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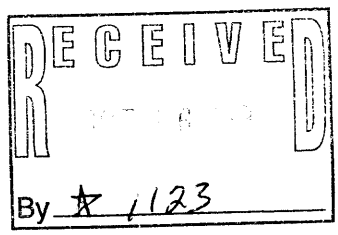

October 15, 1997

Mr. Aramis Lopez, Jr.
FHWA LTPP Technical Representative
Federal Highway Administration
LTPP Division, HNR-40
Turner-Fairbanks Highway Research Center
6300 Georgetown Pike
McLean, Virginia 22101-2296

Reference: LTPP Seasonal Monitoring Program
Site Monitoring Suspension Report Status
for SPS Section 460804 (46A) Pollock, South Dakota
FHWA Contact DTFH61-96-C-00013
ERES Project No. 95-075-R1

Dear Mr. Lopez:

Find enclosed a copy of the draft final site monitoring suspension report for SPS section 460804 (46A), Pollock, South Dakota. The second required copy has been sent directly to Dr. Gonzalo Rada at PCS/Law. The report contains information on instrument de-installation and monitoring data collection activities conducted on September 22, 1997. Please do not hesitate to contact me if you have any questions.

Sincerely,

Robert K. Kumapley

Seasonal Monitoring Program Coordinator
North Central Regional Coordination Office

Enclosure
cc. Gonzalo R. Rada, PCS/Law
Thomas Wilson, NCRCO
Michael I. Darter, NCRCO

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Area Office
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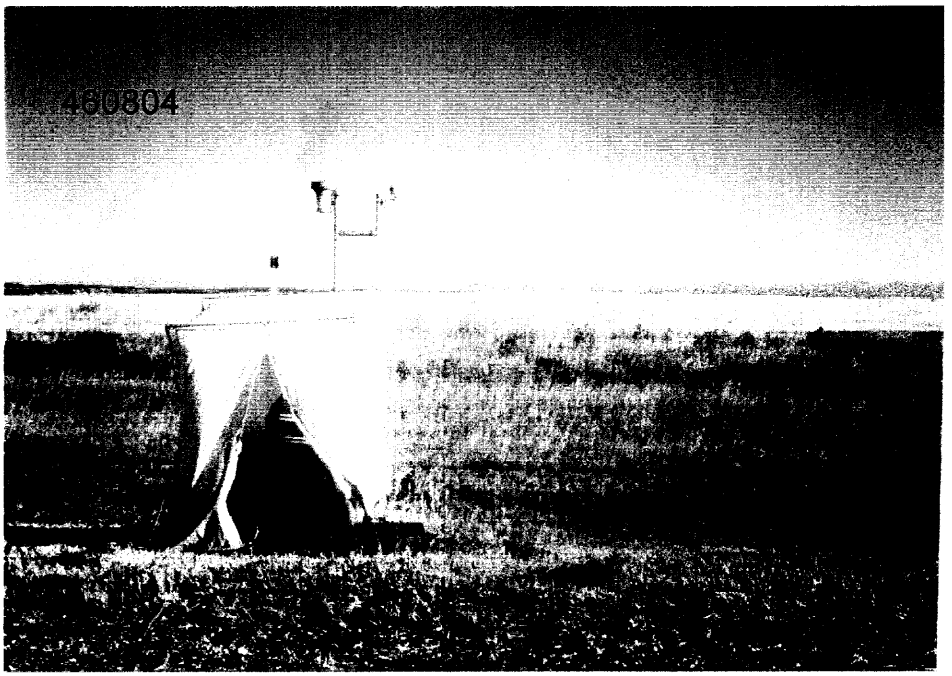
Phone (850) 893-0828

LTPP Seasonal Monitoring Program

Site Monitoring Suspension Status
Draft Final Report for
SPS Section 460804 (46A)
Pollock, South Dakota



FHWA Contract No. DTFH61-96-00013 October 1997

LTPP Seasonal Monitoring Program

Site Monitoring Suspension Status
Draft Final Report for
SPS Section 460804 (46A)
Pollock, South Dakota

FHWA CONTRACT No. DTFH61-96C-00013

Prepared by

ERES Consultants, Inc.
505 West University Avenue
Champaign, IL 61820

Prepared for

Federal Highway Administration
LTPP Division, HNR-40
Turner-Fairbanks Highway Research Center
6300 Georgetown Pike
McLean, Virginia 22101-2296

October 1997

Technical Report Documentation Page

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Federal Highway Administration LTPP Division, HNR-40 Turner-Fairbanks Highway Research Center 6300 Georgetown Pike McLean, Virginia 22101-2296	Final Report Oct. 1997 to Sept. 1998
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15. Supplementary Notes

FHWA LTPP Technical Representative - Aramis Lopez, HNR-40

16. Abstract

This report contains information on instrument de-installation and monitoring data collection activities for the Long Term Pavement Performance (LTPP) Specific Pavement Study (SPS) section 460804 conducted on September 22, 1997. The report presents a description of the following activities: SMP data collection activities, including evaluation of instrument and equipment performance prior to de-installation; instrument de-installation activities; and instrument reinstallation schedule. Also included in the report are the color copies of site photographs taken during suspension preparation activities. The reinstallation of the instrumentation in this site is scheduled for September 20-27, 1998. All units such as the rain gauge, air temperature sensor, and the associated metal poles will be reinstalled and tested.

17. Keyword	18. Distribution Statement
Long Term Pavement Performance, LTPP, Instrument De-installation, Seasonal Monitoring Program, SMP, Time Domain Reflectometry, TDR, Piezometer, Falling Weight Deflectometer	No restrictions. This document is available to the public from the sponsoring agency.

19. Security Classification (of this report)	Security Classification (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified		

Table of Contents

Page

TECHNICAL REPORT DOCUMENTATION PAGE.....i

1.0 INTRODUCTION.....1

2.0 SMP DATA COLLECTION.....2

2.1 SMP Data Collection and Upload.....2

2.2 Instrument and Equipment Problems.....3

3.0 INSTRUMENT DE-INSTALLATION ACTIVITIES.....4

3.1 Suspension Preparation and Repairs to Instrumentation Hole.....4

3.2 Unique Site Features.....5

4.0 INSTRUMENT REINSTALLATION.....5

5.0 SUMMARY.....6

LIST OF REFERENCES.....7

APPENDIXES

Appendix A - SMP Data Collection Summary Table

Appendix B - SMP Data Sheets

Appendix C- Site Information Sheet (SIS)

Appendix D - Photographs

LTPP Seasonal Monitoring Program
Site Monitoring Suspension Status
Draft Final Report for
SPS Section 460804 (46A)
Pollock, South Dakota

1.0 INTRODUCTION

The seasonal monitoring data collection for the Long Term Pavement Performance (LTPP) Specific Pavement Study (SPS) section 460804 has been suspended for a period of one year effective September 22, 1997. The test section, which is part of the Seasonal Monitoring Program (SMP) managed by the Federal Highway Administration (FHWA) LTPP Division, is approximately 15 kilometers northwest of Pollock, South Dakota, on the eastbound driving lane of State Highway 1804. This location is approximately 2.0 kilometers south of the state line and just east of the Missouri River. Additional background information on the test section, types of instruments installed, and the in-place pavement structure can be found in the *Site Installation Report for SPS Section 460804 (46A), Pollock, South Dakota*, dated January 1996 (1).

This report contains information on instrument de-installation and monitoring data collection activities conducted on September 22, 1997. After the installation of instrumentation in the test section on July 14, 1994, the test section was visited 18 times for SMP data collection and then de-installed on

June 27, 1995. The site was re-installed on September 26, 1996, visited 14 times for SMP data collection, and again de-installed on September 22, 1997. The dates of these visits and the activities performed can be found in the SMP data collection summary table in appendix A. The instrumentation for the site is scheduled for reinstallation in September 1998 and will be monitored for another year. This section is planned to be monitored every other year for the remainder of the LTPP study or until it is removed from the study.

The report presents a description of the following activities: SMP data collection activities, including evaluation of instrument and equipment performance prior to de-installation; instrument de-installation activities; and instrument reinstallation schedule. Also included in the report are color photographs taken during suspension preparation activities.

2.0 SMP DATA COLLECTION

2.1 SMP Data Collection and Upload

Prior to de-installation of the instrumentation in this test section, the full suite of SMP monitoring measurements in the *LTPP Seasonal Monitoring Program Instrument Installation and Data Collection Guidelines* (2) was performed. These include the following:

- FWD and associated measurements.
- Elevation survey.
- Manual distress survey with transverse profile measurements.

- Manual electrical resistivity measurements (two- and four-point).
- Automated mobile data measurements (Time Domain Reflectometry [TDR] and resistivity).
- Water table measurements.

A summary of all the SMP data collected to date can be found in the SMP data collection summary table in appendix A. The specific type and amount of data collected can be found on the SMP field activity report (data sheet SMP-D10) in appendix B. Six other SMP data sheets pertaining to the data collection activities are also in appendix B. The locations for FWD and elevation measurements can be found in the site information sheet (SIS) in appendix C. During the current instrument de-installation and data collection activities, the weather was calm and sunny.

As can be seen in the SMP data collection summary table in appendix A, longitudinal profile measurements were recorded. All the data collected to date have been processed and uploaded into the RIMS.

2.2 Instrument and Equipment Problems

All the sensors in the test section (TDR, rain gauge, and Measurement Research Corporation [MRC]) were evaluated by reviewing the data from the onsite and mobile dataloggers using the SMPCheck 2.5c program (3). A review of the data collected during this visit indicated that all the sensors were functioning as expected. No obvious problems were noted from the data recorded from

August 24, 1997, through September 21, 1997. All the TDR traces had the maximum and minimum points on the traces that enable analysis.

3.0 INSTRUMENT DE-INSTALLATION ACTIVITIES

3.1 Suspension Preparation and Repairs to Instrumentation Hole

As required by the LTPP Seasonal Directive SM-8 (4), on the last day of monitoring, the following site preparation activities were performed:

- Application of an electronics quality, anti-corrosion compound to the TDR and BNC connectors, electrical resistivity connector, and MRC temperature lead wires.
- Disconnection and removal of the panel board containing the Onsite CR10, power supply, terminal strip, and relay. A desiccant pouch with all wires and connectors was sealed in a plastic bag. The wires were secured as high as possible in the cabinet, as shown in photograph 1 in appendix D.
- Locked and taped cabinet as shown in photographs 2 and 3 in appendix D.
- Painted the units used to protect South Dakota DOT benchmark red for easy identification.
- The edges of the instrumentation block were in excellent condition, and no resealing was needed.

The rain gauge, air temperature sensor, and the associated metal poles were labeled "46SA" and carefully stored in the North Central Regional Coordination Office (NCRCO) for reinstallation. The union was left onsite in the cabinet.

3.2 Unique Site Features

This test section is the 8th SMP installation in the LTPP North Central Region, and happens to be the oldest concrete SMP section in the North Central Region.

The TDR cable lengths (in inches) unique to this section for TDR sensors 1 through 10 are 19.25, 19.00, 19.00, 19.25, 19.00, 19.00, 19.00, 20.85, 20.85, and 20.85, respectively. These cable lengths are required to capture the maximum and minimum points on the TDR traces.

Another unique feature is that the site is located in an area that does not observe daylight savings time. Also, in the course of monitoring this site, a solar panel was installed on top of the cabinets to prolong the life of the battery onsite. The solar panel was found to be an effective and significant addition to the SMP onsite data collection equipment that ensured efficient storage and collection of the SMP data stored onsite.

4.0 INSTRUMENT REINSTALLATION

Reinstallation of the instrumentation at this site is scheduled for September 20-27, 1998. All units such as the rain gauge, air temperature sensor, and the associated metal poles labeled "46SA" will be reinstalled and tested.

5.0 SUMMARY

This report contains information on instrument de-installation and monitoring data collection activities for the LTPP SPS section 460804, conducted on September 22, 1997. The report presents a description of the SMP data collection activities, including an evaluation of the SMP sensors and equipment. No obvious problems were noted from the data recorded from August 24, 1997, through September 21, 1997. All the TDR traces had the required maximum and minimum points that enable analysis of the TDR data. Also included in the report are the color copies of site photographs taken during suspension preparation activities.

Reinstallation of the instrumentation at this site is scheduled for September 20-27, 1998; all units such as the rain gauge, air temperature sensor, and the associated metal poles will be reinstalled and tested. This includes the reinstallation of solar panels on the cabinets to prolong the life of the battery onsite.

LIST OF REFERENCES

1. *LTPP Seasonal Monitoring Program Site Installation Report for SPS Section 460804 (46A) Pollock, South Dakota.* Federal Highway Administration, LTPP Division, HNR-40, Turner-Fairbanks Highway Research Center, McLean, Virginia. January 1996.
2. *LTPP Seasonal Monitoring Program: Instrumentation Installation and Data Collection Guideline.* FHWA-RD-94-110, Federal Highway Administration, LTPP Division, HNR-40, Turner-Fairbanks Highway Research Center, McLean, Virginia. April 1994.
3. SMPCheck, computer software version 2.5c, prepared for the Federal Highway Administration, Pavement Performance Division, HNR-30, McLean, Virginia. July 1997.
4. Lopez, Aramis, Jr. *Long Term Pavement Performance Directive for the Seasonal Monitoring Program: Directive Number SM-8, Suspension of SMP Site Monitoring Activities.* Federal Highway Administration, LTPP Division, HNR-40, Turner-Fairbanks Highway Research Center, McLean, Virginia. March 1995.

Appendix A - SMP Data Collection Summary Table

46SA - 460804, ST-1804 EB LANE, 9 MILES NORTHWEST OF POLLOCK, SD.

		ONSITE Data			MOBILE Data				Manual Data						FWD Data				Distress		Profile		Comments
Date dd/mmm/yy		Pvmt. Temp.	Air Temp.	Rain	TDR	Frost Volts	Backup TDR	Backup TDR	Frost 2-Pt.	Frost 4-Pt.	Water Table	Pvmt. Elev.	Joint Open.	Joint Fault	Man. Temp.	OWP	ML	PE	M	P	P	D	
22-Oct-93																					X		
8-Jun-94																			X				
14-Jul-94	94A														X	1	1						INSTALLATION, MANUAL TDR DATA.
15-Jul-94	94B	P	P	P	P	P			P	P	P	P			X	4	4						
12-Aug-94	94C	P	P	P	P	P			P	P	P				X	3	3		X				
18-Aug-94																					X		
27-Sep-94	94D	P	P	P	P	P			P	P	P				X	3	3						
30-Sep-94																					X		PROFILE DATA NOT RECEIVED BY RCO.
25-Oct-94	94E	P	P	P	P	P			P	P	P	P			X	2	2						
22-Nov-94	94F	P	P	P	P	P			P	P	P				X	2	2						
20-Dec-94	94G	P	P	P	P	P			P	P	P	P			X	3	3						COLLECTED TO CHECK STABILITY OF
19-Jan-95	95A	P	P	P					P	P	P					0	0						FWD TRAYS FROZEN. NO TESTING.
25-Jan-95																	3				X		PROFILE DATA NOT RECEIVED BY RCO.
21-Feb-95	95B	P	P	P	P	P			P	P	P				X	3	3						
9-Mar-95	95C	P	P	P	P	P			P	P	P				X	1	1						
23-Mar-95	95D	P	P	P	P	P			P	P	P	P			X	3	3		X				
6-Apr-95	95E	P	P	P	P	P			P	P	P				X	3	3						
20-Apr-95	95F	P	P	P	P	P			P	P	P	P			X	3	3						
23-May-95	95G	P	P	P	P	P			P	P	P				X	4	4						DEPTH
22-Jun-95																					S		
27-Jun-95	95H	P	P	P	P	P			P	P	P	P			X	3	3		X				COLLECTED TO CHECK STABILITY OF
23-Sep-96																					X		
24-Oct-96	96A	P	P	P	P	P			P	P	P	P				3	3						
18-Nov-96	96B	P	P	P												0	0						
17-Dec-96	96C																						Site inaccessible due to blizzard.
18-Jan-97	97A	P	P	P																			
18-Feb-97	97B	P	P	P	P	P			P	P	P												FWD MONITOR FAILED
31-Mar-97	97C	P	P	P		P			P	P	P				X	4	4						
15-Apr-97	97D	P	P	P	P	P			P	P	P	P			X	2	2						
29-Apr-97	97E	P	P	P	P	P			P	P	P	P			X	4	4						
15-May-97	97F	P	P	P	P	P			P	P	P	P			X	3	3						
5-Jun-97	97G	P	P	P	P	P			P	P	P				X	3	3						
24-Jun-97	97H	P	P	P	P	P			P	P	P				X	3	3						
22-Jul-97	97 I	P	P	P	P	P			P	P	P	P			X	3	3						
24-Aug-97	97J	P	P	P	P	P			P	P	P												Fwd inop. due to hydraulic leak
22-Sep-97	97K	P	P	P	P	P			P	P	P	P			X	2	2		X				

Notes

P Denotes data collected and processed by Braun Intertec Corp

P Denotes data collected and processed by ERES Consultants, Inc

X Denotes data collected by Braun Intertec Corp.

X Denotes data collected by ERES Consultants, Inc.

P Denotes data collected by Braun Intertec Corp. and processed by ERES Consultants, Inc.

S Denotes data collected and processed by SME

Appendix B - SMP Data Sheets

- SMP-D10: SMP Field Activity Report
- SMP-D03: Contact Resistance Measurements
- SMP-D04: Four-Point Resistivity Measurements
- SMP-D05: Ground Water Table Measurement
- SMP-D09: Elevation Measurements - AC
- SMP-M1: Distress Survey of Instrument Area

LTPP Seasonal Monitoring Program Data Sheet SMP-D10 SMP Field Activity Report	Agency Code [4 6] LTPP Section ID [0 8 0 4]

Onsite Datalogger and Instrumentation		
File Name - *.ONS	465497KI	Comments:
Battery Replace	Yes - (No)	Voltages = 13.0
Repairs/Calib.		
Other:		

Mobile Datalogger		
File Name - *.MOB		Comments:
TDR/Resistance Voltages	Sets (0 1)	
Other:		

Manual Data Collection		
Piezometer	(Yes) - No	Comments:
Resistance 2 pt.	Sets (0 1)	
Resistivity 4 pt.	Sets (0 1)	
Elevations	Sets (0 1)	
Distress Survey	(Yes) - No	
Long. Dipstick Profile	Yes - (No)	
Photos or Video	(Yes) - No	
Other:		

FWD and Associated Data		
FWD Testing	Sets (0 2)	Operator: DSP
JCP - Snap Rings	Sets (— —)	AC
JCP - Faulting	Sets (— —)	AC
Other:		

IF REQUIRED, ATTACH SKETCHES TO THIS DATA SHEET

Comments: 3 hrs down time due to hyd leak. Replaced filter, added fluid

Prepared by: GFE Employer: ERES/NCR

Date (dd/mmm/yy): 22 / SEP / 97 Daylight Savings Time (Y or N): Y

LTPP Seasonal Monitoring Program Data Sheet SMP-D03 Contact Resistance Measurements	Agency Code [46] LTPP Section ID [0404]

Start Time (military): 1315

Test Position	Switch Settings I1 V1	Switch Settings I2 V2	Voltage (ACV) Range Setting	Voltage (ACV) Reading	Current (ACA) Range Setting	Current (ACA) Reading	Comments
1	1	2	mil	163.0 ↓	mic	1.3	
2	2	3		152.0 ↓		1.6	
3	3	4		138.0 ↓		2.6	
4	4	5		114.0 ↓		2.3	
5	5	6		91.0 ↓		4.4	
6	6	7		50.0 ↓		4.7	
7	7	8		54.0 ↓		2.9	
8	8	9		0.1		0.2	
9	9	10		64.9 ↓		2.6	
10	10	11		57.3		2.4	
11	11	12		65.2 ↓		1.8	
12	12	13		83.2 ↓		1.9	
13	13	14		76.0 ↓		1.8	
14	14	15		75.6 ↓		2.7	
15	15	16		59.0 ~~[illegible]~~ ↓		1.5	
16	16	17		98.0 ↓		1.1	
17	17	18		85.1 ↓		1.7	
18	18	19		62.9 ↓		2.2	
19	19	20		52.8 ↓		2.3	
20	20	21		50.2 ↓		2.6	
21	21	22		26.7 ↓		2.0	
22	22	23		32.3 ↓		2.3	
23	23	24		0.3		0.3	
24	24	25		23.3		2.6	
25	25	26		18.3		2.7	
26	26	27		17.8		2.6	
27	27	28		19.8		2.6	
28	28	29		18.5		2.7	
29	29	30		18.6		2.4	
30	30	31		26.5		1.9	
31	31	32		45.4		1.7	
32	32	33		39.4		0.7	
33	33	34		107.4		0.7	
34	34	35		45.1		1.4	
35	35	36		61.9		1.7	
36	36	37		~~[illegible]~~ 0.1		48.6	R1 =
37	37	38		4.5		42.6	R2 =
38	38	39		27.4		27.9	R3 =
39	39	00		103.4		0.1	R4 =

Note: R = V/I, in ohms; measured resistances should be compared with known values.

Comments: ↓ = falling measurement

Prepared by: GFE Employer: ERES

Date (dd/mmm/yy): 22/SEP/97

LTPP Seasonal Monitoring Program Data Sheet SMP-D04 Four-Point Resistivity Measurements	Agency Code [46] LTPP Section ID [0804]

Start Time (military): 1335

Test Position	Switch Settings				Voltage (ACV)		Current (ACA)		Comments
	I1	V1	V2	I2	Range Setting	Reading (Volts)	Range Setting	Reading (Amps)	
1	1	2	3	4	mil	4.1	mic	0.3	
2	2	3	4	5		3.0		0.3	
3	3	4	5	6		4.8		0.5	
4	4	5	6	7		2.3		0.4	
5	5	6	7	8		2.1		0.8	
6	6	7	8	9		2.1		1.0	
7	7	8	9	10		1.6		0.9	
8	8	9	10	11		0.1		0.2	
9	9	10	11	12		1.3		0.5	
10	10	11	12	13		1.4		0.5	
11	11	12	13	14		1.1		0.5	
12	12	13	14	15		1.2		0.5	
13	13	14	15	16		1.2		0.3	
14	14	15	16	17		1.6		0.4	
15	15	16	17	18		1.2		0.6	
16	16	17	18	19		0.9		0.4	
17	17	18	19	20		1.1		0.4	
18	18	19	20	21		1.2		0.6	
19	19	20	21	22		1.2		0.7	
20	20	21	22	23		1.1		0.7	
21	21	22	23	24		0.9		0.7	
22	22	23	24	25		0.9		0.8	
23	23	24	25	26		0.1		0.3	
24	24	25	26	27		0.9		0.9	
25	25	26	27	28		0.9		1.0	
26	26	27	28	29		0.9		0.9	
27	27	28	29	30		0.9		0.9	
28	28	29	30	31		0.9		0.8	
29	29	30	31	32		0.9		0.8	
30	30	31	32	33		0.8		0.3	
31	31	32	33	34		0.6		0.7	
32	32	33	34	35		0.6		0.6	
33	33	34	35	36		0.3		0.4	
36	36	36	37	37		0.1		46.8	R1 =
37	37	37	38	38		4.3		41.2	R2 =
38	38	38	39	39		26.6		26.4	R3 =
39	39	39	00	00		101.2		0.1	R4 =

Note: R = V/I, in ohms; measured resistances should be compared with known values.

Comments: _____

Prepared by: GFE Employer: ERES/NCR

Date (dd/mmm/yy): 22/SEP/97

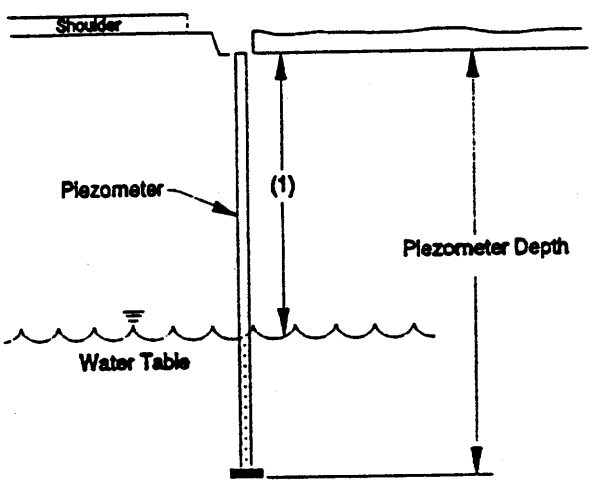
LTPP Seasonal Monitoring Program Data Sheet SMP-D05 Ground Water Table Measurement	Agency Code [46] LTPP Section ID [0804]

Piezometer Depth (m): 4.288

Measurement Number	Time (military)	Depth to Water[1,2] (m)	Comments
1	1100	/.__	Pipe is Dry
2	_____	__.__	

[1] Distance from top of piezometer pipe to top of ground water table; to an accuracy of ±10 mm (0.4 in)

[2] If piezometer pipe is dry or frozen, enter "time" when observation was made, leave "depth to water" field blank, and enter "pipe is dry" or "pipe is frozen" under comments column.



Comments: Pipe is Dry

Prepared by: GFE Employer: ERES/NCR

Date (dd/mmm/yy): 22SEP97

LTPP Seasonal Monitoring Program Data Sheet SMP-D08 Elevation Measurements - AC	Agency Code [46] LTPP Section ID [0804]

Type of Instrument: NA 2000

Start Time (military): 1210

BM	Station	BS	HI	IFS	FS	ELEV	CLOSE
Piez.	4+00	1.5516		1.5516			1.5516
Det DM Other	5+00	2.1497					2.1496

	Station	Offset (PE): 0.16 m	Offset (OWP): 0.76 m	Offset (ML): 1.83 m	Offset (IWP): 2.90 m	Offset (ILE): 3.51 m	Comments
91.4	3+00	1.3895	1.3720	1.3438	1.3232	1.3139	
99.1	3+25	1.3480	1.3297	1.3017	1.2814	1.2717	
106.7	3+50	1.3045	1.2865	1.2563	1.2356	1.2253	
4.3	3+75	1.2629	1.2441	1.2161	1.1975	1.1891	
121.9	4+00	1.2715	1.2017	1.1720	1.1513	1.1414	
129.5	4+25	1.1594	1.1433	1.1140	1.0951	1.0864	
137.2	4+50	1.1011	1.0863	1.0570	1.0385	1.0287	
144.8	4+75	1.0417	1.0263	.9995	.9798	0.9694	
152.4	5+00	.9761	.9607	.9342	.9142	.9048	
155.4	5+10	.9489	.9340	.9067	.8879	.8790	
158.5	5+20	.9183	.9096	.8810	.8617	.8527	
160.0	5+25	.9072	.8966	.8706	.8525	.8425	

Comments: _____

Prepared by: GFE Employer: ERES/NCR

Date (dd/mmm/yy): 22/SEP/97

4 6 S A 9 7 K

LTPP Seasonal Monitoring Program Data Sheet SMP-MI (Page Distress Survey of Instrumentation Area	Agency Code [4 6] Test Section Number [0 8 0 4]

Rate the condition of the instrumentation area (check one):

X Good (little or no distress; repairs are not required in the immediate future)

___ Poor (significant distress, repairs required now or in the immediate future)

List any repairs (type and extent) done since instrumentation installation and/or last survey of instrumentation area: None

Additional Comments: ~~None~~ Fault meter not working – as usual

Need to replace ASAP, or do without.

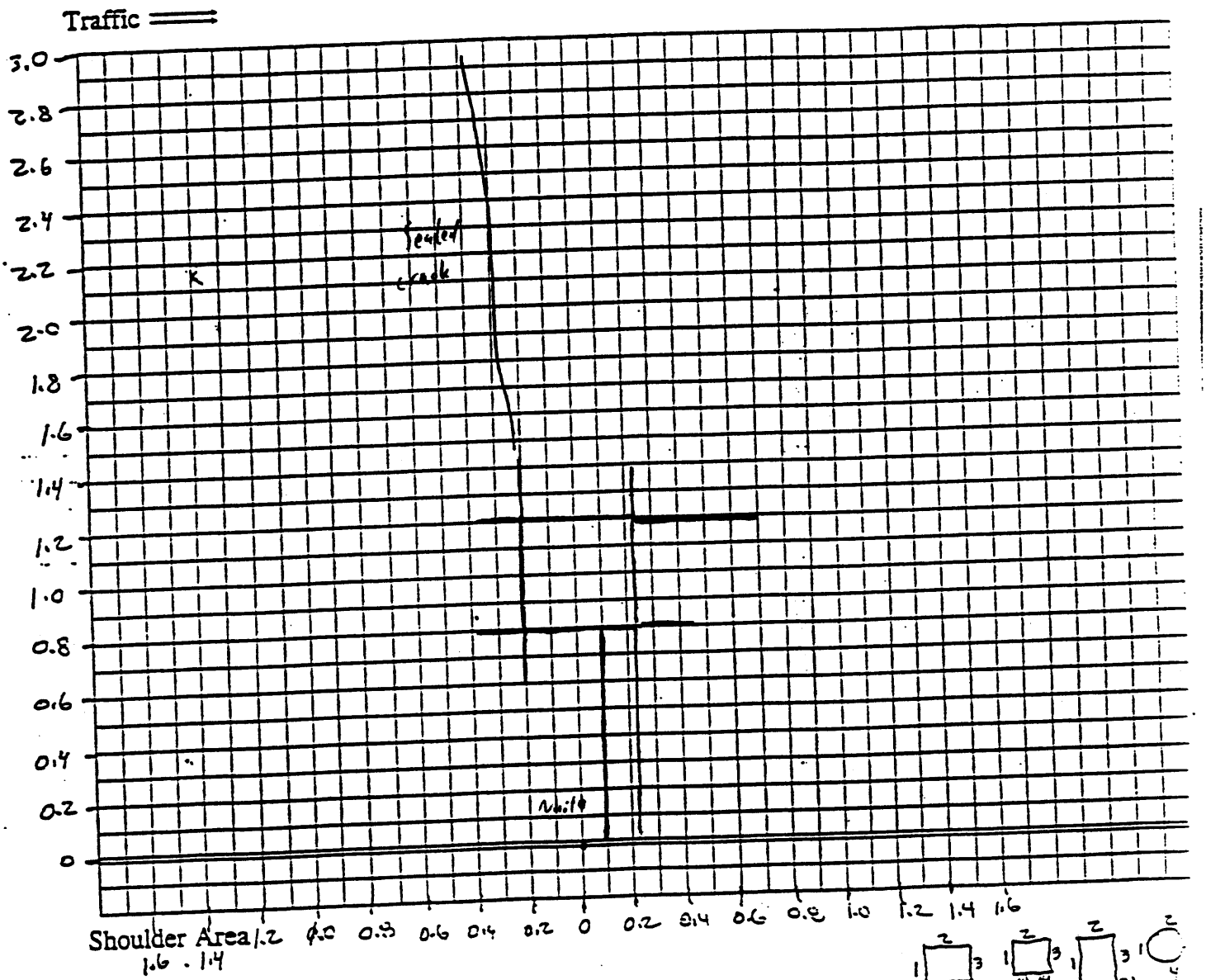
Prepared by: GFE Employer: ERES/NCR

Date: 22/Sep/97

4 6 S A 9 7 K

LTPP Seasonal Monitoring Program Data Sheet SMP-M1 (Page Distress Survey of Instrumentation Area	Agency Code [46] SHRP Section ID [0804] Survey Date [22/SEP/97]

Use grid below to sketch distresses within 1.5 m (5 ft) of instrumentation block/hole and trench. Use LTPP Distress Identification Manual to extent possible. (Note: each square in grid equals 0.1 m by 0.1 m area)



Use table below to record settlement of pavement in instrumentation area.

Measurement Device: DIPSTICK / STRAIGHT EDGE

Location	Settlement, mm			
	Location 1	Location 2	Location 3	Location 4
Instrumentation block/hole	__.__	__.__	__.__	__.__
Trench	__.__	__.__	n/a	n/a

Appendix C- Site Information Sheet (SIS)

Updated October 15, 1997

460804 - 46SA

LOCATION - St-1804 EB Lane,15 Miles Northwest of Pollock, SD
CONTACTS - Dennis Schneider (605) 845-3844, Dan Strand (605) 773-3871
TEMP HOLES - Sta 5+03, Depths are about 1.1", 3.5", and 6.0" (AC thickness = 7.1").

DISTRESS COMMENTS:

Sta F1 - Tests at 25 foot intervals from Sta 3+00 to Sta 5+00, and at Sta 5+20.

520 LP ADJACENT TO INSTRUMENTATION HOLE
520 M-TRANS.CR. 1' BEHIND LP

Sta F3 - Tests at 25 foot intervals from Sta 3+00 to Sta 5+00, and at Sta 5+10, and 5+25.

(none)

PIEZOMETER - Sta 4+00, 1.0 feet from edge of paved shoulder, Depth = 4.288M.

ELEVATIONS - SD/DOT BM at Sta 5+00, at edge of ROW next toSHRP sign.

Offsets:		PE	OWP	ML	IWP	ILE	
(M)	-0.16	0.16	0.76	1.83	2.90	3.51	3.81
(ft)	-0.5 (nail)	0.5	2.5	6.0	9.5	11.5	12.5 (nail)

Note: Offsets are based on 12 foot lane measured from the centerline for the road. Lane edge strip is not at 12 foot.

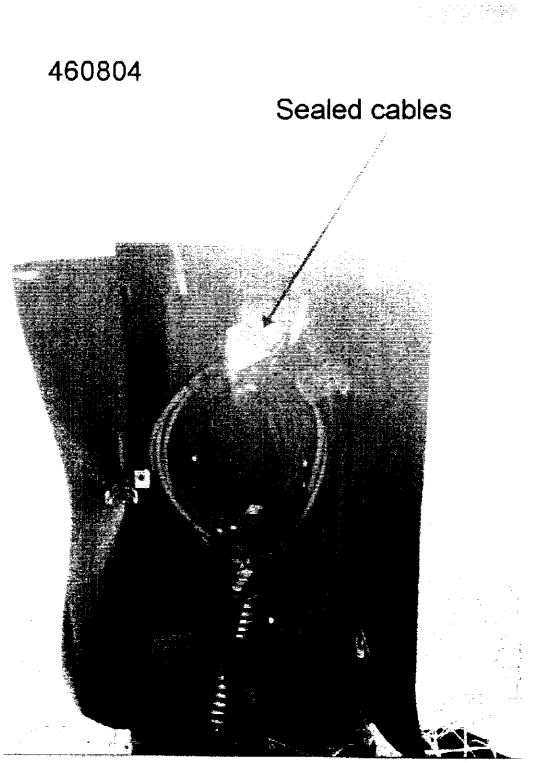
Note: PK nails are 13 feet apart and elevations between nails are at 1.0'(LE), 3.0'(WP), 6.5'(ML), 10.0'(WP), and 12.0'(LE). Latest guidelines require nails be 0.5 feet outside the section.

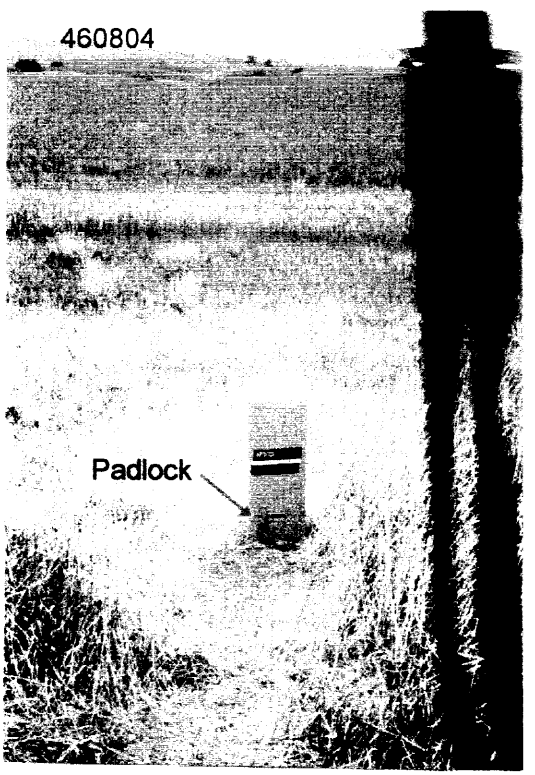
Sta: Transverse profiles every 25 feet from Sta 3+00 to Sta 5+00, and at Sta 5+10, 5+20, and 5+25.

COMMENTS -- Check temperature hole depths - refilled on 97K loop.

Appendix D - Photographs

Photograph # 1





⇐ **Photograph # 2**

Photograph # 3