107	1+00	5′ Lt	T1	Moisture Density
650+00	52.5	120107	2+50	5′ Lt	T2	Moisture Density
651+50	52.5	120107	4+00	5′ Lt	T3	Moisture Density
668+50	52.5	120108	1+00	5′ Lt	T4	Moisture Density
670+00	52.5	120108	2+50	5′ Lt	T5	Moisture Density
671+50	52.5	120108	4+00	5′ Lt	T6	Moisture Density
679+50	52.5	120106	1+00	5′ Lt	T7	Moisture Density
681+00	52.5	120106	2+50	5′ Lt	T8	Moisture Density
682+50	52.5	120106	4+00	5′ Lt	T9	Moisture Density
706+50	52.5	120110	1+00	5′ Lt	T10	Moisture Density
708+00	52.5	120110	2+50	5′ Lt	T11	Moisture Density
709+50	52.5	120110	4+00	5′ Lt	T12	Moisture Density
721+50	52.5	120111	1+00	5′ Lt	T13	Moisture Density
723+00	52.5	120111	2+50	5′ Lt	T14	Moisture Density

SUBGRADE/EMBANKMENT MATERIALS FIELD SAMPLING AND TESTING (Continued)

Approx. ℄ Sta.	Offset (Ft.)	Section ID Nº.	Section Sta.	O/S From Lane Edge	Sample ID Nº.	Sample Type
724+50	52.5	120111	4+00	5′ Lt	T15	Moisture Density
738+00	52.5	120112	1+00	5′ Lt	T16	Moisture Density
739+50	52.5	120112	2+50	5′ Lt	T17	Moisture Density
741+00	52.5	120112	4+00	5′ Lt	T18	Moisture Density
752+50	52.5	120109	1+00	5′ Lt	T19	Moisture Density
754+00	52.5	120109	2+50	5′ Lt	T20	Moisture Density
755+50	52.5	120109	4+00	5′ Lt	T21	Moisture Density
769+50	52.5	120104	1+00	5′ Lt	T22	Moisture Density
771+00	52.5	120104	2+50	5′ Lt	T23	Moisture Density
772+50	52.5	120104	4+00	5′ Lt	T24	Moisture Density
781+00	52.5	120103	1+00	5′ Lt	T25	Moisture Density
782+50	52.5	120103	2+50	5′ Lt	T26	Moisture Density
784+00	52.5	120103	4+00	5′ Lt	T27	Moisture Density
791+00	52.5	120105	1+00	5′ Lt	T28	Moisture Density
792+50	52.5	120105	2+50	5′ Lt	T29	Moisture Density
794+00	52.5	120105	4+00	5′ Lt	T30	Moisture Density
801+00	52.5	120101	1+00	5′ Lt	T31	Moisture Density
802+50	52.5	120101	2+50	5′ Lt	T32	Moisture Density
804+00	52.5	120101	4+00	5′ Lt	T33	Moisture Density
814+50	52.5	120102	1+00	5′ Lt	T34	Moisture Density
816+00	52.5	120102	2+00	5′ Lt	T35	Moisture Density
817+50	52.5	120102	4+00	5′ Lt	T36	Moisture Density
840+50	52.5	120161	1+00	5′ Lt	T37	Moisture Density
842+00	52.5	120161	2+50	5′ Lt	T38	Moisture Density

SUBGRADE/EMBANKMENT MATERIALS FIELD SAMPLING AND TESTING (Continued)

Approx. ℄ Sta.	Offset (Ft.)	Section ID Nº.	Section Sta.	O/S From Lane Edge	Sample ID Nº.	Sample Type
843+50	52.5	120161	4+00	5′ Lt	T39	Moisture Density
653+00	52.5	120107	5+50	5′ Lt	T166	Moisture Density
684+00	52.5	120106	5+50	5′ Lt	T167	Moisture Density
742+50	52.5	120112	5+50	5′ Lt	T168	Moisture Density
774+00	52.5	120104	5+50	5′ Lt	T169	Moisture Density
799+50	52.5	120101	-50	5′ Lt	T170	Moisture Density
845+00	52.5	120161	5+50	5′ Lt	T171	Moisture Density

DENSE GRADED AGGREGATE BASE
FIELD MATERIALS SAMPLING AND TESTING

Approx. ℄ Sta.	Offset (Ft.)	Section ID №.	Section Sta.	O/S From Lane Edge	Sample ID №.	Sample Type
648+50	52.5	120107	1+00	5′ Lt	T40	Density (IS)
650+00	5.25	120107	2+50	5′ Lt	T41	Density (IS)
651+50	52.5	120107	4+00	5′ Lt	T42	Density (IS)
668+50	52.5	120108	1+00	5′ Lt	T43	Density (IS)
670+00	52.5	120108	2+50	5′ Lt	T44	Density (IS)
671+50	52.5	120108	4+00	5′ Lt	T45	Density (IS)
679+50	52.5	120106	1+00	5′ Lt	T46	Density (IS)
681+00	52.5	120106	2+50	5′ Lt	T47	Density (IS)
682+50	52.5	120106	4+00	5′ Lt	T48	Density (IS)
752+50	52.5	120109	1+00	5′ Lt	T49	Density (IS)
754+00	52.5	120109	2+50	5′ Lt	T50	Density (IS)
755+50	52.5	120109	4+00	5′ Lt	T51	Density (IS)
791+00	52.5	120105	1+00	5′ Lt	T52	Density (IS)
792+50	52.5	120105	2+50	5′ Lt	T53	Density (IS)
794+00	52.5	120105	4+00	5′ Lt	T54	Density (IS)
801+00	52.5	120101	1+00	5′ Lt	T55	Density (IS)
802+50	52.5	120101	2+50	5′ Lt	T56	Density (IS)
804+00	52.5	120101	4+00	5′ Lt	T57	Density (IS)
814+50	52.5	120102	1+00	5′ Lt	T58	Density (IS)
816+00	52.5	120102	2+50	5′ Lt	T59	Density (IS)
817+50	52.5	120102	4+00	5′ Lt	T60	Density (IS)
840+50	52.5	120161	1+00	5′ Lt	T61	Density (IS)
842+00	52.5	120162	2+50	5′ Lt	T62	Density (IS)
843+50	52.5	120163	4+00	5′ Lt	T63	Density (IS)
674+00	52.5	120108	5+50	5′ Lt	T172	Density (IS)

DENSE GRADED AGGREGATE BASE
FIELD MATERIALS SAMPLING AND TESTING
(Continued)

Approx. ℄ Sta.	Offset (Ft.)	Section ID №.	Section Sta.	O/S From Lane Edge	Sample ID №.	Sample Type
751+00	52.5	120109	-50	5′ Lt	T173	Density (IS)
805+50	52.5	120101	5+50	5′ Lt	T174	Density (IS)
847+50	52.5	121061	5+50	5′ Lt	T175	Density (IS)
673+00	52.5	120108	5+50	5′ Lt	B7	*Bulk
751+00	52.5	120109	-50	5′ Lt	B8	*Bulk
805+50	52.5	120101	5+50	5′ Lt	B9	*Bulk
847+50	52.5	120161	5+50	5′ Lt	B22	*Bulk
Density (IS) = In Situ Density (Nuclear Gauge)						

* Each bulk sample to include a jar sample (moisture) and nuclear density testing.

ASPHALT TREATED BASE
FIELD MATERIALS SAMPLING AND TESTING

Approx. ℄ Sta.	Offset (Ft.)	Section ID Nº.	Section Sta.	O/S From Lane Edge	Sample ID Nº.	Sample Type
679+50	52.5	120106	1+00	5′ Lt	T64	Density (IS)
681+00	5.25	120106	2+50	5′ Lt	T65	Density (IS)
682+50	52.5	120106	4+00	5′ Lt	T66	Density (IS)
706+50	52.5	120110	1+00	5′ Lt	T67	Density (IS)
708+00	52.5	120110	2+50	5′ Lt	T68	Density (IS)
709+50	52.5	120110	4+00	5′ Lt	T69	Density (IS)
721+50	52.5	120111	1+00	5′ Lt	T70	Density (IS)
723+00	52.5	120111	2+50	5′ Lt	T71	Density (IS)
724+50	52.5	120111	4+00	5′ Lt	T72	Density (IS)
738+00	52.5	120112	1+00	5′ Lt	T73	Density (IS)
739+50	52.5	120112	2+50	5′ Lt	T74	Density (IS)
741+00	52.5	120112	4+00	5′ Lt	T75	Density (IS)
769+50	52.5	120104	1+00	5′ Lt	T76	Density (IS)
771+00	52.5	120104	2+50	5′ Lt	T77	Density (IS)
772+50	52.5	120104	4+00	5′ Lt	T78	Density (IS)
781+00	52.5	120103	1+00	5′ Lt	T79	Density (IS)
782+50	52.5	120103	2+50	5′ Lt	T80	Density (IS)
784+00	52.5	120103	4+00	5′ Lt	T81	Density (IS)
791+00	52.5	120105	1+00	5′ Lt	T82	Density (IS)
792+50	52.5	120105	2+50	5′ Lt	T83	Density (IS)
794+00	52.5	120105	4+00	5′ Lt	T84	Density (IS)
678+00	52.5	120106	-50	5′ Lt	T124	Density (IS)
684+00	52.5	120106	+50	5′ Lt	T125	Density (IS)
705+00	52.5	120110	-50	5′ Lt	T126	Density (IS)
711+00	52.5	120110	+50	5′ Lt	T127	Density (IS)

ASPHALT TREATED BASE
FIELD MATERIALS SAMPLING AND TESTING
(Continued)

Approx. ℄ Sta.	Offset (Ft.)	Section ID №.	Section Sta.	O/S From Lane Edge	Sample ID №.	Sample Type
720+00	52.5	120111	-50	5′ Lt	T128	Density (IS)
726+00	52.5	120111	+50	5′ Lt	T129	Density (IS)
736+50	52.5	120112	-50	5′ Lt	T130	Density (IS)
742+50	52.5	120112	+50	5′ Lt	T131	Density (IS)
768+00	52.5	120104	-50	5′ Lt	T132	Density (IS)
774+00	52.5	120104	+50	5′ Lt	T133	Density (IS)
779+50	52.5	120103	-50	5′ Lt	T134	Density (IS)
785+50	52.5	120103	+50	5′ Lt	T135	Density (IS)
789+50	52.5	120105	-50	5′ Lt	T136	Density (IS)
795+50	52.5	120105	+50	5′ Lt	T137	Density (IS)
Plant	---	---	---	---	B13	Bulk
Plant	---	---	---	---	B14	Bulk
Plant	---	---	---	---	B15	Bulk
Density (IS) = In Situ Density (Nuclear Gauge)						

AC SURFACE FIELD MATERIALS SAMPLING AND TESTING

Approx. ℄ Sta.	Section ID Nº.	Section Sta.	O/S From Lane Edge	Sample ID Nº.	Sample Type
647+25	120107	-25	3.0′,4.5′,6.0′,7.5′	C1,C2,C3,C4	4″ Cores
652+75	120107	5+25	3.0′,6.0′	C5,C6	4″ Cores
667+25	120108	-25	3.0′,6.0′	C7,C8	4″ Cores
672+75	120108	5+25	3.0′,6.0′	C9,C10	4″ Cores
678+25	120106	-25	3.0′,4.5,′6.0′,7.5′	C11,C12,C13,C14	4″ Cores
683+75	120106	5+25	3.0′,6.0′	C15,C16	4″ Cores
705+25	120110	-25	3.0′,6.0′	C17,C18	4″ Cores
710+75	120110	5+25	3.0′,6.0′	C19,C20	4″ Cores
720+25	120111	-25	3.0′,6.0′	C21,C22	4″ Cores
725+75	120111	5+25	3.0′,6.0′	C23,C24	4″ Cores
736+75	120112	-25	3.0′,4.5′,6.0′7.5′	C25,C26,C27,C28	4″ Cores
742+25	120112	5+25	3.0′,6.0′	C29,C30	4″ Cores
751+25	120109	-25	3.0′,4.5′,6.0′,7.5′	C31,C32,C33,C34	4″ Cores
756+75	120109	5+25	3.0′,6.0′	C35,C36	4″ Cores
768+25	120104	-25	3.0′,6.0′	C37,C38	4″ Cores
773+75	120104	5+25	3.0′,6.0′	C39,C40	4″ Cores
779+75	120103	-25	3.0′,4.5′,6.0′,7.5′	C41,C42,C43,C44	4″ Cores
785+25	120103	5+25	3.0′,6.0′	C45,C46	4″ Cores
789+75	120105	-25	3.0′,6.0′	C47,C48	4″ Cores
795+25	120105	5+25	3.0′,6.0′	C49,C50	4″ Cores
799+75	120101	-25	3.0′,4.5′,6.0′,7.5′	C51,C52,C53,C54	4″ Cores
805+25	120101	5+25	3.0′,6.0′	C55,C56	4″ Cores
813+25	120102	-25	3.0′,6.0′	C57,C58	4″ Cores
818+75	120102	5+25	3.0′,6.0′	C59,C60	4″ Cores
839+25	120161	-25	3.0′,6.0′	C61,C62	4″ Cores
844+75	120161	5+25	3.0′,6.0′	C63,C64	4″ Cores

AC SURFACE FIELD MATERIALS SAMPLING AND TESTING
(Continued)

Approx. ℄ Sta.	Offset (Ft.)	Section ID №.	Section Sta.	O/S From Lane Edge	Sample ID №.	Sample Type
648+50	52.5	120107	1+00	5′ Lt	T85	Density (IS)
650+00	52.5	120107	2+50	5′ Lt	T86	Density (IS)
651+50	52.5	120107	4+00	5′ Lt	T87	Density (IS)
668+50	52.5	120108	1+00	5′ Lt	T88	Density (IS)
670+00	52.5	120108	2+50	5′ Lt	T89	Density (IS)
671+50	52.5	120108	4+00	5′ Lt	T90	Density (IS)
679+50	52.5	120106	1+00	5′ Lt	T91	Density (IS)
681+00	52.5	120106	2+50	5′ Lt	T92	Density (IS)
682+50	52.5	120106	4+00	5′ Lt	T93	Density (IS)
706+50	52.5	120110	1+00	5′ Lt	T94	Density (IS)
708+00	52.5	120110	2+50	5′ Lt	T95	Density (IS)
709+50	52.5	120110	4+00	5′ Lt	T96	Density (IS)
721+50	52.5	120111	1+00	5′ Lt	T97	Density (IS)
723+00	52.5	120111	2+50	5′ Lt	T98	Density (IS)
724+50	52.5	120111	4+00	5′ Lt	T99	Density (IS)
738+00	52.5	120112	1+00	5′ Lt	T100	Density (IS)
739+50	52.5	120112	2+50	5′ Lt	T101	Density (IS)
741+00	52.5	120112	4+00	5′ Lt	T102	Density (IS)
742+50	52.5	120109	1+00	5′ Lt	T103	Density (IS)
754+50	52.5	120109	2+50	5′ Lt	T104	Density (IS)
755+50	52.5	120109	4+00	5′ Lt	T105	Density (IS)
769+50	52.5	120104	1+00	5′ Lt	T106	Density (IS)
771+00	52.5	120104	2+50	5′ Lt	T107	Density (IS)
772+50	52.5	120104	4+00	5′ Lt	T108	Density (IS)
781+00	52.5	120103	1+00	5′ Lt	T109	Density (IS)

AC SURFACE FIELD MATERIALS SAMPLING AND TESTING
(Continued)

Approx. ℄ Sta.	Offset (Ft.)	Section ID Nº.	Section Sta.	O/S From Lane Edge	Sample ID Nº.	Sample Type
782+50	52.5	120103	2+50	5′ Lt	T110	Density (IS)
784+00	52.5	120103	4+00	5′ Lt	T111	Density (IS)
791+00	52.5	120105	1+00	5′ Lt	T112	Density (IS)
792+50	52.5	120105	2+50	5′ Lt	T113	Density (IS)
794+00	52.5	120105	4+00	5′ Lt	T114	Density (IS)
801+00	52.5	120101	1+00	5′ Lt	T115	Density (IS)
802+50	52.5	120101	2+50	5′ Lt	T116	Density (IS)
804+00	52.5	120101	4+00	5′ Lt	T117	Density (IS)
814+50	52.5	120102	1+00	5′ Lt	T118	Density (IS)
816+00	52.5	120102	2+50	5′ Lt	T119	Density (IS)
817+50	52.5	120102	4+00	5′ Lt	T120	Density (IS)
840+50	52.5	120161	1+00	5′ Lt	T121	Density (IS)
842+00	52.5	120161	2+50	5′ Lt	T122	Density (IS)
843+50	52.5	120161	4+00	5′ Lt	T123	Density (IS)
647+00	52.5	120107	-50	5′ Lt	T140	Density (IS)
653+00	52.5	120107	+50	5′ Lt	T141	Density (IS)
667+00	52.5	120108	-50	5′ Lt	T142	Density (IS)
673+00	52.5	120108	+50	5′ Lt	T143	Density (IS)
678+00	52.5	120106	-50	5′ Lt	T144	Density (IS)
684+00	52.5	120106	+50	5′ Lt	T145	Density (IS)
705+00	52.5	120110	-50	5′ Lt	T146	Density (IS)
711+00	52.5	120110	+50	5′ Lt	T147	Density (IS)
720+00	52.5	120111	-50	5′ Lt	T148	Density (IS)
726+00	52.5	120111	+50	5′ Lt	T149	Density (IS)
736+50	52.5	120112	-50	5′ Lt	T150	Density (IS)

AC SURFACE FIELD MATERIALS SAMPLING AND TESTING
(Continued)

Approx. ℄ Sta.	Offset (Ft.)	Section ID Nº.	Section Sta.	O/S From Lane Edge	Sample ID Nº.	Sample Type
742+50	52.5	120112	+50	5′ Lt	T151	Density (IS)
751+00	52.5	120109	-50	5′ Lt	T152	Density (IS)
757+00	52.5	120109	+50	5′ Lt	T153	Density (IS)
768+00	52.5	120104	-50	5′ Lt	T154	Density (IS)
774+00	52.5	120104	+50	5′ Lt	T155	Density (IS)
779+50	52.5	120103	-50	5′ Lt	T156	Density (IS)
785+50	52.5	120103	+50	5′ Lt	T157	Density (IS)
789+50	52.5	120105	-50	5′ Lt	T158	Density (IS)
795+50	52.5	120105	+50	5′ Lt	T159	Density (IS)
799+50	52.5	120101	-50	5′ Lt	T160	Density (IS)
805+50	52.5	120101	+50	5′ Lt	T161	Density (IS)
813+00	52.5	120102	-50	5′ Lt	T162	Density (IS)
819+00	52.5	120102	+50	5′ Lt	T163	Density (IS)
839+00	52.5	120161	-50	5' Lt	T164	Density (IS)
845+00	52.5	120161	+50	5′ Lt	T165	Density (IS)
Density (IS) = In Situ Density (Nuclear Gauge)						

SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location Number	Sample Number	Lab Test Number	Type of Sample
Asphalt Concrete			
C5	CA05	2	102 mm (4 in.) Core
C6	CA06	2	102 mm (4 in.) Core
C9	CA09	2	102 mm (4 in.) Core
C10	CA10	2	102 mm (4 in.) Core
C15	CA15	2	102 mm (4 in.) Core
C16	CA16	2	102 mm (4 in.) Core
C17	CA17	1	102 mm (4 in.) Core
C18	CA18	1	102 mm (4 in.) Core
C20	CA20	2	102 mm (4 in.) Core
C21	CA21	1	102 mm (4 in.) Core
C22	CA22	1	102 mm (4 in.) Core
C23	CA23	2	102 mm (4 in.) Core
C24	CA24	2	102 mm (4 in.) Core
C29	CA29	2	102 mm (4 in.) Core
C30	CA30	2	102 mm (4 in.) Core
C32	CA32	1	102 mm (4 in.) Core
C33	CA33	1	102 mm (4 in.) Core
C35	CA35	2	102 mm (4 in.) Core
C36	CA36	2	102 mm (4 in.) Core
C37	CA37	1	102 mm (4 in.) Core
C38	CA38	1	102 mm (4 in.) Core
C39	CA39	2	102 mm (4 in.) Core
C44	CA44	1	102 mm (4 in.) Core
C45	CA45	2	102 mm (4 in.) Core

SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE) (Continued)

Sample Location Number	Sample Number	Lab Test Number	Type of Sample
C46	CA46	2	102 mm (4 in.) Core
C55	CA55	2	102 mm (4 in.) Core
C56	CA56	2	102 mm (4 in.) Core
C57	CA57	1	102 mm (4 in.) Core
C58	CA58	1	102 mm (4 in.) Core
C59	CA59	2	102 mm (4 in.) Core
C60	CA60	2	102 mm (4 in.) Core
B16	BA01	3	91 kg (200 lb) Bulk Sample
B17	BA02	3	91 kg (200 lb) Bulk Sample
B18	BA03	3	91 kg (200 lb) Bulk Sample
B19*	BC01	3	19 1(5 gal) Bulk Sample of Asphalt Cement
B20*	BC02	3	19 1(5 gal) Bulk Sample of Asphalt Cement
B21*	BC03	3	19 1(5 gal) Bulk Sample of Asphalt Cement
Asphalt Treated Base			
C15	CT15	2	102 mm (4 in.) Core
C16	CT16	2	102 mm (4 in.) Core
C17	CT17	1	102 mm (4 in.) Core
C18	CT18	1	102 mm (4 in.) Core
C20	CT20	2	102 mm (4 in.) Core
C21	CT21	1	102 mm (4 in.) Core
C22	CT22	1	102 mm (4 in.) Core
C23	CT23	2	102 mm (4 in.) Core

* Additional asphalt samples may apply if more than one AC grade is utilized throughout the SPS-1 project.

SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE) (Continued)

Sample Location Number	Sample Number	Lab Test Number	Type of Sample
C24	CT24	2	102 mm (4 in.) Core
C29	CT29	2	102 mm (4 in.) Core
C30	CT30	2	102 mm (4 in.) Core
C37	CT37	1	102 mm (4 in.) Core
C39	CT37	2	102 mm (4 in.) Core
C44	CT44	1	102 mm (4 in.) Core
C45	CT45	2	102 mm (4 in.) Core
C46	CT46	2	102 mm (4 in.) Core
B13	BT04	3	91 kg (200 lb) Bulk Sample
B14	BT05	3	91 kg (200 lb) Bulk Sample
B15	BT06	3	91 kg (200 lb) Bulk Sample
B19*	BC01	3	19 1(5 gal) Bulk Sample of Asphalt Cement
B20*	BC02	3	19 1(5 gal) Bulk Sample of Asphalt Cement
B21*	BC03	3	19 1(5 gal) Bulk Sample of Asphalt Cement
Permeable Asphalt Treated Base			
B10	BT01	3	45 kg (100 lb) Bulk Sample
B11	BT02	3	45 kg (100 lb) Bulk Sample
B12	BT03	3	45 kg (100 lb) Bulk Sample
Unbound Granular Base			
B7	BG01	2	181 kg (400 lb) Bulk Sample[1]
B8	BG02	1	181 kg (400 lb) Bulk Sample[1]
B9	BG03	2	181 kg (400 lb) Bulk Sample[1]

* Additional asphalt samples may apply if more than one AC grade is utilized throughout the SPS-1 project.

SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE) (Continued)

Sample Location Number	Sample Number	Lab Test Number	Type of Sample
Subgrade (Embankment < 1.2 m [4']) - If Thin-Wall Tube Samples Available			
B1	BS01	2	181 kg (400 lb) Bulk Sample[1]
B2	BS02	2	181 kg (400 lb) Bulk Sample[1]
B3	BS03	2	181 kg (400 lb) Bulk Sample[1]
B4	BS04	2	181 kg (400 lb) Bulk Sample[1]
B5	BS05	1	181 kg (400 lb) Bulk Sample[1]
B6	BS06	2	181 kg (400 lb) Bulk Sample[1]
A1	TS01	2	Thin-Wall Tube Sample
A3	TS05	2	Thin-Wall Tube Sample
A3	TS06	2	Thin-Wall Tube Sample
A4	TS07	2	Thin-Wall Tube Sample
A4	TS08	2	Thin-Wall Tube Sample
A6	TS11	3	Thin-Wall Tube Sample
A6	TS12	3	Thin-Wall Tube Sample
A7	TS13	3	Thin-Wall Tube Sample
A7	TS14	3	Thin-Wall Tube Sample
A8	TS15	3	Thin-Wall Tube Sample
A8	TS16	3	Thin-Wall Tube Sample
A11	TS21	3	Thin-Wall Tube Sample
A11	TS22	3	Thin-Wall Tube Sample
A13	TS25	3	Thin-Wall Tube Sample
A13	TS26	3	Thin-Wall Tube Sample
A14	TS27	3	Thin-Wall Tube Sample
A14	TS28	3	Thin-Wall Tube Sample

SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE) (Continued)

Sample Location Number	Sample Number	Lab Test Number	Type of Sample
Subgrade (Embankment < 1.2 m [4′]) - If Thin-Wall Tube Samples Not Available			
B1	BS01	2	181 kg (400 lb) Bulk Sample[1]
B2	BS02	2	181 kg (400 lb) Bulk Sample[1]
B3	BS03	2	181 kg (400 lb) Bulk Sample[1]
B4	BS04	2	181 kg (400 lb) Bulk Sample[1]
B5	BS05	1	181 kg (400 lb) Bulk Sample[1]
B6	BS06	2	181 kg (400 lb) Bulk Sample[1]

NOTE [1]: The bulk sample is to be shipped to the participating agency laboratory where it is to be split and quartered. A 136 kg (300 lb) portion of the bulk sample is then to be shipped to the FHWA-LTPP Testing Contractor Laboratory for further testing.

SAMPLES TO BE SHIPPED TO THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location Number	Sample Number	Lab Test Number	Type of Sample
Asphalt Concrete			
C1	CA01	1	102 mm (4 in.) Core
C2	CA02	1	102 mm (4 in.) Core
C3	CA03	1	102 mm (4 in.) Core
C4	CA04	1	102 mm (4 in.) Core
C7	CA07	1	102 mm (4 in.) Core
C8	CA08	1	102 mm (4 in.) Core
C11	CA11	1	102 mm (4 in.) Core
C12	CA12	1	102 mm (4 in.) Core
C13	CA13	1	102 mm (4 in.) Core
C14	CA14	1	102 mm (4 in.) Core
C19	CA19	2	102 mm (4 in.) Core
C25	CA25	1	102 mm (4 in.) Core
C26	CA26	1	102 mm (4 in.) Core
C27	CA27	1	102 mm (4 in.) Core
C28	CA28	1	102 mm (4 in.) Core
C31	CA31	1	102 mm (4 in.) Core
C34	CA34	1	102 mm (4 in.) Core
C40	CA40	2	102 mm (4 in.) Core
C41	CA41	1	102 mm (4 in.) Core
C42	CA42	1	102 mm (4 in.) Core
C43	CA43	1	102 mm (4 in.) Core
C47	CA47	1	102 mm (4 in.) Core
C48	CA48	1	102 mm (4 in.) Core
C51	CA51	1	102 mm (4 in.) Core

SAMPLES TO BE SHIPPED TO THE FHWA-LTPP TESTING CONTRACTOR LABORATORY (Continued)

Sample Location Number	Sample Number	Lab Test Number	Type of Sample
C52	CA52	1	102 mm (4 in.) Core
C53	CA53	1	102 mm (4 in.) Core
C54	CA54	1	102 mm (4 in.) Core
C61	CA61	1	102 mm (4 in.) Core
C62	CA62	1	102 mm (4 in.) Core
C63	CA63	2	102 mm (4 in.) Core
C64	CA64	2	102 mm (4 in.) Core
Asphalt Treated Base			
C11	CT11	1	102 mm (4 in.) Core
C12	CT12	1	102 mm (4 in.) Core
C13	CT13	1	102 mm (4 in.) Core
C14	CT14	1	102 mm (4 in.) Core
C19	CT19	2	102 mm (4 in.) Core
C25	CT25	1	102 mm (4 in.) Core
C26	CT26	1	102 mm (4 in.) Core
C27	CT27	1	102 mm (4 in.) Core
C28	CT28	1	102 mm (4 in.) Core
C40	CT40	2	102 mm (4 in.) Core
C41	CT41	1	102 mm (4 in.) Core
C42	CT42	1	102 mm (4 in.) Core
C43	CT43	1	102 mm (4 in.) Core
C47	CT47	1	102 mm (4 in.) Core
C48	CT48	1	102 mm (4 in.) Core
C49	CT49	2	102 mm (4 in.) Core
C50	CT50	2	102 mm (4 in.) Core

SAMPLES TO BE SHIPPED TO THE FHWA-LTPP TESTING CONTRACTOR LABORATORY (Continued)

Sample Location Number	Sample Number	Lab Test Number	Type of Sample
Unbound Granular Base			
B7	BG01	2	136 kg (300 lb) Bulk Sample[1]
B8	BG02	1	136 kg (300 lb) Bulk Sample[1]
B9	BG03	2	136 kg (300 lb) Bulk Sample[1]
B7	MG01	2	Moisture Content Jar Sample
B8	MG02	1	Moisture Content Jar Sample
B9	MG03	2	Moisture Content Jar Sample
Subgrade (Embankment ≥ 1.2 m [4′]) - If Thin-Wall Tubes Available			
B1	BS01	2	136 kg (300 lb) Bulk Sample[1]
B2	BS02	2	136 kg (300 lb) Bulk Sample[1]
B3	BS03	2	136 kg (300 lb) Bulk Sample[1]
B4	BS04	2	136 kg (300 lb) Bulk Sample[1]
B5	BS05	1	136 kg (300 lb) Bulk Sample[1]
B6	BS06	2	136 kg (300 lb) Bulk Sample[1]
A2	TS03	3	Thin-Wall Tube Sample
A2	TS04	3	Thin-Wall Tube Sample
A5	TS09	3	Thin-Wall Tube Sample
A5	TS10	3	Thin-Wall Tube Sample
A9	TS17	3	Thin-Wall Tube Sample
A9	TS18	3	Thin-Wall Tube Sample
A12	TS23	3	Thin-Wall Tube Sample
A12	TS24	3	Thin-Wall Tube Sample
A15	TS29	3	Thin-Wall Tube Sample
A15	TS30	3	Thin-Wall Tube Sample

SAMPLES TO BE SHIPPED TO THE FHWA-LTPP TESTING CONTRACTOR LABORATORY (Continued)

Sample Location Number	Sample Number	Lab Test Number	Type of Sample
B1	MS01	2	Moisture Content Jar Sample
B2	MS02	2	Moisture Content Jar Sample
B3	MS03	2	Moisture Content Jar Sample
B4	MS04	2	Moisture Content Jar Sample
B5	MS05	1	Moisture Content Jar Sample
B6	MS06	2	Moisture Content Jar Sample
Subgrade (Embankment ≥ 1.2 m [4′]) - If Thin-Wall Tubes Not Available			
B1	BS01	2	136 kg (300 lb) Bulk Sample[1]
B2	BS02	2	136 kg (300 lb) Bulk Sample[1]
B3	BS03	2	136 kg (300 lb) Bulk Sample[1]
B4	BS04	2	136 kg (300 lb) Bulk Sample[1]
B5	BS05	1	136 kg (300 lb) Bulk Sample[1]
B6	BS06	2	136 kg (300 lb) Bulk Sample[1]
B1	MS01	2	Moisture Content Jar Sample
B2	MS02	2	Moisture Content Jar Sample
B3	MS03	2	Moisture Content Jar Sample
B4	MS04	2	Moisture Content Jar Sample
B5	MS05	1	Moisture Content Jar Sample
B6	MS06	2	Moisture Content Jar Sample

NOTE [1] The bulk sample shall be obtained from the participating agency.

SECTION A.

LABORATORY MATERIAL TESTING

SECTION A

LABORATORY MATERIAL TESTING

It is the intent of this section of the sampling and testing plan to provide an outline for the laboratory testing that is planned for the Florida SPS-1 project. The previous section ended with lists of samples to be shipped to each of two laboratories; the state designated laboratory and the FHWA/LTPP contracted laboratory. In this section, the tests to be performed on each sample are listed.

Table A.1 provides a reference project layer numbering scheme. It is important that the two laboratories reference the same layer by number to ensure meaningful results.

Table A.2 provides a listing of the tests to be performed for each material type and pavement layer, and the associated laboratory testing protocol. It is imperative that the protocols listed be strictly followed during testing.

Tables A.3 through A.8 provide tracking tables for the state designated laboratory for each material type. These tables itemize the testing to occur on each sample and provide an indication of whether the sample is to be disposed of. Tables A.9 through A.14 provide similar information for the FHWA/LTPP contracted laboratory.

PROJECT LAYER NUMBERING

Layer No.	Description
1	Subgrade
2	Embankment (Fill)
3	Dense Graded Aggregate Base (DGAB)
4	Permeable Asphalt Treated Base (PATB)
5	Dense Graded Asphalt Treated Base (ATB)
6	Hot Mix Asphalt Concrete Binder Course
7	Hot Mix Asphalt Concrete Wearing Course

SAMPLES TO BE USED FOR LABORATORY MATERIALS TESTING

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum No. of Tests per Layer	Sampling Location	Test Conducted by: State	FHWA
SUBGRADE/EMBANKMENT						
Sieve Analysis	SS01	P51	6	B1-B6		X
Hydrometer to 0.001 mm	SS02	P42	6	B1-B6		X
Atterberg Limits	SS03	P43	6	B1-B6		X
Classification	SS04	P52	6	B1-B6		X
(Visual-manual only on thin-wall tubes)			15	A1-A15	X	X
Moisture-Density Relations	SS05	P55	6	B1-B6		X
Resilient Modulus	SS07	P46	5	A2, A5, A9, A12, A15		X
(If thin-wall tube is not available)			6	B1-B6		X
Unit Weight (If thin-wall tube is not available, test is not conducted)	SS08	P56	5	A1, A4, A8, A11, A14	X	
Natural Moisture Content	SS09	P49	6	B1-B6		X
Unconfined Comp. Strength (If thin-wall tube is not available, test is not conducted)	SS10	P54	5	A1, A4, A8, A11, A14	X	
Permeability	SS11	P57	3	A3, A7, A13	X	
Permeability	UG09	P48	6	B1-B6	X	
DENSE GRADED AGGREGATE BASE						
Particle Size Analysis	UG01	P41	3	B7-B9		X
Sieve Analysis (Washed)	UG02	P41	3	B7-B9		X
Atterberg Limits	UG04	P43	3	B7-B9		X
Moisture-Density Relations	UG05	P44	3	B7-B9		X
Resilient Modulus	UG07	P46	3	B7-B9		X
Classification	UG08	P47	3	B7-B9		X
Permeability	UG09	P48	3	B7-B9	X	
Natural Moisture Content	UG10	P49	3	B7-B9		X
PERMEABLE ASPHALT TREATED BASE						
Asphalt Content (Extraction)	AC04	P04	3	B10-B12 From Paver	X	
Extracted Aggregate:						
Gradation of Aggregate	AG04	P14	3	B10-B12 From Paver	X	

SAMPLES TO BE USED FOR LABORATORY MATERIALS TESTING
(Continued)

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum No. of Tests per Layer	Sampling Location	Test Conducted by: State	FHWA
ASPHALT TREATED BASE						
Core Examination/Thickness	AC01	P01	34	C11-C30, C37-C50	X	X
Bulk Specific Gravity	AC02	P02	34	C11-C30, C37-C50	X	X
Maximum Specific Gravity	AC03	P03	3	B13-B15 From Paver	X	
Asphalt Content (Extraction)	AC04	P04	3	B13-B15 From Paver	X	
Moisture Susceptibility	AC05	P05	3	B13-B15 From Paver	X	
Resilient Modulus	AC07	P07	9	C11-C13, C25-C27, C47-C49		X
Tensile Strength	AC07	P07	12	C11-C14, C25-C28, C47-C50		X
Extracted Aggregate:						
Specific Gravity:						
Coarse Aggregate	AG01	P11	3	B13-B15 From Paver	X	
Fine Aggregate	AG02	P12	3	B13-B15 From Paver	X	
Gradation of Aggregate	AG04	P14	3	B13-B15 From Paver	X	
NAA Test for Fine Aggregate	AG05	P14A	3	B13-B15 From Paver	X	
Particle Shape						
Asphalt Cement:						
Abson Recovery	AE01	P21	3	B13-B15 From Paver	X	
Penetration at 25°C, 46°C (77°F, 115°F)	AE02	P22	3	B13-B15 From Paver	X	
Specific Gravity 16°C (60°F)	AE03	P23	3	B13-B15 From Paver	X	
Viscosity at 25°C (77°F)	AE04	P24	3	B13-B15 From Paver	X	
Viscosity at 60°C, 135°C (140°F, 275°F)	AE05	P25	3	B13-B15 From Paver	X	
Asphalt Cement: (From Tanker or Plant)						
Penetration at 25°C, 46°C (77°F, 115°F)	AE02	P22	3	B19-B21 From Tanker	X	
Specific Gravity 16°C (60°F)	AE03	P23	3	B19-B21 From Tanker	X	
Viscosity at 25°C (77°F)	AE04	P24	3	B19-B21 From Tanker	X	
Viscosity at 60°C, 135°C (140°F, 275°F)	AE05	P25	3	B19-B21 From Tanker	X	

SAMPLES TO BE USED FOR LABORATORY MATERIALS TESTING
(Continued)

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum No. of Tests per Layer	Sampling Location	Test Conducted by: State	FHWA
ASPHALTIC CONCRETE SURFACE AND BINDER						
Core Examination/Thickness	AC01	P01	60	C1-C64	X	X
Bulk Specific Gravity	AC02	P02	60	C1-C64	X	X
Maximum Specific Gravity	AC03	P03	3	B16-B18 From Paver	X	
Asphalt Content (Extraction)	AC04	P04	3	B16-B18 From Paver	X	
Moisture Susceptibility	AC05	P05	3	B16-B18 From Paver	X	
Creep Compliance	AC06	P06	3	C5, C23, C46		X
Resilient Modulus	AC07	P07	18	C11-C13, C25-C27, C1-C3, C51-C53, C40-C42, C61-C63		X
Tensile Strength	AC07	P07	24	C1-C4, C11-C14, C25-C28, C40-C43, C51-C54, C61-C64		X
Extracted Aggregate:						
Specific Gravity:						
Coarse Aggregate	AG01	P11	3	B16-B18 From Paver	X	
Fine Aggregate	AG02	P12	3	B16-B18 From Paver	X	
Gradation of Aggregate	AG04	P14	3	B16-B18 From Paver	X	
NAA Test for Fine Aggregate	AG05	P14A	3	B16-B18 From Paver	X	
Particle Shape						
Asphalt Cement:						
Abson Recovery	AE01	P21	3	B16-B18 From Paver	X	
Penetration at 25°C, 46°C (77°F, 115°F)	AE02	P22	3	B16-B18 From Paver	X	
Specific Gravity 16°C (60°F)	AE03	P23	3	B16-B18 From Paver	X	
Viscosity at 25°C (77°F)	AE04	P24	3	B16-B18 From Paver	X	
Viscosity at 60°C, 135°C (140°F, 275°F)	AE05	P25	3	B16-B18 From Paver	X	
Asphalt Cement: (From Tanker or Plant)						
Penetration at 25°C, 46°C (77°F, 115°F)	AE02	P22	3	B19-B21 From Tanker	X	
Specific Gravity 16°C (60°F)	AE03	P23	3	B19-B21 From Tanker	X	
Viscosity at 25°C (77°F)	AE04	P24	3	B19-B21 From Tanker	X	
Viscosity at 60°C, 135°C (140°F, 275°F)	AE05	P25	3	B19-B21 From Tanker	X	

TRACKING TABLE OF ASPHALTIC CONCRETE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
C6	CA06	2	AC01/P01	AC02/P02			Yes	(a)	No
C7	CA07	1	AC01/P01	AC02/P02			Yes	(a)	No
C8	CA08	2	AC01/P01	AC02/P02			Yes	(a)	No
C9	CA19	2	AC01/P01	AC02/P02			Yes	(a)	No
C10	CA10	2	AC01/P01	AC02/P02			Yes	(a)	No
C15	CA15	2	AC01/P01	AC02/P02			Yes	(a)	No
C16	CA16	2	AC01/P01	AC02/P02			Yes	(a)	No
C17	CA17	1	AC01/P01	AC02/P02			Yes	(a)	No
C18	CA18	1	AC01/P01	AC02/P02			Yes	(a)	No
C19	CA19	2	AC01/P01	AC02/P02			Yes	(a)	No
C20	CA20	2	AC01/P01	AC02/P02			Yes	(a)	No
C21	CA21	1	AC01/P01	AC02/P02			Yes	(a)	No
C22	CA22	1	AC01/P01	AC02/P02			Yes	(a)	No
C24	CA24	2	AC01/P01	AC02/P02			Yes	(a)	No
C29	CA29	2	AC01/P01	AC02/P02			Yes	(a)	No
C30	CA30	2	AC01/P01	AC02/P02			Yes	(a)	No
C31	CA31	1	AC01/P01	AC02/P02			Yes	(a)	No
C32	CA32	1	AC01/P01	AC02/P02			Yes	(a)	No
C33	CA33	1	AC01/P01	AC02/P02			Yes	(a)	No
C34	CA34	1	AC01/P01	AC02/P02			Yes	(a)	No
C35	CA35	2	AC01/P01	AC02/P02			Yes	(a)	No
C36	CA36	2	AC01/P01	AC02/P02			Yes	(a)	No
C37	CA37	1	AC01/P01	AC02/P02			Yes	(a)	No
C38	CA38	1	AC01/P01	AC02/P02			Yes	(a)	No
C39	CA39	2	AC01/P01	AC02/P02			Yes	(a)	No
C44	CA44	1	AC01/P01	AC02/P02			Yes	(a)	No

TRACKING TABLE OF ASPHALTIC CONCRETE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

(Continued)

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
C45	CA45	2	AC01/P01	AC02/P02			Yes	(a)	No
C55	CA55	2	AC01/P01	AC02/P02			Yes	(a)	No
C56	CA56	2	AC01/P01	AC02/P02			Yes	(a)	No
C57	CA57	1	AC01/P01	AC02/P02			Yes	(a)	No
C58	CA58	1	AC01/P01	AC02/P02			Yes	(a)	No
C59	CA59	2	AC01/P01	AC02/P02			Yes	(a)	No
C60	CA60	2	AC01/P01	AC02/P02			Yes	(a)	No
B16	BA01	3	See Page C.22				No	(a)	Yes
B17	BA02	3	See Page C.22				No	(a)	Yes
B18	BA03	3	See Page C.22				No	(a)	Yes
B19*	BC01/04	3	AE02/P22	AE03/P23	AE04/P24	AE05/P25	No	(a)	Yes
B20*	BC01/04	3	AE02/P22	AE03/P23	AE04/P24	AE05/P25	No	(a)	Yes
B21*	BC01/04	3	AE02/P22	AE03/P23	AE04/P24	AE05/P25	No	(a)	Yes

Note: All of the core specimens noted herein shall be stored for possible future use. In the future, these specimens may be used to evaluate test procedures for the SUPERPAVE program.

* - Additional asphalt samples may apply if more than one AC grade is utilized throughout the SPS-1 project.

TRACKING TABLE OF ASPHALT TREATED BASE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
C15	CT15	2	AC01/P01	AC02/P02			Yes	(a)	No
C16	CT16	2	AC01/P01	AC02/P02			Yes	(a)	No
C17	CT17	1	AC01/P01	AC02/P02			Yes	(a)	No
C18	CT18	1	AC01/P01	AC02/P02			Yes	(a)	No
C19	CT19	2	AC01/P01	AC02/P02			Yes	(a)	No
C20	CT20	2	AC01/P01	AC02/P02			Yes	(a)	No
C21	CT21	1	AC01/P01	AC02/P02			Yes	(a)	No
C22	CT22	1	AC01/P01	AC02/P02			Yes	(a)	No
C24	CT23	2	AC01/P01	AC02/P02			Yes	(a)	No
C29	CT29	2	AC01/P01	AC02/P02			Yes	(a)	No
C30	CT30	2	AC01/P01	AC02/P02			Yes	(a)	No
C37	CT37	1	AC01/P01	AC02/P02			Yes	(a)	No
C38	CT38	1	AC01/P01	AC02/P02			Yes	(a)	No
C39	CT39	2	AC01/P01	AC02/P02			Yes	(a)	No
C44	CT44	2	AC01/P01	AC02/P02			Yes	(a)	No
C45	CT49	2	AC01/P01	AC02/P02			Yes	(a)	No
B13	BT20	3	See Page C.22				No	(a)	Yes
B14	BT21	3	See Page C.22				No	(a)	Yes
B15	BT22	3	See Page C.22				No	(a)	Yes
B19*	BC01/04	3	AE02/P22	AE03/P23	AE04/P24	AE05/P25	No	(a)	Yes
B20*	BC02/05	3	AE02/P22	AE03/P23	AE04/P24	AE05/P25	No	(a)	Yes
B21*	BC03/06	3	AE02/P22	AE03/P23	AE04/P24	AE05/P25	No	(a)	Yes

* - Additional asphalt samples may apply if more than one AC grade is utilized throughout the SPS-1 project.

TRACKING TABLE OF PERMEABLE ASPHALT TREATED BASE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
B10	BT01	3	AC04/P04	AG04/P14			No	(a)	Yes
B11	BT02	3	AC04/P04	AG04/P14			No	(a)	Yes
B12	BT03	3	AC04/P04	AG04/P14			No	(a)	Yes

TRACKING TABLE OF DENSE GRADED AGGREGATE BASE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
B7	BG01	2	UG09/P48				No	(b)	Yes
B8	BG02	1	UG09/P48				No	(b)	Yes
B9	BG03	2	UG09/P48				No	(b)	Yes

TRACKING TABLE OF SUBGRADE/EMBANKMENT (≥ 1.2 m [4']) TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE) (IF THIN-WALL TUBES ARE AVAILABLE)

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
B1	BS01	2	No testing - samples stored				Yes	(b)	No
B2	BS02	2	No testing - samples stored				Yes	(b)	No
B3	BS03	2	No testing - samples stored				Yes	(b)	No
B4	BS04	2	No testing - samples stored				Yes	(b)	No
B5	BS05	2	No testing - samples stored				Yes	(b)	No
B6	BS06	2	No testing - samples stored				Yes	(b)	No
A1	TS01	3	SS04/P52	SS08/P56	SS10/P54		No	(c)	Yes
A3	TS05	3	SS04/P52	SS11/P57			No	(c)	Yes
A4	TS07	3	SS04/P52	SS08/P56	SS10/P54		No	(c)	Yes
A6	TS11	3	SS04/P52				No	(c)	Yes
A7	TS13	3	SS04/P52	SS11/P57			No	(c)	Yes
A8	TS15	3	SS04/P52	SS08/P56	SS10/P54		No	(c)	Yes
A11	TS21	3	SS04/P52	SS11/P57			No	(c)	Yes
A13	TS25	3	SS04/P52	SS08/P56	SS10/P54		No	(c)	Yes
A14	TS27	3	SS04/P52	SS08/P56	SS10/P54		No	(c)	Yes
A3	TS06	3					Yes	(c)	No
A4	TS08	3					Yes	(c)	No
A6	TS12	3					Yes	(c)	No
A7	TS14	3					Yes	(c)	No
A8	TS16	3					Yes	(c)	No
A11	TS22	3					Yes	(c)	No
A13	TS26	3					Yes	(c)	No
A14	TS28	3					Yes	(c)	No

TRACKING TABLE OF SUBGRADE/EMBANKMENT (≥ 1.2 m [4′]) TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE) (IF THIN-WALL TUBES ARE NOT AVAILABLE)

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
B1	BS01	2	UG09/P48				No	(b)	Yes
B2	BS02	2	UG09/P48				No	(b)	Yes
B3	BS03	2	UG09/P48				No	(b)	Yes
B4	BS04	2	UG09/P48				No	(b)	Yes
B5	BS05	1	UG09/P48				No	(b)	Yes
B6	BS06	2	UG09/P48				No	(b)	Yes

TRACKING TABLE OF ASPHALTIC CONCRETE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
C1	CA01	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C2	CA02	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C3	CA03	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C4	CA04	1	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C5	CA05	1	AC01/P01	AC02/P02	AC06/P06		No	(a)	Yes
C11	CA11	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C12	CA12	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C13	CA13	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C14	CA14	1	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C23	CA23	2	AC01/P01	AC02/P02	AC06/P06		No	(a)	Yes
C25	CA25	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C26	CA26	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C27	CA27	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C28	CA28	1	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C40	CA40	2	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C41	CA41	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C42	CA42	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C43	CA43	1	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C46	CA46	2	AC01/P01	AC02/P02	AC06/P06		No	(a)	Yes
C47	CA47	1	AC01/P01	AC02/P02			No	(a)	Yes
C48	CA48	1	AC01/P01	AC02/P02			No	(a)	Yes
C49	CA49	2	AC01/P01	AC02/P02			No	(a)	Yes
C50	CA50	2	AC01/P01	AC02/P02			No	(a)	Yes
C51	CA51	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C52	CA52	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C53	CA53	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes

TRACKING TABLE OF ASPHALTIC CONCRETE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY (Continued)

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
C54	CA54	1	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C61	CA61	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C62	CA62	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C63	CA63	2	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C64	CA64	2	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes

TRACKING TABLE OF ASPHALT TREATED BASE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			
C11	CT11	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C12	CT12	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C13	CT13	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C14	CT14	1	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C23	CT23	2	AC01/P01	AC02/P02			No	(a)	Yes
C25	CT25	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C26	CT26	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C27	CT27	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C28	CT28	1	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C40	CT40	2	AC01/P01	AC02/P02			No	(a)	Yes
C41	CT41	1	AC01/P01	AC02/P02			No	(a)	Yes
C42	CT42	1	AC01/P01	AC02/P02			No	(a)	Yes
C43	CT43	1	AC01/P01	AC02/P02			No	(a)	Yes
C46	CT46	2	AC01/P01	AC02/P02			No	(a)	Yes
C47	CT47	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C48	CT48	1	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C49	CT49	2	AC01/P01	AC02/P02	AC07/P07	AC07/P07 (ITS)	No	(a)	Yes
C50	CT50	2	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes

TRACKING TABLE OF PERMEABLE ASPHALT TREATED BASE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location Number	Sample Number	Lab Test Number	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer (4)				Extra Sample	Sample Storage	Sample Disposed?
			First	Second	Third	Fourth			

No permable asphalt treated base testing will be conducted by the FWHA-LTPP Testing Contractor

TRACKING TABLE OF DENSE GRADED AGGREGATE BASE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location Number	Sample No.	Lab Test No.	Steps Involved in Laboratory Handling and Testing Sequence								
			Required Laboratory Tests Per Layer						Extra Sample	Sample Storage	Sample Disposed ?
			First	Second	Third	Fourth	Fifth	Sixth			
B7	BG01	2	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46	No	(b)	Yes
B8	BG02	1	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46	No	(b)	Yes
B9	BG03	2	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46	No	(b)	Yes
B7	MG01	2	UG10/P49						No	(b)	Yes
B8	MG02	1	UG10/P49						No	(b)	Yes
B9	MG03	2	UG10/P49						No	(b)	Yes

TRACKING TABLE OF SUBGRADE/EMBANKMENT (≥ 1.2 m [4′]) TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY (IF THIN-WALL TUBES ARE AVAILABLE)

Sample Location No.	Sample No.	Lab Test No.	Steps Involved in Laboratory Handling and Testing Sequence								
			Required Laboratory Tests Per Layer						Extra Sample	Sample Storage	Sample Disposed ?
			First	Second	Third	Fourth	Fifth	Sixth			
B1	BS01	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B2	BS02	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B3	BS03	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B4	BS04	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B5	BS05	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B6	BS06	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
A2	TS03	3	SS04/P52	SS07/P46					No	(c)	Yes
A5	TS09	3	SS04/P52	SS07/P46					No	(c)	Yes
A9	TS17	3	SS04/P52	SS07/P46					No	(c)	Yes
A12	TS23	3	SS04/P52	SS07/P46					No	(c)	Yes
A15	TS29	3	SS04/P52	SS07/P46					No	(c)	Yes
B1	MS01	2	SS09/P49						No	(b)	Yes
B2	MS02	2	SS09/P49						No	(b)	Yes
B3	MS03	2	SS09/P49						No	(b)	Yes
B4	MS04	2	SS09/P49						No	(b)	Yes
B5	MS05	1	SS09/P49						No	(b)	Yes
B6	MS06	2	SS09/P49						No	(b)	Yes
A2	TS04	3							Yes	(c)	No
A5	TS10	3							Yes	(c)	No
A9	TS18	3							Yes	(c)	No
A12	TS24	3							Yes	(c)	No
A15	TS30	3							Yes	(c)	No

TRACKING TABLE OF SUBGRADE/EMBANKMENT (≥ 1.2 m [4']) TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY (IF THIN-WALL TUBES ARE NOT AVAILABLE)

Sample Location No.	Sample No.	Lab Test No.	Steps Involved in Laboratory Handling and Testing Sequence								
			Required Laboratory Tests Per Layer						Extra Sample	Sample Storage	Sample Disposed ?
			First	Second	Third	Fourth	Fifth	Sixth			
B1	BS01	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B2	BS02	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B3	BS03	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B4	BS04	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B5	BS05	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B6	BS06	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B1	MS01	2	SS09/P49						No	(b)	Yes
B2	MS02	2	SS09/P49						No	(b)	Yes
B3	MS03	2	SS09/P49						No	(b)	Yes
B4	MS04	2	SS09/P49						No	(b)	Yes
B5	MS05	1	SS09/P49						No	(b)	Yes
B6	MS06	2	SS09/P49						No	(b)	Yes

These tables provide the laboratories with the following information and directions:

- tracking of samples as they are taken from the field and testing in the laboratory,
- laboratory test sequences for each pavement material type,
- dedicated sample(s) for each test,
- designation of extra samples for future use,
- instructions for sample storage, and
- special instructions and other remarks.

As mentioned previously, these tables are based on the idealized sampling plan presented in Section 3 and Appendix A of this document. Using these tracking tables, each laboratory shall be able to plan and track each sample through the laboratory materials testing program for the SPS-1 experiment in a step-by-step manner.

The following is a description of the column headings used for the tracking table:

Sample Location Number - As described previously in Section 3 and as shown on sample tags and labels.

Sample Number - As described previously in Section 3 and as shown on sample tags and labels.

Lab Test Number - Shall be assigned as per the following:

a. Beginning of the Section (Station 0-): Samples of each layer that are retrieved from areas in the approach end of the test section (stations preceding 0+00) shall be assigned Laboratory Test Number '1'.

b. End of the Section (Stations 5+): Samples of each layer that are retrieved from the areas in the leave end of the test section (stations 5+00) shall be assigned Laboratory Test Number '2'.

c. Middle of the Section (Stations 0+00 to 5+00): Samples of each layer that are retrieved from areas in the middle of the test section (from the paver) shall be assigned Laboratory Test Number '3'.

Required Laboratory Test Per Layer - Order in which testing shall proceed.

Extra Sample - Is the sample to be saved as a backup for other tests? A "yes" in this column implies that this is a dedicated extra sample saved for future use. A "no" indicates that a sample can be discarded after use.

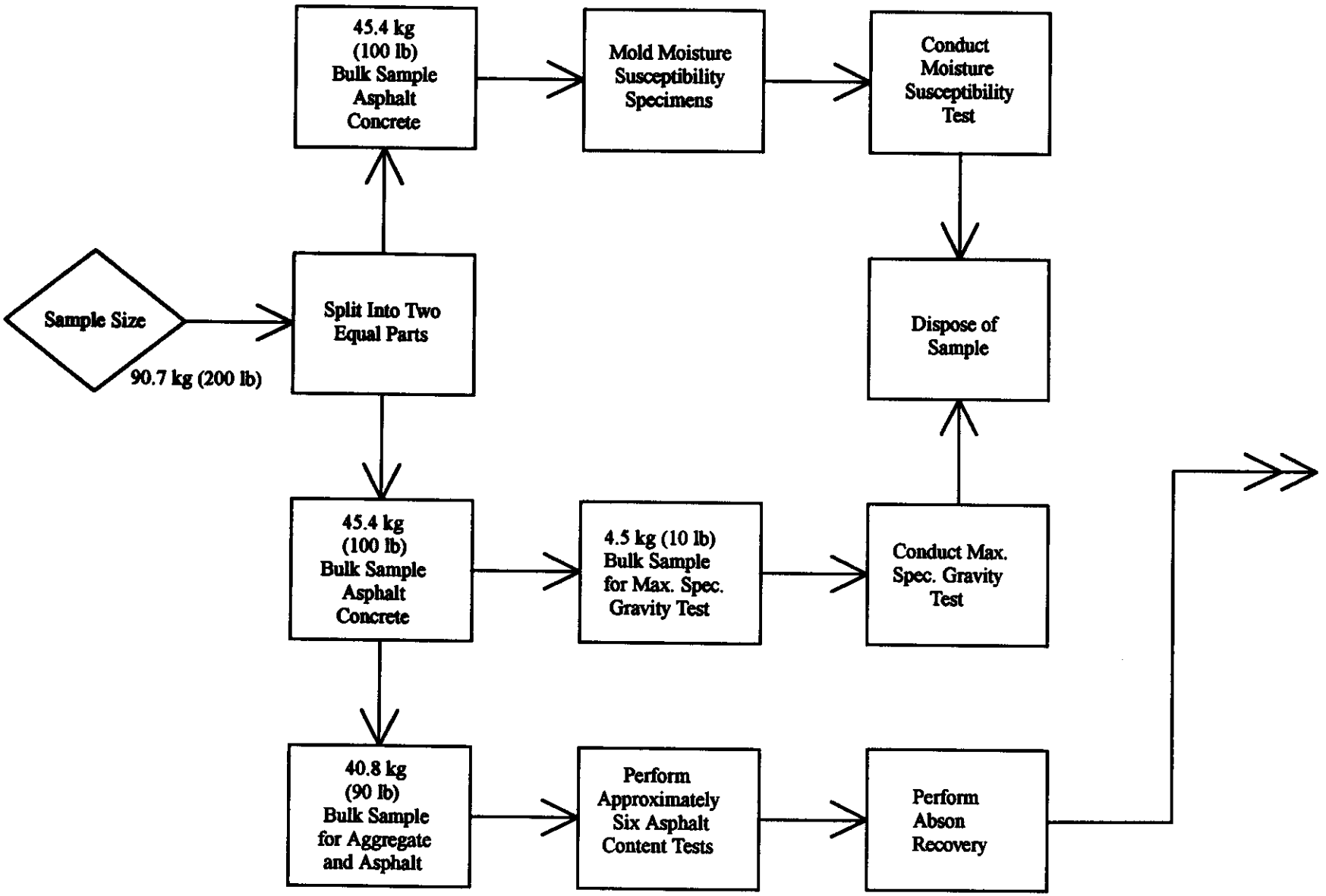
Sample Storage - The following codes are used to specify the sample storage conditions for samples.

a. environmentally protected and controlled storeroom at 5-21°C (40-70°F).

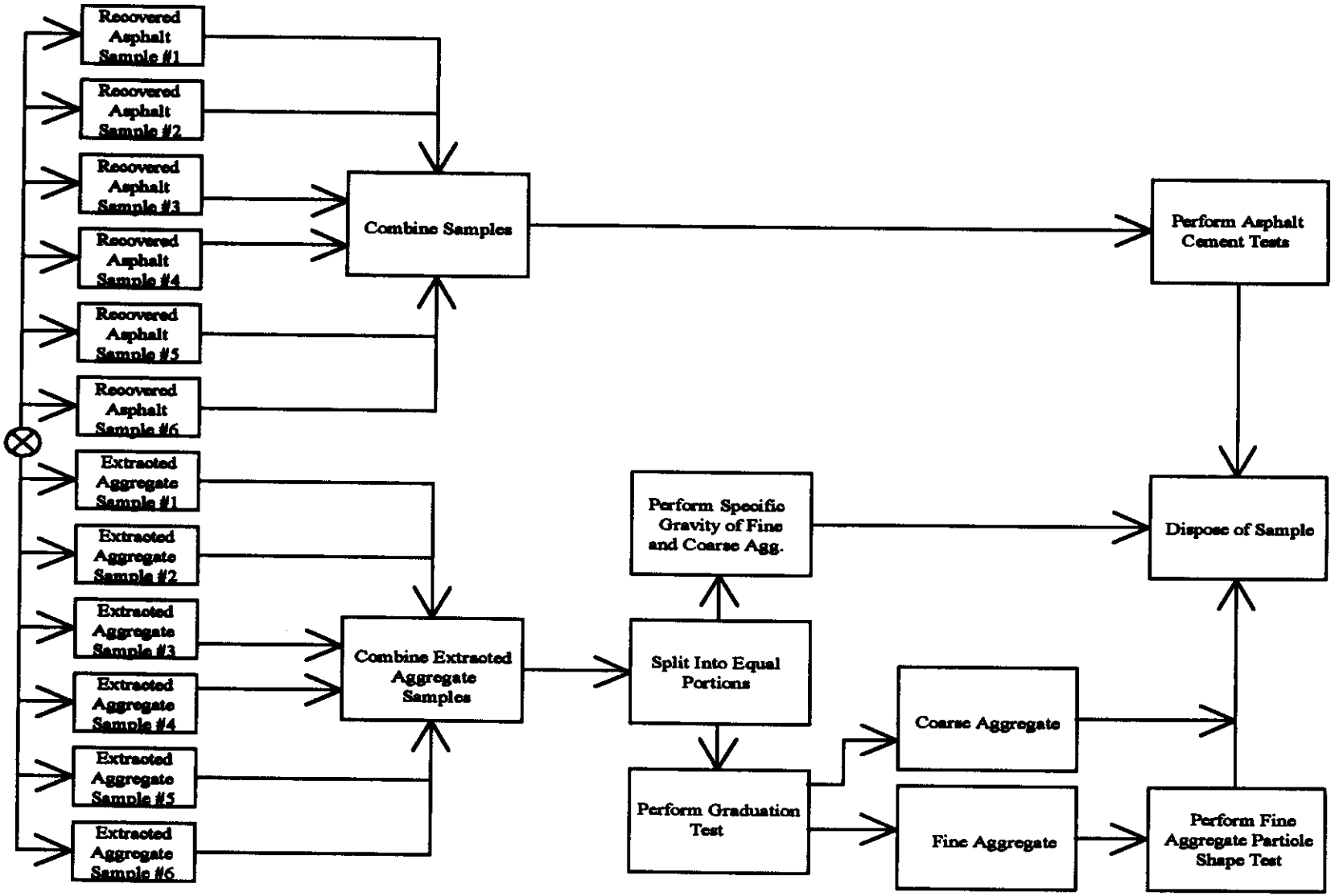
b. environmentally protected and controlled storeroom at 5-38°C (40-100°F).

c. Thin-walled tube samples of the subgrade that should be stored in a fully supported condition and at temperatures between 5°C (40°F) and 21°C (70°F) in an environmentally protected storeroom. They shall be stored on their ends and shall always be stored in a vertical position with respect to the longitudinal axis of the tube in the same orientation as that retrieved from the field.

Sample Disposal? - Indicates whether or not a sample can be disposed of after testing. Generally all samples, or portions of samples that are not tested, are saved until further notice.



FLOWCHART FOR ASPHALT CONCRETE BULK SAMPLES



FLOWCHART FOR ASPHALT CONCRETE BULK SAMPLES (Continued)

APPENDIX D

PHOTOGRAPHS

(See Page D.2 For Listing of Photographs)

LIST OF PHOTOGRAPHS

Page №.

1 US-27 SB - Demucking 8'-9' To A Rigid Layer Prior To Backfill With Select Limerock Material D.3

2 Limerock Embankment Material Placed On Test Section 120106 . . . . . D.3

3 The Final Subgrade Surface Is Trimmed To The Appropriate Elevation D.4

4 Material Sampling And Testing Is Performed On The Finished Subgrade D.4

5 An Edge Drain Trench Cut Into The Constructed Embankment D.5

6 Fabric And #57 Stone Lined Trench With Pipe Prior To Backfill D.5

7 DGAB Material Is Trimmed To The Required Elevation Tolerance D.6

8 Placement Of ATB On The Finished Embankment D.6

9 The Ranger Construction Drum Plant D.7

10 ATB Construction D.7

11 Placement Of The PATB On Top Of The Geotextile Fabric D.8

12 PATB Placement D.8

13 Compaction Of The PATB Material D.9

14 Placement Of The HMAC Binder (State Mix SII) D.9

15 Compaction Of The HMAC Binder (State SII Mix) D.10

16 Placement Of The HMAC Binder Over PATB D.10

17 HMAC Bulk Samples Obtained During Construction D.11

18 Placement Of The HMAC Surface (State Mix SI) D.11

19 Installation Of The Weigh-In-Motion (WIM) System D.12

Photo 1. US-27 SB - Demucking 8′-9′ To A Rigid Layer Prior To Backfill With Select Limerock Material

Photo 2. Limerock Embankment Material Placed On Test Section 120106

Photo 3. The Final Subgrade Surface Is Trimmed To The Appropriate Elevation

Photo 4. Material Sampling And Testing Is Performed On A Finished Subgrade

Photo 5. An Edge Drain Trench Cut Into The Constructed Embankment

Photo 6. Fabric And #57 Stone Lined Trench With Pipe Prior To Backfill

Photo 7. DGAB Material Is Trimmed To The Required Elevation Tolerance

Photo 8. Placement Of ATB On The Finished Embankment

Photo 9. The Ranger Construction Drum Plant

Photo 10. ATB Construction

Photo 11. Placement Of The PATB On Top Of The Geotextile Fabric

Photo 12. PATB Placement

Photo 13. Compaction Of The PATB Material

Photo 14. Placement Of The HMAC Binder (State Mix SII)

Photo 15. Compaction Of The HMAC Binder (State SII Mix)

Photo 16. Placement Of The HMAC Binder Over PATB

Photo 17. HMAC Bulk Samples Obtained During Construction

Photo 18. Placement Of The HMAC Surface (State Mix SI)

Photo 19. **Installation Of The Weigh-In-Motion (WIM) System**