LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE

For The Technical Direction Of The LTPP Program

Program Area: Specific Pavement Studies
Directive Number: S-2
Supersedes: None

Date: November 27, 1992

Subject: Policy on Treatment of Failed SPS Test Sections

The attached is the November 13, 1992 memorandum from PCS Law to Amir Hanna containing the detailed Policy for Treatment of Failed SPS Test Sections. This policy shall be effective immediately.

S-2 Directive

Approved: Paul Teng

Date: 11/27/92

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MEMORANDUM

November 13, 1992

To: Amir Hanna

From: Shiraz D. Tayabji

Subject: Policy on Treatment of Failed SPS Test Sections
SHRP Contract No. SHRP-90-P-001B
PCS/LAW Project No. 1470001600

Distribution: R. Raab, N. Hawks, P. Teng

1. INTRODUCTION

The SPS experiments are comprised of projects incorporating multiple test sections. The test sections at each project site include variations in structural design (thickness and materials), maintenance treatment, or rehabilitation treatment. As such, the SPS projects incorporate sections that are expected to fail very early in the experiment. Although it is the objective of the LTPP studies to retain test sections in the original experiments for as long as possible, it is likely that safety considerations will dictate highway agencies to consider corrective treatments soon after "failure" condition is reached for a test section.

To date several SPS-5 and SPS-6 projects involving rehabilitation of flexible and rigid pavements, respectively, have exhibited failures of some routine maintenance and minimum rehabilitation test sections. These sections have been rehabilitated further by generally applying AC overlays. Data collection activities have been continued at these sections. This memorandum discusses the policies and procedures that should be followed for treatment of failed SPS test sections. The treatment of failed SPS-3 and SPS-4 test sections is not discussed here as these experiments are being managed under the Highway Operations portion of SHRP. Also, treatment of failed SPS-9 test sections is not discussed here as the experiment is being managed under the Asphalt Research portion of SHRP.

2. GENERAL POLICY ON RETENTION OF MODIFIED TEST SECTIONS

2.1 Each SPS project site will be monitored until a majority of test sections have failed or until a highway agency decides to terminate the project because of safety considerations.

Therefore, the Regional Contractors will continue to provide monitoring support for SPS projects for a long time. Thus, it is desirable to continue to monitor as many of the original number of test sections at each site. The simplest approach is to incorporate rehabilitation treatment that will be consistent with an existing or newly designed GPS or SPS experiment. The modified test section will be continued to be monitored in conjunction with monitoring of adjacent SPS test sections.

The Regional Contractor's Office (RCO) will offer assistance to the highway agencies so that planned modifications are consistent with study criteria whenever possible.

2.2 If, when a test section is rehabilitated and the modifications are not consistent with an existing GPS or a newly designed GPS or SPS experiment, then monitoring of the test section will not be continued.

3. MODIFICATION OF SPS TEST SECTIONS

3.1 Modification of SPS-1 Test Sections - An SPS-1 site will consist of twelve test sections incorporating a wide range in structural capacity. Test sections range from a 4 in. thick AC surface layer over a dense graded base to a 16 in. thick AC surface layer over a 4 in. thick asphalt treated base placed over 4 in. thick dense graded aggregate base.

3.1.1 Test sections of SPS-1 that are rehabilitated by an AC overlay and conform to current GPS requirements shall be considered for inclusion in the GPS-6B experiment. The pavement condition at the time of failure of the original section will need to be categorized as "bad" or "good."

3.1.2 Test sections of SPS-1 that are rehabilitated by an AC overlay but do not conform to current GPS requirements (e.g., recycled AC, rubberized AC, stone mastic asphalt (SMA)) shall be considered for continued monitoring. The modified test sections will be referred to as GPS-6C.

3.1.3 Because failed test sections at SPS-1 sites will be rehabilitated selectively, most likely one at a time, the modification of the SPS-1 sections to SPS-5 sections is not considered practical. Also, each of the existing SPS-1 test sections is unique and therefore failed sections will not exhibit uniform conditions for consideration as potential SPS-5 projects.

3.2 Modification of SPS-2 Test Sections - An SPS-2 site will consist of twelve sections incorporating a wide range of structural capacity. Test sections range from an 8 in. thick concrete slab placed on a dense aggregate base to an 11 in. thick slab placed over a 6 in. thick lean concrete base.

3.2.1 Test sections of SPS-2 that are rehabilitated by an AC overlay and conform to current GPS requirements shall be considered for inclusion in the GPS-7B experiment.

3.2.2 Test sections of SPS-2 that are rehabilitated by an unbonded concrete overlay shall be considered for inclusion in GPS-9.

3.2.3 Test sections of SPS-2 that are rehabilitated by an asphalt concrete overlay but not conform to current GPS requirements (e.g., recycled AC overlay) shall be considered for continued monitoring. The modified test sections will be referred to as GPS-7C.

3.2.4 Test sections of SPS-2 that are rehabilitated by using guidelines developed for SPS-6 shall be considered for continued monitoring. The modified test sections will be referred to as SPS-6A.

3.2.5 Test sections of SPS-2 that are rehabilitated by using guidelines developed for SPS-7 shall be considered for continued monitoring. The modified test sections will be referred to as SPS-7A.

3.2.6 Test sections of SPS-2 that are rehabilitated by treatments other than those identified in Articles 3.2.1, 3.2.2, 3.2.3, 3.2.4, and 3.2.5 shall be considered for continued monitoring. The modified test sections will be referred to as GPS-7S.

3.2.7 Because failed test sections at SPS-2 sites will be rehabilitated selectively, most likely one at a time, the modification of SPS-2 sections to SPS-6 or SPS-7 sections is not considered practical. Also, each of the existing SPS-2 test sections is unique an therefore failed sections will not exhibit uniform conditions for consideration as potential SPS-6 or SPS-7 projects.

3.3 Modification of SPS-5 Test Sections - An SPS-5 site will consist of nine sections incorporating a wide range of rehabilitation alternatives using AC overlays. The

alternatives range from routine maintenance (control section) to 5 in. thick virgin AC overlay placed over an extensively prepared existing AC surface layer.

Test sections of SPS-5 will most likely be rehabilitated by a second asphalt concrete overlay. Also, because failed test sections at SPS-5 sites will be rehabilitated selectively, most likely one at a time, and because each of the existing test sections is unique the failed test sections will not exhibit uniform conditions for consideration for another potential SPS experiment.

3.3.1 Test sections of SPS-5 that are rehabilitated by a second AC overlay and conform to current GPS requirements shall be considered for inclusion in the GPS-6D experiment. Performance data will be collected prior to the second overlay in a manner similar to that required for GPS-6B test sections. In addition, materials used in the second overlay shall be sampled and characterized by laboratory tests.

3.3.2 Test sections of SPS-5 that are reconstructed shall be taken out of the monitoring program.

3.4 Modification of SPS-6 Test Sections - An SPS-6 site will consist of eight sections incorporating a wide range of rehabilitation alternatives. The alternatives range from routine maintenance (control section) to maximum restoration using concrete pavement restoration (CPR) techniques. Also, crack/break and seat technique and AC overlay with AC overlays is included.

Failed test sections at SPS-6 sites will be rehabilitated selectively, most likely, one at a time. Also, each test section of SPS-6 is unique and therefore the failed test sections will not exhibit uniform conditions for consideration for another potential SPS experiment. The SPS-6 sections also possess a unique characteristic - some of the sections have maintained the original PCC surface and some of the sections are overlaid with asphalt concrete. Thus, distress types at failure will be very different - some will exhibit concrete distresses while others will exhibit AC distresses. Another element to be considered is section length. Sections 500 ft in length should not be considered for rehabilitation using the crack/break and seat technique as a 1,000 ft length is considered a minimum requirement for reliable evaluation of this technique.

3.4.1 Routine Maintenance Section - This section shall be rehabilitated using the maximum restoration techniques of SPS-6 and overlaid with 4 in. thick AC overlay. Performance monitoring will be continued and the modified test sections will be referred to as SPS-6B.

3.4.2 Minimum Restoration Sections - These sections shall be rehabilitated using the maximum restoration techniques of SPS-6 and overlaid with 4 in. thick AC overlay. The existing AC overlays, where applicable, shall be completely removed. Performance monitoring will be continued and the modified test sections will be referred to as SPS-6B.

3.4.3 Maximum Restoration Sections - These sections shall be rehabilitated using the maximum restoration techniques (as applicable) and overlaid with 4 in. thick AC overlay. The existing AC overlays, where applicable, shall be completely removed. Performance monitoring will be continued and the modified test sections will be referred to as SPS-6B.

3.4.4 Crack/Break and Seat Sections - These sections (each 1,000 ft long) shall be rehabilitated by using the procedures established under SPS-6 for intensive surface preparation and using a 2 in. thick AC overlay. The 2 in. thickness of the new AC overlay will be in addition to the replacement in equal thickness of the milled layer of the existing AC overlay.

3.4.5 Because of the extensive amount of variables that may possibly result, the monitoring of modified test sections shall be discontinued if the modifications are not in accordance with those identified in Articles 3.4.1, 3.4.2, 3.4.3, and 3.4.4.

3.5 Modification of SPS-7 Test sections - An SPS-7 site will consist of eight test sections incorporating different surface preparation techniques and different overlay thicknesses. Also, the pavement type may be jointed or continuously reinforced concrete pavement. The predominant distress types may possibly include cracked delaminated areas resulting from bond failure at the interface between the overlay and the base concrete pavement.

3.5.1 The SPS-7 sections that are rehabilitated using an AC overlay conforming to current GPS requirements shall be considered for inclusion in GPS-7B experiment. All delaminated areas in the existing pavement shall be patched using partial-depth patching procedures (using concrete) before AC overlay construction.

3.5.2 The SPS-7 sections that are rehabilitated by an asphalt concrete overlay but do not conform to current GPS requirements (e.g., recycled AC overlay) shall be considered for continued monitoring. The modified test sections will be referred to as GPS-7C. All delaminated areas in the existing pavement shall be patched using partial-depth patching procedures (using concrete) before AC overlay construction.

3.5.3 The SPS-7 sections of jointed concrete pavements that are rehabilitated by concrete pavement restoration (CPR) techniques in accordance with the guidelines for SPS-6 shall be considered for continued monitoring. The modified test sections will be referred to as GPS-7S.

3.6 Modification of SPS-8 Test sections - An SPS-8 site will consist of two AC sections, two concrete sections, or two AC and two concrete sections. Early failures of these test sections is unlikely. Only routine maintenance is expected to be required at these sections. When failures of the test sections do develop, these sections should be rehabilitated using highway agency practice and monitoring of the failed section should be discontinued.

4. OTHER CONSIDERATIONS

4.1 When rehabilitation or modification of an SPS test section is necessary, the highway agency is urged to consider rehabilitation or modification which is consistent with current GPS or SPS experiment requirements.

4.2 One major item of consideration when an overlay is the selected treatment is the grade change. Because other SPS sections may be located adjacent to the failed section, possibly within 100 ft of the failed section, the grade limitations may impose a cap on the overlay thickness. The minimum AC overlay thickness that should be considered is 2 in. The grade concern may also preclude use of PCC overlays.

4.3 Information regarding modified test section shall be submitted for evaluation and approval following the same procedures used for other GPS and SPS projects. Test sections meeting the requirements stipulated in these policy and procedures will be approved and shall be monitored following the procedures specified for appropriate GPS or SPS sections. Test sections that are considered unsuitable for further monitoring shall be evaluated to assess the need for condition evaluation, material characterization, or other specific testing.

4.4 The modification of failed SPS-2 and SPS-7 projects to GPS-7S experiments should be carefully weighed. The GPS-7S experiment has not been well defined and therefore modifications to GPS-7S should not be approved unless the benefits to the highway agency are considered to be very high.

NOTICE OF CHANGE(S) TO SHRP SPS REPORT		
Report Title: **Report Date:** **SHRP Operational Memo No.:**	Guidelines for Nominations and Evaluation of Candidate Projects for SPS-2 April 1990 SHRP-LTPP-OM-009	
Change Number: **Change Date:**	1 October 30, 1992	Page 1 of 1

The following change should be incorporated in the document:

Traffic

If a project contains an interchange or an intersection (n rural areas), traffic levels may vary along the length of the project. By a SHRP memorandum dated May 20, 1991 related to nomination for an SPS-2 project in Michigan, an allowance was made to allow varying traffic conditions. Variation in traffic along a project length would be considered acceptable if difference in traffic rate, as expressed in terms of the 18-kip Equivalent Single Axle Load and calculated for the same pavement structure, does not vary by more than 10% between the lowest and highest trafficked test sections. Additional traffic monitoring is required to obtain accurate traffic data for all test sections.

NOTICE OF CHANGE(S) TO SHRP SPS REPORT		
Report Title: **Report Date:** **SHRP Operational Memo No.:**	Construction Guidelines for SPS-2 December 1990 SHRP-LTPP-OM-018	
Change Number: **Change Date:**	1 October 30, 1992	Page 1 of 4

The following change should be incorporated in the document:

Section Stationing

The original document stipulates that the monitoring section start at a transverse joint. To eliminate a possible difference in interpretation whether this first joint is or is not part of the test section, a revised section layout was developed. This has resulted in changes in pages 41 and 42 of the Construction Guidelines.

Revised pages 41 and 42 are attached.

Concrete Mix Design

The SPS-2 experiment requires that portland cement concrete with flexural strengths of 550 and 900 psi (when tested in third point loading at 14 days) be used for the test sections. This revision provides guidelines for the development and evaluation of concrete mix designs that may be used for these test sections.

Concrete mix designs proposed for this experiment should be based on the results of laboratory tests of concrete specimens made from several trial batches. All test specimens should be tested in third point loading at 14 days.

1. TRIAL BATCHES AND MIX DESIGN SELECTION

1.1 At least three trial batches with different cement contents and water/cement ratios should be prepared to cover the proposed flexural strength range, i.e., 500 to 900 psi at 14 days.

1.2 At least three beam specimens should be made from each batch and tested for flexural strength at 14 days. Based on test data, the two mixtures which are expected to yield flexural strength levels of 550 and 900 psi should be selected for use in mix design verification as described in Item 2. These mixtures will be designated Mix A and Mix B for the 550 and 900 psi strength levels, respectively.

2. MIX DESIGN VERIFICATION

2.1 550 psi Mixture

2.1.1 - At least three trial batches (and as many as n batches) of the mixture selected for the 550 psi flexural strength level (Mix A) should be made. These batches will be designated Al, A2, A3, ... and An.

2.1.2 - At least three beam specimens (and as many as m specimens) should be made from each batch (Al, A2, A3, ...and An) and tested for flexural strength at 14 days. These beam specimens will be designated A11, A12, A13, ...A1m; A21, A22, A23, ...A2m,; A31, A32 , A33 , ...A3m; ...and Anl, An2 , An3, ...and Anm for batches Al, A2, A3, ...and An, respectively. The average strength obtained for each batch will be designated fAl, fA2, fA3, ...and fAn for batches Al, A2, A3, ...and An, respectively.

2.2 900 psi Mixture

2.2.1 - At least three trial batches (and as many as p batches) of the mixture selected for the 900 psi flexural strength level (Mix B) should be made. These batches will be designated Bl, B2, B3, ... and Bp.

2.2.2 - At least three beam specimens (and as many as q specimens) should be made from each batch (Bl, B2, B3, ...and Bp) and tested for flexural strength at 14 days. These beam specimens will be designated B11, B12, B13, ...Blq; B21, B22, B23, ...B2q,; B31, B32 , B33 , ...B3q; ..and Bp1, Bp2, Bp3, ...and Bpq for batches Bl, B2, B3, ...and Bp, respectively. The average strength obtained for each batch will be designated fBl, fB2, fB3, ...and fBp for batches Bl, B2, B3, ...and Bp, respectively.

3. ACCEPTANCE

3.1 550 psi Mixture

The selected mixture for the 550 psi strength level (Mix A) shall be considered acceptable if the following two conditions are met:

a. The average flexural strength for all test specimens (average of fA1 through fAn) is not less than 525 psi and not more than 575 psi.

b. The variation of average strength (fA1, fA2, fA3, ...fAn) obtained for the different batches does not exceed the following:

165 psi if 3 batches are made
180 psi if 4 batches are made
195 psi if 5 batches are made
200 psi if 6 batches are made

If one or both conditions are not met, the mix design and quality control procedures must be evaluated and appropriate revisions should be incorporated to develop mixtures that will meet the required conditions.

3.2 900 psi Mixture

The selected mixture for the 900 psi strength level (Mix B) shall be considered acceptable if the following two conditions are met:

a. The average flexural strength for all test specimens (average of fB1 through fBp) is not less than 860 psi and not more than 940 psi.

b. The variation of average strength (fB1, fB2, fB3, ...fBp) obtained for the different batches does not exceed the following:

250 psi if 3 batches are made
270 psi if 4 batches are made
290 psi if 5 batches are made
300 psi if 6 batches are made

If one or both conditions are not met, the mix design and quality control procedures must be evaluated and appropriate revisions should be incorporated to develop mixtures that will meet the required conditions.

4. FINAL MIX DESIGN

The mix design developed and verified based on the results of the laboratory tests should be used for the construction of test sections. Adjustment of the mix design during construction should only be allowed after careful evaluation.

to provide sufficient production in order to develop consistency after changes in materials, thicknesses, or lane widths.

SECTION STATIONING

The test site shall be surveyed to the extent that limits of each test section location will be known to an accuracy of one foot. The first test section occurring in the direction of traffic at a site will have the project station 0+00 at the beginning of the monitoring section. Subsequent test section will have a test section 0+00 at the beginning of each monitoring section. Site and individual test section beginning stations for SPS-2 and SPS-2B sections will be located 10 feet before the first joint of the monitoring section. The ending stations for SPS-2 and SPS-2B monitoring sections (station 5+00) will be 10 feet beyond the last joint in the section. SPS-2A has variable joint spacing of 15, 13, 14, and 12 feet. The beginning station will be located within a 15 foot slab, 10 feet before the first joint in the section and the ending station will occur in a 13 foot slab 3.5 feet beyond the last joint in the section. Figure 12 illustrates the layout expected for the beginning and ending stations for the SPS-2, SPS-2A, and SPS-2B sections.

DEVIATIONS FROM GUIDELINES

An agency that desires to participate in the SPS-2 experiment but finds it necessary to deviate from some of the guidelines described in the report should review these deviations with the SHRP Regional Office or SHRP headquarters. SHRP will assess the implications of these deviations on the study objectives. If the implications of the non-compliance appear minimal, the deviations will be accepted, otherwise SHRP will suggest alternatives for consideration by the participating agency.

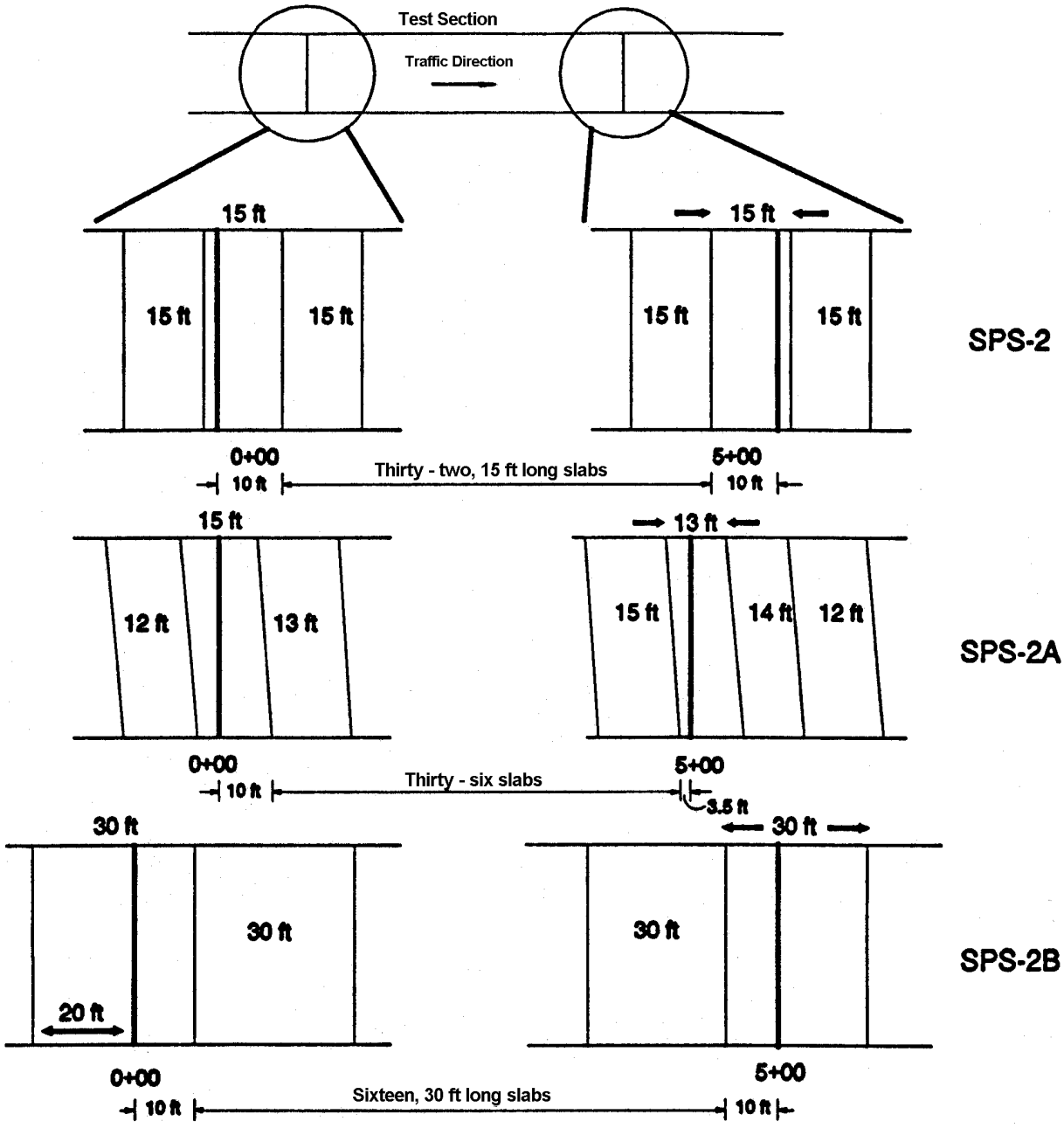

Figure 12. Location of Transverse Joint Relative to Test Section Stationing (Revised October 1991)

NOTICE OF CHANGE(S) TO SHRP SPS REPORT		
Report Title: **Report Date:** **SHRP Operational Memo No.:**	Materials Sampling and Testing Requirements for SPS-2 April 1991 SHRP-LTPP-OM-022	
Change Number: **Change Date:**	1 October 30, 1992	Page 1 of 2

The following change should be incorporated in the document:

Page D-16

The reference to data item LAYER NUMBER was missing. This text has been added and the page header has a revision date of October 1992.

The revised sheet is attached.

Sampling Data Sheet 8-1

The data sheet was revised to eliminate reference to Sheet 5 which does not exist for SPS-1.

The revised sheet is attached.

Coring of PCC and LCB

The SPS-2 experiment requires that cores of the as-placed portland cement concrete surface and the lean concrete base layers be obtained for laboratory determination of compressive strength and other properties. The purpose of this coring and testing is to determine the material properties for samples that have been part of the pavement structure, i.e., subjected to the effects of traffic and climate, until approximately the time of testing. To achieve this objective, the cores should be obtained a few days prior to scheduled testing to allow time for shipping to the testing laboratory and conditioning prior to testing. The times at test (14, 28, 365 days) indicated in the Materials Sampling and Testing Requirements for Experiment SPS-2, represent the time elapsed after placement of the portland cement concrete (PCC) or lean concrete base (LCB) layer. For the test sections constructed with a lean concrete base, there will be an age difference between the LCB and the PCC surface as placement will not occur simultaneously. This age difference may vary from a few days to several days depending on construction schedule. Therefore, in some situations cores of LCB layer may have to be taken independently from those of the PCC surface to achieve the required age for both

layers. For these situations, additional core locations need to be designated on the sampling plan for the test site.

To ensure a reasonable representation of the cores to field conditions, the following schedule should be adhered to:

- For 14-day tests, cores should be obtained 10-13 days after placement.
- For 28-day tests, cores should be obtained 21-24 days after placement.
- For 365-day tests, cores should be obtained 350-360 days after placement.

This schedule allows time for shipping and conditioning prior to testing at the designated age.

Also, test cores should be conditioned prior to testing in accordance with procedures described in ASTM C42, "Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete." This procedure requires that the test specimen be saturated in lime-saturated water at 73.4 ±3.0°F for at least 40 hours immediately prior to testing. Cores shall be tested promptly after removal from water storage. During the period between removal from water storage and testing, the specimens shall be kept moist by covering with a wet blanket of burlap or other suitable absorbent fabric. Laboratory Testing Protocols P61, P62, and P64 will be revised to require that this conditioning procedure be followed prior to testing of portland cement concrete and lean concrete cores obtained from the SPS-2 and SPS-8 test sites.

DESCRIPTION OF MIX PLANT. Provide a brief description of the type of mix plant noting any special features of traditional types of batch or drum plants, or a description of other mix plant types.

MANUFACTURER OF MIX PLANT. Enter the name of the mix plant manufacturer.

MODEL NUMBER. Enter the model number or model designation of the mix plant.

BATCH SIZE. Record the size of the batch the sample from which the sample was obtained.

SAMPLING LOCATION. Enter the code number shown on the data form corresponding to the location from which the sample was taken. If the sample was taken from the roadway prior to compaction, indicate the station and offset of the sample and the respective test section number.

MIX TYPE. Enter the code number corresponding to the generic type of material (virgin asphalt concrete, recycled asphalt concrete, asphalt dense graded or permeable asphalt treated). For SHRP test sections, recycled asphalt concrete should not be used.

LAYER NUMBER. Enter the layer number for which the plant-sampled materials will be used (permeable asphalt treated).

LAYER TYPE. Enter the code number, as shown on the form, which corresponds to the type of layer in which the material is used.

SAMPLE TYPE DESIGNATOR. Enter the sample type designation for the sample. This is a 4 digit code which signifies the generic type of material, virgin or recycled, and a sequential number for each sample of each material type obtained. For materials incorporating all virgin materials, the sample type designation shall begin with the letters BV (Bulk Virgin). For materials incorporating recycled materials, the designator shall begin with BR (Bulk Recycled). These letter designations are followed with a two digit number sequentially assigned to each sample, for each type of material.

SAMPLE NUMBER. This is a 4 digit code starting with the letters BA (Bulk Asphalt Concrete) or BT (Bulk Asphalt Treated material) and followed with a

NOTICE OF CHANGE(S) TO SHRP SPS REPORT		
Report Title: **Report Date:** **SHRP Operational Memo No.:**	Data Collection Guidelines for SPS-2 February 1992 SHRP-LTPP-OM-028	
Change Number: **Change Date:**	1 October 30, 1992	Page 1 of 1

The following change should be incorporated in the document:

Sampling Data Sheet 8-1

The data sheet was revised to eliminate reference to Sheet 5 which does not exist for SPS-1.

The revised sheet is attached.

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING SHEET NUMBER _____ OF _____

IN SITU DENSITY AND MOISTURE TESTS

SAMPLING DATA SHEET 8-1

SHRP REGION _____ STATE _____ *STATE CODE* ___ ___
SPS EXPERIMENT NO_____ *SPS PROJECT CODE* ___ ___
ROUTE/HIGHWAY _____ Lane _____ Direction _____ *TEST SECTION NO.* ___ ___
SAMPLE/TEST LOCATION: ☐ Before Section ☐ After Section *FIELD SET NO.* ___
☐ Within Section
OPERATOR _____ *NUCLEAR DENSITY GAUGE I.D.*_____ *TEST DATE*___-___-___
*SAMPLING AREA NO: SA-*_____ *LOCATION: STATION*_____ *OFFSET*_____ *feet from ℄s*
*LOCATION NO:*_____ DATE OF LAST MAJOR CALIBRATION____-____-____
Note: Use additional sheets if necessary

DEPTH FROM SURFACE TO THE TOP OF THE LAYER, INCHES (From Plans)						
LAYER NUMBER						
MATERIAL TYPE: (Unbound=G Other=T)						
1 *IN SITU* 2 *DENSITY, pcf* 3 (AASHTO T238-86) 4						
AVERAGE						
Method (A, B, or C)						
Rod Depth, inches						
1 *IN SITU* 2 *MOISTURE* *CONTENT, %* 3 (AASHTO T239-86) 4						
AVERAGE						

GENERAL
REMARKS:_____
_____

CERTIFIED VERIFIED AND APPROVED DATE
_____ _____ _____-_____-19____
Field Crew Chief SHRP Representative Month- Day- Year
Affiliation:_____ Affiliation:_____