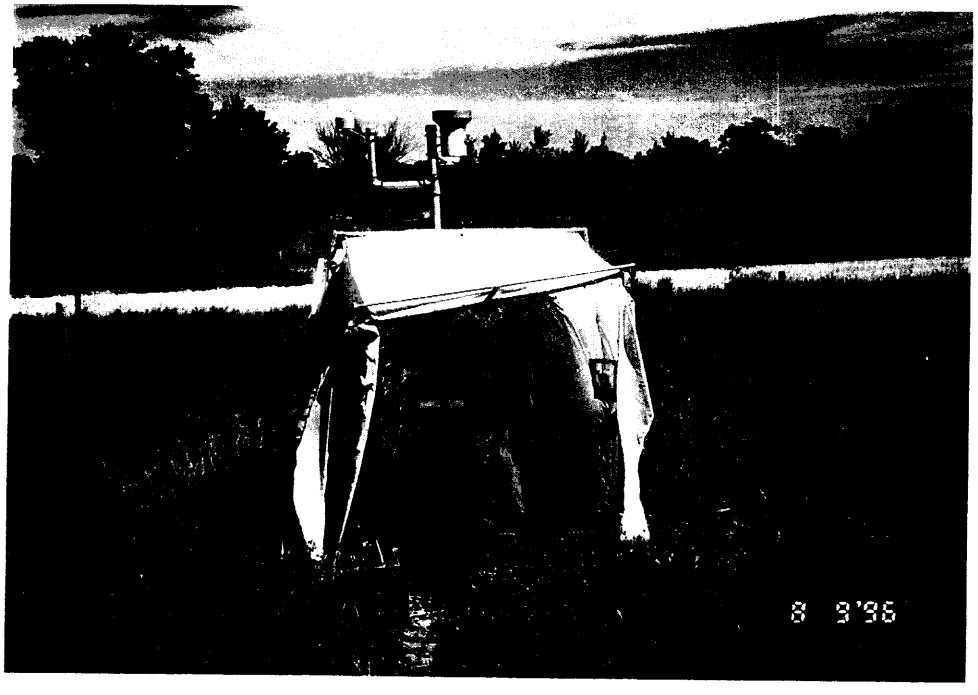
LTPP Seasonal Monitoring Program

Site Monitoring Suspension Status Draft Final Report for GPS Section 313018 (31B) Kearney, Nebraska



U.S. Department
of Transportation
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Administration

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LTPP Seasonal Monitoring Program

Site Monitoring Suspension Status
Draft Final Report for
GPS Section 313018 (31B)
Kearney, Nebraska

Report No. FHWA-

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16. Abstract

This report contains information on instrument de-installation and monitoring data collection activities for the Long Term Pavement Performance (LTPP) General Pavement Study (GPS) section 313018 conducted on August 9, 1996. The report presents a description of the following activities: SMP data collection activities, including instrument and equipment problems noted prior to de-installation; instrument de-installation activities and unresolved problems with installed sensors; 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 August 8-15, 1997. All units such as the rain gauge, air temperature sensor, and the associated metal poles will be carefully reinstalled and tested.

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Kearney, Nebraska

1.0 INTRODUCTION

The seasonal monitoring data collection for the Long Term Pavement Performance (LTPP) General Pavement Study (GPS) section 313018 has been suspended for a period of one year effective August 9, 1996. The test section, which is part of the Seasonal Monitoring Program (SMP) managed by the Federal Highway Administration (FHWA) LTPP Division, is located approximately 1.5 kilometers east of Kearney, Nebraska on the westbound driving lane of Interstate Highway 80 at milepost 274.5. Additional background information on the test section, including the exact location of the test section, types of instruments installed, and the pavement structure in-place, can be found in the *Site Installation Report for GPS Section 313018 (31B), Kearney, Nebraska* dated February 1996 (1).

This report contains information on instrument de-installation and monitoring data collection activities conducted on August 9, 1996. After the installation of instrumentation in the test section on August 10, 1995, the test section was visited a total of nine times for SMP data collection, five times in

1995 and four times in 1996, including the de-installation visit. The dates and activities performed during these visits can be found in the SMP data collection summary table in appendix A. The instrumentation for the site is scheduled for reinstallation August 1997 and will be monitored for another year. This section is planned to be monitored every other year for the remainder of the LTPP Study.

The report presents a description of the following activities: SMP data collection activities, including instrument and equipment problems noted prior to de-installation; instrument de-installation activities and unresolved problems with installed sensors; and an instrument reinstallation schedule. Also included in the report are color copies of site photographs taken during suspension preparation activities.

2.0 SMP DATA COLLECTION

2.1 SMP Data Collection

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 in the SMP field activity report (data sheet SMP-D10) in appendix B. Ten other SMP data sheets pertaining to the data collection activities are also in appendix B. The locations for FWD, faultmeter, and elevation measurements can be found in the site information sheet (SIS) in appendix C. During the instrument de-installation and data collection activities, the weather was sunny and often windy.

As can be seen the SMP data collection summary table in appendix A, no longitudinal profile measurements were recorded. This data will be collected at the first opportunity once the new longitudinal profile equipment is released for use or the old profile equipment is in working condition.

2.3 Instrument and Equipment Problems

The performance of all TDR, rain gauge, and Measurement Research Corporation (MRC) sensors in the test section were evaluated by reviewing the data from the onsite and mobile dataloggers using the SMPCheck program (3).

A review of the onsite data collected during this visit indicated that the temperature recordings from the MRC sensors and air temperature measuring sensor appear reasonable and typical of temperatures at this time of the year.

As shown in photograph 1 in appendix E, the collector unit (funnel) of the rain gauge is intact and no obvious problems were noted from the data recorded from June 10, 1996 through August 9, 1996.

A review of the data from the mobile datalogger indicates that the TDR sensors are functioning as expected. All the TDR traces, which can be found in Appendix D, are typical for this site. The traces had the required characteristics that enable analysis. However, in the same figure, plot K indicates potential problems with the mobile unit, possibly the CRREL multiplexer. As can be seen in plot K, a value of -6999 was noted for locations 10 and 11, suggesting potential problems at these locations in the mobile unit. A review of data from previous visits indicates that this problem existed as early as March 11, 1996.

3.0 INSTRUMENT DE-INSTALLATION ACTIVITIES

3.1 Suspension Preparation and Repairs to Instrumentation Hole

As required by the LTPP Seasonal Directive SM-8 (3), 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 as shown in photograph 2 in appendix E.
- After completion of the final water table depth measurement, the end of the piezometer was sealed and marked for easy identification.
- As shown in photograph 3 the vegetation growing around the benchmark installed by the Nebraska DOT was cleared. Photograph 4 shows how the benchmark is marked by the DOT for easy identification.
- The three temperature holes in the pavement were sealed with silicone after the final temperature readings.
- Locked cabinet as shown in photograph number 5 in appendix E. Photograph 6, also in appendix E shows the remaining pipe at the back of the cabinet.

Photograph 7 in appendix E shows the condition of the instrumentation hole which is considered good.

All units such as the rain gauge, air temperature sensor, and the associated metal poles were labeled "31SB" and carefully stored in the North Central Regional Coordination Office (NCRCO) for reinstallation. The union was left onsite in the cabinet.

3.2 Unresolved Problems with the Installed Sensors

The unresolved problems at this site are associated with the CRREL multiplexer in the mobile unit. Previous problem reports (PRs) on these cases submitted February 22, 1995, February 27, 1995 and October 13, 1995 (5), respectively were reviewed. These problems were resolved and required no immediate action at the time. A new problem report related to the CRREL multiplexer has been dispatched to the other three Regional Coordination Offices, PCS/Law and the LTPP Division, HNR-40 of the FHWA.

3.3 Unique Site Features

This test section is the 11th SMP installation in the LTPP North Central Region.

4.0 INSTRUMENT REINSTALLATION

Reinstallation of the instrumentation in this site is scheduled for August 8-15, 1997. All units such as the rain gauge, air temperature sensor, and the associated metal poles labeled "31SB" are carefully reinstalled and tested.

At the SMPCheck meeting recently held in Champaign, Illinois it was discussed that solar panels would be installed at the SMP sites on top of the cabinets to prolong the life of the battery onsite. There are ongoing efforts to purchase these units.

5.0 SUMMARY

This report contains information on instrument de-installation and monitoring data collection activities for the Long Term Pavement Performance (LTPP) General Pavement Study (GPS) section 313018, conducted on August 9, 1996. The report presents a description of the SMP data collection activities including instrument and equipment problems noted prior to de-installation, instrument de-installation activities, unresolved problems with the CRREL multiplexer in the mobile unit, and an instrument reinstallation schedule. 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 August 8-15, 1997. All units such as the rain gauge, air temperature sensor, and the associated metal poles will be carefully reinstalled and tested. This includes the installation of solar panels on the cabinets to prolong the life of the battery onsite. There are ongoing efforts to purchase these units.

LIST OF REFERENCES

1. *LTPP Seasonal Monitoring Program Site Installation Report for GPS Section 313018 (31B) Kearney, Nebraska.* Federal Highway Administration, LTPP Division, HNR-40, Turner-Fairbanks Highway Research Center, McLean, Virginia. February 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 2.4, prepared for The Federal Highway Administration, Pavement Performance Division, HNR-30, McLean, Virginia. August 1996.
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, Turner-Fairbanks Highway Research Center, McLean, Virginia. March 1995.
5. Padgett, Sherry. *Long Term Pavement Performance (LTPP) Monitoring Problem Report.* A nine page Facsimile Message from Jonathan Groegr, PCS/Law, Beltsville, Maryland to Thomas Wilson, ERES Consultants, Inc., Champaign, Illinois, August 29, 1996.

Appendix A - SMP Data Collection Summary Table

SMP DATA COLLECTION SUMMARY

31SB-313018, I-80 WB LANES, 1.0 MILES EAST OF KEARNEY, NE. (MP 274.5)

		ONSITE Data			MOBILE Data		Manual Data								FWD Data				Distress		Profile		Comments
Date dd/mmm/yy	Visit ID	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	
?????????																				X			
?????????																					X		
22-Aug-94																					X		
19-Apr-95															X	1	1	1	X				DISTRESS SURVEY PRIOR TO INSTALLATION
10-Aug-95	95A														X	1	1	1					INSTALLATION
11-Aug-95	95B	X	X	X	X	X			D	D	D	D			X	2	2	2					
19-Sep-95	95C	X	X	X	X	X			D	D	D	D	D	D	X	2	2	2					
16-Oct-95	95D	X	X	X	X	X			D	D	D	D	D		X	3	3	3					
29-Oct-95																					X		
14-Nov-95	95E	X	X	X	X	X			D	D	D	D	D	D	X	3	3	3					SET ONSITE CLOCK FOR STANDARD TIME
13-Dec-95	95F	X	X	X	X	X					D					0	0	0					NO TESTING DUE TO BAD WEATHER
22-Jan-96	96A	X	X	X	X	X			D	D	D					0	0	0					NO TRAFFIC CONTROL, NEW RELAY FOR CR10
6-Mar-96	96B	X	X	X	X	X			X	X	X		X	X	X	2	2	2	X				CONCERNS WITH MRC DATA (SMPPRNC 29,30)
23-Apr-96	96C	X	X	X	X	X			X	X	X	X	X	X	X	2	2	2					NEW CR10 RELAY AGAIN, SET CLOCK TO DST
9-Aug-96	96D	D	D	D	D	D			D	D	D	D	D	D	X	2	2	2	X				DE-INSTALLED SITE

Updated August 29, 1996

N:\LTPP\NCRCO\TASK_A\SMP\SLOOP\SMPTRK\31SB.XLS

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-D06: Joint Opening Measurement
- SMP-D07: Joint Faulting Measurement
- SMP-D09: Elevation Measurements - PCC
- SMP-M1: Distress Survey of Instrument Area
- FHWA/SHRP-LTPP Pavement Temperature Profile Measurements
- FASTBACK PLUS - Backup History Report

3 1 S B 9 6 D

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-D10 SMP Field Activity Report	Agency Code [3 1] LTPP Section ID [3 0 1 8]

Onsite Datalogger and Instrumentation		
File Name - *.ONS	31SB96DH	Comments:
Battery Replace	Yes - No	Voltages 11.0
Repairs/Calib.	De-install today	
Other:	~~ONSFIELD did not catch errors caused by MRC #1.~~	

Mobile Datalogger		
File Name - *.MOB	31SB96DH	Comments: Contact resistances mostly neg.
TDR/Resistance Voltages	Sets (0 2)	
Other:		

Manual Data Collection 4.752		
Piezometer	Yes - No	Comments: ~~4.766 m~~
Resistance 2 pt.	Sets (0 1)	Weather: Sunny
Resistivity 4 pt.	Sets (0 1)	Sunny
Elevations	Sets (0 1)	Sunny + Windy
Distress Survey Visual	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 (0 2)	
JCP - Faulting	Sets (0 2)	
Other:	Camera + DMI malfunctioned, all day	

IF REQUIRED, ATTACH SKETCHES TO THIS DATA SHEET

Comments: All weather comments = Sunny

Prepared by: GFE

Employer: ERES Consultant

Date (dd/mmm/yy): 09/Aug/96

Daylight Savings Time (Y or N): Y (winter is STD. Time)

3 1 S B 9 6 E

LTPP Seasonal Monitoring Program Data Sheet SMP-D03 Contact Resistance Measurements	Agency Code [3 1] LTPP Section ID [3 0 1 8]

Start Time (military): 0922

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	Volts	10.29	Micro	124.8	current on area
2	2	3		10.31		115.7	↓
3	3	4		10.46		128.3	stable
4	4	5		10.04		200.6	"
5	5	6		8.73		304.1	decreasing ACA
6	6	7		6.97		355.0	"
7	7	8		7.73		69.6	"
8	8	9		10.6		42.8	"
9	9	10		10.47		62.0	"
10	10	11		10.42		60.5	"
11	11	12		10.4		69.0	"
12	12	13		9.73		131.9	"
13	13	14		6.91		308.3	decreasing ACA
14	14	15		5.72		214.2	"
15	15	16		8.46		162.5	"
16	16	17		8.16		298.6	"
17	17	18		6.55		207.0	"
18	18	19		6.27		392.1	"
19	19	20		4.092		455.0	stable
20	20	21		4.18		244.0	↓
21	21	22		6.03		367.6	unstable current
22	22	23		3.373		402.3	both V & C unstable
23	23	24		4.22		400.1	stable
24	24	25		4.51		254.0	current decreasing
25	25	26		4.85		265.6	"
26	26	27		6.73		175.1	
27	27	28		6.95		210.1	"
28	28	29		6.59		275.2	"
29	29	30		6.37		220.0	"
30	30	31		6.88		166.3	"
31	31	32		7.40		238.5	"
32	32	33		4.44		504.0	"
33	33	34		3.720		488.0	"
34	34	35		4.42		260.2	"
35	35	36	↓	6.58	↓	71.7	"
36	36	37	Milli	5.5	Milli	8.04	R1 = .684
37	37	38	Volts	.731	↓	7.28	R2 = 100.4
38	38	39	↓	4.15	↓	4.14	R3 = 1002.4
39	39	00	↓	10.25	Micro	11.5	R4 = 891,304

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

Comments: _____

Prepared by: GEE / GAM Employer: ERES

Date (dd/mmm/yy): 09 / Aug / 96

3 1 5 8 9 6 D

LTPP Seasonal Monitoring Program Data Sheet SMP-D04 Four-Point Resistivity Measurements	Agency Code [3 1] LTPP Section ID [3 0 1 8]

Start Time (military): 0 9 3 7

Test Position	Switch Settings I1	V1	V2	I2	Voltage (ACV) Range Setting	Reading (Volts)	Current (ACA) Range Setting	Reading (Amps)	Comments
1	1	2	3	4	Volts	.496	Micro	30.4	current instability
2	2	3	4	5		.673		43.3	
3	3	4	5	6		.505		45.8	
4	4	5	6	7		.492		62.5	
5	5	6	7	8	Milli	325.6		23.5	
6	6	7	8	9	Volts	.478		29.1	
7	7	8	9	10		.482		18.7	
8	8	9	10	11		.244		8.9	
9	9	10	11	12	Milli	331.9		11.7	
10	10	11	12	13		339.5		26.5	
11	11	12	13	14		266.8		41.3	
12	12	13	14	15		140.6		33.1	
13	13	14	15	16		206.8		50.7	
14	14	15	16	17	Volts	.431		78.6	
15	15	16	17	18	Milli	342.7		46.0	
16	16	17	18	19	Volts	.399		89.9	
17	17	18	19	20	Milli	335.0		118.3	
18	18	19	20	21		226.0		74.9	
19	19	20	21	22		255.3		210.1	
20	20	21	22	23		182.8		136.4	
21	21	22	23	24		206.9		90.6	
22	22	23	24	25		214.0		138.3	
23	23	24	25	26		229.7		86.8	
24	24	25	26	27		189.5		85.9	
25	25	26	27	28		277.8		86.3	
26	26	27	28	29		199.2		61.2	
27	27	28	29	30		226.7		54.3	
28	28	29	30	31		315.1		52.4	
29	29	30	31	32		275.5		103.7	
30	30	31	32	33		250.4		124.0	
31	31	32	33	34		154.8		107.3	
32	32	33	34	35		204.4		125.6	
33	33	34	35	36		118.0		52.6	
36	36	36	37	37	Milli	5.5	Milli	8.05	R1 = .683
37	37	37	38	38	Volts	~~2.36~~ .736		7.33	R2 = 100.4
38	38	38	39	39		4.17		4.17	R3 = 1000.0
39	39	39	00	00		10.27	Micro	11.5	R4 = 893.043

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

Comments:

Prepared by: GEI/GAM Employer: ERES

Date (dd/mmm/yy): 0 9 / A u g / 9 6

3 1 5 B 9 6 D

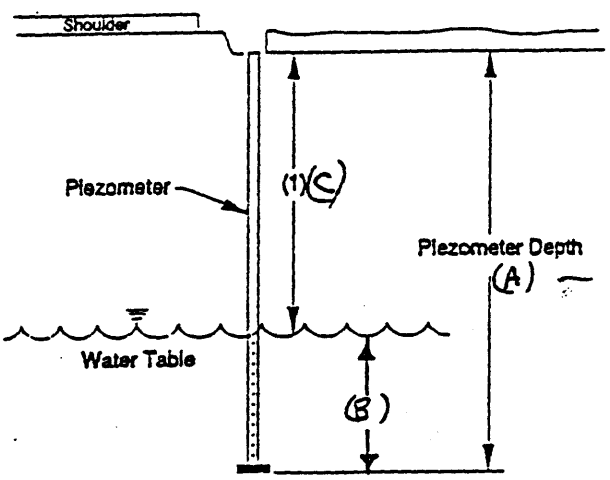
LTPP Seasonal Monitoring Program Data Sheet SMP-D05 Ground Water Table Measurement	Agency Code [3 1] LTPP Section ID [3 0 1 8]

MEASURED
Piezometer Depth (m): (A) ~~4.766~~ 4.752

Measurement Number	Time (military)	(C) Depth to Water[1,2] (m) (A−B)	(B) Depth of Water (m) measure	Comments
1	0848	3.18	1.577	
2	1327	3.18	1.578	

[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.



MEASURE. DO NOT ASSUME DEPTH ON INFO SHEET IS CORRECT. RV

Comments: _____

Prepared by: GFE Employer: ERES

Date (dd/mmm/yy): 09/Aug/96

3 1 S B 9 5 D

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-D06 Joint Opening Measurement	Agency Code [3 1] LTPP Section ID [3 0 1 8]

Station	Time (military)	Joint Opening (mm) Offset (PE): 0.76 m	Offset (ML): 1.83 m	Offset (ILE): 2.90 m	Joint Width (mm)	Joint W (in) for Fu
0-31	1027	115.97	117.19	115.59	10.0	41"
		115.93	117.16	115.51		
		115.74	117.23	115.55		
	1257	115.63	117.21	115.52	10.4	.41
0-13	1040	115.60	115.16	115.25	10.	40"
		115.55	115.19	115.09		
		115.60	115.22	115.12		
	1300	115.64	115.39	115.15	10.	.45
0+04	1052	115.20	114.95	115.17	11.	43
		115.29	114.87	115.25		
		115.22	114.92	115.25		
	1305	115.34	114.69	115.13	12	49
0+17	1307	115.09	115.46	115.62	10.	39
		115.10	115.62	115.41		
		115.14	115.51	115.52		
	1312	115.13	115.65	115.32	10.8	38
0+31	1124	115.70	115.80	114.75	11.	43
		115.63	115.72	114.74		
		115.58	115.70	114.74		
	1319	115.64	115.34	114.58	10.	39
0+49	1132	115.36	114.82	115.71	9.53	.37
		115.48	115.20	115.69		
		115.38	114.98	115.74		
	1330	115.15	115.11	115.44	10.	.39

Comments:

Prepared by: DSP Employer: ERES

Date (dd/mmm/yy): 09/Aug/95

3 1 5 B 9 6 D

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-D07 Joint Faulting Measurement	Agency Code [3 1] LTPP Section ID [3 0 1 8]

Station	Time (military)	Joint Faulting (mm) Offset (OWP): 0.76 m	Offset (ML): 1.83 m	Offset (IWP): 2.90 m
0-31	1025	03.5	03.0	02.0
	~~1257~~	~~03.5~~	2.1	2.1
		.	.	.
0-13	1040	01.0	02.0	03.0
	1259	1.1	2.1	3.1
		.	.	.
0+04	1050	5.1	4.1	3.1
	1303	5.1	4.1	2.1
		.	.	.
0+17	1100	2.1	3.1	3.1
	1309	2.1	2.1	2.1
		.	.	.
0+31	1123	5.1	4.1	3.1
	1315	3.1	1.1	2.1
		.	.	.
0+49	1132	4.1	5.1	3.1
	1328	4.1	4.1	3.1
		.	.	.

might have been stuck in hole

Comments: STA 0+31 ML reading, pin may have been in hole

Prepared by: DSP Employer: ERES

Date (dd/mmm/yy): 09/Aug/95

3 1 S B 9 6

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-D09 Elevation Measurements - PCC	Agency Code [3 1] LTPP Section ID [3 0 1 8]

Type of Instrument: NA2000

Start Time (military): 1 0 1 5

check "close" at midpoint of survey.

BM	Station	BS	HI	* ~~IPS~~	FS	ELEV	CLOSE
Piez.	0+11	0.6819		0.6821			0.6820
D.O.T. BM Other	0+31	2.4311					2.4312

Station	Offset (PE): 0.30 m	Offset (ML): 1.83 m	Offset (ILE): 3.35 m	Comments
0-31 AJ	0.5039	0.4885	0.4710	
0-22 MP	0.5003	0.4860	0.4701	
0-13 BJ	0.4937	0.4785	0.4619	
0-13 AJ	0.4960	0.4805	0.4644	
0-04 MP	0.4928	0.4764	0.4608	
0+04 BJ	0.4867	0.4718	0.4565	
0+04 AJ	0.4919	0.4752	0.4593	
0+11 MP	0.4929	0.4770	0.4609	
0+17 BJ	0.4884	0.4738	0.4586	
0+17 AJ	0.4913	0.4762	0.4595	
0+24 MP	0.4862	0.4731	0.4569	
0+31 BJ	0.4803	0.4666	0.4497	
0+31 AJ	0.4830	0.4680	0.4507	
0+40 MP	0.4837	0.4671	0.4501	
0+49 BJ	0.4735	0.4599	0.4435	

Comments: Transit set up 15' from PE

Prepared by: GEE

Employer: ERES

Date (dd/mmm/yy): 09/Aug/95

3 1 S B 9 6 D

LTPP Seasonal Monitoring Program Data Sheet SMP-M1 (Page 1) Distress Survey of Instrumentation Area	Agency Code [31] Test Section Number [3018]

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

✓ 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

Prepared by: GEE Employer: ERES

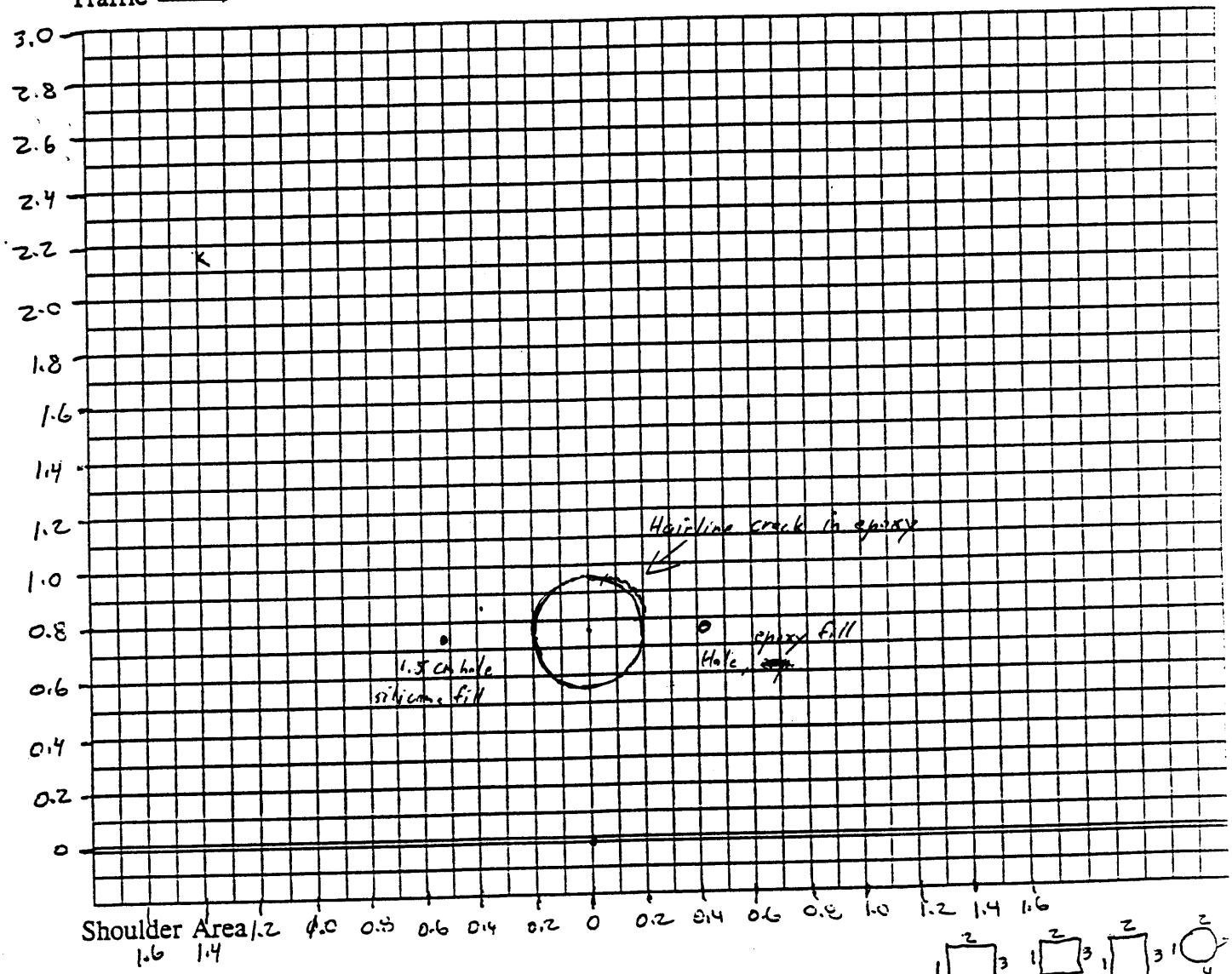
Date: 09 Aug 96
dd-mmm-YY

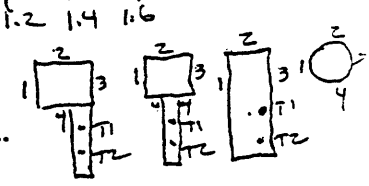
3 1 S B 9 6 D

LTPP Seasonal Monitoring Program Data Sheet SMP-M1 (Page 2) Distress Survey of Instrumentation Area	Agency Code [3 1] SHRP Section ID [3 0 1 8] Survey Date [0 9 / Aug / 9 6] dd mmm yy

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)

Traffic ⟹





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

Measurement Device: FAULTMETER / ~~Dipstick~~ STRAIGHT EDGE

Location	Settlement, mm			
	Location 1	Location 2	Location 3	Location 4
Instrumentation block/hole	0 0.—	0 0.—	0 1.—	0 1.—
Trench None	—.—	—.—	n/a	n/a

FHWA/SHRP-LTPP PAVEMENT TEMPERATURE PROFILE MEASUREMENTS

SHRP NORTH CENTRAL REGION

SHRP SECTION I.D. # 313018

AGENCY NE DOT

TESTING SMP FWD

ROUTE/HIGHWAY # I-80

FIELD SET # SMP96

TESTING DATE dd/mmm/yr 09/Aug/96

SHEET # 2 OF 3

LOCATION STATION 0+03

DEPTH MILTIME	D1 = 1.0" T1 (F)	D2 = 6.0" T2 (F)	D3 = 11.0" T3 (F)	D4 = T4 (F)	D5 = T5 (F)	WEATHER CONDITIONS
0840	75.4	77.0	80.7			S
0950	80.7	77.3	78.0			S
1045	83.9	79.3	78.8			PC
1135	89.3	81.0	80.9			S
1245	96.4	83.6	84.6			S
1345	100.6	89.3	88.5			S

NOTE: USE ONLY THESE WEATHER TERMS; (S)SUNNY, (PC)PARTLY CLOUDY, (C)CLOUDY, (R)RAIN

COMMENT

TESTING COMPLETED BY:

FHWA FWD S/N 8002-060

DSP
FWD OPERATOR

dd/mmm/yr 09/Aug/1996
DATE

SHRP LTPP

SHRP REGION NCR STATE CODE 31 SHRP ASSIGNED ID 3018

STATE NE TESTING SMP FWD DISTRICT NE DOT

LTPP EXPERIMENT CODE SMP FWD ROUTE/HIGHWAY NO. I-80

FIELD ACTIVITY REPORT

FIELD SET NO. SMP96D

TESTING DATE (dd mmm yr) 09/Aug/96 SHEET NUMBER 1 OF 3 DOG SHEET

FWD AND TOW VEHICLE BEFORE OPERATION CHECKS _____ (Initial)

	TIME	ODOMETER
START TRAVEL	0645	57119
END TRAVEL	0730	57160
READY TO TEST	0800	
TRAFFIC CONTROL READY	0815	
BEGIN TESTING	0825	
END TESTING	1425	
START TRAVEL		
END TRAVEL		

DOWN TIME _____ HOURS REASON(S) _____

NUMBER OF TESTS:

	BASIN	JT/CRACK
TP	0	cycles 2 * 12 tests
OWP	0	
PE	cycles 2 * 9 tests	
ML	2 * 5	

ADDITIONAL REMARKS REGARDING TESTING Decided not to do repeat tests on first cycle due to time constraints

TRAFFIC CONTROL CREW

AGENCY NE DOT

NAMES: _____

TEST COMPLETED

ERES Consultants — AFFILIATION

DSP — FWD OPERATOR

09 (dd) Aug (mmm) 1996 (YEAR)

COPIES: RCO

FASTBACK PLUS BACKUP HISTORY REPORT 09-09-96 14:05:36

```
SU  User name       = HI_DISK
SN  Set name        = C9609090.FUL
SV  Volume          = C:
SY  Volume type     = Fixed Disk
SI  Comment         = ""
SM  Media           = A:MS-DOS 1.44Mb 3 1/2 Floppies
SD  Date gates      = Off :  01-01-80  12-31-99
SR  Size gates      = Off :            0  2146435072
SA  Attributes      = Off :  None
SE  ECC             = On
SC  Compression     = Save Time
    Virus Scanning  = Off
ST  Backup Type     = Full
SP  Protection      = NONE
```

	FILE NAME	SIZE	DATE	TIME	ATTR	SEG	ENGBLK
P	PATH = \						2
P	PATH = \FWD						2
P	PATH = \FWD\DATA						2
F	31S896D1.FWD	385482	09-09-96	12:35:40	----	1	2
F	31S896D3.FWD	920614	09-09-96	13:55:30	----	1	10
F	31S896D2.FWD	691424	09-09-96	13:12:06	----	1	28

File	Time	STA	comment
31SB96D1.FWD	0832	22	OMI should read -22
" "	0836	4	Add comment "Accepted test w/variance"
" "	0843	"	" " "
" "	0847	24	" " "
31SB96D2.FWD	22	-28	OMI should read -29, remove comment
31SB96D3.FWD	1100 ~~1056~~	30	OMI should read -30
" "	1117	-13	Lane should be J4
" "	1132	5	Add comment "Accepted test w/variance
" "	1158	49	" " "
31SB96D2	1247	3	OMI should read -3
"	1306	32	OMI should read 33, Lane should be J2
31SB96D3	1323	30	OMI should read -30
" "	1327	13	OMI should read -13

Appendix C- Site Information Sheet (SIS)

Updated September 17, 1996

313018 - 31SB

LOCATION - IH-80 WB Lanes, 1.0? Miles East of Kearney, NE (MP 274.5)
CONTACTS - William Bebb (308) 865-5430 (Second contact is Bill Parrish ((308)) 385-6265)
TEMP HOLES - Sta 3-03?, Depths about 1.0?", 6.0?", and 11.0?" (PCC = 11.9").

TEST LOCATIONS:	J1	J2	J3	J4	J5
	-22	-29	BLK	-31	-30
	-04	-11	-03	-13	-12
	11	6	12	4	5
	24	19	25	17	18
	40	33	41	31	32
	--	--	--	49	50

DISTRESS COMMENTS:

Sta J1 - Midpanel tests.

-22 LP ADJACENT TO INSTRUMENTATION HOLE

Sta J2 and J3 - Corner and Mid-edge tests.

Sta J4 and J5 - Load transfer tests in the OWP.

PIEZOMETER - Sta 0+11, 1.0? feet from edge of paved shoulder, Depth = 4.766M.
(Located longitudinally at midpanel of third panel tested.)

ELEVATIONS - DOT BM @ Sta. 0+31 and 68 feet from edge stripe (1.0' in from fence)
Note: Piezometer is not anchored, but is still used as second reference for elevation surveys.

Offsets:	PE	ML	ILE	
	(M)	0.30	1.83	3.35
	(ft)	1.0	6.0	11.0
		(hole)	(hole)	(hole)

Sta:	--	BJ/AJ	-31	-13	4	17	31	49
	--	at MP	-22	-4	11	24	40	
		(only AJ at -31 and BJ at 49)						

FAULTMETER Offsets:	OWP	ML	IWP	
	(M)	0.76	1.83	2.90
	(ft)	2.5	6.0	9.5

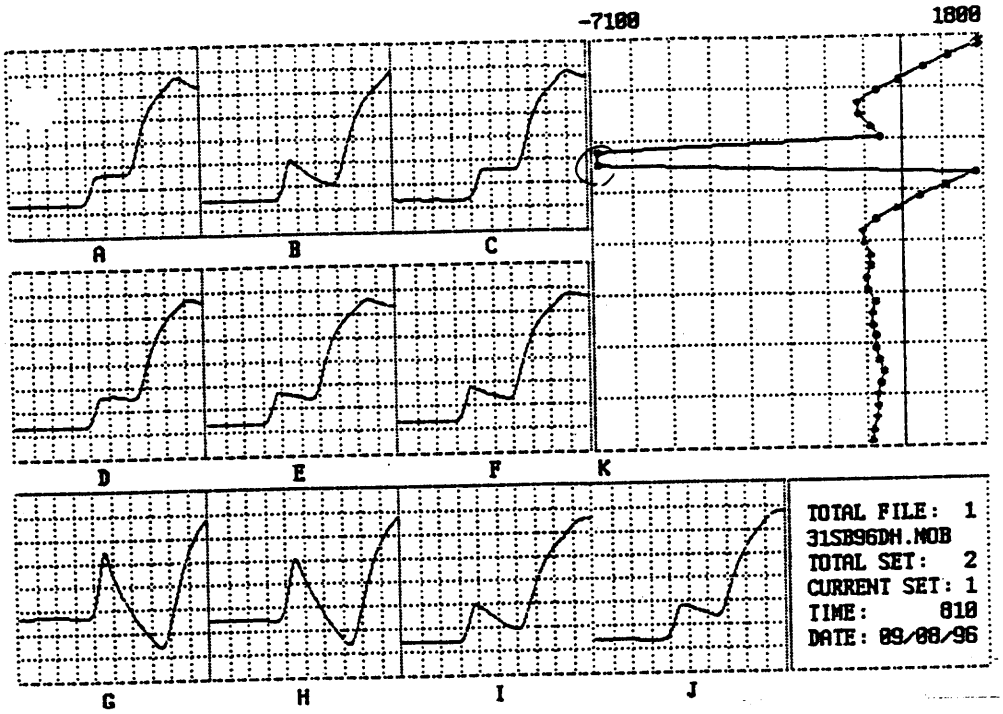
Sta:	-31	-13	4	17	31	49

COMMENTS

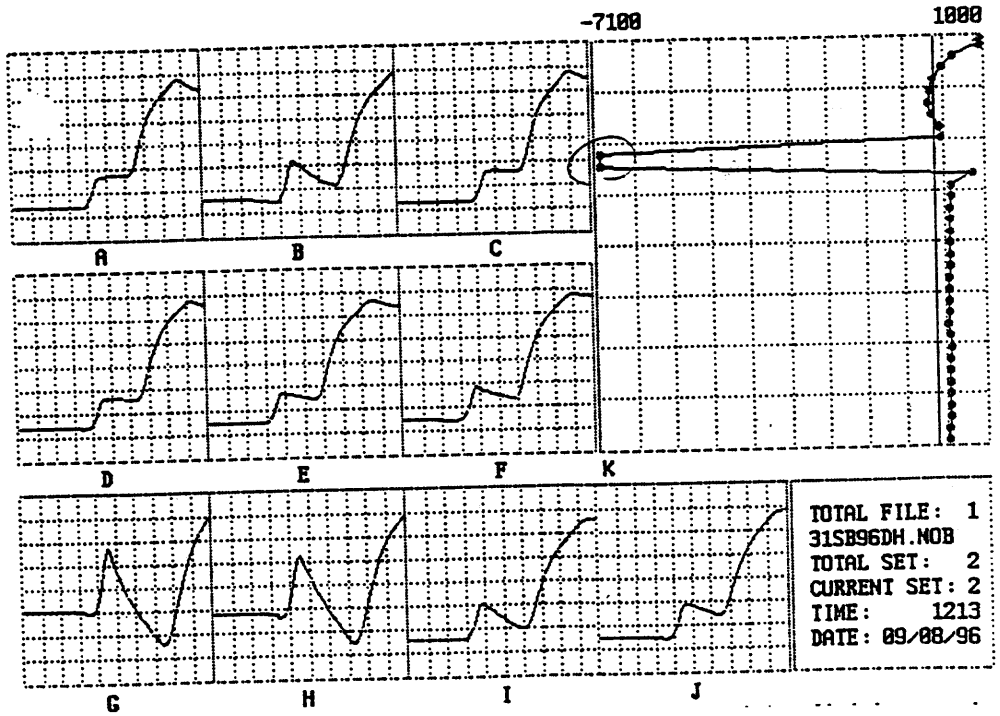
N:\LTPP\NCRCO\TASK_A\SMP\SLOOP\SIS\31SB\31SB95J.WPD

Appendix D - Instrument and Equipment Evaluation Plot

- TDR Traces



Changed to -1



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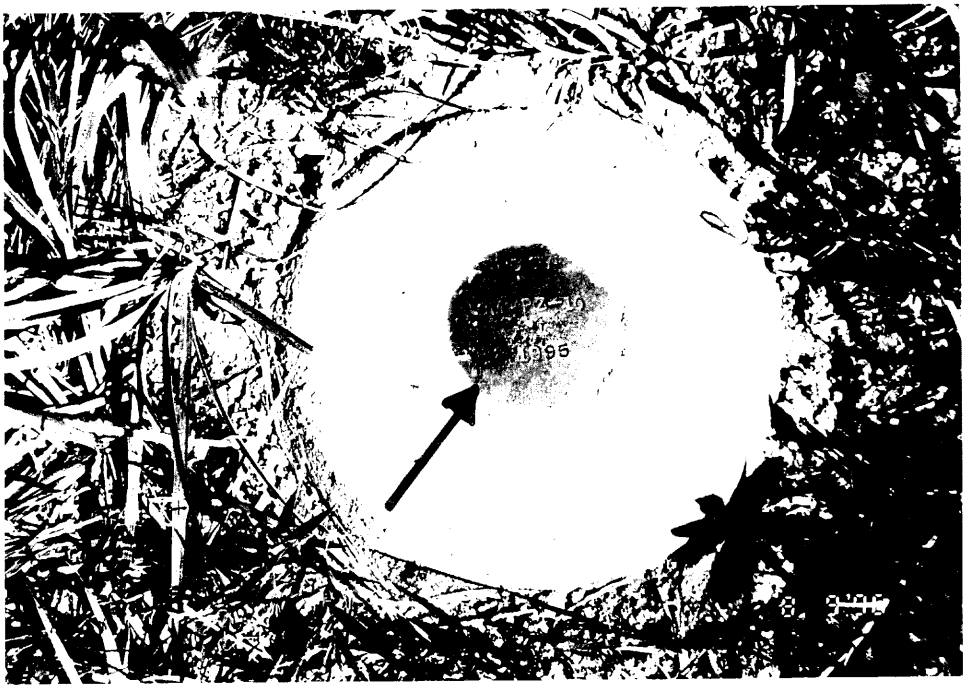
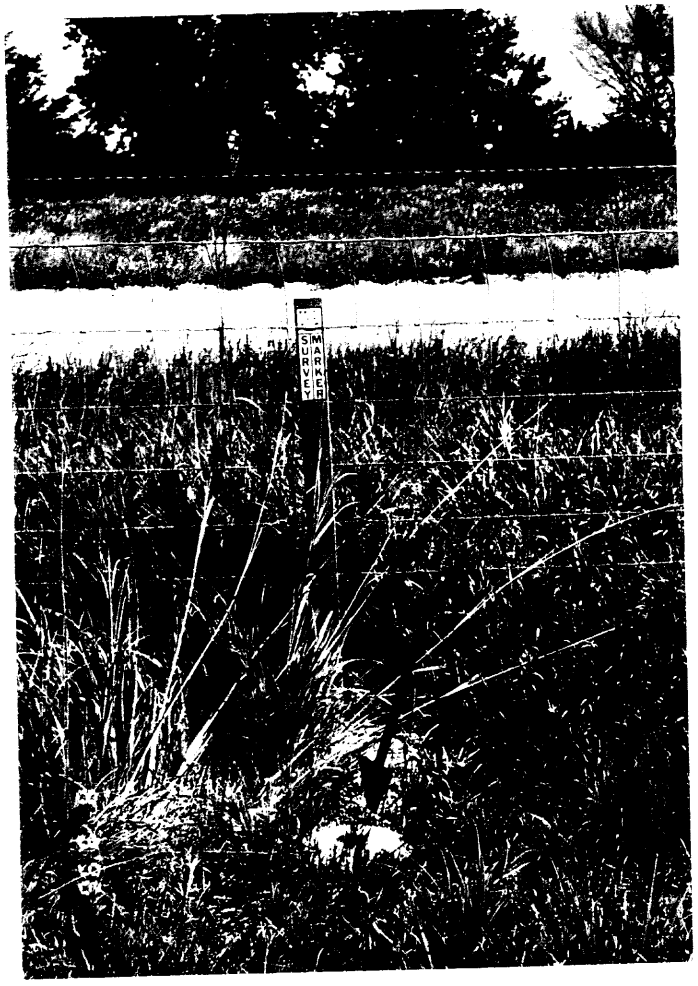
Appendix E - Photographs

Photograph #1 ⇒

⇐ Photograph # 2

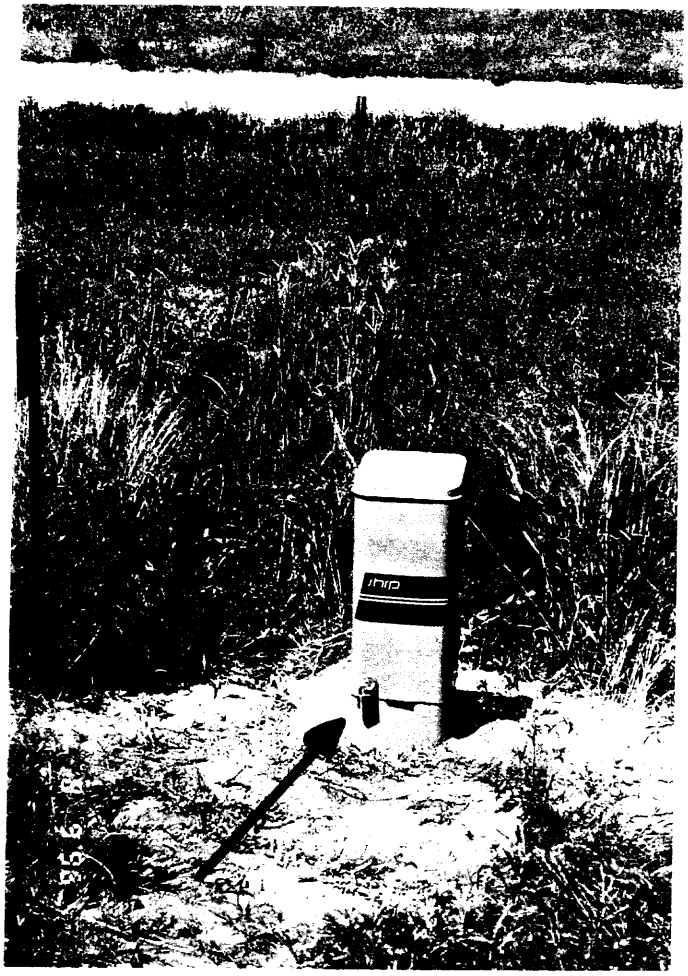
Photograph # 3 ⇒



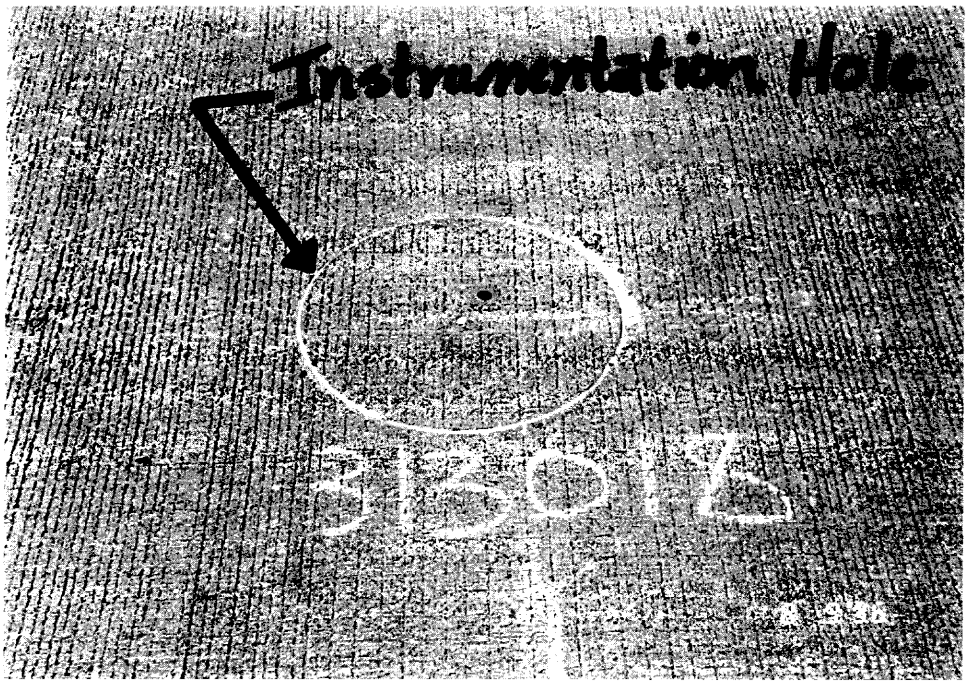


⇐ Photograph # 4

Photograph # 5 ⇒



⇐ Photograph # 6



Photograph # 7