LTPP Seasonal Monitoring Program

Site Installation Report for GPS Section 183002 (18A) Lafayette, Indiana

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Report No. FHWA- February 1996

LTPP Seasonal Monitoring Program

Site Installation Report for GPS Section 183002 (18A) Lafayette, Indiana

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Report No. FHWA-

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Prepared for

Federal Highway Administration
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McLean, Virginia 22101-2296

February 1996

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
FHWA-		

4. Title and Subtitle	5. Report Date
LTPP Seasonal Monitoring Program Site Installation Report for GPS Section 183002 (18A) Lafayette, Indiana	February 1996
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
Robert J. Van Sambeek and Ronald R. Urbach	DBNX92700-B6-18A

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Braun Intertec Corporation 6875 Washington Avenue South, P.O. Box 39108 Minneapolis, Minnesota 55439-0108	11. Contract or Grant No. DTFH61-92-C-00009

12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
Federal Highway Administration LTPP-Division, HNR-40 Turner-Fairbanks Highway Research Center 6300 Georgetown Pike McLean, Virginia 22101-2296	Final Report September 1995 - January 1996
	14. Sponsoring Agency Code

15. Supplementary Notes

Contracting Officer's Technical Representative - Aramis Lopez, HNR-40

16. Abstract

This report contains instrumentation installation details and data collection summaries for GPS test section 183002, which is a core section in the LTPP Seasonal Monitoring Program. This jointed plain concrete (JPC) pavement section on U.S. Highway 41 about 50 kilometers northwest of Lafayette, Indiana was instrumented September 7, 1995. Instrumentation included time domain reflectometry (TDR) probes to estimate moisture content in unbound pavement layers, thermistor probes to measure pavement structure thermal gradients and air temperature, electrical resistivity probe to predict frost/thaw conditions, piezometer to measure water table depth below the pavement surface, snap rings to measure joint opening, and tipping-bucket rain gauge to measure precipitation.

Monitoring data was collected the day after instrument installation and roughly on a monthly basis from September 1995 to January 1996, and data collection is expected to continue through July 1996 to complete the current monitoring cycle. In addition to temperature and precipitation data that are collected continuously by a datalogger at the site, monitoring data each month usually includes Falling Weight Deflectometer data, joint faulting data, joint opening data, TDR probe readings, frost/thaw readings, and piezometer readings. On a less regular basis, longitudinal profile data, pavement surface elevation data, and manual distress data are collected as required by FHWA guidelines. A summary of data collected is included in the report.

17. Key Words	18. Distribution Statement
Long Term Pavement Performance, LTPP, Pavement Instrumentation, Seasonal Monitoring Program, SMP, Time Domain Reflectometry, TDR, Resistance, Frost, Thaw, Temperature, Thermistor, Water Table, Piezometer, Falling Weight Deflectometer, FWD, Joint Faulting, Joint Opening	

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price

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LTPP Seasonal Monitoring Program
Site Installation Report for GPS Section 183002 (18A)
Lafayette, Indiana

I. Introduction

This report contains information specific to instrument installation and monitoring data collection for the Long Term Pavement Performance (LTPP) General Pavement Study (GPS) section 183002, which is part of the core Seasonal Monitoring Program (SMP) under the Federal Highway Administration (FHWA) LTPP Division. This pavement section was instrumented on September 7, 1995, and will have regular data collection through July 1996. The section will be monitored every other year under the LTPP Study for a ten-year period or until it is removed from the study.

A. Test Site Location

GPS section 183002 is located about 50 kilometers northwest of Lafayette, Indiana on the southbound driving lane of U.S. Highway 41.

B. General Test Section Information

This four-lane divided highway had the original 240-mm thick jointed plain concrete (JPC) pavement placed in 1976. The rest of the pavement structure consists of a 140-mm thick crushed-stone base on a fine-grain subgrade. Additional background information about the section is located in Appendix A-1. This information includes, but is not limited to, the following items:

- SMP location map;
- Detailed section location map;
- SHRP Inventory Data Sheet - traffic, design factors, and layer information;
- SHRP Section Field Verification Form;
- IMS L05A and L05B tables - layer thickness and material type; and
- LTPP Form S04 - base and subgrade moisture data.

Relevant pre-installation monitoring data for the section located in Appendix A-2 includes the following:

- Pre-installation pavement distress data;
- Pre-installation FWD data (includes tests outside the section limits); and
- FWDCHECK program uniformity analysis results.

C. SMP Test Section Information

The geographic location and existing pavement structure place this section in Cell 20 of the SMP experiment, which is defined by the following parameters:

- JPC pavement;
- Fine-grain subgrade;
- Freezing environment; and
- Wet environment.

This was the thirteenth SMP installation in the LTPP North Central Region, and highlights of the installation are summarized in Section IV of this report. Data forms from the LTPP Seasonal Monitoring Program: Instrumentation and Data Collection Guidelines, April 1994, were used for this installation, and the people involved with the installation are listed on "Data Sheet SMP-I01: List of Installed Instrumentation," which is included in Appendix C-1 along with the other SMP installation forms.

II. Instrumentation Installation

A. Pre-Installation Activities

Mr. Donald Lucas of the Indiana Department of Transportation (INDOT or referred to as "the agency" in this report) was initially contacted regarding potential sections identified for the seasonal monitoring pilot activities started in 1991 under the Strategic Highway Research Program (SHRP). General Pavement Study (GPS) section 184042 was identified as a potential SMP site at that time.

In 1993, Mr. Yi Jiang was contacted to confirm continued agency support for core sections in the SMP study administered by the FHWA LTPP Division. The agency could not guarantee deferred rehabilitation for GPS section 184042 which had been selected under the SHRP SMP pilot, and GPS section 183002 was identified as an alternative section. The agency was willing to support GPS section 183002 and agreed to defer any pavement rehabilitation at least the five years required to get three years of monitoring data that is collected every other year. This section was scheduled for installation in 1994. However, in 1994, FHWA LTPP Division staff elected to delay any additional installation for one year to allow a full year of monitoring on the sections installed the fall of 1993.

In 1995, Ms. Rebecca McDaniels was contacted to see if the agency was still willing to participate in the SMP and whether any maintenance was scheduled for GPS section 183002 before the year 2001. The agency was still willing to participate and defer any rehabilitation on the section, and an SMP pre-installation meeting with the agency was scheduled for July 25, 1995. In addition, pre-installation monitoring activities for GPS section 183002, including both FWD testing and a manual distress survey, were scheduled for April 18, 1995 so final installation details could be based on recent monitoring data.

Early on July 25, 1995, Regional Coordination Office (RCO) staff visited GPS section 183002 to identify any installation concerns with the site, and field notes from the site visit are included in Appendix B-1. After the site visit, RCO staff travelled to Lafayette, Indiana for the pre-installation meeting.

Agency staff involved with instrumentation installation and monitoring activities for GPS section 183002 attended the pre-installation meeting. A presentation was given on the SMP, arrangements were made for the agency to supply equipment and materials required for the installation, and an installation date was set for agency staff to verify availability of equipment and materials. The agency was interested in cutting a 0.40-m long by 0.96-m wide block from the outer wheel path to the pavement edge so reinforcing steel could be used to tie the pavement repair into the existing pavement. Also, the agency agreed to investigate installation of a benchmark at the site. The agenda, list of participants, and notes from the pre-installation meeting are included in Appendix B-1.

At the RCO, pre-installation activities included performing instrumentation checks/calibrations, and incorporating improvements to the installation process based on previous installations done in 1993 and 1994. Recommended improvements to the installation process resulting from instrumentation of GPS section 183002 are listed in Section IV of this report, and results from instrumentation checks/calibration are included in Appendix B-2 using the following forms:

- Data Sheet SMP-C01: TDR Probe Check;
- Data Sheet SMP-C02: Thermistor and Air Temperature Probe Check;
- Data Sheet SMP-C03: Electrical Resistivity Probe Check;
- Data Sheet SMP-C04: Function Generator, Multi-meter, and Switch Box Checks; and
- Data Sheet SMP-C05: Tipping-Bucket Rain Gauge Calibration.

For the air temperature and thermistor probes, checks were done using the datalogger to monitor the 19 temperature readings for the two probes simultaneously for tests run in an environmental chamber for about 12 hours at both 1.4°C and 38.9°C. The probes were left connected to the datalogger for several days after the check to verify their continued operation and consistency among the 19 temperatures recorded. The tipping-bucket rain gauge was also calibrated during this time period with data stored on the datalogger. Datalogger serial number 16545, which was originally tested for this installation, had a defective channel for the air temperature probe, and it was replaced with datalogger serial number 16588.

For the resistivity probe, loose electrode wraps were tightened by twisting the lead with a needle-nose pliers, and lead wires sticking out of the potting material for the probe were covered with silicon sealant for protection during installation. Excess potting material was scraped off the electrodes for better contact with the soil.

Pre-installation activities also required selection of the instrumentation location. From field observations during the July 25, 1995 site visit and FWDCHECK program analysis for the section, the five panels from Station 4+42 to Station 5+22 were selected for monitoring, and instrumentation would be placed at Station 5+12, based on the following items:

- No distress was noted in the five panels to monitor, except for a few pop outs. However, the joints at about Station 0-20 and Station 0-05 both had distress extending about 1.0 m into the driving lane from the pavement edge, and these joints would have defined the panel to instrument on that end of the section.

- FWDCHECK analysis results were more uniform for the Volumetric Modulus of Subgrade Reaction.

- The joint at Station 5+04 allowed instrumentation to be placed in the panel adjacent to the section limits without having to skip a panel.

B. Installation Activities

The SMP instrumentation installation itinerary for Indiana included travel, installation, and data collection time for one site over a three-day period. On September 6, 1995, RCO staff traveled to Lafayette, Indiana. On September 7, 1995, instrumentation installation was completed with some final installation activities continued on the following day. The following installation forms are included in Appendix C-1 along with field notes and photographs of the installation:

- Data Sheet SMP-I01: List of Installed Instrumentation;
- Data Sheet SMP-I02: Instrumentation Locations;
- Data Sheet SMP-I03: Log of Piezometer Hole;

- Data Sheet SMP-I04: Log of Instrumentation Hole;
- Data Sheet SMP-I05: Field Gravimetric Moisture Contents;
- Data Sheet SMP-I05(A): Lab Gravimetric Moisture Contents;
- Data Sheet SMP-I05(B): Gravimetric Moisture Comparison;
- Data Sheet SMP-I06: TDR Moisture Content; and
- Data Sheet SMP-I07: Representative Dry Density.

Piezometer installation was done according to protocol. A 0.6-m long access tube was set in concrete just below the existing shoulder material to protect the top of the piezometer and provide easy access for measurements. A 3.0-m long grease sleeve was used on this piezometer to isolate the piezometer from frost heave. The grease sleeve extends about 0.2 m up into the access tube and the space between the two is filled with sand. RCO staff will have to monitor piezometer settlement because the hole was drilled too deep, and water in the hole made it difficult to compact material placed below the piezometer. Additional field notes on piezometer installation are included in Appendix C-1.

A 0.40-m long by 0.96-m wide block was marked on the pavement surface from the outer wheel path to the shoulder at Station 5+12 for the instrumentation hole as discussed at the pre-installation meeting. FWD testing was done on the panel from Station 5+03 to Station 5+22 including a test over the instrumentation hole. Additional FWD testing on the section was not possible because the drill rig used to install the piezometer was blocking access to the pavement. The drilling crew had stopped working while it rained, and there was potential for lightning. The rain caused about a one-hour delay.

The block was sawed after FWD testing over the instrumentation hole was done. Even though air temperatures were mild the day of the installation, the pavement saw got stuck when compressive forces in the pavement closed the saw cut as the first transverse cut was finished. It took about one hour to get a jack hammer to free the saw blade and finish cutting the pavement. The block was jack hammered into pieces and removed from the hole.

The drill rig was moved into position over the instrumentation hole, and the crushed-stone base and top subgrade soils were removed in 0.15-m lifts and placed in sealed buckets. However, at a depth of about 0.6 m below the pavement surface, it was discovered that the drill rig did not have an extension for the 280-mm diameter auger provide by the RCO, and the hole needed to be drilled to about 1.9 m below the pavement surface. The largest auger the drill rig had was 180-mm diameter, but the TDR probes required a hole at least 240-mm diameter.

There was a one-hour delay while the drill rig operator checked with other crews in the area and with the agency drilling department for an extension or alternative auger. RCO staff called the Technical Assistance Contractor (TAC) for LTPP to inquire about placement of TDR probes 9 and 10. TAC advised the RCO staff to try installing all ten TDR probes, but if necessary, a smaller diameter hole could be drilled from 1.37-m deep to 1.90-m deep to place the resistivity probe and thermistor probe.

As a solution, the drill rig operator agreed to have agency staff weld additional teeth to a cutting head for the 160-mm diameter auger that was available to increase the tip diameter to about 205 mm. This was still smaller than the 240-mm diameter required for the TDR probes, but RCO staff agreed to dig out the side of the hole where required to place the TDR probes. The additional subgrade soil was put into buckets as it was removed from the hole in 0.15-m lifts to the required depth of 1.9 m.

Slots were cut through the subgrade soil along the sides of the hole for the resistivity and thermistor probe to increase the area for the TDR probes and space for compaction equipment. For TDR probes 7 through 10, the side of the instrumentation hole was dug out to a diameter sufficient to place the probes. The remaining TDR probes were placed according to protocol with TDR probe 1 mid-depth in the base layer.

All the sensor cables were pulled through the flexible metal conduit supplied by the RCO, and the conduit was buried in a 0.3-m deep trench that had been dug between the highway and datalogger cabinet. The pavement thermistor probe was placed in the saw cut on the southeast corner of the block with the tip of the probe 20 mm below the pavement surface.

A wire brush was used to clean the hole, and quick-set concrete patching material was used to fill the hole and bond the pavement thermistor probe into the saw cut. No reinforcing steel was installed because it was late and the patching material needed time to set up before the lane could be opened to traffic. As of January 26, 1996, the block has settled an average of 8.0 mm which has caused some spalling and a chipped corner on the repair. See photographs in Appendix D-2.

Installation of the datalogger cabinet and weather pole were completed, and the datalogger was initiated to collect data to confirm operation the following day. Agency staff remained at the site until the quick-set concrete had set up sufficiently to remove the lane closure.

For installation reports from the LTPP North Central RCO, "Data Sheet SMP-I05(A): Lab Gravimetric Moisture Contents," is used to report agency laboratory moisture results. Also, "Data Sheet SMP-I05(B): Gravimetric Moisture Comparison" was created to summarize moisture data obtained from field moisture tests, laboratory moisture tests, and interpretation of TDR probe data. These forms, along with a plot of the moisture results, are included in Appendix C-1, and the following assumptions and conclusions were made regarding the moisture data:

- LTPP Directive Number: SM-13 "TDR Trace Interpretation Method for Calibration and Function Checks" dated August 17, 1995 was used to interpret the apparent length of each TDR trace obtained during installation for estimating moisture results. This method was specified for "calibration and function checks," but no other method had been distributed by FHWA LTPP staff. The interpreted apparent lengths are reported on "Data Sheet SMP-I06: TDR Moisture Content" in Appendix C-1.

- Equations on pages II-2 and II-5 of the LTPP Seasonal Monitoring Program: Instrumentation Installation and Data Collection Guidelines, April 1994 were used to convert apparent lengths to gravimetric moisture estimates for the base and subgrade materials, and the results are included on "Data Sheet SMP-I05(B): Gravimetric Moisture Comparison," located in Appendix C-1. A plot comparing the TDR probe moisture data to the field and laboratory data is also included in Appendix C-1.

- The field moisture results averaged 1.6 percentage points greater than the laboratory moisture results.

- The average moisture estimate from all ten TDR probes was 19.2 percent, which is only 1.1 percentage points higher than the average from the field moisture tests.

- Answers to the following questions could help explain the differences seen in the moisture data, but they are beyond the scope of this report:

    1. Are the same equations appropriate for all materials on this site?

    2. Do estimates of dry density for the subgrade used to convert from volumetric to gravimetric moisture seem reasonable given the consistently higher moisture values from the TDR probes compared to the field and laboratory results?

    3. How much influence does compaction have on the results?

"Data Sheet SMP-I07: Representative Dry Density" was used to record test data obtained during the installation to estimate the dry density of the subgrade, and the form is included in Appendix C-1. The dry density obtained was 1.79 g/cm^3 compared to 1.83 g/cm^3 reported for the subgrade soil on SHRP Form S04 from tests done in 1990.

Several items were changed regarding installation of the datalogger cabinet and weather pole as follows:

- RCO staff were not able to get the 9.1-m offset from the lane edge specified on page II-23 and Figure II-12 of the LTPP Seasonal Monitoring Program: Instrumentation Installation and Data Collection Guidelines, April 1994 because the TDR cables provided were too short. The cabinet at this site is offset about 7.5 m and the weather pole is offset about 7.7 m. This places the obstructions inside the normal 9.15-m safety zone for highways. However, FHWA LTPP Division staff approved the two obstructions as break-away objects (page II-32 of manual) for placement inside the safety zone.

- The bottom of the front panel on the datalogger cabinet was notched about 0.1 m so the conduit buried about 0.3 m below the shoulder was easier to get into the cabinet, and it also slightly increased the distance the cabinet could be placed from the roadway.

- The conduit for the air temperature probe and tipping-bucket rain gauge signal wires was cut into the back of the cabinet above ground instead of running the conduit underground as shown in the guidelines. If the cables were run underground, the air temperature probe signal cable would have to be extended using special wire and resistors to compensate for increased lead resistance. Also, a union coupler was used on the weather pole about 0.3 m above ground to make pole installation easier.

III. SMP Data Collection

A. Initial SMP Data Collection

On September 8, 1995, final wiring of the datalogger in the cabinet was completed, test locations were marked on the pavement, the first set of SMP data was collected, and the saw cuts for the block were filled with crack sealant.

Two cycles of FWD data were collected, as well as manual data including joint faulting data, resistivity probe data, and piezometer data. Equipment problems made elevation data collection impossible until the next site visit in October. The RCO did not have access to the drill guide for installing snap rings for joint opening measurements until October 13, 1995, when three sets of joint opening data were collected. The October joint opening data and elevation data along with manual data collected September 8, 1995 are included in Appendix D-1 as follows:

- One set of contact resistance data;
- One set of four-point resistivity data;
- Two ground water table measurements;
- Three sets of joint opening measurements;
- Two sets of joint faulting measurements; and
- One set of elevation data.

Data from the piezometer should not be entered into the IMS database because low permeability for the soils on this site will require several days for piezometer readings to stabilize.

Datalogger files obtained from automated data collection included the following:

- Two sets of TDR traces and CRREL voltages; and
- Temperature and precipitation data collected overnight.

Temperature data from the thermistor probe should not be entered into the IMS database because of heat given off by the quick-set patching material used to repair the pavement and disturbance of material around the probe. In addition, temperature data up to several days after instrument installation will have to be reviewed to determine when the disturbed materials came back to thermal equilibrium. Data affected by the installation will have to be edited from the computer files.

The agency installed a benchmark at Station 5+19 and offset -6.86 m from the section on November 16, 1995. Additional details on the benchmark installation are included in Appendix C-1.

B. Routine SMP Data Collection

Routine data collection done on the site from September 8, 1995 through January 26, 1996 is summarized on LTPP's standard data tracking log included in Appendix D-2. Data collection is expected to continue through July 1996 to complete the current monitoring loop.

Events that influenced data collection and that will influence data interpretation include the following:

- Some water may be seeping into the base because the concrete block is settling and cannot be sealed until the block is stable.
- On September 9, 1995, the thermistor mid-depth in the concrete was not consistent with the other two thermistors in the pavement.
- On about September 23, 1995, the pavement thermistor probe started reading about -90°C for the three temperatures in the pavement. The probe has only worked intermittently since that time. These temperature data are not available, except for manual readings done during FWD testing roughly one day per month. See screen prints of data in Appendix D-2.
- The piezometer hole was dug too deep and water in the hole made it difficult to compact material placed below the piezometer. The stability of the piezometer as an elevation reference is questionable for data collected in 1995. Elevation data collected starting January 26, 1996 uses the agency benchmark installed at the site on November 16, 1995 as the primary elevation reference.
- On January 26, 1996, the snap ring located at midlane for Station 4+59 was missing, and a new snap ring was installed. This may influence continuity of data if the snap ring was not exactly the same size.
- Unstable resistivity probe readings were noted for data collected January 24, 1996. For these data, the average value observed will be entered into the IMS database.

Instrumentation and equipment problems at the site include the following:

- The datalogger for recording temperature and precipitation data had a defective channel for the air temperature probe, and it was replaced.
- The pavement thermistor probe failed about September 23, 1995.
- Cold temperatures caused spikes in various TDR traces on October 13, 1995; November 20, 1995; December 8, 1995; and January 26, 1995. Screen prints in Appendix D-2 show the spikes.
- The snap ring midlane at Station 4+59 was missing on January 26, 1996, and a new one was installed.
- The digital caliper used to measure joint openings got wet in the rain and quit working on January 26, 1996.

Other problems experienced at the site include failures with switch boxes used to collect manual resistance/resistivity data and failures of the CRREL multiplexer for automated resistance data collection. Print screens showing the failure modes for the CRREL multiplexer are included in Appendix D-2.

IV. Summary, Conclusions, and Recommendations

A. Instrumentation Installation Highlights

The following items are identified by the authors as unique or particular items of interest regarding this section in the SMP.

- This was the thirteenth SMP installation in the LTPP North Central Region, and GPS section 183002 is the oldest concrete SMP section in the North Central Region.
- This was the first installation by the RCO where the instrumentation block was cut full width from the outer wheel path to the shoulder.
- This site had to be opened to traffic before the pavement repair had time to fully cure, and some additional repairs may need to be done on the site after the block stops settling.

B. Recommendations for Improving Installations

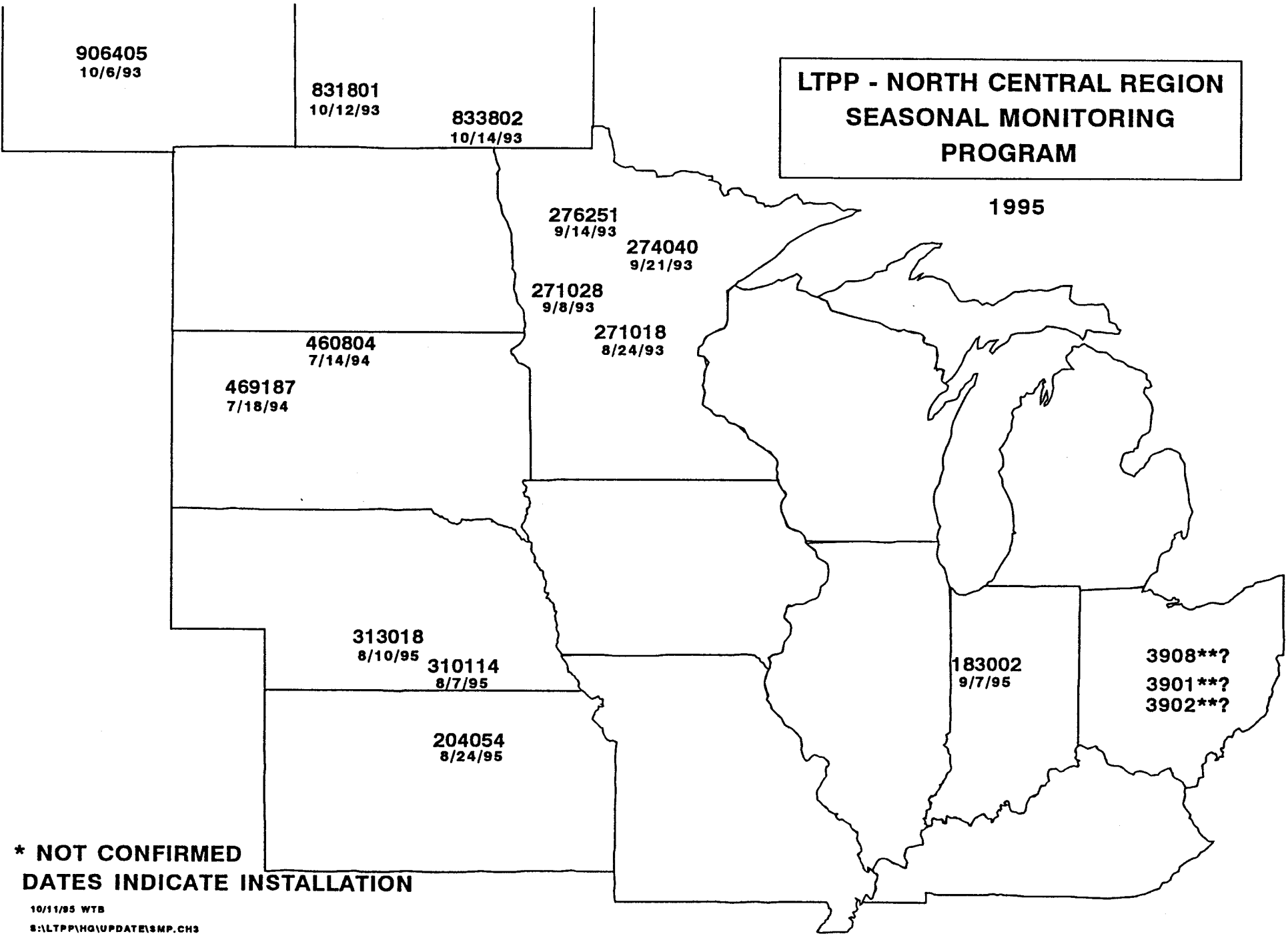
In addition to previous modifications from other installations, the following procedure and equipment changes from protocol were used during this installation or are recommended for future installations:

- For this installation, the sides of the instrumentation hole had to be dug out to place the TDR probes. However, the RCO did not have a good tool for this, and a long handled spade should be included in the tool inventory for additional installations.
- For this installation, reinforcement was supposed to have been installed to tie the pavement repair into the existing pavement. However, this was not done and the block is settling. On any additional concrete installations, where quick-set patching material is used, the patch should be tied into the existing pavement, because the patching material shrinks as it cures.

Appendix A-1: Test Section Background Information

Appendix A-1 contains the following test section background information:

- SMP location map;
- Detailed section location map;
- SHRP Inventory Data Sheet - traffic, design factors, and layer information;
- SHRP Section Field Verification Form;
- IMS L05A and L05B tables - layer thickness and material type; and
- LTPP Form S04 - base and subgrade moisture data.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LTPP - NORTH CENTRAL REGION
SEASONAL MONITORING
PROGRAM
1995
276251
9/14/93
274040
9/21/93
271028
9/8/93
271018
8/24/93
460804
7/14/94
469187
7/18/94
313018
8/10/95
310114
8/7/95
204054
8/24/95
183002
9/7/95
3908**?
3901**?
3902**?
* NOT CONFIRMED
DATES INDICATE INSTALLATION
10/11/95 WTB
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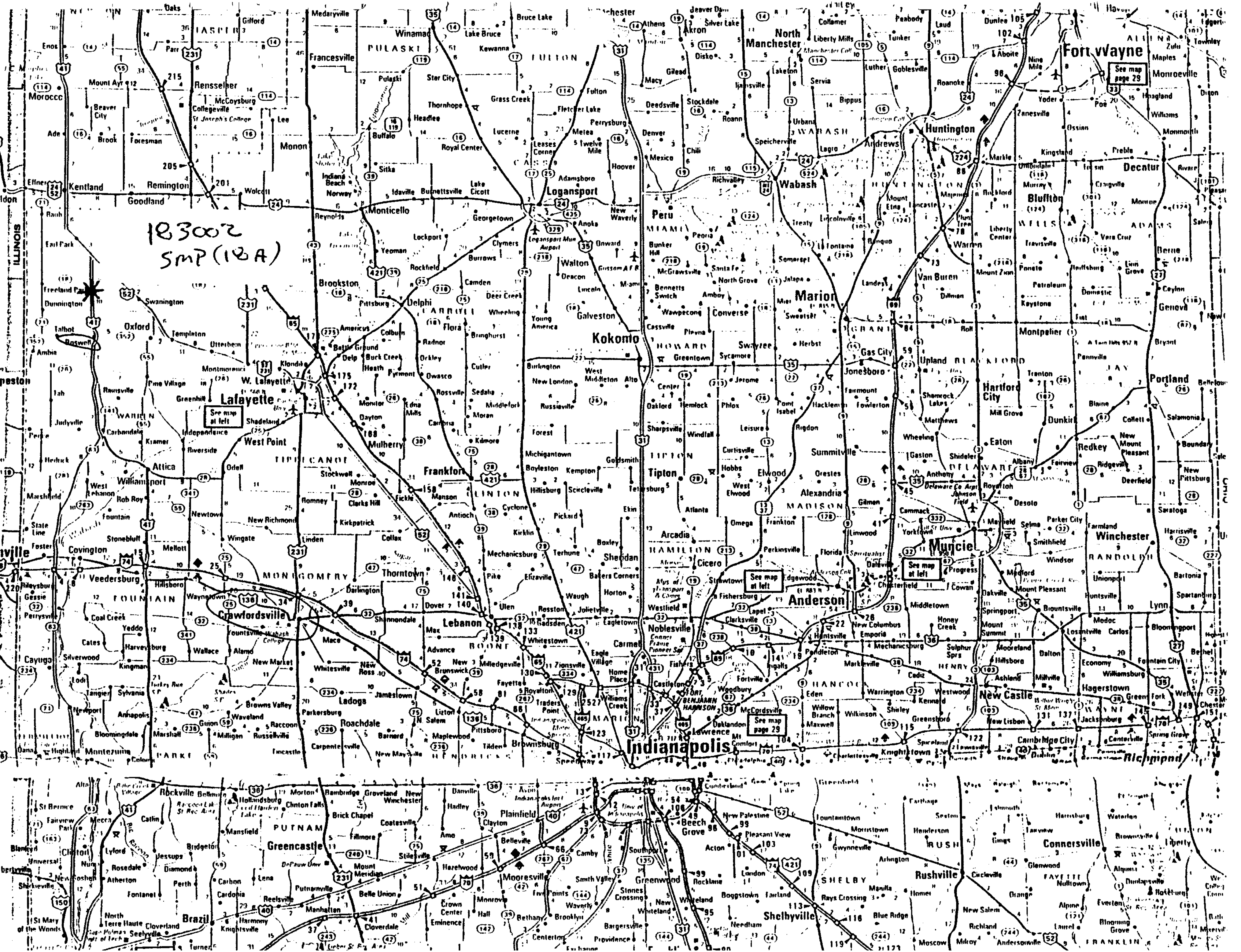


18300Z
SMP (12A)

STRATEGIC HIGHWAY RESEARCH PROGRAM
GENERAL PAVEMENT STUDIES
Long-Term Pavement Performance Monitoring
Project Information Sheet

REGION: North Central PAVEMENT TYPE: Jointed Plain Concrete
STATE: Indiana

SHRP Assigned ID:	183002	District:	10	Year Open:	1976
State Assigned ID:	3003	Highway:	U.S.- 41	Year Traffic:	1985
Design Cell ID:	3- 2	Length:	7.9 miles	AADT:	4190
		Lanes:	2	Trucks:	12.0 %
		Shoulder Surface Type:	Unspecified		
		Project Status:	Approved		

DESIGN FACTORS - Moisture: Wet
Temperature: Freeze
Subgrade: 53 - Silty Clay
Traffic: 99 KESAL/Yr
Base Type: Granular
PCC Thickness: 9.0 in.
Dowels: Yes

LAYER CONFIGURATION

LAYER NO.	LAYER DESCRIPTION	LAYER THICKNESS	LAYER MATERIAL TYPE
3	3 - Orig Surface	9.0	4 - Portland Cement Concrete (JPCP)
2	5 - Base Layer	6.0	23 - Crushed Stone, Gravel, or Slag
1	7 - Subgrade		53 - Silty Clay

PAVEMENT LAYER INFORMATION

LAYER NO.	PORTLAND CEMENT CONCRETE LAYERS JOINT SPACING	DOWELS	REINFORCING	CRCP STEEL
3	15.5	Yes	No	

Revised June 8, 1988

SECTION FIELD VERIFICATION FORM

Date 11-30-88

Rater C.T. KELLER

State Project Code 3003
State Code 18
SHRP Section I.D. 3002

Project and Section Identification

State District No. 10

County or Parish BENTON 2

Route Signing (Numeric Code)
- Interstate 1
- Primary 2
- State 3
- Other 4

Route Number US-41

LTPP Experiment Code 3-2

Number of Through Lanes (One Direction) 2

Direction of Travel 4 SB
- Eastbound 1
- Westbound 2
- Northbound 3
- Southbound 4

Available Project Length (Without Discontinuities) 7.9 MILES

	Start Point	End Point
Test Section ~~Milepoints~~ STATIONS	289+99	284+99

Additional Section Location Information*: SECTION LOCATED APPROXIMATELY 1.7 MILES SOUTH OF SR 18. STATIONING STENCILED IN PVT.

* Include distances from two landmarks (refer to specific procedures outlined in the Initial State Visit Guidelines).

Location of monument: OUTSIDE EDGE OF SHOULDER AT START AND END OF SECTION.

Geometric Information

Lane Width (Feet) 12.0

Lane (By Number) Included in Monitoring Section 1

(Lane 1 is Outside Lane, Lane 2 is Next to Lane 1, etc.)

Shoulder Data:	Outside Shoulder	Inside Shoulder
Total Width (Feet)	10.5	4.0
Paved Width (Feet)	10.5	4.0
Surface Type		4

Surface Type
- Turf 1
- Granular 2
- Asphalt Concrete ... 3
- Concrete 4
- Surface Treatment 5
- Other 6

Additional Data for PCC Shoulders:

	Outside Shoulder	Inside Shoulder
Average Joint Spacing (Feet)	16.0	16.0
Skewness of Joints (Feet)	1.8	0.7
Joints Match Pavement Joints? (Yes - 1; No - 2)	1	1

Revised June 8, 1988

SECTION FIELD VERIFICATION FORM (CONTINUED)

State Code
SHRP Section I.D. 18 3002

Vertical Alignment (from plans)

Cut, Fill, or At Grade: FILL
Depth of Cut/Fill at Start of Section: 4 FT. FILL
Depth of Cut/Fill at End of Section: 2 FT. FILL

Joint Information for JCP

Average Contraction Joint Spacing (Feet) 16.0
Average Intermediate Sawed Joint Spacing (Feet) (JRCP Only)
Skewness of Joints (Feet/Lane) 2.0

CORE 1 (Beginning of Project)

Layer No.	Layer Types*	Thickness	Brief Material Description
1	Subgrade (G)		
2			
3			
4			
5			
6			
7			

Notes:

CORE 2 (End of Project)

Layer No.	Layer Types*	Thickness	Brief Material Description
1	Subgrade (G)		Silty clay - trace sand & gravel
2	Base (B)	5.5"	Sandy gravel
3	Surface (P)	9"	PCC
4			
5			
6			
7			

Notes:

*Layer Types: A - HMAC/Surface Treatment, P - PCC Layer, B - Base/Subbase, G - Subgrade

Revised June 8, 1988

DISTRESS SURVEY FORM
PCC Surfaced Pavements
(GPS Experiments 3,4,5,9)

Date 11-30-88

Rater C.T. KELLER

State Code 18

SHRP Section ID 3002

	Severity Level		
	Low	Medium	High
1. "D" Cracking (Linear Feet of joints, cracks, and free edges affected)*			
2. Joint Seal Damage** (Number of joints)			
3. Longitudinal Cracking (Linear Feet)			
4. Patch or Slab Replacement Deterioration (Number and Sq. Ft.)			
5. Pumping (Check highest severity found)			
6. Transverse Cracking (Number of Cracks)			

7. Corner Break** (Number) _____

8. Average Faulting**
   - < 0.4" ✓
   - 0.4-0.8" _____
   - > 0.8" _____

* Measured as percent surface area for CRCP.
** Not applicable to CRCP.

Comments Longitudinal crack at shoulder/lane 1/8"-1/4" sealed. 10 l.f. of grinding at Sta 3 performed. Blowup (pothole) located 8 ft. South of Sta 3, 2 1/2' ft. west of ℄ with piece of reinforcing steel embedded in bottom approximately 12"x6"x2". Joints sealed and in good condition.

Revised June 8, 1988

OFFICE PLAN REVIEW FORM

(Potential Monitoring Section)

State Project Code 3003
State Code 18
SHRP Project ID 3002

Potential Monitoring Section Station Boundaries: 1) 294-285
2) -

Reference Landmarks: _____

Length of Potential Section: _____

Cut, Fill, or At Grade: FILL

Depth of Cut or Fill at Start of Section: _____

Depth of Cut or Fill at End of Section: _____

Differences between previously submitted data and plans: _____

Comments: _____

Field Notes*: _____

*Include distress information obtained while driving over section.

SHRP/LTPP LAYER THICKNESS

L05A - L05B TABLES "L05_A_B"

20-MAR-95

E**L05A DATA**			Gps Sps-- STA 0 ---------| |- WITHIN THE SECTION -|								|-------- STA 5 -------|				**L05B**									
- CN	L#	TYP-------		MATL	1	2	3	THICK	MATL	1	2	3	THICK	MATL	1	2	3	CN	L#	DESC	TYPE	THICK	MATL	1	2	3	COMMENT NOTE	INV
18 3002	1	1	SS		114	7								108	7			1	1	7	SS		114	E	N			1
	1	2	GB	5.5	303	4							5.5	303	4	6		1	2	5	GB	5.5	303	E			L05A CODES 253, 259	2
	1	3	PC	9.5	4	1	2	4					9.4	4	1	2	6	1	3	3	PC	9.5	4					3
18 3003	1	1	SS		216	7								214	7			1	1	7	SS		216	E	H			1
	1	2	TB	3.5	323	1	3	4					4	323	1	6		1	2	5	TB	3.8	323					2
	1	3	PC	10.2	4	1	3	4					10.2	4	1	6		1	3	3	PC	10.2	4					3
	2	1	SS		216	7								214	7			2	1	7	SS		216	E	H			1
	2	2	TB	3.5	323	1	3	4					4	323	1	6		2	2	5	TB	3.8	323					2
	2	3	PC	10.2	4	1	3	4					10.2	4	1	6		2	3	3	PC	10.2	4					3
	2	4	AC	999	1								999	1				2	4	4	AC	3.5	1				AC OVERLAY 7/7/93 (BINDER	
																		2	5	1	AC	1	1				AC OVERLAY 7/29/93 (SURFA	
18 3030	1	1	SS		114	7								114	7			1	1	7	SS		114				INV #1 AND #2 COMBINED	1
	1	2	TB	4.2	319	1	3	4					4.4	319	1	6		1	2	5	TB	4.3	319					3
	1	3	PC	8.4	4	1	2	4					7.7	4	1	2	6	1	3	3	PC	8	4					4
18 3031	1	1	SS		102	7								102	7			1	1	7	SS		102					1
	1	2	TB	4.8	321	1	2	3					4.4	321	1	2	6	1	2	5	TB	4.6	321				INV LAY 2 "NO BASE"	3
	1	3	PC	10	4	1	2	4					10.4	4	1	2	6	1	3	3	PC	10.2	4					4
18 4021	1	1	SS		114	7								114	7			1	1	7	SS		114					1
	1	2	TB	4.1	323	1	3	4					3.9	323	1	4	6	1	2	5	TB	4	323					2
	1	3	PC	10.9	5	1	2	4					11.4	5	1	2	6	1	3	3	PC	11.2	5					3
18 4042	1	1	SS		135	7								214	7			1	1	7	SS		214	E	H			1
	1	2	TB	4.2	319	1	3	4					4.1	319	1	3	4	1	2	5	TB	4.2	319					2
	1	3	PC	9	5	1	3	4					9.4	5	1	3	4	1	3	3	PC	9.2	5					3

SHRP-LTPP
FIELD MATERIAL SAMPLING
AND FIELD TESTING

STATE CODE ______
SHRP ASSIGNED ID 183002

RP REGION N/C
ATE INDIANA

P EXPERIMENT ______ ROUTE/HIGHWAY US 41 Lane 1 Direction S
PLE/TEST: (a) Before Section ______ (b) After Section X FIELD SET NO. 1

IN SITU DENSITY AND MOISTURE TESTS

DCG SHEET: 24

PERATOR Bob Bailey NUCLEAR DENSITY GAUGE I.D. 672 SHEET NUMBER 9 OF 23
EST DATE 7-25-90 LOCATION: STATION 5+72 TEST PIT NUMBER 1
ATE OF LAST MAJOR CALIBRATION 7-31-89 OFFSET 3 feet from o/s
ote: Use additional sheets if necessary

DEPTH FROM SURFACE TO THE TOP OF THE LAYER, INCHES (SEE S03)		9.4				17.4	
TEST TYPE		BASE COURSE TOP Result, pcf Wet	Dry	SUBBASE TOP Result, pcf Wet	Dry	SUBGRADE TOP Result, pcf Wet	Dry
MATERIAL TYPE: (Unbound–G Other–T)		G					
IN SITU DENSITY, pcf	1	141.3	130.8			132.6	112.7
	2	140.3	130.0			133.8	115.8
	3	138.0	127.6			134.0	115.0
(AASHTO T238-86)	4	139.3	128.6			132.5	112.8
AVERAGE		139.7	129.2			133.2	114.0
Method (A,B,or C)		B				B	
Rod Depth, inches		8				12	
IN SITU MOISTURE CONTENT, %	1	8.1				17.6	
	2	8.0				15.5	
	3	8.1				16.6	
(AASHTO T239-86)	4	8.3				17.4	
AVERAGE		8.1				16.7	

GENERAL REMARKS: ______

CERTIFIED [signature]
Crew Chief, Contractor
ffiliation: BEI

VERIFIED AND APPROVED [signature]
SHRP Representative
Affiliation: SME

MONTH-DAY-YEAR
7-25-1990
Date

Form S04/Issued 19 February 1990

Appendix A-2: Pre-Installation Monitoring Data and FWDCHECK Results

Appendix A-2 contains the following pre-installation monitoring data and FWDCHECK analysis results:

- Pre-installation pavement distress data;
- Pre-installation FWD data; and
- FWDCHECK program uniformity analysis results.

Revised May 29, 1992

STATE ASSIGNED ID ____

SHEET 4

DISTRESS SURVEY

LTPP PROGRAM

STATE CODE 18

SHRP SECTION ID 3002

DISTRESS SURVEY FOR PAVEMENTS WITH JOINTED PORTLAND CEMENT CONCRETE SURFACES

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) 06/14/95

SURVEYORS: TJL, ____, ____

PAVEMENT SURFACE TEMP - BEFORE 26 °C; AFTER 29 °C

PHOTOS, VIDEO, OR BOTH WITH SURVEY (P, V, (B)) B

DISTRESS TYPE	SEVERITY LEVEL LOW	MODERATE	HIGH
CRACKING			
1. CORNER BREAKS (Number)	00	00	00
2. DURABILITY "D" CRACKING (Number of Affected Slabs)	00	00	00
AREA AFFECTED (Square Meters)	00.0	00.0	00.0
3. LONGITUDINAL CRACKING (Meters)	00.0	00.0	00.0
Length Sealed (Meters)	00.0	00.0	00.0
4. TRANSVERSE CRACKING (Number of Cracks)	00	00	00
(Meters)	00.0	00.0	00.0
Length Sealed (Meters)	00.0	00.0	00.0
JOINT DEFICIENCIES			
5a. TRANSVERSE JOINT SEAL DAMAGE Well Sealed? (Y), N) If "Y" Number of Joints	30	02	Y 00
5b. LONGITUDINAL JOINT SEAL DAMAGE Number of Longitudinal Joints that have been sealed (0, 1, or (2))			2
Length of Damaged Sealant (Meters)			00.0
6. SPALLING OF LONGITUDINAL JOINTS (Meters)	00.0	00.0	00.0
7. SPALLING OF TRANSVERSE JOINTS Number of Affected Joints	07	02	02
Length Spalled (Meters)	00.8	00.5	01.1

Revised May 29, 1992

SHEET 5

DISTRESS SURVEY

LTPP PROGRAM

STATE ASSIGNED ID _ _ _ _

STATE CODE 18

SHRP SECTION ID 3002

DISTRESS SURVEY FOR PAVEMENTS WITH JOINTED PORTLAND CEMENT CONCRETE SURFACES (CONTINUED)

DISTRESS TYPE	SEVERITY LEVEL LOW	MODERATE	HIGH
SURFACE DEFORMATION			
8a. MAP CRACKING (Number)			0
(Square Meters)			0.0
8b. SCALING (Number)			1
(Square Meters)			0.2
9. POLISHED AGGREGATE (Square Meters)			0.0
10. POPOUTS (Number) outside 50' section			3.
MISCELLANEOUS DISTRESSES			
11. BLOWUPS (Number)			0
12. FAULTING OF TRANSVERSE JOINTS AND CRACKS - REFER TO SHEET 6			
13. LANE-TO-SHOULDER DROPOFF - REFER TO SHEET 7			
14. LANE-TO-SHOULDER SEPARATION - REFER TO SHEET 7			
15. PATCH/PATCH DETERIORATION			
Flexible (Number)	0	0	0
(Square Meters)	0.0	0.0	0.0
Rigid (Number)	0	0	0
(Square Meters)	0.0	0.0	0.0
16. WATER BLEEDING AND PUMPING (Number of Occurrences)			0
Length Affected (Meters)			0.0
17. OTHER (Describe) ________			

Revised May 29, 1992

SHEET 6

DISTRESS SURVEY

LTPP PROGRAM

STATE ASSIGNED ID ____

STATE CODE 18

SHRP SECTION ID 3062

06/14/95
TJ2

DISTRESS SURVEY FOR PAVEMENTS WITH JOINTED PORTLAND CEMENT CONCRETE SURFACES (CONTINUED)

12. FAULTING OF TRANSVERSE JOINTS AND CRACKS

Point[1] Distance (Meters)	Joint or Crack (J/C)	Crack Length (Meters)	Well Sealed (Y/N)	Length of Spalling, m L	Length of Spalling, m M	Length of Spalling, m H	Faulting (mm)[2] 0.3m	Faulting (mm)[2] 0.7m
24.4	J	-	-	-	-	-	1	1
71.9	J	-	-	-	-	0.7	1	1
92.7	J	-	-	0.1	-	-	1	1
117.3	J	-	-	-	-	-	1	0
141.4	J	-	-	-	-	-	1	0
166.9	J	-	-	-	-	-	0	1
192.6	J	-	-	0.1	-	-	2	0
216.6	J	-	-	-	-	-	1	0
240.2	J	-	-	-	-	-	1	1
265.7	J	-	-	-	-	0.4	1	1
291.6	J	-	-	-	0.5	-	1	0
315.5	J	-	-	0.2	-	-	1	0
339.2	J	-	-	-	-	-	0	0
364.6	J	-	-	-	-	-	1	0
388.4	J	-	-	-	-	-	0	0
411.4	J	-	-	0.1	-	-	1	0
438.0	J	-	-	-	-	-	1	0
462.5	J	-	-	-	-	-	2	0
487.3	J	-	-	-	-	-	0	0
512.2	J	-	-	0.1	-	-	1	1
536.9	J	-	-	-	-	-	0	0
562.4	J	-	-	-	-	-	1	1
587.2	J	-	-	-	0.2	-	1	0
612.2	J	-	-	0.1	-	-	1	1
635.8	J	-	-	-	-	-	1	1
661.3	J	-	-	-	-	-	0	0
686.0	J	-	-	-	-	-	2	1

Note 1. Point Distance is from the start of the test section to the measurement location.

Note 2. If the "approach" slab is higher than the "departure" slab, faulting is recorded as positive (+ or 0); if the "approach" slab is lower, record faulting as negative (-) and the minus sign must be used.

Revised April 23, 1993

SHEET 6

DISTRESS SURVEY

LTPP PROGRAM

STATE ASSIGNED ID ____

STATE CODE 18

SHRP SECTION ID 3ØØ2

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) Ø6/14/95

SURVEYORS: JJZ, ___

DISTRESS SURVEY FOR PAVEMENTS WITH JOINTED PORTLAND CEMENT CONCRETE SURFACES (CONTINUED)

FAULTING OF TRANSVERSE JOINTS AND CRACKS

Page 2 of 2

[Poi]nt[1] [Dis]tance [(Me]ters)	Joint or Crack (J/C)	Crack Length (Meters)	Well Sealed (Y/N)	Length of Joint Spalling, m L	M	H	Faulting[2], mm 0.3m	0.75m
1.1	J						Ø	Ø
4.7	J			Ø.1			Ø	Ø
Ø.2	J						1	Ø
8.Ø	J						Ø	Ø
Ø.Ø	J						1	1

1. Point Distance is from the start of the test section to the measurement location.
2. If the "approach" slab is higher than the "departure" slab, faulting is recorded as positive (+ or 0); if the "approach" slab is lower, record faulting as negative (-) and the minus sign must be used.

Revised May 29, 1992

SHEET 7

DISTRESS SURVEY

LTPP PROGRAM

STATE ASSIGNED ID _ _ _ _

STATE CODE 18

SHRP SECTION ID 3 0 0 2

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) 0 6 / 1 4 / 9 5

SURVEYORS: I I E. _ _ _

DISTRESS SURVEY FOR PAVEMENTS WITH JOINTED PORTLAND CEMENT CONCRETE SURFACES (CONTINUED)

13. LANE-TO-SHOULDER DROPOFF

14. LANE-TO-SHOULDER SEPARATION

Point No.	Point[1] Distance (meters)	Lane-to-shoulder[2] Dropoff (mm)	Lane-to-shoulder Separation (mm)	Well Sealed (Y/N)
1.	0.	1.	0.	Y
2.	15.25	0.	0.	Y
3.	30.5	5.	0.	Y
4.	45.75	1.	0.	Y
5.	61.	0.	0.	Y
6.	76.25	5.	0.	Y
7.	91.5	0.	0.	Y
8.	106.75	4.	0.	Y
9.	122.	2.	0.	Y
10.	137.25	0.	0.	Y
11.	152.5	0.	0.	Y

Note 1. Point Distance is from the start of the test section to the measurement location. The values shown are SI equivalents of the 50 ft spacing used in previous surveys.

Note 2. If heave of the shoulder occurs (upward movement), record as a negative (-) value. Do not record (+) signs, positive values are assumed.

Outer 0.3 - 3.2 m

3.65 m = width of Lane

SaL - (5) joints

SaM - (1) joint

7L - (0.1) m

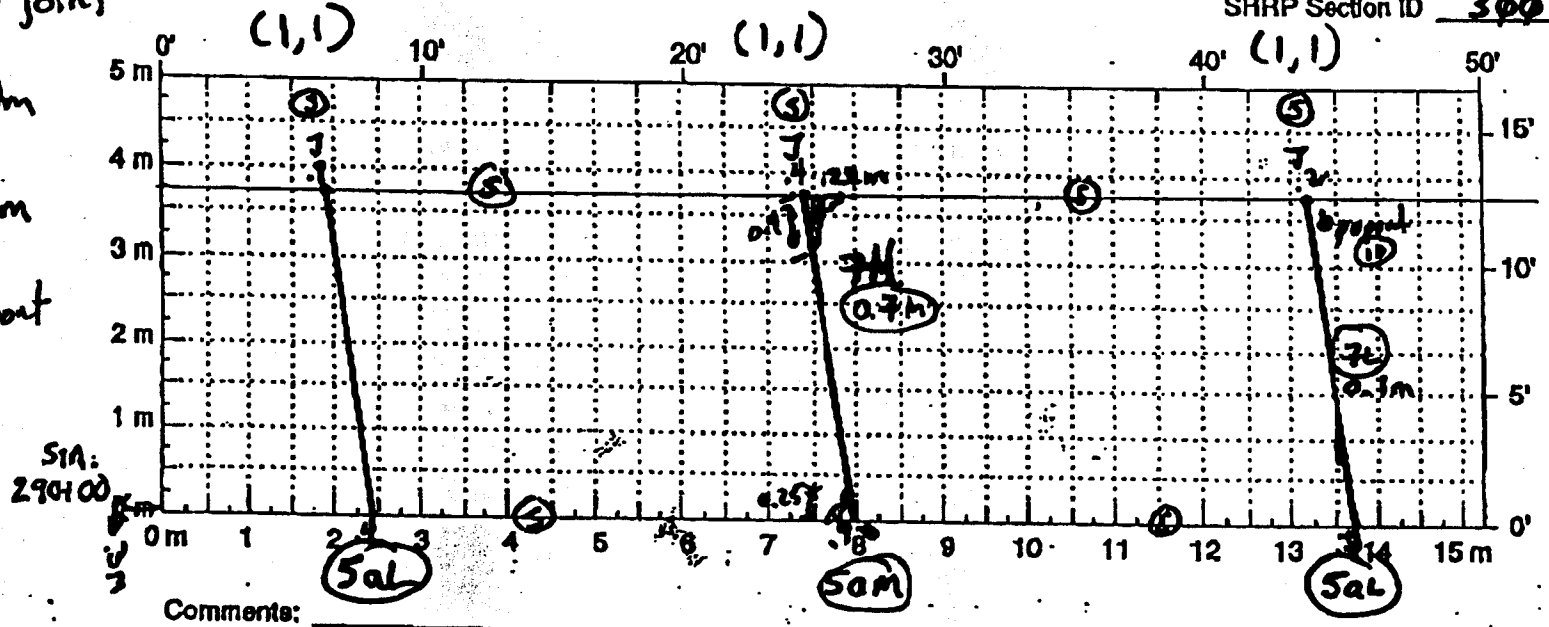
7M - (0.7) m

10 - (1) popout

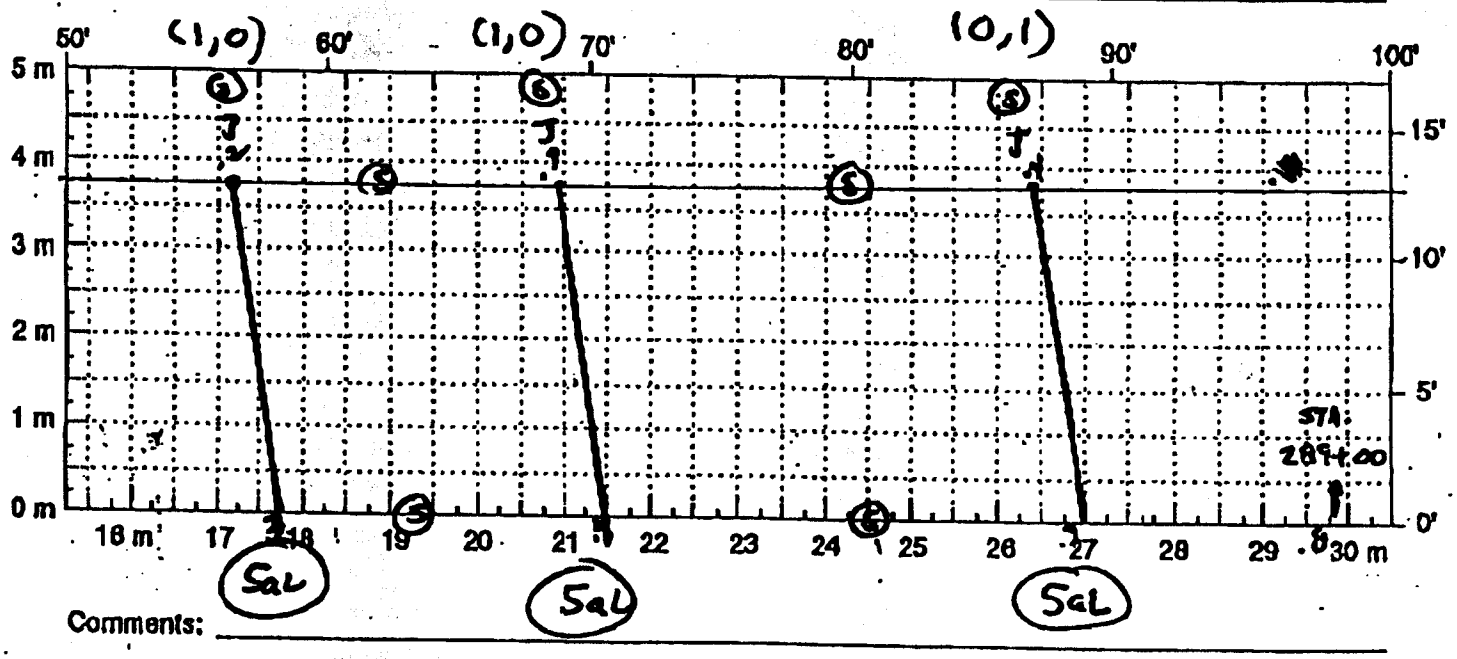
State Assigned ID _____

State Code 10

SHRP Section ID 3002



Comments: _____



Comments: _____

Longitudinal Joint Along Pavement Edge/Shoulder - Sealed well

State Assigned ID _____

State Code 18

SHRP Section ID 3002

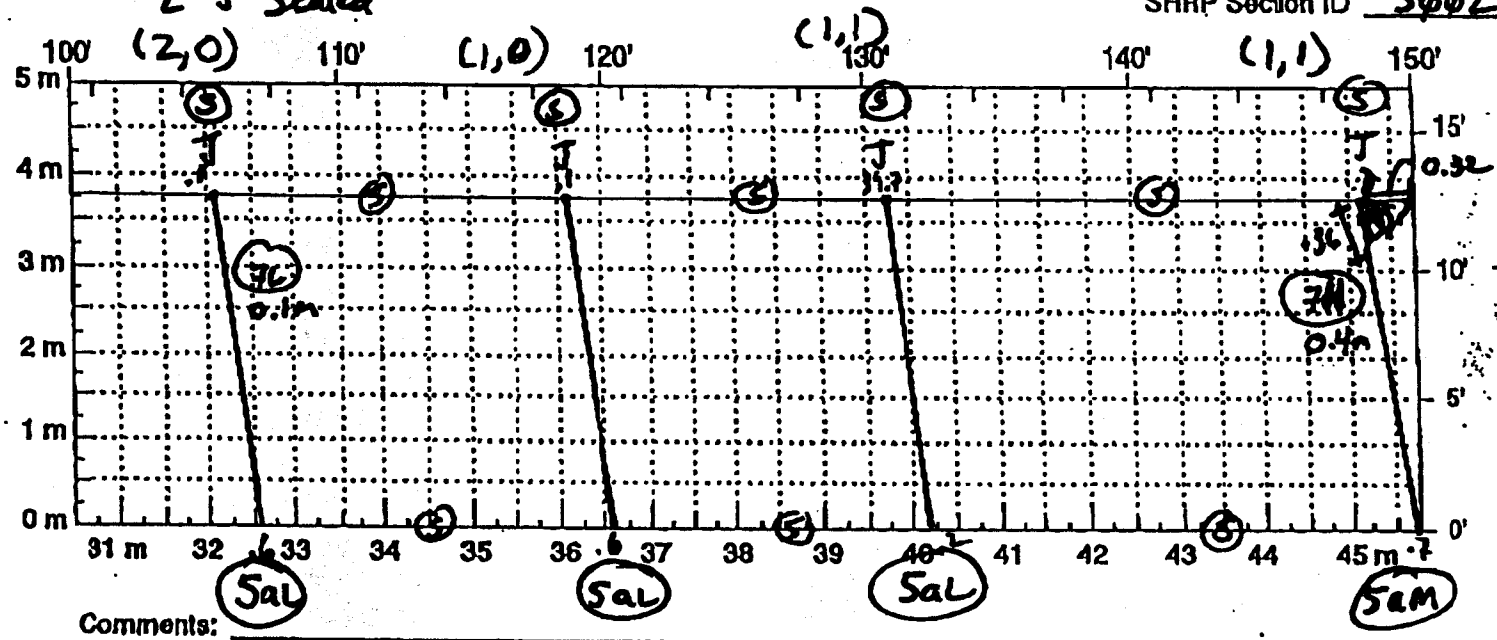
2 "J" Sealed

SaL - (6) joints
SaM - (1) joint

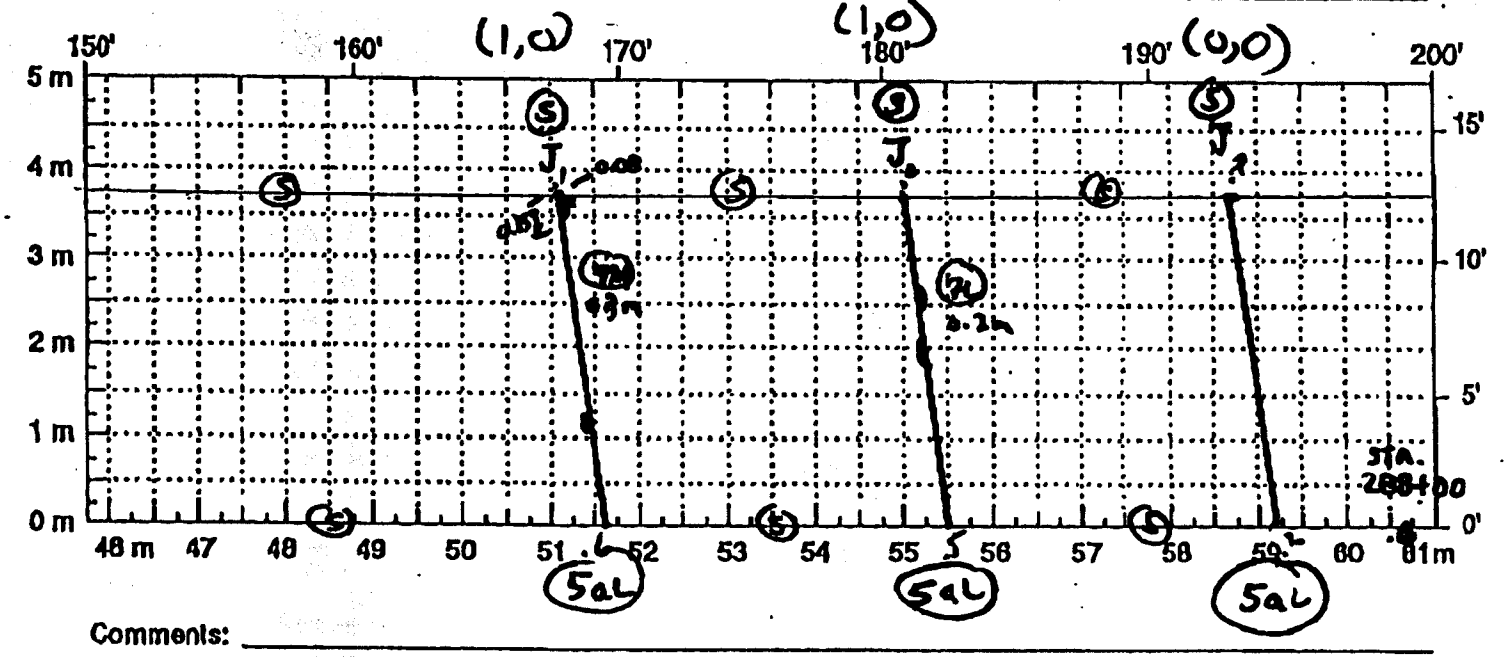
7L - 0.1 m
0.2 m
(0.3 m)

7M - (0.4 m)

7M (0.3)



Comments: _____



Comments: _____

Sal - (6) joints

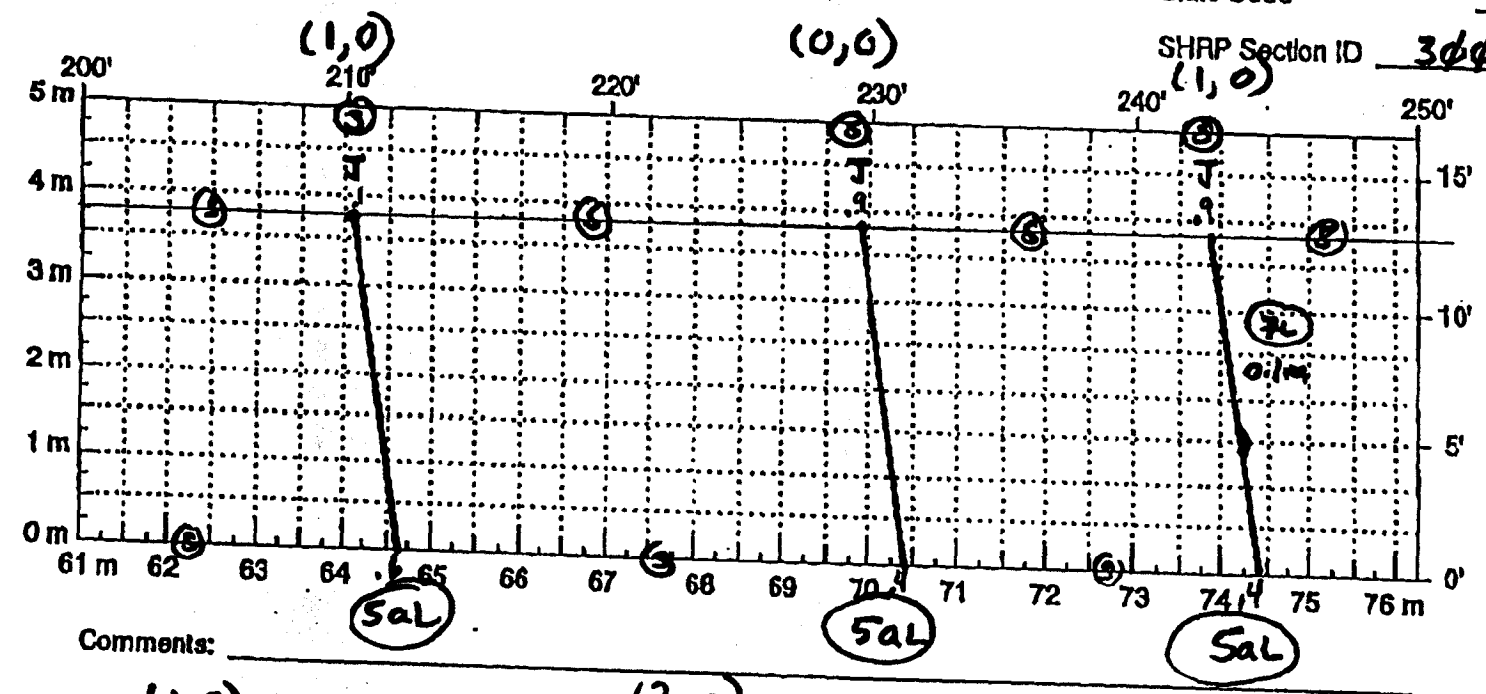
7L - (0.1)m

2 "T" scaled

State Assigned ID _____

State Code 18

SHRP Section ID 3002



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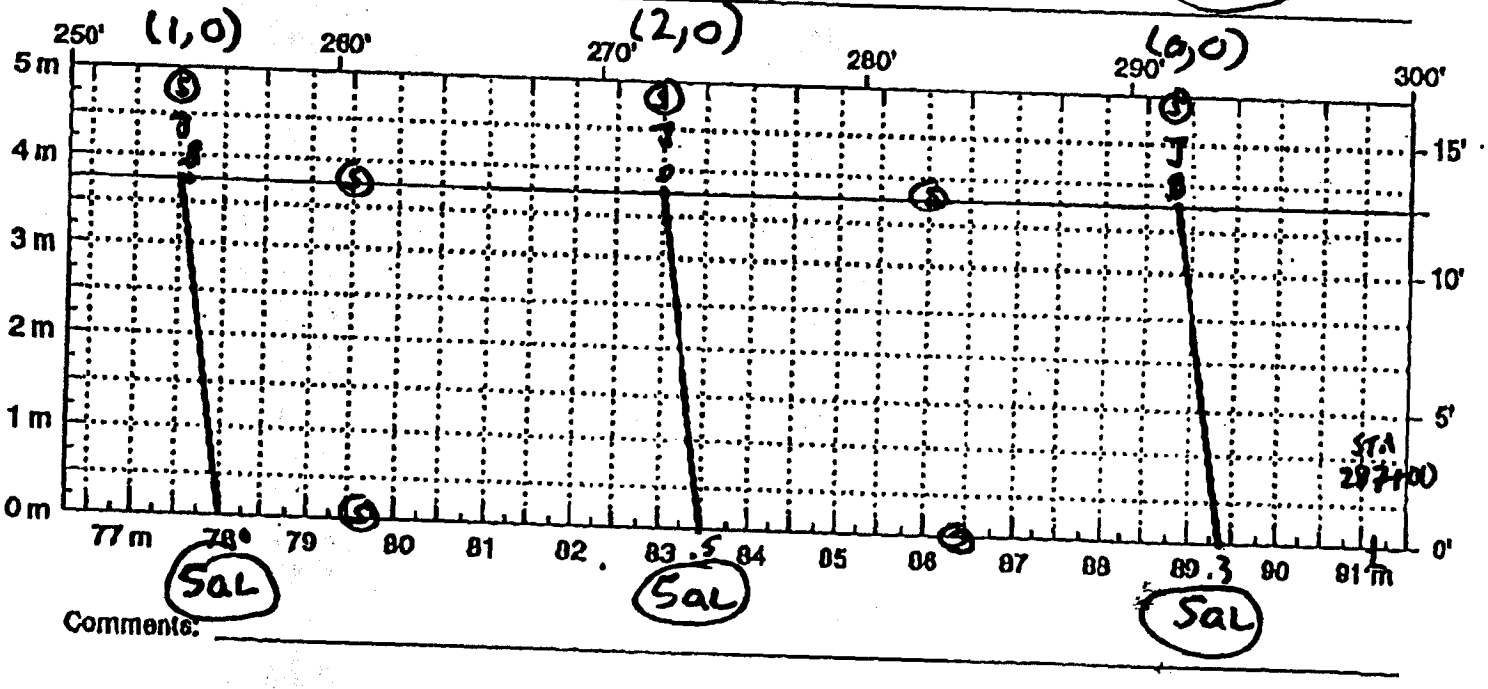


Comments: _____

State Assigned ID _____

State Code 18

SHRP Section ID 3002

5aL - (7) joints

2 "J" sealed

7L - 0.1m

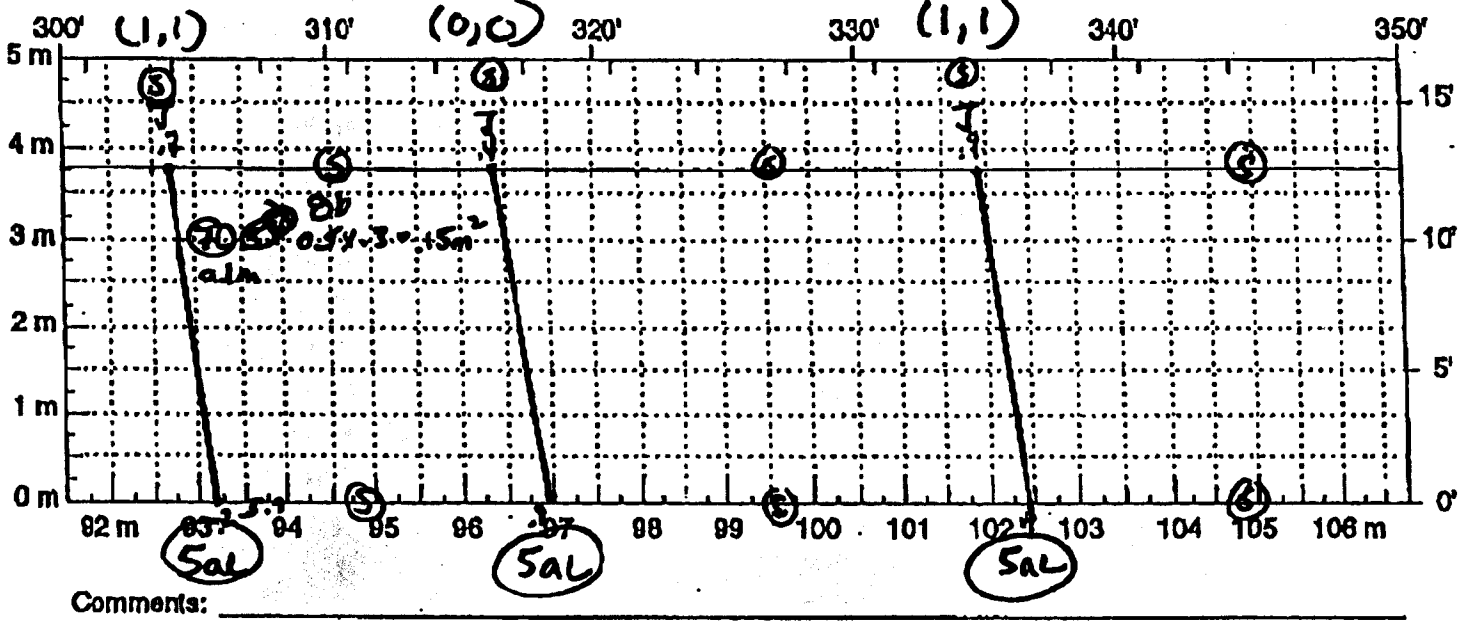
0.1m

0.2m

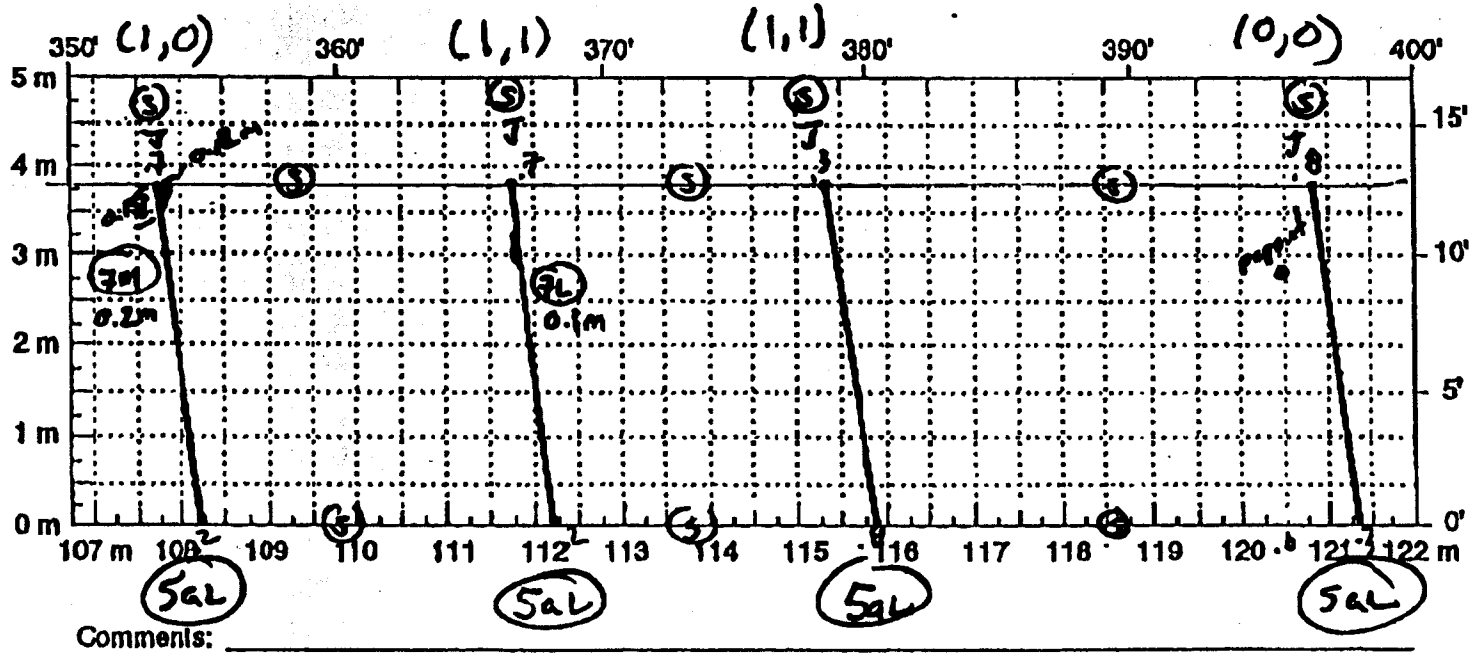
7m - 0.2m

8b - 0.2m

10 - (1) popout



Comments: _____



Comments: _____

Sal - (6) points

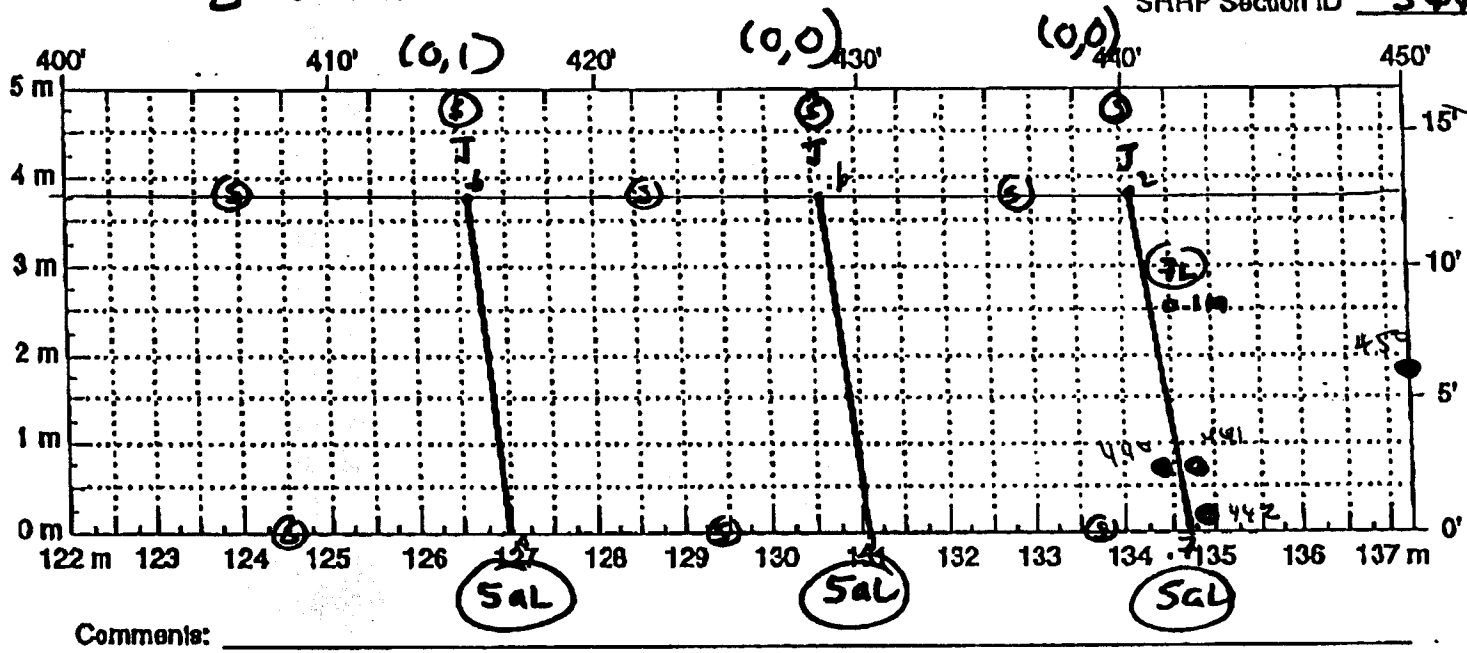
7L - (0.1) m

10 - (1) popout

2 "J" sealed

State Code 18

SHRP Section ID 3002



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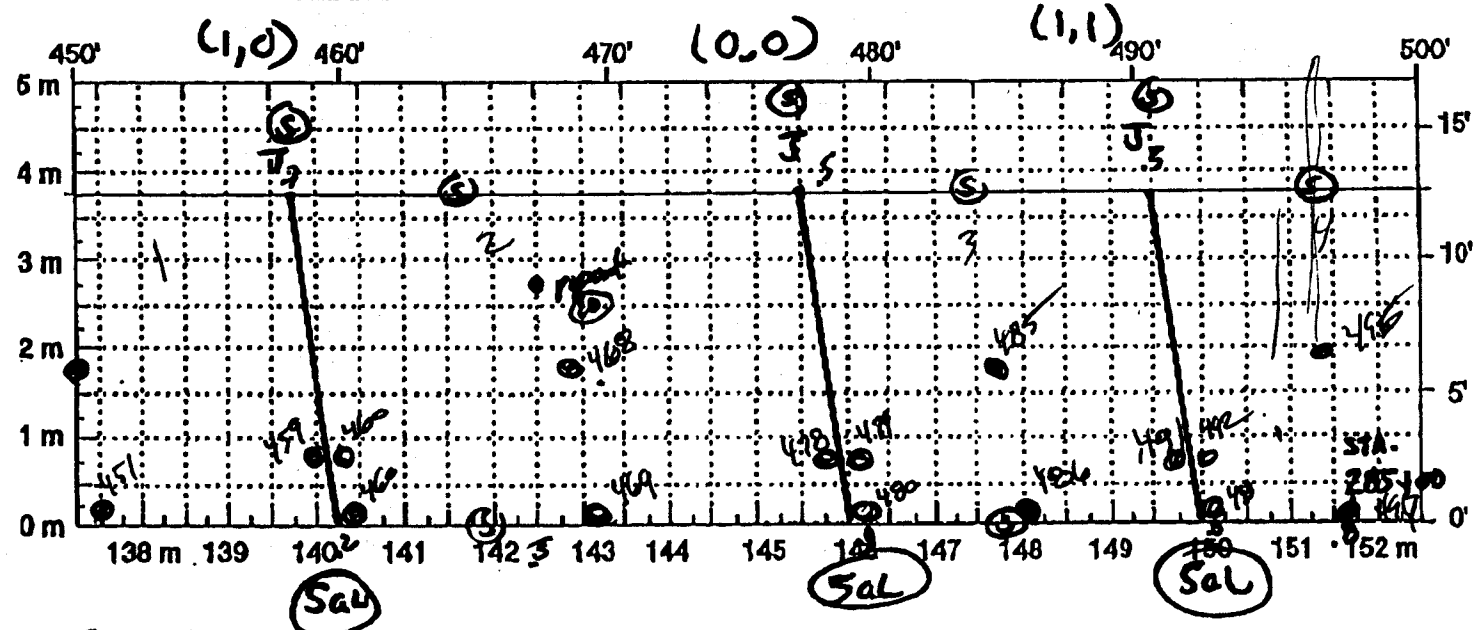


Comments: _____

NO SIGNS ON THIS SECTION DONE

SECTION	183002
DATE	1995

1

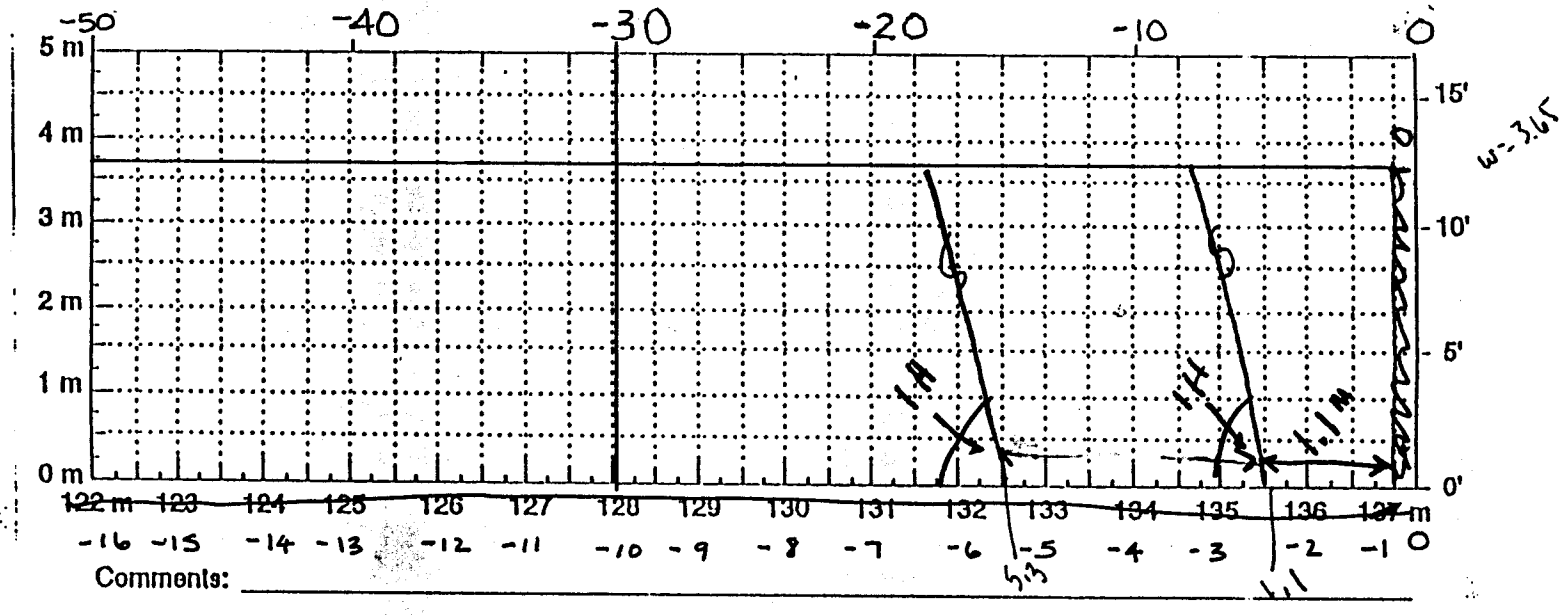
2

3

4

5

6



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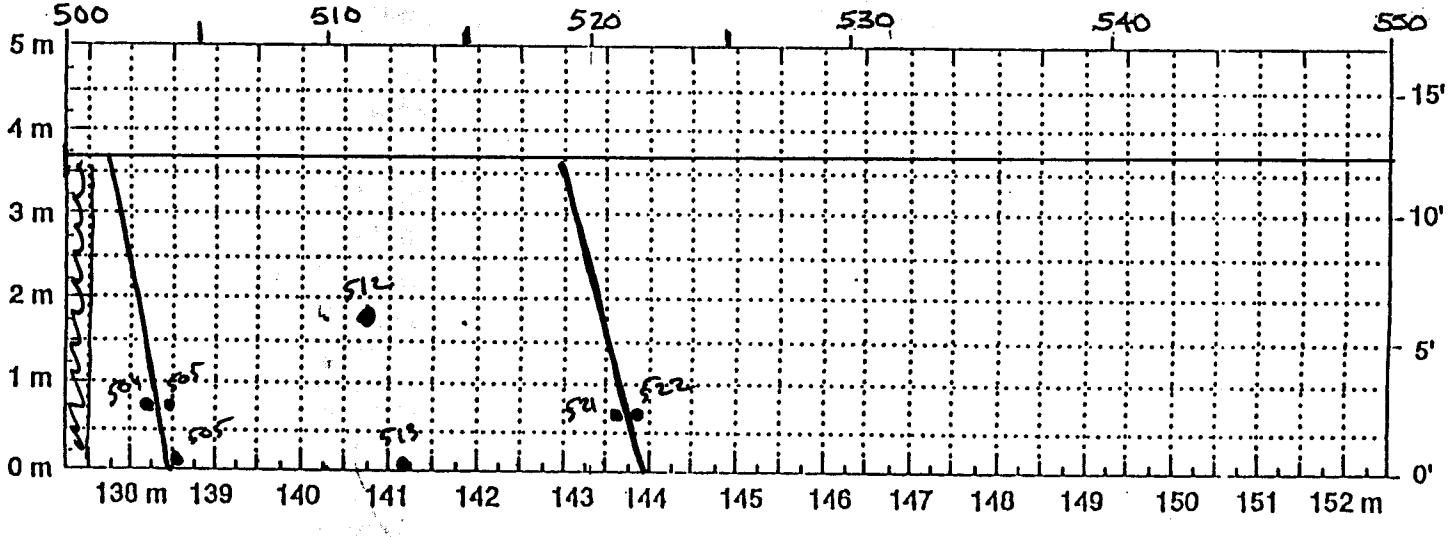

Comments: _____

08:45 950614 4.

File: CLOSED
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

PRE-SMP -FWD

08:45 950614 5.

File: C:\FWD\DATA\183002C1.FWD
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

FWD S/N : 8002-060
Operator ID : STONESTROM, ERIC, L.

Stationing...: Feet

Direction of Plots: 11.6

SHRP TESTING - RIGID/CROP - BASIN AND EDGE TEST (J0/C0, J1/C1, J2/C2, J3/C3)
Sequence: CCC222233334444

Stn:		-12	Lane:J1	Temp:		J/C:		Air: 75	PvT: 87		09:04
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
	C	111.9	12263	3.74	3.48	3.39	3.12	2.83	2.27	1.33	
	C	112.7	12351	3.74	3.51	3.40	3.13	2.85	2.28	1.33	
	C	112.7	12343	3.74	3.51	3.40	3.14	2.85	2.28	1.34	
*	2	82.6	9045	2.73	2.56	2.48	2.28	2.08	1.67	0.97	
*	2	82.9	9081	2.76	2.57	2.49	2.31	2.09	1.67	0.98	
*	2	82.8	9077	2.73	2.56	2.48	2.29	2.08	1.66	0.97	
*	2	82.6	9045	2.76	2.57	2.49	2.30	2.09	1.67	1.00	
*	3	112.1	12283	3.74	3.50	3.39	3.13	2.85	2.28	1.33	
*	3	112.5	12323	3.74	3.50	3.40	3.13	2.85	2.28	1.33	
*	3	112.8	12359	3.74	3.50	3.39	3.13	2.85	2.27	1.33	
*	3	112.5	12327	3.74	3.52	3.40	3.13	2.85	2.29	1.33	
*	4	147.3	16140	5.01	4.64	4.51	4.17	3.79	3.04	1.74	
*	4	147.6	16168	5.04	4.68	4.51	4.17	3.79	3.05	1.75	
*	4	147.5	16156	5.03	4.65	4.52	4.19	3.82	3.02	1.75	
*	4	147.2	16125	5.03	4.65	4.52	4.17	3.80	3.04	1.76	

Stn:		1	Lane:J1	Temp:		J/C:		Air: 75	PvT: 85		09:08
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
	C	111.5	12220	3.79	3.59	3.48	3.24	2.98	2.45	1.55	
	C	111.6	12231	3.80	3.60	3.49	3.25	2.98	2.48	1.56	
	C	111.8	12247	3.76	3.60	3.49	3.24	3.00	2.48	1.56	
*	2	82.1	8990	2.76	2.59	2.53	2.37	2.17	1.83	1.12	
*	2	81.8	8966	2.78	2.57	2.52	2.37	2.16	1.81	1.13	
*	2	82.3	9014	2.80	2.58	2.52	2.38	2.15	1.78	1.15	
*	2	82.1	8998	2.81	2.58	2.53	2.39	2.15	1.80	1.11	
*	3	111.7	12235	3.78	3.59	3.48	3.24	2.98	2.47	1.54	
*	3	112.6	12335	3.86	3.60	3.49	3.28	2.98	2.46	1.57	
*	3	111.4	12208	3.77	3.59	3.48	3.24	2.99	2.48	1.56	
*	3	111.9	12255	3.77	3.58	3.47	3.26	2.95	2.44	1.56	
*	4	146.7	16077	5.07	4.78	4.64	4.32	3.97	3.31	2.05	
*	4	147.1	16121	5.09	4.78	4.63	4.34	3.96	3.23	2.09	
*	4	147.4	16152	5.07	4.78	4.64	4.34	3.96	3.29	2.07	
*	4	148.0	16216	5.13	4.81	4.66	4.37	4.00	3.29	2.06	

Stn:		15	Lane:J1	Temp:		J/C:		Air: 76	PvT: 86		09:10
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
	C	111.7	12235	4.03	3.82	3.70	3.44	3.18	2.65	1.65	
	C	111.2	12184	4.00	3.78	3.67	3.38	3.16	2.67	1.64	
	C	111.0	12164	4.00	3.80	3.67	3.40	3.16	2.60	1.65	
*	2	81.7	8950	2.94	2.75	2.70	2.50	2.31	1.94	1.21	
*	2	81.5	8926	2.93	2.76	2.69	2.51	2.30	1.96	1.20	
*	2	81.6	8942	2.94	2.77	2.68	2.52	2.30	2.02	1.21	
*	2	81.5	8930	2.96	2.76	2.70	2.53	2.31	2.01	1.22	
*	3	110.5	12104	3.98	3.78	3.67	3.38	3.15	2.63	1.64	
*	3	111.1	12168	3.98	3.80	3.67	3.42	3.17	2.65	1.65	
*	3	110.9	12156	4.00	3.80	3.68	3.42	3.17	2.63	1.64	
*	3	111.1	12176	4.01	3.80	3.69	3.43	3.18	2.69	1.65	
*	4	146.4	16037	5.30	5.00	4.85	4.52	4.18	3.48	2.17	
*	4	146.6	16065	5.30	5.00	4.86	4.51	4.19	3.40	2.17	
*	4	146.4	16037	5.29	5.00	4.87	4.50	4.19	3.40	2.18	
*	4	146.3	16029	5.28	5.00	4.86	4.48	4.18	3.45	2.19	

Stn:		35	Lane:J1	Temp:		J/C:		Air: 76	PvT: 86		09:12
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
	C	110.7	12128	4.44	4.19	4.09	3.83	3.54	2.95	1.88	

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	C	110.9	12148	4.46	4.17	4.08	3.81	3.54	2.94	1.87
	C	111.0	12164	4.48	4.19	4.09	3.83	3.53	2.94	1.88
*	2	81.7	8946	3.29	3.08	3.02	2.81	2.59	2.16	1.38
*	2	81.5	8926	3.28	3.09	3.01	2.81	2.59	2.17	1.40
*	2	81.4	8918	3.26	3.07	3.00	2.80	2.58	2.16	1.39
*	2	81.7	8946	3.27	3.08	3.01	2.80	2.59	2.17	1.40

*	3	111.1	12168	4.47	4.19	4.09	3.82	3.54	2.84	1.88
*	3	111.3	12196	4.47	4.19	4.09	3.83	3.54	2.95	1.88
*	4	146.1	16005	5.80	5.50	5.33	4.99	4.61	3.85	2.46
*	4	146.0	16001	5.81	5.50	5.35	5.00	4.62	3.85	2.46
*	4	146.3	16029	5.82	5.51	5.35	5.00	4.62	3.86	2.48
*	4	146.2	16017	5.81	5.51	5.35	5.00	4.62	3.86	2.47

Stn: 63 Lane:J1 Temp: J/C: Air: 76 PvT: 90 09:15

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	110.7	12132	4.08	3.85	3.74	3.50	3.22	2.67	1.65
	C	110.9	12156	4.07	3.84	3.74	3.50	3.22	2.66	1.64
	C	110.4	12092	4.07	3.82	3.73	3.49	3.20	2.64	1.64
*	2	81.1	8883	2.99	2.81	2.74	2.55	2.34	1.93	1.19
*	2	80.9	8867	2.98	2.82	2.73	2.55	2.34	1.93	1.20
*	2	81.0	8875	2.97	2.81	2.73	2.54	2.35	1.94	1.20
*	2	80.9	8863	2.96	2.81	2.73	2.54	2.34	1.94	1.19
*	3	110.3	12080	4.06	3.81	3.72	3.48	3.20	2.62	1.64
*	3	109.5	11993	4.06	3.81	3.71	3.46	3.19	2.64	1.64
*	3	109.5	12001	4.04	3.81	3.70	3.46	3.18	2.63	1.62
*	3	110.1	12065	4.18	3.98	3.85	3.59	3.32	2.77	1.74
*	4	146.0	16001	5.43	5.15	4.96	4.61	4.27	3.60	2.16
*	4	146.2	16017	5.42	5.09	4.97	4.65	4.26	3.50	2.17
*	4	146.3	16033	5.43	5.09	4.97	4.65	4.27	3.48	2.19
*	4	146.3	16029	5.43	5.13	4.97	4.63	4.28	3.61	2.17

Stn: 77 Lane:J1 Temp: J/C: Air: 76 PvT: 88 09:17

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.3	11977	4.18	3.89	3.83	3.60	3.25	2.73	1.74
	C	110.2	12069	4.18	3.94	3.84	3.57	3.29	2.77	1.74
	C	109.6	12009	4.16	3.91	3.83	3.60	3.24	2.73	1.74
*	2	80.9	8859	3.06	2.87	2.83	2.65	2.38	2.01	1.29
*	2	80.8	8855	3.04	2.89	2.81	2.63	2.39	2.01	1.28
*	2	81.1	8883	3.03	2.87	2.80	2.61	2.39	2.00	1.27
*	2	81.0	8879	3.04	2.86	2.80	2.61	2.39	2.01	1.25
*	3	109.1	11957	4.16	3.91	3.82	3.57	3.26	2.73	1.73
*	3	109.6	12009	4.20	3.92	3.83	3.59	3.26	2.74	1.74
*	3	109.3	11977	4.16	3.91	3.83	3.60	3.23	2.72	1.75
*	3	109.5	11993	4.13	3.91	3.83	3.59	3.24	2.72	1.75
*	4	145.4	15926	5.53	5.24	5.09	4.74	4.37	3.66	2.31
*	4	144.8	15866	5.54	5.20	5.08	4.76	4.32	3.64	2.32
*	4	144.8	15866	5.56	5.20	5.07	4.74	4.33	3.63	2.31
*	4	144.6	15842	5.56	5.19	5.08	4.75	4.33	3.63	2.31

Stn: 113 Lane:J1 Temp: J/C: Air: 76 PvT: 90 09:19

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.2	11969	4.30	4.05	3.93	3.65	3.41	2.80	1.74
	C	109.4	11989	4.26	4.04	3.93	3.65	3.41	2.81	1.74
	C	109.5	11993	4.26	4.03	3.92	3.65	3.41	2.80	1.72
*	2	80.8	8851	3.13	2.94	2.87	2.67	2.46	2.06	1.27
*	2	80.8	8851	3.10	2.94	2.86	2.67	2.46	2.05	1.26
*	2	80.9	8867	3.12	2.93	2.85	2.65	2.48	2.04	1.26
*	2	80.7	8843	3.11	2.93	2.85	2.65	2.46	2.03	1.25
*	3	108.9	11930	4.26	4.02	3.91	3.63	3.40	2.78	1.73
*	3	109.3	11973	4.25	4.04	3.93	3.65	3.39	2.80	1.73
*	3	109.2	11961	4.25	4.04	3.93	3.65	3.39	2.80	1.73
*	3	110.6	12120	4.31	4.08	3.96	3.70	3.43	2.83	1.75
*	4	145.9	15985	5.70	5.43	5.25	4.91	4.55	3.78	2.31
*	4	146.4	16045	5.72	5.43	5.26	4.89	4.57	3.76	2.31
*	4	146.3	16025	5.72	5.43	5.26	4.92	4.54	3.78	2.32
*	4	146.5	16049	5.72	5.41	5.26	4.87	4.59	3.73	2.31

Stn: 126 Lane:J1 Temp: J/C: Air: 77 PvT: 89 09:22

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7

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	C	110.2	12069	4.44	4.22	4.11	3.85	3.52	2.87	1.79
	C	110.7	12124	4.50	4.22	4.12	3.86	3.52	2.87	1.79
	C	110.4	12092	4.48	4.21	4.12	3.87	3.54	2.83	1.79
*	2	80.9	8863	3.30	3.07	3.02	2.83	2.58	2.06	1.31
*	2	80.7	8839	3.28	3.10	3.00	2.79	2.56	2.11	1.30
*	2	80.8	8858	3.31	3.08	3.01	2.82	2.57	2.09	1.31

*	3	109.2	11965	4.51	4.15	4.07	3.82	3.48	2.85	1.76
*	3	109.4	11981	4.43	4.19	4.08	3.81	3.49	2.87	1.77
*	3	109.5	11993	4.46	4.18	4.07	3.81	3.49	2.87	1.78
*	4	144.7	15858	5.89	5.54	5.38	5.02	4.61	3.80	2.32
*	4	145.1	15898	5.93	5.52	5.40	5.07	4.62	3.78	2.34
*	4	145.0	15890	5.92	5.53	5.40	5.08	4.63	3.78	2.33
*	4	145.0	15890	5.93	5.54	5.40	5.05	4.63	3.78	2.33

Stn: 161 Lane:J1 Temp: J/C: Air: 77 PvT: 90 09:24

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.8	12033	4.63	4.33	4.22	4.00	3.63	3.02	1.95
	C	109.5	12001	4.58	4.29	4.19	3.96	3.61	3.02	1.93
	C	109.6	12013	4.60	4.30	4.19	3.97	3.61	2.99	1.94
*	2	80.7	8843	3.38	3.11	3.04	2.91	2.63	2.17	1.42
*	2	80.5	8823	3.35	3.11	3.05	2.89	2.63	2.15	1.42
*	2	81.1	8883	3.38	3.19	3.11	2.93	2.67	2.25	1.43
*	2	80.8	8855	3.36	3.14	3.07	2.91	2.63	2.16	1.41
*	3	108.8	11926	4.58	4.30	4.19	3.94	3.61	3.00	1.94
*	3	109.5	11993	4.57	4.28	4.19	3.95	3.61	3.01	1.93
*	3	109.4	11985	4.57	4.28	4.19	3.95	3.62	3.01	1.93
*	3	109.3	11977	4.57	4.28	4.19	3.95	3.61	3.01	1.93
*	4	144.6	15842	6.02	5.67	5.51	5.24	4.76	3.97	2.54
*	4	145.3	15918	6.09	5.70	5.55	5.24	4.79	4.00	2.55
*	4	144.7	15854	6.06	5.70	5.54	5.21	4.77	4.00	2.54
*	4	144.9	15878	6.06	5.67	5.53	5.24	4.76	3.96	2.55

Stn: 177 Lane:J1 Temp: J/C: Air: 77 PvT: 90 09:26

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.9	11930	4.38	4.07	3.96	3.68	3.38	2.78	1.69
	C	109.9	12041	4.36	4.15	4.01	3.73	3.42	2.81	1.70
	C	109.4	11985	4.36	4.11	3.98	3.69	3.40	2.80	1.70
*	2	80.6	8835	3.21	3.06	2.93	2.72	2.50	2.03	1.24
*	2	80.6	8835	3.22	3.04	2.94	2.73	2.50	2.04	1.25
*	2	81.0	8879	3.22	3.06	2.95	2.74	2.52	2.06	1.25
*	2	81.0	8871	3.21	3.04	2.94	2.73	2.50	2.03	1.23
*	3	109.8	12029	4.37	4.11	3.99	3.71	3.42	2.79	1.70
*	3	109.9	12041	4.38	4.13	4.00	3.71	3.42	2.80	1.70
*	3	110.0	12053	4.39	4.12	4.00	3.72	3.42	2.80	1.70
*	3	110.1	12061	4.40	4.14	4.01	3.72	3.42	2.81	1.71
*	4	146.2	16021	5.81	5.50	5.30	4.94	4.54	3.71	2.25
*	4	146.3	16033	5.84	5.49	5.31	4.95	4.55	3.73	2.25
*	4	145.9	15982	5.87	5.47	5.30	4.94	4.55	3.71	2.24
*	4	146.2	16013	5.91	5.50	5.31	4.93	4.54	3.72	2.26

Stn: 221 Lane:J1 Temp: J/C: Air: 78 PvT: 90 09:29

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	110.3	12080	3.90	3.74	3.62	3.35	3.09	2.52	1.56
	C	110.6	12120	3.97	3.72	3.61	3.34	3.09	2.51	1.55
	C	109.7	12021	3.89	3.65	3.57	3.28	3.09	2.43	1.53
*	2	80.4	8811	2.83	2.71	2.63	2.43	2.24	1.78	1.13
*	2	80.5	8823	2.80	2.65	2.58	2.39	2.23	1.77	1.11
*	2	80.9	8859	2.95	2.72	2.64	2.44	2.26	1.82	1.13
*	2	80.6	8831	2.92	2.73	2.63	2.44	2.24	1.83	1.14
*	3	109.9	12037	3.94	3.73	3.60	3.34	3.07	2.54	1.55
*	3	109.8	12029	3.93	3.67	3.58	3.30	3.08	2.48	1.54
*	3	109.8	12029	3.92	3.71	3.59	3.32	3.07	2.48	1.53
*	3	109.9	12041	3.93	3.70	3.59	3.32	3.09	2.46	1.53
*	4	145.1	15898	5.20	4.93	4.78	4.44	4.08	3.30	2.06
*	4	145.4	15926	5.22	4.93	4.78	4.43	4.12	3.31	2.06
*	4	145.2	15910	5.22	4.92	4.78	4.43	4.11	3.31	2.06
*	4	144.9	15878	5.20	4.92	4.76	4.42	4.07	3.33	2.05

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Stn: 237 Lane:J1 Temp: J/C: Air: 78 PvT: 90 09:32

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.5	11997	4.16	3.86	3.74	3.48	3.19	2.58	1.58
	C	109.5	12001	4.11	3.85	3.73	3.47	3.18	2.61	1.56
	C	109.6	12009	4.08	3.84	3.73	3.47	3.19	2.60	1.56

*	2	80.7	8839	2.97	2.77	2.70	2.52	2.31	1.88	1.13
*	3	109.1	11949	4.08	3.85	3.73	3.46	3.19	2.62	1.56
*	3	109.6	12009	4.06	3.84	3.73	3.47	3.19	2.59	1.57
*	3	109.8	12025	4.09	3.85	3.73	3.47	3.19	2.59	1.57
*	3	109.5	11993	4.09	3.84	3.73	3.47	3.19	2.59	1.56
*	4	145.0	15882	5.44	5.14	4.99	4.63	4.26	3.50	2.08
*	4	145.4	15926	5.46	5.15	5.00	4.67	4.28	3.48	2.09
*	4	145.0	15882	5.45	5.14	4.99	4.65	4.27	3.49	2.09
*	4	145.3	15918	5.46	5.16	5.01	4.68	4.29	3.53	2.09

Stn: 283 Lane:J1 Temp: J/C: Air: 79 PvT: 91 09:34

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.2	11969	4.49	4.25	4.12	3.84	3.54	2.97	1.87
	C	109.4	11985	4.47	4.24	4.11	3.83	3.53	2.96	1.87
	C	109.4	11985	4.47	4.22	4.10	3.82	3.51	2.96	1.87
*	2	80.3	8799	3.29	3.05	2.98	2.79	2.54	2.16	1.37
*	2	80.5	8815	3.28	3.07	2.99	2.79	2.57	2.15	1.37
*	2	80.6	8835	3.27	3.09	3.00	2.80	2.58	2.15	1.35
*	2	80.6	8835	3.26	3.09	3.00	2.80	2.58	2.17	1.38
*	3	109.3	11973	4.47	4.21	4.11	3.82	3.52	2.96	1.88
*	3	109.6	12009	4.48	4.26	4.13	3.84	3.56	2.96	1.87
*	3	109.8	12025	4.49	4.26	4.13	3.84	3.56	2.97	1.88
*	3	109.6	12005	4.46	4.25	4.12	3.83	3.54	2.96	1.87
*	4	144.7	15858	5.91	5.58	5.42	5.04	4.67	3.92	2.47
*	4	145.3	15922	5.94	5.58	5.43	5.07	4.66	3.93	2.48
*	4	145.1	15902	5.94	5.59	5.44	5.07	4.67	3.94	2.48
*	4	145.2	15906	5.95	5.58	5.44	5.07	4.67	3.93	2.48

Stn: 299 Lane:J1 Temp: J/C: Air: 78 PvT: 90 09:36

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.1	11953	5.56	5.24	5.15	4.84	4.43	3.65	2.15
	C	109.3	11977	5.53	5.26	5.13	4.81	4.42	3.64	2.13
	C	109.2	11965	5.53	5.25	5.14	4.81	4.41	3.63	2.12
*	2	79.9	8751	4.12	3.93	3.82	3.57	3.29	2.70	1.57
*	2	80.2	8787	4.15	3.94	3.82	3.57	3.29	2.70	1.57
*	2	80.3	8803	4.14	3.91	3.81	3.56	3.29	2.70	1.56
*	2	80.2	8783	4.10	3.93	3.81	3.56	3.28	2.70	1.57
*	3	109.6	12005	5.52	5.26	5.12	4.79	4.41	3.63	2.12
*	3	109.2	11961	5.53	5.24	5.12	4.81	4.40	3.62	2.12
*	3	109.2	11969	5.54	5.25	5.12	4.80	4.41	3.62	2.13
*	3	109.4	11989	5.54	5.24	5.14	4.81	4.42	3.63	2.13
*	4	144.7	15850	7.18	6.82	6.66	6.24	5.74	4.72	2.76
*	4	145.5	15942	7.24	6.83	6.70	6.28	5.76	4.74	2.77
*	4	145.2	15914	7.24	6.83	6.69	6.28	5.76	4.74	2.76
*	4	145.4	15934	7.24	6.84	6.70	6.28	5.76	4.75	2.76

Stn: 326 Lane:J1 Temp: J/C: Air: 79 PvT: 93 09:39

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.9	11933	4.32	4.11	4.02	3.77	3.49	2.89	1.81
	C	109.1	11949	4.33	4.06	4.02	3.77	3.50	2.89	1.80
	C	109.1	11949	4.35	4.09	4.02	3.76	3.48	2.88	1.80
*	2	79.8	8744	3.18	3.01	2.93	2.74	2.53	2.09	1.30
*	2	80.0	8763	3.15	3.00	2.93	2.73	2.51	2.09	1.30
*	2	80.0	8767	3.17	3.02	2.92	2.72	2.50	2.08	1.30
*	2	80.4	8807	3.16	3.02	2.93	2.72	2.50	2.09	1.31
*	3	109.1	11949	4.33	4.10	4.00	3.74	3.45	2.87	1.79
*	3	109.0	11945	4.35	4.07	4.00	3.75	3.48	2.87	1.80
*	3	109.1	11949	4.34	4.09	4.01	3.75	3.46	2.88	1.80
*	3	109.0	11941	4.35	4.08	4.01	3.75	3.48	2.87	1.79
*	4	144.4	15819	5.72	5.42	5.29	4.94	4.57	3.80	2.38
*	4	144.7	15854	5.77	5.45	5.32	4.96	4.59	3.81	2.39
*	4	144.7	15858	5.76	5.45	5.32	4.97	4.60	3.82	2.38
*	4	144.8	15862	5.77	5.44	5.31	4.97	4.61	3.81	2.40

File: C:\FWD\DATA\183002C1.FWD
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

Stn: 345 Lane:J1 Temp: J/C: Air: 79 PvT: 91 09:41

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.1	11957	4.67	4.26	4.15	3.80	3.47	2.83	1.70
	C	109.0	11941	4.63	4.25	4.13	3.78	3.45	2.87	1.70
	C	108.8	11918	4.60	4.25	4.12	3.78	3.44	2.83	1.68

*	2	79.8	8740	3.40	3.13	3.03	2.78	2.53	2.04	1.24
*	3	108.4	11882	4.56	4.23	4.10	3.76	3.43	2.80	1.69
*	3	108.7	11914	4.59	4.27	4.13	3.80	3.45	2.79	1.69
*	3	108.6	11902	4.61	4.24	4.11	3.76	3.43	2.78	1.69
*	3	108.6	11894	4.63	4.24	4.12	3.78	3.46	2.84	1.70
*	4	143.6	15731	6.05	5.59	5.41	4.97	4.53	3.69	2.24
*	4	143.9	15767	6.07	5.61	5.42	5.00	4.54	3.68	2.25
*	4	144.2	15795	6.07	5.62	5.43	5.00	4.55	3.71	2.24
*	4	143.9	15763	6.06	5.61	5.43	5.00	4.55	3.70	2.24

Stn: 371 Lane:J1 Temp: J/C: Air: 79 PvT: 94 09:44

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.0	11838	4.69	4.42	4.29	4.00	3.66	3.03	1.80
	C	108.5	11886	4.71	4.44	4.29	4.00	3.66	3.02	1.80
	C	108.6	11898	4.72	4.43	4.29	3.99	3.66	3.02	1.79
*	2	79.3	8684	3.44	3.26	3.17	2.93	2.69	2.19	1.31
*	2	79.5	8716	3.43	3.30	3.19	2.94	2.71	2.22	1.33
*	2	79.5	8712	3.43	3.30	3.18	2.93	2.71	2.26	1.33
*	2	79.7	8732	3.43	3.31	3.19	2.93	2.71	2.25	1.33
*	3	108.1	11842	4.67	4.39	4.26	3.97	3.63	2.98	1.79
*	3	108.2	11854	4.69	4.39	4.26	3.98	3.63	2.97	1.78
*	3	108.2	11850	4.70	4.39	4.26	3.97	3.63	2.98	1.78
*	3	108.0	11838	4.70	4.38	4.26	3.98	3.63	2.97	1.76
*	4	143.9	15771	6.19	5.84	5.67	5.29	4.86	4.03	2.44
*	4	144.5	15827	6.17	5.80	5.63	5.24	4.82	3.97	2.37
*	4	144.2	15803	6.17	5.79	5.63	5.24	4.81	3.97	2.37
*	4	144.4	15823	6.18	5.80	5.64	5.24	4.81	3.96	2.36

Stn: 386 Lane:J1 Temp: J/C: Air: 79 PvT: 92 09:46

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.1	11842	5.01	4.69	4.58	4.27	3.96	3.36	2.13
	C	108.2	11850	5.00	4.70	4.59	4.27	3.97	3.36	2.13
	C	108.3	11866	4.98	4.70	4.59	4.28	3.98	3.35	2.12
*	2	79.5	8712	3.70	3.49	3.43	3.20	2.97	2.48	1.56
*	2	79.5	8712	3.72	3.48	3.43	3.19	2.97	2.48	1.56
*	2	80.0	8767	3.74	3.49	3.43	3.20	2.98	2.48	1.56
*	2	79.7	8728	3.73	3.46	3.41	3.17	2.94	2.48	1.57
*	3	107.8	11806	4.96	4.67	4.57	4.27	3.96	3.32	2.10
*	3	108.2	11858	4.96	4.68	4.58	4.26	3.97	3.35	2.11
*	3	108.1	11846	4.98	4.69	4.59	4.26	3.97	3.34	2.11
*	3	108.3	11870	4.98	4.70	4.59	4.28	3.98	3.35	2.12
*	4	143.4	15715	6.51	6.11	5.98	5.57	5.17	4.38	2.78
*	4	144.1	15791	6.55	6.15	6.02	5.61	5.20	4.38	2.81
*	4	144.0	15779	6.54	6.16	6.02	5.61	5.21	4.38	2.80
*	4	144.4	15823	6.59	6.17	6.04	5.62	5.22	4.40	2.81

Stn: 424 Lane:J1 Temp: J/C: Air: 79 PvT: 94 09:50

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.7	11914	4.21	3.97	3.89	3.67	3.38	2.80	1.70
	C	108.9	11933	4.20	3.99	3.89	3.66	3.39	2.81	1.72
	C	108.7	11906	4.20	3.99	3.89	3.65	3.39	2.81	1.72
*	2	79.8	8744	3.08	2.91	2.83	2.67	2.47	2.10	1.26
*	2	80.0	8767	3.06	2.92	2.85	2.67	2.48	2.13	1.28
*	2	79.8	8748	3.06	2.93	2.85	2.67	2.49	2.12	1.27
*	2	79.7	8728	3.05	2.91	2.84	2.66	2.47	2.11	1.26
*	3	108.3	11866	4.18	3.96	3.87	3.65	3.37	2.77	1.70
*	3	108.4	11878	4.20	3.98	3.88	3.63	3.38	2.78	1.70
*	3	108.5	11890	4.22	3.98	3.87	3.64	3.38	2.78	1.71
*	3	108.6	11894	4.21	3.99	3.89	3.65	3.38	2.79	1.70
*	4	143.8	15751	5.57	5.26	5.13	4.81	4.44	3.68	2.22
*	4	144.3	15807	5.61	5.29	5.17	4.85	4.47	3.69	2.24

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*	4	144.5	15831	5.61	5.29	5.16	4.84	4.46	3.69	2.24
*	4	144.4	15819	5.60	5.28	5.16	4.85	4.46	3.69	2.24

Stn: 437 Lane:J1 Temp: J/C: Air: 80 PvT: 92 09:52

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.9	11826	4.80	4.46	4.35	4.02	3.69	2.94	1.76

*	2	79.6	8720	3.52	3.27	3.20	2.96	2.71	2.14	1.31
*	2	79.8	8744	3.56	3.29	3.22	2.98	2.72	2.17	1.31
*	2	79.9	8751	3.57	3.31	3.22	2.97	2.72	2.15	1.31
*	3	108.0	11838	4.70	4.44	4.31	3.99	3.67	2.94	1.75
*	3	108.2	11858	4.75	4.44	4.33	4.01	3.68	2.91	1.77
*	3	108.4	11882	4.78	4.48	4.34	4.02	3.67	2.96	1.76
*	3	108.3	11870	4.78	4.47	4.33	4.01	3.67	2.95	1.76
*	4	143.5	15719	6.21	5.85	5.67	5.25	4.80	3.87	2.30
*	4	144.1	15783	6.27	5.90	5.71	5.28	4.82	3.91	2.30
*	4	144.5	15827	6.28	5.89	5.70	5.27	4.81	3.93	2.30
*	4	144.0	15779	6.27	5.90	5.71	5.28	4.83	3.91	2.31

Stn: 472 Lane:J1 Temp: J/C: Air: 80 PvT: 95 09:55

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.0	11838	5.48	5.08	4.87	4.48	4.05	3.28	1.91
	C	108.3	11870	5.48	5.06	4.86	4.47	4.05	3.27	1.91
	C	108.3	11866	5.47	5.06	4.87	4.47	4.05	3.24	1.89
*	2	79.2	8676	3.99	3.58	3.56	3.22	2.93	2.31	1.39
*	2	79.3	8692	3.98	3.59	3.56	3.22	2.94	2.32	1.41
*	2	79.2	8676	4.00	3.63	3.56	3.24	2.94	2.33	1.40
*	2	79.2	8580	4.00	3.61	3.54	3.21	2.93	2.29	1.41
*	3	107.9	11822	5.43	5.00	4.82	4.41	4.01	3.22	1.88
*	3	108.2	11850	5.45	5.04	4.85	4.45	4.04	3.26	1.92
*	3	108.1	11842	5.47	5.06	4.84	4.45	4.04	3.25	1.91
*	3	108.3	11870	5.46	5.05	4.83	4.44	4.02	3.22	1.91
*	4	143.8	15755	7.18	6.63	6.39	5.86	5.33	4.30	2.56
*	4	144.3	15807	7.24	6.65	6.42	5.88	5.34	4.30	2.53
*	4	144.5	15831	7.24	6.65	6.43	5.90	5.36	4.33	2.54
*	4	144.2	15803	7.25	6.68	6.43	5.90	5.36	4.30	2.55

Stn: 483 Lane:J1 Temp: J/C: Air: 80 PvT: 94 09:58

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.2	11858	4.72	4.43	4.37	4.02	3.72	3.09	1.89
	C	108.4	11882	4.64	4.43	4.34	4.02	3.72	3.10	1.87
	C	108.3	11870	4.69	4.43	4.34	4.02	3.71	3.08	1.86
*	2	79.3	8692	3.47	3.22	3.14	2.91	2.70	2.24	1.34
*	2	79.3	8684	3.37	3.23	3.15	2.93	2.70	2.24	1.35
*	2	79.5	8708	3.44	3.23	3.16	2.91	2.70	2.26	1.35
*	2	79.3	8684	3.40	3.27	3.16	2.94	2.72	2.26	1.34
*	3	107.6	11790	4.69	4.42	4.32	4.00	3.69	3.07	1.86
*	3	108.1	11842	4.71	4.42	4.32	4.02	3.71	3.10	1.87
*	3	108.3	11862	4.76	4.44	4.33	4.04	3.73	3.10	1.87
*	3	107.8	11806	4.74	4.43	4.36	4.04	3.75	3.13	1.94
*	4	143.4	15711	6.22	5.88	5.76	5.33	4.94	4.07	2.50
*	4	144.2	15795	6.33	5.92	5.79	5.36	4.96	4.11	2.52
*	4	143.8	15759	6.30	5.93	5.76	5.38	4.98	4.13	2.52
*	4	144.1	15783	6.31	5.93	5.78	5.39	4.96	4.11	2.49

Stn: 511 Lane:J1 Temp: J/C: Air: 81 PvT: 95 10:00

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.4	11878	4.46	4.17	4.05	3.80	3.51	2.93	1.87
	C	108.6	11894	4.45	4.18	4.07	3.80	3.51	2.97	1.86
	C	108.3	11862	4.46	4.20	4.05	3.77	3.50	3.00	1.87
*	2	79.4	8696	3.19	2.98	2.94	2.74	2.54	2.14	1.33
*	2	79.3	8688	3.15	2.94	2.93	2.76	2.56	2.11	1.35
*	2	79.4	8700	3.20	3.00	2.95	2.76	2.52	2.07	1.34
*	2	79.4	8704	3.20	2.96	2.93	2.76	2.53	2.06	1.35
*	3	108.0	11834	4.44	4.13	4.05	3.79	3.47	2.89	1.83
*	3	108.3	11862	4.44	4.16	4.04	3.76	3.48	2.92	1.85
*	3	108.5	11890	4.45	4.17	4.06	3.79	3.50	2.94	1.85
*	3	108.3	11862	4.45	4.23	4.07	3.76	3.50	3.00	1.84
*	4	143.8	15751	5.91	5.59	5.40	5.02	4.66	3.94	2.48

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Subsection: 183002

*	4	144.2	15799	5.94	5.61	5.43	5.04	4.67	3.91	2.48
*	4	144.3	15811	5.90	5.60	5.42	5.06	4.69	3.92	2.50
*	4	144.3	15815	5.93	5.62	5.43	5.05	4.68	3.95	2.48

Stn: 530 Lane:J1 Temp: J/C: Air: 80 PvT: 94 10:03

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.6	11877	4.51	4.28	4.15	3.87	3.60	2.87	1.82

*	2	79.7	8728	3.26	3.11	3.02	2.82	2.63	2.22	1.43
*	2	79.6	8720	3.18	3.04	2.96	2.80	2.66	2.24	1.46
*	2	79.4	8700	3.26	3.09	3.03	2.84	2.64	2.21	1.39
*	3	108.0	11838	4.40	4.24	4.16	3.90	3.62	3.04	1.96
*	3	108.6	11902	4.52	4.24	4.13	3.85	3.56	3.04	1.97
*	3	108.7	11906	4.59	4.29	4.14	3.83	3.57	3.04	1.98
*	3	108.7	11914	4.48	4.25	4.13	3.86	3.59	3.06	1.99
*	4	143.7	15743	5.83	5.62	5.50	5.22	4.85	4.09	2.65
*	4	144.4	15819	5.96	5.67	5.52	5.18	4.81	4.08	2.65
*	4	144.5	15831	5.93	5.67	5.54	5.20	4.85	4.09	2.65
*	4	144.0	15775	5.93	5.70	5.55	5.22	4.87	4.07	2.61

Mileage:-.002 -> .1

File: C:\FWD\DATA\183002C2.FWD
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

FWD S/N : 8002-060
Operator ID : STONESTROM, ERIC, L.

Stationing...: Feet

Diameter of Plate: 11.8
Deflector distances : 0 12 18 24 36 60

Sequence: [illegible]

Stn:	-15	Lane:J2	Temp:		J/C:		Air: 81	PvT: 97		10:10
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
	C	109.1	11957	10.54	7.37	6.93	6.09	5.44	4.06	2.26	
	C	109.6	12005	10.22	7.08	6.66	5.84	5.22	3.85	2.18	
	C	109.5	11993	10.21	7.07	6.66	5.85	5.22	3.90	2.16	
*	2	80.0	8763	7.70	5.09	4.77	4.19	3.74	2.77	1.51	
*	2	80.2	8783	7.74	5.10	4.78	4.20	3.74	2.80	1.50	
*	2	79.9	8759	7.66	5.09	4.78	4.21	3.75	2.81	1.50	
*	2	79.9	8751	7.68	5.10	4.78	4.19	3.73	2.79	1.52	
*	3	109.1	11949	10.16	7.05	6.61	5.81	5.18	3.89	2.12	
*	3	109.2	11969	10.22	7.07	6.66	5.83	5.21	3.87	2.17	
*	3	109.5	12001	10.27	7.09	6.67	5.85	5.22	3.86	2.15	
*	3	109.3	11973	10.26	7.09	6.67	5.83	5.22	3.87	2.15	
*	4	144.3	15807	13.39	9.61	9.03	7.94	7.05	5.31	2.93	
*	4	144.4	15823	13.44	9.65	9.06	7.97	7.08	5.34	2.94	
*	4	144.5	15835	13.49	9.67	9.08	7.98	7.09	5.33	2.94	
*	4	144.1	15787	13.50	9.68	9.09	7.99	7.12	5.32	2.95	

Stn:-	11	Lane:J3	Temp:		J/C:		Air: 81	PvT: 96		10:14
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
	C	109.7	12017	6.38	6.15	6.00	5.60	5.18	4.26	2.55	
	C	109.9	12037	6.35	6.09	5.94	5.54	5.11	4.21	2.52	
	C	109.6	12013	6.35	6.07	5.95	5.55	5.11	4.20	2.49	
*	2	80.5	8819	4.61	4.41	4.33	4.02	3.70	3.05	1.80	
*	2	80.4	8807	4.63	4.40	4.32	4.01	3.68	3.05	1.76	
*	2	80.4	8807	4.61	4.37	4.31	4.00	3.67	3.04	1.75	
*	2	80.3	8799	4.62	4.37	4.30	4.00	3.67	3.03	1.77	
*	3	109.4	11985	6.34	6.09	5.95	5.55	5.12	4.20	2.49	
*	3	109.9	12041	6.36	6.06	5.95	5.53	5.10	4.20	2.48	
*	3	109.8	12025	6.37	6.08	5.95	5.54	5.11	4.21	2.48	
*	3	109.8	12033	6.36	6.07	5.96	5.56	5.13	4.22	2.49	
*	4	145.6	15954	8.51	8.18	8.00	7.45	6.87	5.67	3.34	
*	4	146.0	16001	8.56	8.22	8.06	7.49	6.94	5.71	3.37	
*	4	145.9	15989	8.55	8.26	8.07	7.55	6.95	5.71	3.39	
*	4	145.7	15966	8.58	8.26	8.06	7.52	6.94	5.71	3.37	

NOTE: MOVE (-) SIGN OVER

Stn:	-3	Lane:J2	Temp:		J/C:		Air: 81	PvT: 95		10:17
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
	C	107.8	11810	14.43	9.01	8.49	7.54	6.60	5.04	2.59	
	C	107.9	11818	13.99	8.66	8.16	7.24	6.35	4.85	2.49	
	C	107.8	11806	13.95	8.63	8.17	7.24	6.35	4.85	2.48	
*	2	79.2	8672	10.74	6.28	5.89	5.22	4.58	3.48	1.76	
*	2	79.0	8660	10.74	6.25	5.86	5.20	4.55	3.46	1.74	
*	2	79.2	8680	10.71	6.23	5.87	5.20	4.56	3.48	1.76	
*	2	79.0	8656	10.69	6.22	5.85	5.19	4.55	3.46	1.75	
*	3	107.6	11790	13.90	8.65	8.14	7.22	6.33	4.83	2.46	
*	3	107.6	11794	13.92	8.66	8.13	7.22	6.33	4.81	2.44	
*	3	107.8	11810	13.96	8.68	8.17	7.25	6.34	4.84	2.47	
*	3	107.8	11806	13.97	8.71	8.17	7.25	6.35	4.83	2.47	
*	4	143.0	15668	17.88	11.77	11.08	9.83	8.61	6.57	3.34	
*	4	143.5	15719	17.95	11.79	11.07	9.81	8.60	6.54	3.33	
*	4	143.1	15680	18.00	11.87	11.13	9.86	8.63	6.57	3.37	
*	4	143.3	15703	18.04	11.85	11.14	9.87	8.65	6.56	3.35	

Stn:	1	Lane:J3	Temp:		J/C:		Air: 81	PvT: 93		10:19
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
	C	109.2	11969	5.71	5.17	5.03	4.61	4.14	3.31	1.97	
	C	109.4	11985	5.67	5.17	4.96	4.48	4.04	3.24	1.91	
	C	109.1	11953	5.70	5.20	4.96	4.48	4.04	3.25	1.91	

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*	2	79.6	8720	4.04	3.74	3.58	3.21	2.91	2.35	1.37
*	2	80.4	8811	4.13	3.78	3.61	3.24	2.94	2.35	1.37
*	2	79.8	8748	4.04	3.75	3.59	3.24	2.93	2.35	1.38
*	2	80.1	8775	4.14	3.79	3.60	3.23	2.91	2.35	1.38
*	3	108.9	11930	5.69	5.19	4.95	4.48	4.02	3.23	1.91
*	3	109.2	11969	5.68	5.22	4.97	4.49	4.04	3.24	1.90
*	3	109.1	11953	5.64	5.22	4.96	4.48	4.04	3.24	1.90

*	4	145.2	15914	7.66	7.04	6.67	6.06	5.44	4.40	2.58
*	4	145.7	15966	7.63	7.03	6.69	6.05	5.46	4.40	2.59
*	4	145.5	15942	7.61	7.01	6.69	6.03	5.45	4.40	2.58

Stn: 8 Lane:J2 Temp: J/C: Air: 81 PvT: 83 10:22

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.5	11890	5.84	5.05	4.80	4.37	4.00	3.20	1.99
	C	108.7	11906	5.76	4.93	4.69	4.25	3.90	3.07	1.93
	C	108.8	11918	5.76	4.91	4.67	4.24	3.91	3.07	1.94
*	2	79.7	8728	4.19	3.55	3.39	3.06	2.81	2.24	1.43
*	2	79.5	8716	4.16	3.58	3.40	3.07	2.82	2.25	1.44
*	2	79.5	8708	4.11	3.58	3.42	3.10	2.82	2.25	1.43
*	2	79.5	8712	4.15	3.57	3.41	3.10	2.81	2.26	1.43
*	3	108.7	11910	5.78	4.97	4.71	4.28	3.89	3.13	1.94
*	3	108.7	11906	5.78	4.94	4.69	4.25	3.88	3.09	1.93
*	3	108.7	11910	5.78	4.94	4.70	4.27	3.90	3.09	1.94
*	3	108.7	11914	5.78	4.96	4.70	4.27	3.89	3.11	1.94
*	4	145.4	15930	7.73	6.65	6.31	5.72	5.22	4.17	2.61
*	4	146.0	15997	7.76	6.67	6.33	5.77	5.25	4.20	2.63
*	4	145.5	15946	7.76	6.66	6.33	5.74	5.25	4.19	2.63
*	4	145.4	15934	7.76	6.67	6.33	5.75	5.24	4.19	2.62

Stn: 16 Lane:J3 Temp: J/C: Air: 81 PvT: 78 10:24

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.4	11981	6.53	6.42	6.26	5.90	5.55	4.70	3.01
	C	109.1	11949	6.41	6.30	6.15	5.80	5.44	4.57	2.89
	C	109.4	11989	6.46	6.26	6.13	5.74	5.45	4.47	2.95
*	2	79.9	8759	4.74	4.61	4.50	4.22	3.98	3.31	2.14
*	2	79.9	8755	4.75	4.60	4.50	4.20	3.99	3.28	2.17
*	2	80.2	8783	4.74	4.63	4.52	4.25	4.00	3.30	2.11
*	2	79.9	8755	4.71	4.59	4.48	4.24	3.97	3.36	2.08
*	3	109.0	11941	6.42	6.26	6.11	5.74	5.44	4.52	2.89
*	3	109.0	11945	6.41	6.29	6.15	5.79	5.44	4.57	2.92
*	3	108.9	11930	6.44	6.31	6.17	5.80	5.46	4.56	2.92
*	3	109.0	11945	6.42	6.31	6.17	5.80	5.45	4.57	2.92
*	4	144.2	15803	8.45	8.28	8.09	7.61	7.17	6.00	3.88
*	4	144.8	15866	8.53	8.33	8.14	7.66	7.22	6.04	3.91
*	4	144.9	15874	8.52	8.36	8.17	7.69	7.24	6.06	3.91
*	4	145.0	15886	8.51	8.35	8.17	7.69	7.24	6.06	3.91

Stn: 26 Lane:J2 Temp: J/C: Air: 81 PvT: 77 10:26

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.0	11941	9.33	7.55	7.01	6.12	5.35	4.11	2.44
	C	108.7	11906	9.10	7.34	6.78	5.89	5.19	4.00	2.38
	C	108.9	11933	9.13	7.41	6.80	5.91	5.20	3.99	2.36
*	2	80.1	8779	6.78	5.48	4.99	4.31	3.79	2.92	1.72
*	2	80.1	8775	6.76	5.44	5.00	4.31	3.80	2.92	1.74
*	2	79.9	8755	6.74	5.44	4.97	4.28	3.79	2.89	1.72
*	2	79.8	8744	6.73	5.48	5.00	4.32	3.82	2.91	1.73
*	3	108.6	11894	9.17	7.47	6.83	5.93	5.22	4.02	2.36
*	3	108.8	11922	9.19	7.44	6.85	5.97	5.22	4.02	2.35
*	3	108.9	11930	9.19	7.47	6.87	5.97	5.24	4.04	2.39
*	3	108.6	11902	9.22	7.52	6.88	5.97	5.25	4.04	2.36
*	4	144.1	15787	12.19	9.95	9.10	7.92	6.97	5.39	3.19
*	4	144.4	15819	12.24	9.97	9.14	7.95	6.99	5.36	3.16
*	4	144.5	15831	12.31	10.02	9.16	7.94	7.00	5.41	3.18
*	4	144.3	15807	12.31	10.02	9.19	7.98	7.02	5.41	3.18

Stn: 35 Lane:J3 Temp: J/C: Air: 81 PvT: 79 10:29

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.8	11926	5.88	5.50	5.41	5.18	4.79	4.06	2.60
	C	108.9	11930	5.76	5.57	5.37	5.02	4.68	3.93	2.56

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	C	108.7	11914	5.78	5.52	5.35	5.02	4.68	3.93	2.54
*	2	79.7	8736	4.18	3.93	3.88	3.66	3.39	2.83	1.83
*	2	79.9	8759	4.16	3.95	3.87	3.66	3.39	2.83	1.81
*	2	80.1	8771	4.18	4.02	3.90	3.64	3.39	2.83	1.84
*	2	80.2	8787	4.19	4.01	3.91	3.63	3.39	2.83	1.83
*	3	108.7	11910	5.78	5.54	5.36	5.04	4.67	3.93	2.54
*	3	108.8	11925	5.78	5.55	5.38	5.04	4.69	3.94	2.56

*	4	145.4	15934	7.61	7.23	7.06	6.67	6.20	5.22	3.38
*	4	145.6	15954	7.62	7.32	7.10	6.68	6.22	5.26	3.41
*	4	145.6	15954	7.62	7.32	7.11	6.68	6.22	5.24	3.39

Stn: 59 Lane:J2 Temp: J/C: Air: 81 PvT: 99 10:31

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.1	11949	6.74	5.89	5.58	4.93	4.43	3.53	2.13
	C	109.6	12009	6.53	5.73	5.40	4.79	4.29	3.40	2.07
	C	109.0	11937	6.55	5.69	5.37	4.75	4.26	3.35	2.04
*	2	80.3	8799	4.70	4.23	3.92	3.46	3.10	2.45	1.48
*	2	80.1	8779	4.71	4.20	3.91	3.44	3.08	2.44	1.48
*	2	80.0	8767	4.69	4.11	3.87	3.41	3.06	2.42	1.47
*	2	80.2	8791	4.68	4.20	3.89	3.44	3.07	2.43	1.48
*	3	109.2	11965	6.52	5.69	5.37	4.74	4.25	3.35	2.04
*	3	109.5	11993	6.56	5.70	5.39	4.77	4.28	3.37	2.06
*	3	109.4	11981	6.55	5.70	5.39	4.76	4.28	3.39	2.06
*	3	109.5	11997	6.52	5.68	5.39	4.77	4.26	3.36	2.05
*	4	145.8	15978	8.72	7.61	7.20	6.38	5.73	4.52	2.76
*	4	146.0	15993	8.75	7.63	7.21	6.39	5.75	4.52	2.76
*	4	146.0	15993	8.77	7.61	7.22	6.41	5.73	4.52	2.77
*	4	145.8	15970	8.76	7.63	7.22	6.38	5.73	4.54	2.78

Stn: 65 Lane:J3 Temp: J/C: Air: 82 PvT: 99 10:33

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.1	11949	5.29	5.03	4.91	4.57	4.24	3.52	2.28
	C	109.2	11969	5.23	4.96	4.85	4.52	4.18	3.48	2.20
	C	108.9	11930	5.24	4.95	4.83	4.52	4.18	3.49	2.19
*	2	79.8	8744	3.77	3.56	3.48	3.25	3.02	2.50	1.57
*	2	79.7	8732	3.80	3.53	3.48	3.25	3.01	2.49	1.57
*	2	80.0	8763	3.78	3.54	3.48	3.25	3.02	2.50	1.56
*	2	80.1	8779	3.80	3.55	3.48	3.24	3.02	2.50	1.58
*	3	108.9	11930	5.24	4.98	4.84	4.52	4.19	3.46	2.18
*	3	109.1	11957	5.25	5.00	4.85	4.53	4.19	3.52	2.20
*	3	109.1	11957	5.23	5.02	4.86	4.54	4.19	3.48	2.17
*	3	108.7	11906	5.24	5.04	4.85	4.54	4.20	3.50	2.18
*	4	145.8	15974	6.96	6.67	6.48	6.06	5.62	4.67	2.93
*	4	146.0	16001	7.00	6.71	6.50	6.05	5.63	4.64	2.93
*	4	146.1	16005	6.98	6.67	6.49	6.06	5.65	4.67	2.93
*	4	146.1	16005	7.00	6.69	6.50	6.07	5.64	4.67	2.94

Stn: 72 Lane:J2 Temp: J/C: Air: 81 PvT: 98 10:35

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.3	11973	6.70	6.02	5.73	5.19	4.70	3.78	2.35
	C	109.5	12001	6.49	5.80	5.56	5.03	4.57	3.63	2.25
	C	109.6	12005	6.53	5.79	5.57	5.06	4.52	3.69	2.27
*	2	80.2	8783	4.71	4.15	4.04	3.68	3.28	2.68	1.64
*	2	80.1	8779	4.67	4.16	4.02	3.67	3.23	2.69	1.64
*	2	80.5	8823	4.70	4.17	4.03	3.67	3.26	2.69	1.63
*	2	80.1	8771	4.69	4.14	4.03	3.67	3.24	2.67	1.63
*	3	109.5	11993	6.52	5.78	5.55	5.05	4.51	3.67	2.26
*	3	109.4	11985	6.53	5.83	5.57	5.05	4.53	3.67	2.26
*	3	109.2	11969	6.52	5.84	5.57	5.04	4.56	3.66	2.27
*	3	109.2	11961	6.51	5.87	5.58	5.05	4.57	3.66	2.29
*	4	145.6	15954	8.66	7.81	7.42	6.70	6.09	4.89	3.03
*	4	146.0	16001	8.68	7.82	7.43	6.74	6.13	4.88	3.04
*	4	146.2	16013	8.70	7.84	7.45	6.73	6.12	4.88	3.04
*	4	145.8	15978	8.69	7.81	7.44	6.75	6.10	4.89	3.04

Stn: 80 Lane:J3 Temp: J/C: Air: 82 PvT: 98 10:39

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7

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	C	108.8	11926	5.56	5.34	5.16	4.87	4.53	3.84	2.49
	C	108.6	11898	5.52	5.31	5.16	4.89	4.53	3.84	2.52
	C	108.7	11914	5.54	5.29	5.18	4.88	4.54	3.85	2.46
*	2	79.8	8748	4.04	3.80	3.80	3.53	3.30	2.80	1.70
*	2	79.7	8732	4.07	3.81	3.80	3.53	3.29	2.80	1.75
*	2	79.7	8732	4.04	3.81	3.79	3.52	3.27	2.78	1.76
*	2	79.7	8728	4.05	3.87	3.76	3.54	3.28	2.78	1.81
*	3	108.8	11922	5.53	5.28	5.16	4.86	4.52	3.83	2.44

*	4	145.5	15942	7.35	7.00	6.88	6.48	6.02	5.11	3.29
*	4	145.9	15982	7.40	7.01	6.89	6.50	6.06	5.13	3.28
*	4	146.0	15997	7.40	7.07	6.91	6.52	6.06	5.14	3.31
*	4	146.0	15997	7.37	7.05	6.93	6.54	6.07	5.14	3.30

Stn: 107 Lane:J2 Temp: J/C: Air: 81 PvT: 101 10:41

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.9	11930	5.75	5.20	5.02	4.56	4.15	3.46	2.23
	C	109.1	11957	5.57	5.03	4.84	4.42	4.03	3.35	2.16
	C	109.2	11969	5.56	5.01	4.84	4.41	4.02	3.33	2.14
*	2	79.3	8692	4.02	3.64	3.48	3.17	2.89	2.40	1.55
*	2	79.5	8708	4.03	3.63	3.48	3.15	2.90	2.41	1.57
*	2	79.9	8751	4.00	3.63	3.48	3.15	2.91	2.39	1.55
*	2	79.9	8759	4.02	3.63	3.49	3.19	2.93	2.41	1.56
*	3	108.8	11926	5.52	5.02	4.83	4.42	4.02	3.32	2.11
*	3	109.0	11945	5.53	5.00	4.81	4.39	4.02	3.33	2.14
*	3	109.0	11941	5.50	5.02	4.84	4.45	4.04	3.32	2.10
*	3	108.9	11930	5.55	5.02	4.83	4.41	4.00	3.32	2.13
*	4	145.4	15934	7.35	6.72	6.46	5.92	5.41	4.46	2.85
*	4	145.6	15950	7.44	6.74	6.46	5.90	5.41	4.46	2.87
*	4	145.9	15985	7.42	6.72	6.46	5.93	5.39	4.46	2.87
*	4	145.8	15970	7.41	6.71	6.46	5.89	5.38	4.44	2.84

Stn: 112 Lane:J3 Temp: J/C: Air: 81 PvT: 99 10:43

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.4	11878	5.60	5.32	5.22	4.90	4.55	3.84	2.44
	C	108.4	11878	5.42	5.20	5.11	4.81	4.46	3.73	2.35
	C	108.5	11890	5.48	5.19	5.08	4.78	4.43	3.74	2.39
*	2	79.5	8712	4.00	3.82	3.70	3.48	3.24	2.65	1.65
*	2	79.7	8728	3.96	3.79	3.72	3.50	3.23	2.69	1.65
*	2	79.5	8716	3.89	3.79	3.72	3.51	3.27	2.69	1.67
*	2	79.5	8712	4.03	3.81	3.73	3.50	3.22	2.69	1.69
*	3	108.1	11846	5.48	5.22	5.11	4.80	4.42	3.73	2.35
*	3	108.5	11890	5.43	5.20	5.10	4.79	4.44	3.72	2.35
*	3	108.5	11890	5.49	5.17	5.07	4.76	4.42	3.73	2.38
*	3	108.5	11890	5.46	5.17	5.07	4.77	4.44	3.72	2.38
*	4	144.7	15854	7.29	6.99	6.78	6.34	5.89	4.93	3.11
*	4	145.3	15918	7.29	6.95	6.75	6.35	5.93	4.95	3.15
*	4	145.3	15922	7.31	7.00	6.80	6.37	5.90	4.94	3.11
*	4	145.3	15922	7.31	7.02	6.80	6.36	5.92	4.93	3.11

Stn: 120 Lane:J2 Temp: J/C: Air: 82 PvT: 99 10:46

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.6	11790	7.29	6.69	6.37	5.84	5.28	4.20	2.61
	C	108.0	11830	7.16	6.50	6.19	5.67	5.14	4.07	2.54
	C	107.8	11814	7.17	6.54	6.26	5.69	5.13	4.06	2.50
*	2	78.8	8636	5.11	4.72	4.51	4.09	3.72	3.01	1.80
*	2	79.3	8692	5.10	4.75	4.50	4.11	3.73	2.97	1.80
*	2	78.9	8648	5.17	4.73	4.51	4.09	3.70	2.98	1.78
*	2	79.0	8660	5.16	4.70	4.49	4.04	3.71	2.98	1.79
*	3	107.3	11759	7.14	6.47	6.19	5.65	5.12	4.10	2.50
*	3	108.0	11838	7.08	6.46	6.25	5.69	5.15	4.15	2.50
*	3	107.9	11826	7.17	6.48	6.26	5.69	5.13	4.13	2.52
*	3	108.0	11834	7.16	6.47	6.25	5.68	5.12	4.03	2.53
*	4	143.8	15759	9.45	8.67	8.29	7.56	6.87	5.54	3.26
*	4	144.3	15811	9.52	8.75	8.34	7.60	6.88	5.52	3.33
*	4	144.3	15807	9.53	8.77	8.34	7.59	6.89	5.53	3.35
*	4	144.2	15799	9.59	8.76	8.34	7.56	6.86	5.55	3.34

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Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

Stn: 125 Lane:J3 Temp: J/C: Air: 81 PvT: 98 10:49

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.9	11818	7.00	6.67	6.55	6.17	5.71	4.69	2.82
	C	108.0	11834	6.94	6.69	6.50	6.11	5.67	4.64	2.77
	C	107.9	11818	6.95	6.60	6.49	6.09	5.63	4.61	2.76
*	2	78.9	8644	5.09	4.88	4.74	4.44	4.11	3.39	2.00
*	2	79.0	8652	5.06	4.82	4.71	4.41	4.08	3.33	2.00
*	2	78.8	8636	5.03	4.82	4.72	4.43	4.09	3.34	1.99

* 3	108.1	11845	6.93	6.67	6.48	6.09	5.65	4.62	2.75
* 3	108.1	11846	6.97	6.69	6.50	6.10	5.66	4.63	2.76
* 3	108.0	11838	6.96	6.68	6.50	6.10	5.65	4.63	2.76
* 4	144.1	15787	9.09	8.68	8.48	7.96	7.38	6.06	3.54
* 4	145.0	15882	9.15	8.69	8.55	8.04	7.44	6.09	3.67
* 4	144.8	15862	9.16	8.72	8.57	8.06	7.45	6.12	3.68
* 4	145.0	15882	9.17	8.70	8.57	8.06	7.46	6.11	3.69

Stn: 150 Lane:J2 Temp: J/C: Air: 81 PvT: 101 10:51

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.0	11830	7.67	6.80	6.47	5.86	5.29	4.31	2.69
	C	108.4	11882	7.43	6.57	6.31	5.69	5.13	4.21	2.61
	C	108.2	11858	7.44	6.58	6.28	5.69	5.12	4.21	2.61
*	2	79.3	8692	5.52	4.96	4.70	4.25	3.85	3.11	1.94
*	2	79.0	8660	5.49	4.92	4.69	4.24	3.81	3.08	1.92
*	2	79.0	8656	5.50	4.89	4.69	4.23	3.82	3.11	1.94
*	2	79.4	8704	5.54	4.91	4.75	4.23	3.80	3.12	1.94
*	3	107.3	11759	7.40	6.53	6.26	5.66	5.09	4.19	2.61
*	3	108.3	11866	7.42	6.53	6.29	5.66	5.11	4.22	2.59
*	3	108.4	11874	7.44	6.59	6.29	5.74	5.19	4.21	2.63
*	3	108.9	11930	7.41	6.58	6.31	5.70	5.12	4.25	2.59
*	4	144.3	15815	9.68	8.57	8.19	7.41	6.73	5.52	3.48
*	4	144.4	15823	9.67	8.57	8.16	7.43	6.79	5.53	3.50
*	4	144.6	15842	9.67	8.55	8.17	7.41	6.75	5.54	3.52
*	4	144.5	15835	9.67	8.56	8.20	7.46	6.77	5.56	3.50

Stn: 158 Lane:J3 Temp: J/C: Air: 82 PvT: 102 10:53

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.4	11981	6.86	6.47	6.31	5.86	5.40	4.39	2.78
	C	109.2	11969	6.72	6.35	6.22	5.78	5.31	4.29	2.67
	C	109.4	11989	6.74	6.36	6.20	5.74	5.29	4.30	2.70
*	2	79.5	8712	5.00	4.69	4.56	4.20	3.88	3.14	1.95
*	2	79.6	8724	5.02	4.73	4.60	4.24	3.83	3.13	1.94
*	2	79.9	8751	4.92	4.70	4.58	4.21	3.85	3.14	1.96
*	2	79.7	8736	4.89	4.66	4.56	4.22	3.88	3.15	1.97
*	3	108.7	11910	6.81	6.39	6.17	5.69	5.23	4.26	2.68
*	3	109.2	11969	6.88	6.39	6.16	5.69	5.24	4.29	2.74
*	3	109.9	12037	6.74	6.37	6.24	5.76	5.26	4.30	2.72
*	3	109.3	11973	6.69	6.35	6.21	5.77	5.30	4.29	2.72
*	4	145.5	15946	8.94	8.38	8.15	7.54	6.92	5.66	3.57
*	4	146.0	15993	8.89	8.41	8.18	7.58	6.98	5.69	3.62
*	4	146.0	15993	9.06	8.48	8.19	7.58	6.97	5.71	3.62
*	4	145.9	15985	8.94	8.44	8.23	7.61	7.00	5.72	3.59

Stn: 169 Lane:J2 Temp: J/C: Air: 81 PvT: 99 10:55

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.2	11850	6.06	5.52	5.25	4.82	4.43	3.70	2.43
	C	108.6	11902	5.93	5.43	5.14	4.72	4.35	3.63	2.38
	C	108.5	11886	5.73	5.30	5.10	4.70	4.31	3.60	2.37
*	2	79.0	8656	4.17	3.87	3.74	3.48	3.12	2.60	1.69
*	2	79.1	8664	4.10	3.91	3.71	3.45	3.21	2.56	1.70
*	2	79.0	8660	4.19	3.94	3.80	3.46	3.13	2.59	1.72
*	2	78.9	8648	4.15	3.91	3.74	3.49	3.19	2.59	1.69
*	3	107.8	11806	5.77	5.29	5.13	4.74	4.33	3.59	2.33
*	3	108.2	11850	5.85	5.36	5.20	4.76	4.33	3.62	2.34
*	3	108.3	11870	5.83	5.33	5.19	4.77	4.33	3.61	2.34
*	3	108.5	11886	5.88	5.34	5.17	4.72	4.31	3.60	2.38
*	4	144.9	15878	7.74	7.08	6.81	6.25	5.74	4.78	3.15
*	4	145.6	15958	7.73	7.10	6.86	6.32	5.80	4.83	3.13
*	4	145.5	15942	7.79	7.13	6.86	6.31	5.81	4.81	3.13
*	4	145.4	15926	7.77	7.11	6.85	6.29	5.78	4.81	3.13

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Stn: 176 Lane:J3 Temp: J/C: Air: 82 PvT: 99 10:58

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.6	11902	5.33	5.08	4.99	4.68	4.32	3.65	2.31
	C	109.0	11941	5.29	5.06	4.94	4.63	4.29	3.58	2.25
	C	108.7	11906	5.31	5.06	4.94	4.62	4.28	3.58	2.26
*	2	79.7	8736	3.83	3.63	3.60	3.39	3.08	2.58	1.62
*	2	79.8	8744	3.82	3.69	3.59	3.35	3.11	2.61	1.64
*	2	79.7	8736	3.85	3.78	3.62	3.37	3.16	2.65	1.64

*	3	109.1	11949	5.31	4.97	4.92	4.62	4.22	3.57	2.23
*	4	145.3	15918	7.04	6.69	6.55	6.15	5.65	4.74	2.98
*	4	145.7	15966	7.04	6.72	6.57	6.16	5.71	4.80	3.00
*	4	145.9	15985	7.04	6.74	6.58	6.17	5.72	4.75	3.01
*	4	145.5	15946	7.06	6.69	6.57	6.15	5.67	4.76	3.00

Stn: 212 Lane:J2 Temp: J/C: Air: 82 PvT: 103 11:00

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.6	11894	5.24	4.80	4.61	4.21	3.86	3.17	2.00
	C	109.0	11941	5.05	4.69	4.48	4.11	3.77	3.14	1.89
	C	109.1	11949	5.00	4.67	4.47	4.11	3.78	3.11	1.93
*	2	79.7	8732	3.58	3.31	3.24	2.94	2.70	2.10	1.35
*	2	79.7	8736	3.64	3.33	3.26	2.98	2.70	2.10	1.31
*	2	79.7	8732	3.56	3.29	3.21	2.93	2.70	2.15	1.37
*	2	79.7	8736	3.60	3.28	3.22	2.93	2.72	2.10	1.39
*	3	108.5	11890	4.93	4.56	4.43	4.08	3.74	3.03	1.93
*	3	108.7	11910	5.00	4.64	4.46	4.12	3.71	3.03	1.85
*	3	108.7	11910	4.96	4.64	4.44	4.06	3.73	3.01	1.89
*	3	108.5	11890	5.09	4.65	4.42	4.06	3.71	3.01	1.87
*	4	144.9	15878	6.69	6.14	5.94	5.46	5.02	4.09	2.54
*	4	145.7	15962	6.67	6.17	5.98	5.51	5.04	4.17	2.54
*	4	145.5	15946	6.70	6.13	5.94	5.46	5.02	4.10	2.57
*	4	145.6	15958	6.80	6.19	5.96	5.46	4.99	4.19	2.56

Stn: 222 Lane:J3 Temp: J/C: Air: 82 PvT: 102 11:02

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.3	11977	5.08	4.83	4.70	4.39	4.07	3.43	2.21
	C	109.2	11961	4.99	4.72	4.58	4.28	3.96	3.31	2.11
	C	109.0	11937	4.95	4.69	4.59	4.28	3.94	3.29	2.08
*	2	79.4	8696	3.53	3.37	3.28	3.06	2.83	2.39	1.54
*	2	79.2	8676	3.54	3.33	3.26	3.07	2.81	2.38	1.52
*	2	79.6	8720	3.57	3.38	3.33	3.09	2.83	2.39	1.50
*	2	79.4	8704	3.50	3.35	3.26	3.03	2.77	2.33	1.54
*	3	108.3	11862	4.89	4.67	4.56	4.24	3.94	3.28	2.09
*	3	109.2	11965	4.93	4.69	4.57	4.25	3.96	3.29	2.11
*	3	109.3	11977	4.93	4.69	4.56	4.26	3.95	3.29	2.10
*	3	109.2	11969	4.94	4.71	4.58	4.26	3.95	3.29	2.10
*	4	146.4	16045	6.56	6.24	6.09	5.72	5.30	4.43	2.86
*	4	146.9	16097	6.59	6.24	6.11	5.72	5.31	4.43	2.83
*	4	146.9	16093	6.61	6.26	6.11	5.75	5.32	4.44	2.83
*	4	146.7	16073	6.58	6.25	6.10	5.70	5.30	4.43	2.82

Stn: 233 Lane:J2 Temp: J/C: Air: 82 PvT: 99 11:05

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.9	11930	6.75	6.38	6.08	5.55	4.99	3.90	2.21
	C	109.2	11961	6.69	6.24	5.98	5.45	4.90	3.81	2.16
	C	109.1	11953	6.71	6.28	5.97	5.44	4.90	3.81	2.17
*	2	79.5	8708	4.83	4.54	4.33	3.94	3.54	2.74	1.56
*	2	79.4	8696	4.83	4.53	4.33	3.93	3.54	2.73	1.54
*	2	79.3	8688	4.79	4.52	4.26	3.90	3.50	2.73	1.56
*	2	79.3	8688	4.83	4.55	4.27	3.90	3.50	2.72	1.57
*	3	108.3	11866	6.65	6.18	5.94	5.42	4.86	3.79	2.13
*	3	109.1	11957	6.69	6.16	5.96	5.43	4.88	3.79	2.12
*	3	108.9	11930	6.69	6.19	5.96	5.43	4.88	3.80	2.15
*	3	108.8	11926	6.69	6.16	5.95	5.43	4.88	3.81	2.13
*	4	144.4	15819	8.95	8.39	7.98	7.28	6.56	5.11	2.93
*	4	145.0	15882	9.01	8.41	8.00	7.31	6.58	5.13	2.90
*	4	145.1	15902	9.01	8.42	8.02	7.34	6.58	5.13	2.90

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*	4	145.2	15914	9.01	8.41	8.02	7.33	6.59	5.14	2.90

Stn: 238 Lane:J3 Temp: J/C: Air: 82 PvT: 99 11:07

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.4	11874	5.20	4.95	4.80	4.49	4.12	3.42	2.14
	C	108.4	11882	5.16	4.95	4.76	4.46	4.08	3.41	2.08
	C	108.7	11914	5.15	4.87	4.74	4.41	4.06	3.39	2.10
*	2	79.4	8696	3.69	3.43	3.40	3.15	2.91	2.46	1.47
*	2	79.4	8696	3.67	3.55	3.43	3.19	2.94	2.48	1.48
*	2	79.3	8687	3.68	3.52	3.40	3.16	2.92	2.45	1.48

*	3	108.3	11862	5.16	4.88	4.73	4.43	4.03	3.36	2.09
*	3	108.4	11874	5.15	4.88	4.73	4.42	4.03	3.27	2.10
*	4	145.1	15902	6.87	6.52	6.33	5.91	5.43	4.54	2.83
*	4	145.8	15970	6.91	6.51	6.33	5.90	5.44	4.50	2.83
*	4	146.3	16029	6.93	6.51	6.35	5.91	5.46	4.56	2.86
*	4	145.2	15914	6.92	6.54	6.36	5.92	5.45	4.52	2.83

Stn: 278 Lane:J2 Temp: J/C: Air: 82 PvT: 104 11:09

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.0	11830	6.52	5.93	5.73	5.32	4.89	4.09	2.63
	C	108.3	11870	6.38	5.81	5.60	5.19	4.77	3.98	2.58
	C	108.4	11878	6.39	5.82	5.59	5.17	4.75	3.97	2.57
*	2	78.9	8648	4.56	4.22	4.06	3.75	3.45	2.87	1.87
*	2	79.0	8652	4.59	4.21	4.05	3.73	3.44	2.87	1.87
*	2	79.0	8652	4.57	4.21	4.06	3.75	3.45	2.87	1.88
*	2	79.1	8664	4.61	4.20	4.05	3.74	3.44	2.87	1.86
*	3	108.0	11830	6.34	5.84	5.58	5.15	4.73	3.96	2.56
*	3	108.4	11882	6.34	5.81	5.57	5.15	4.74	3.96	2.57
*	3	108.2	11850	6.33	5.81	5.58	5.15	4.73	3.95	2.58
*	3	108.1	11842	6.37	5.85	5.59	5.15	4.74	3.97	2.58
*	4	144.5	15827	8.41	7.66	7.36	6.81	6.27	5.24	3.43
*	4	145.2	15906	8.43	7.68	7.37	6.81	6.28	5.25	3.42
*	4	145.2	15914	8.43	7.70	7.38	6.83	6.30	5.26	3.42
*	4	145.5	15938	8.45	7.68	7.39	6.83	6.29	5.25	3.42

Stn: 286 Lane:J3 Temp: J/C: Air: 83 PvT: 103 11:11

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.7	12017	5.99	5.73	5.57	5.26	4.89	4.06	2.71
	C	109.6	12009	5.88	5.65	5.50	5.17	4.80	4.02	2.66
	C	109.9	12037	5.90	5.64	5.49	5.16	4.79	4.00	2.66
*	2	79.6	8724	4.24	4.14	4.02	3.77	3.49	2.93	1.90
*	2	79.7	8736	4.23	4.14	4.01	3.78	3.48	2.97	1.90
*	2	79.8	8748	4.25	4.12	4.01	3.76	3.48	2.92	1.89
*	2	79.8	8748	4.24	4.09	3.98	3.74	3.47	2.94	1.87
*	3	109.2	11965	5.85	5.59	5.45	5.13	4.76	4.04	2.63
*	3	109.9	12045	5.91	5.69	5.49	5.19	4.79	4.00	2.66
*	3	109.8	12025	5.89	5.63	5.45	5.14	4.77	3.98	2.62
*	3	109.8	12033	5.90	5.64	5.46	5.15	4.78	3.94	2.63
*	4	146.5	16053	7.71	7.40	7.20	6.79	6.34	5.37	3.53
*	4	147.4	16144	7.75	7.44	7.26	6.83	6.35	5.44	3.58
*	4	147.3	16140	7.74	7.43	7.24	6.81	6.34	5.40	3.52
*	4	147.1	16121	7.73	7.44	7.25	6.82	6.33	5.36	3.54

Stn: 298 Lane:J2 Temp: J/C: Air: 82 PvT: 99 11:14

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	110.6	12120	6.32	5.72	5.56	5.15	4.74	3.92	2.65
	C	109.9	12045	6.17	5.65	5.46	5.05	4.66	3.83	2.56
	C	109.8	12025	6.18	5.67	5.46	5.03	4.65	3.85	2.57
*	2	79.9	8751	4.36	4.06	3.94	3.62	3.35	2.75	1.87
*	2	79.9	8751	4.38	4.09	3.94	3.61	3.37	2.83	1.84
*	2	79.8	8744	4.41	4.07	3.92	3.61	3.33	2.69	1.82
*	2	79.9	8755	4.42	4.03	3.93	3.63	3.35	2.76	1.90
*	3	109.1	11949	6.14	5.59	5.42	5.01	4.62	3.85	2.53
*	3	110.0	12053	6.18	5.54	5.44	5.01	4.61	3.83	2.58
*	3	110.3	12088	6.19	5.57	5.45	5.03	4.62	3.81	2.57
*	3	110.4	12096	6.20	5.54	5.46	5.04	4.63	3.83	2.59
*	4	146.8	16081	8.24	7.53	7.28	6.74	6.20	5.18	3.41
*	4	147.6	16172	8.25	7.61	7.30	6.75	6.24	5.25	3.50

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*	4	147.1	16121	8.25	7.62	7.29	6.72	6.24	5.24	3.49
*	4	147.2	16132	8.24	7.62	7.29	6.74	6.26	5.28	3.49

Stn: 299 Lane:J3 Temp: J/C: Air: 82 PvT: 99 11:17

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.2	11961	6.74	6.50	6.30	5.92	5.46	4.54	2.74
	C	109.7	12017	6.59	6.44	6.26	5.87	5.41	4.44	2.70
	C	109.2	11961	6.68	6.42	6.24	5.84	5.39	4.42	2.69
*	2	80.2	8791	4.88	4.66	4.55	4.24	3.94	3.22	1.96
*	2	79.9	8755	4.84	4.71	4.51	4.20	3.94	3.23	1.93

*	3	109.1	11957	6.65	6.43	6.22	5.83	5.35	4.44	2.69
*	3	109.1	11949	6.67	6.38	6.22	5.85	5.37	4.43	2.69
*	3	109.1	11949	6.66	6.39	6.22	5.85	5.37	4.40	2.67
*	4	145.7	15962	8.80	8.50	8.20	7.69	7.11	5.86	3.58
*	4	145.3	16025	8.86	8.50	8.29	7.76	7.16	5.92	3.61
*	4	146.3	16029	8.85	8.48	8.26	7.74	7.15	5.90	3.60
*	4	146.3	16029	8.84	8.56	8.25	7.73	7.17	5.93	3.62

Stn: 319 Lane:J2 Temp: J/C: Air: 83 PvT: 102 11:20

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.8	11810	6.50	5.79	5.52	5.11	4.63	3.77	2.35
	C	108.1	11842	6.35	5.71	5.42	4.97	4.52	3.68	2.31
	C	108.3	11870	6.30	5.65	5.39	4.96	4.51	3.65	2.31
*	2	79.2	8680	4.52	4.08	3.90	3.56	3.24	2.62	1.63
*	2	79.1	8668	4.58	4.13	3.93	3.56	3.25	2.63	1.62
*	2	79.2	8680	4.51	4.11	3.91	3.56	3.25	2.62	1.64
*	2	79.6	8720	4.56	4.11	3.91	3.56	3.24	2.61	1.63
*	3	107.5	11783	6.31	5.64	5.38	4.96	4.49	3.63	2.30
*	3	108.0	11838	6.33	5.66	5.39	4.97	4.50	3.65	2.30
*	3	108.1	11842	6.36	5.67	5.39	4.96	4.51	3.66	2.28
*	3	107.9	11818	6.32	5.67	5.39	4.97	4.51	3.67	2.31
*	4	144.5	15827	8.48	7.59	7.25	6.67	6.02	4.88	3.07
*	4	145.1	15902	8.50	7.61	7.28	6.66	6.05	4.92	3.09
*	4	145.1	15898	8.50	7.59	7.26	6.66	6.03	4.89	3.08
*	4	145.1	15898	8.51	7.60	7.28	6.67	6.06	4.91	3.09

Stn: 327 Lane:J3 Temp: J/C: Air: 84 PvT: 104 11:22

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.2	11965	6.98	6.88	6.72	6.42	6.00	4.96	3.26
	C	108.8	11922	6.86	6.73	6.56	6.25	5.85	4.92	3.15
	C	108.9	11930	6.85	6.77	6.58	6.23	5.85	4.89	3.14
*	2	79.8	8748	5.00	4.93	4.81	4.57	4.26	3.57	2.30
*	2	79.5	8716	5.03	4.88	4.81	4.56	4.26	3.52	2.29
*	2	80.1	8771	5.00	4.98	4.83	4.56	4.28	3.54	2.28
*	2	79.8	8744	4.99	4.94	4.81	4.59	4.28	3.53	2.29
*	3	108.0	11838	6.81	6.72	6.56	6.22	5.83	4.98	3.14
*	3	108.7	11914	6.86	6.75	6.60	6.26	5.87	4.89	3.17
*	3	109.0	11937	6.91	6.77	6.62	6.28	5.88	5.00	3.18
*	3	108.8	11926	6.89	6.74	6.62	6.27	5.87	4.96	3.17
*	4	145.2	15914	9.10	8.97	8.72	8.33	7.77	6.63	4.26
*	4	146.4	16041	9.17	9.06	8.80	8.39	7.85	6.65	4.30
*	4	146.3	16029	9.18	9.06	8.80	8.38	7.83	6.67	4.30
*	4	146.2	16017	9.19	9.07	8.81	8.41	7.87	6.72	4.31

Stn: 336 Lane:J2 Temp: J/C: Air: 83 PvT: 102 11:25

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.6	11902	6.00	5.60	5.43	5.06	4.69	3.88	2.49
	C	108.6	11898	5.88	5.48	5.33	4.98	4.57	3.87	2.43
	C	108.7	11906	5.88	5.48	5.33	4.98	4.57	3.85	2.43
*	2	79.3	8688	4.22	4.04	3.85	3.60	3.31	2.80	1.80
*	2	79.4	8696	4.20	3.89	3.83	3.59	3.28	2.73	1.73
*	2	79.7	8728	4.22	3.91	3.85	3.61	3.31	2.79	1.73
*	2	79.6	8720	4.20	3.96	3.84	3.61	3.29	2.76	1.74
*	3	107.7	11798	5.84	5.46	5.32	4.97	4.54	3.85	2.42
*	3	108.7	11906	5.89	5.50	5.34	4.98	4.60	3.80	2.43
*	3	108.2	11850	5.88	5.48	5.33	4.97	4.58	3.84	2.41
*	3	108.3	11870	5.89	5.54	5.34	4.98	4.58	3.87	2.43

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*	4	145.3	15922	7.89	7.41	7.18	6.70	6.16	5.20	3.29
*	4	145.8	15978	7.91	7.46	7.21	6.73	6.21	5.20	3.31
*	4	145.6	15954	7.91	7.43	7.21	6.74	6.18	5.20	3.31
*	4	145.7	15966	7.93	7.44	7.23	6.76	6.20	5.22	3.31

Stn: 344 Lane:J3 Temp: J/C: Air: 84 PvT: 102 11:28

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.0	11937	5.98	5.62	5.47	5.07	4.68	3.89	2.45
	C	108.8	11926	5.99	5.63	5.46	5.05	4.67	3.90	2.46

*	2	79.1	8668	4.35	4.16	4.01	3.74	3.43	2.81	1.77
*	2	79.2	8672	4.37	4.12	3.98	3.69	3.41	2.81	1.76
*	3	108.0	11834	5.98	5.61	5.44	5.04	4.65	3.86	2.43
*	3	108.4	11878	6.00	5.65	5.48	5.08	4.70	3.89	2.46
*	3	108.6	11898	6.01	5.67	5.48	5.10	4.70	3.89	2.44
*	3	108.4	11882	6.02	5.67	5.49	5.11	4.71	3.89	2.44
*	4	145.0	15886	7.91	7.46	7.24	6.72	6.21	5.15	3.26
*	4	145.9	15985	7.95	7.49	7.28	6.78	6.26	5.17	3.28
*	4	145.9	15989	7.96	7.50	7.28	6.76	6.25	5.19	3.28
*	4	145.9	15985	7.96	7.49	7.28	6.75	6.27	5.18	3.27

Stn: 368 Lane:J2 Temp: J/C: Air: 84 PvT: 104 11:30

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.7	11906	6.64	6.00	5.79	5.30	4.86	4.01	2.54
	C	109.1	11957	6.48	5.85	5.64	5.17	4.73	3.92	2.45
	C	108.5	11890	6.48	5.84	5.63	5.14	4.72	3.86	2.48
*	2	79.4	8700	4.67	4.22	4.06	3.70	3.41	2.79	1.77
*	2	79.3	8688	4.67	4.25	4.07	3.71	3.41	2.81	1.76
*	2	79.5	8716	4.68	4.27	4.07	3.71	3.41	2.83	1.75
*	2	79.4	8700	4.67	4.26	4.07	3.70	3.41	2.80	1.78
*	3	108.0	11838	6.45	5.85	5.61	5.13	4.69	3.93	2.43
*	3	108.4	11878	6.48	5.88	5.63	5.14	4.71	3.92	2.46
*	3	108.8	11922	6.50	5.90	5.63	5.14	4.70	3.89	2.46
*	3	108.7	11906	6.52	5.92	5.65	5.15	4.72	3.93	2.49
*	4	145.1	15898	8.65	7.83	7.52	6.87	6.29	5.20	3.29
*	4	146.0	15997	8.67	7.86	7.55	6.90	6.33	5.20	3.30
*	4	146.2	16021	8.68	7.86	7.55	6.90	6.32	5.20	3.31
*	4	146.0	15993	8.68	7.88	7.56	6.93	6.33	5.21	3.31

Stn: 373 Lane:J3 Temp: J/C: Air: 83 PvT: 106 11:32

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.6	11794	5.94	5.63	5.48	5.10	4.69	3.84	2.35
	C	107.9	11822	5.87	5.58	5.41	5.04	4.61	3.80	2.30
	C	107.8	11806	5.88	5.57	5.41	5.03	4.61	3.78	2.29
*	2	78.9	8648	4.30	4.06	3.97	3.69	3.40	2.77	1.68
*	2	79.0	8656	4.26	4.00	3.94	3.65	3.36	2.74	1.65
*	2	79.0	8660	4.26	4.01	3.93	3.63	3.34	2.72	1.64
*	2	79.0	8652	4.25	4.03	3.94	3.64	3.35	2.73	1.65
*	3	107.3	11759	5.89	5.56	5.41	5.04	4.62	3.80	2.30
*	3	107.6	11794	5.90	5.55	5.42	5.03	4.62	3.79	2.30
*	3	107.9	11826	5.92	5.55	5.42	5.04	4.63	3.80	2.30
*	3	107.8	11810	5.90	5.55	5.42	5.04	4.63	3.79	2.29
*	4	144.7	15854	7.80	7.41	7.19	6.69	6.14	5.05	3.06
*	4	145.7	15962	7.85	7.44	7.22	6.72	6.18	5.07	3.08
*	4	145.8	15970	7.85	7.46	7.23	6.74	6.19	5.08	3.08
*	4	145.7	15962	7.86	7.44	7.24	6.73	6.20	5.08	3.09

Stn: 381 Lane:J2 Temp: J/C: Air: 85 PvT: 103 11:34

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.1	11842	5.80	5.25	5.11	4.71	4.25	3.59	2.29
	C	107.9	11826	5.67	5.21	5.00	4.61	4.25	3.51	2.27
	C	108.3	11870	5.71	5.19	5.02	4.61	4.22	3.51	2.26
*	2	79.0	8660	4.06	3.76	3.58	3.30	3.04	2.49	1.61
*	2	79.1	8664	4.04	3.73	3.60	3.31	3.02	2.51	1.62
*	2	78.7	8620	4.03	3.72	3.57	3.30	3.00	2.49	1.61
*	2	78.8	8636	4.02	3.69	3.58	3.30	2.99	2.50	1.60
*	3	107.6	11794	5.65	5.15	4.98	4.57	4.18	3.47	2.24
*	3	108.0	11838	5.69	5.19	5.00	4.61	4.21	3.49	2.26

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*	3	107.9	11818	5.69	5.15	5.00	4.60	4.17	3.50	2.24
*	3	108.2	11854	5.70	5.14	5.00	4.60	4.21	3.50	2.24
*	4	145.3	15922	7.61	7.02	6.70	6.19	5.69	4.68	3.03
*	4	146.3	16029	7.66	7.09	6.74	6.20	5.73	4.70	3.05
*	4	146.3	16025	7.65	7.07	6.74	6.21	5.71	4.71	3.05
*	4	146.2	16017	7.67	7.05	6.75	6.22	5.70	4.72	3.04

Stn: 389 Lane:J3 Temp: J/C: Air: 83 PvT: 102 11:36

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.0	11945	6.24	5.94	5.84	5.57	5.16	4.41	2.80

*	2	79.6	8724	4.39	4.20	4.18	3.92	3.67	3.09	1.97
*	2	79.5	8716	4.39	4.24	4.16	3.93	3.65	3.08	1.94
*	3	108.3	11866	6.05	5.85	5.73	5.41	5.06	4.28	2.72
*	3	108.8	11926	6.09	5.85	5.74	5.43	5.07	4.30	2.74
*	3	108.8	11926	6.10	5.83	5.74	5.44	5.07	4.29	2.75
*	3	108.7	11906	6.07	5.85	5.72	5.44	5.06	4.28	2.73
*	4	146.0	16001	8.07	7.82	7.62	7.20	6.74	5.70	3.67
*	4	146.8	16081	8.09	7.83	7.66	7.25	6.76	5.74	3.68
*	4	146.9	16097	8.12	7.85	7.67	7.27	6.80	5.75	3.68
*	4	146.7	16073	8.10	7.87	7.69	7.25	6.79	5.74	3.70

Stn: 418 Lane:J2 Temp: J/C: Air: 86 PvT: 107 11:39

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.3	11973	6.69	6.15	5.77	5.24	4.69	3.70	2.20
	C	109.7	12017	6.52	5.94	5.61	5.08	4.54	3.61	2.14
	C	109.7	12017	6.53	5.94	5.61	5.09	4.54	3.60	2.13
*	2	79.5	8716	4.66	4.27	4.07	3.70	3.28	2.59	1.52
*	2	79.4	8704	4.72	4.27	4.07	3.69	3.28	2.58	1.52
*	2	79.5	8716	4.68	4.25	4.06	3.67	3.27	2.58	1.52
*	2	79.9	8751	4.67	4.33	4.07	3.72	3.29	2.58	1.52
*	3	108.4	11882	6.49	5.91	5.58	5.05	4.52	3.56	2.12
*	3	109.4	11989	6.60	5.98	5.63	5.11	4.56	3.61	2.14
*	3	109.4	11981	6.61	5.95	5.63	5.09	4.55	3.61	2.14
*	3	109.9	12041	6.60	5.94	5.63	5.07	4.55	3.62	2.14
*	4	145.8	15970	8.70	7.98	7.51	6.82	6.10	4.83	2.89
*	4	146.3	16029	8.74	8.00	7.55	6.85	6.13	4.85	2.92
*	4	146.2	16017	8.72	7.99	7.53	6.84	6.14	4.87	2.89
*	4	146.3	16033	8.69	7.94	7.52	6.83	6.11	4.83	2.88

Stn: 423 Lane:J3 Temp: J/C: Air: 87 PvT: 103 11:41

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.8	11918	5.73	5.61	5.37	5.04	4.64	3.87	2.40
	C	109.1	11953	5.67	5.52	5.36	5.00	4.61	3.79	2.36
	C	109.1	11949	5.69	5.48	5.33	4.99	4.59	3.77	2.36
*	2	79.7	8728	4.11	3.95	3.87	3.62	3.31	2.74	1.67
*	2	80.1	8771	4.11	3.92	3.89	3.63	3.32	2.74	1.69
*	2	79.8	8740	4.09	4.01	3.89	3.63	3.35	2.75	1.72
*	2	79.8	8748	4.09	4.02	3.85	3.61	3.32	2.77	1.70
*	3	108.4	11878	5.66	5.52	5.32	4.97	4.59	3.79	2.35
*	3	108.7	11910	5.68	5.47	5.38	5.00	4.60	3.74	2.31
*	3	108.7	11906	5.67	5.46	5.36	4.99	4.60	3.74	2.34
*	3	108.7	11910	5.69	5.46	5.37	4.99	4.60	3.78	2.34
*	4	145.6	15958	7.55	7.35	7.13	6.65	6.13	5.06	3.19
*	4	146.2	16021	7.56	7.37	7.13	6.68	6.13	5.13	3.11
*	4	146.4	16037	7.61	7.38	7.15	6.67	6.14	5.13	3.16
*	4	146.5	16049	7.61	7.41	7.16	6.68	6.16	5.11	3.19

Stn: 430 Lane:J2 Temp: J/C: Air: 86 PvT: 104 11:43

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.9	11933	6.65	6.12	5.84	5.47	5.01	4.17	2.69
	C	109.0	11941	6.51	5.99	5.74	5.31	4.89	4.02	2.62
	C	108.8	11926	6.51	5.94	5.68	5.32	4.87	4.05	2.60
*	2	79.2	8680	4.68	4.34	4.15	3.81	3.52	2.98	1.90
*	2	79.2	8680	4.69	4.38	4.17	3.81	3.54	2.98	1.90
*	2	79.4	8700	4.71	4.24	4.09	3.84	3.51	2.97	1.89
*	2	79.2	8680	4.67	4.33	4.15	3.79	3.52	2.93	1.87
*	3	108.6	11902	6.44	5.99	5.70	5.25	4.85	4.04	2.58

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*	3	109.3	11977	6.51	5.97	5.71	5.31	4.87	4.04	2.62
*	3	109.0	11945	6.49	5.97	5.72	5.30	4.87	4.04	2.61
*	3	108.8	11918	6.53	6.00	5.71	5.31	4.88	4.06	2.61
*	4	145.9	15985	8.63	8.06	7.63	7.04	6.49	5.38	3.48
*	4	146.4	16041	8.67	8.06	7.64	7.06	6.50	5.38	3.50
*	4	146.5	16053	8.65	8.01	7.64	7.06	6.51	5.40	3.50
*	4	146.6	16061	8.68	8.01	7.66	7.05	6.54	5.42	3.50

Stn: 436 Lane:J3 Temp: J/C: Air: 86 PvT: 101 11:46

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.4	11985	6.06	5.72	5.50	5.21	4.81	3.94	2.37

*	2	79.3	8684	4.36	4.07	4.00	3.72	3.42	2.80	1.83
*	2	79.6	8720	4.35	4.13	4.02	3.74	3.42	2.79	1.74
*	2	79.5	8712	4.37	4.11	4.02	3.73	3.42	2.80	1.74
*	2	79.3	8684	4.32	4.09	4.00	3.71	3.41	2.79	1.71
*	3	108.4	11878	5.96	5.63	5.50	5.11	4.70	3.86	2.32
*	3	108.9	11930	5.98	5.59	5.51	5.12	4.72	3.90	2.32
*	3	109.4	11981	6.01	5.60	5.53	5.13	4.74	3.91	2.30
*	3	109.1	11953	6.00	5.67	5.54	5.14	4.73	3.88	2.35
*	4	146.3	16029	7.96	7.61	7.34	6.83	6.28	5.17	3.15
*	4	146.9	16093	7.98	7.63	7.38	6.86	6.31	5.19	3.13
*	4	147.2	16125	7.99	7.63	7.37	6.87	6.33	5.19	3.14
*	4	147.1	16117	7.98	7.60	7.38	6.86	6.31	5.20	3.20

Stn: 462 Lane:J2 Temp: J/C: Air: 84 PvT: 104 11:48

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.0	11945	5.99	5.79	5.52	5.18	4.83	4.16	2.80
	C	109.2	11969	5.88	5.59	5.39	5.04	4.71	4.00	2.73
	C	109.2	11965	5.89	5.57	5.42	5.07	4.72	4.05	2.72
*	2	79.5	8708	4.28	3.98	3.90	3.65	3.41	2.85	1.97
*	2	79.6	8720	4.29	4.00	3.91	3.66	3.43	2.89	1.94
*	2	79.7	8728	4.30	4.02	3.92	3.67	3.45	2.93	1.97
*	2	79.9	8751	4.31	3.96	3.89	3.64	3.41	2.90	1.96
*	3	109.1	11953	5.91	5.60	5.41	5.06	4.70	4.00	2.73
*	3	109.4	11985	5.93	5.61	5.38	5.04	4.69	3.99	2.75
*	3	109.3	11977	5.92	5.61	5.40	5.05	4.71	4.04	2.76
*	3	109.5	12001	5.93	5.58	5.40	5.05	4.71	4.01	2.78
*	4	147.0	16109	7.85	7.51	7.16	6.69	6.25	5.33	3.61
*	4	147.2	16132	7.91	7.50	7.20	6.73	6.28	5.38	3.69
*	4	147.4	16144	7.91	7.49	7.22	6.75	6.30	5.37	3.67
*	4	147.4	16144	7.93	7.49	7.24	6.77	6.31	5.39	3.66

Stn: 471 Lane:J3 Temp: J/C: Air: 88 PvT: 102 11:53

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	109.4	11985	6.72	6.24	5.93	5.39	4.93	4.04	2.50
	C	108.7	11914	6.70	6.09	5.90	5.36	4.92	4.02	2.46
	C	108.7	11914	6.72	6.17	5.95	5.40	4.89	3.95	2.49
*	2	79.0	8652	4.85	4.55	4.36	3.96	3.55	2.84	1.79
*	2	79.3	8684	4.87	4.63	4.41	4.01	3.54	2.80	1.83
*	2	79.0	8660	4.85	4.55	4.37	3.98	3.53	2.81	1.77
*	2	78.7	8620	4.83	4.62	4.39	4.00	3.53	2.79	1.81
*	3	107.6	11787	6.67	6.10	5.91	5.36	4.87	3.94	2.46
*	3	108.7	11914	6.70	6.07	5.90	5.35	4.89	3.98	2.47
*	3	108.9	11930	6.72	6.20	5.97	5.42	4.89	3.95	2.50
*	3	109.0	11937	6.74	6.17	5.93	5.39	4.91	3.98	2.48
*	4	145.1	15894	8.80	8.27	7.85	7.15	6.46	5.24	3.31
*	4	145.8	15974	8.84	8.31	7.90	7.20	6.50	5.26	3.34
*	4	145.9	15982	8.85	8.33	7.93	7.22	6.50	5.26	3.34
*	4	146.3	16033	8.87	8.26	7.89	7.19	6.52	5.30	3.34

Stn: 482 Lane:J2 Temp: J/C: Air: 86 PvT: 102 11:55

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.7	11914	8.07	7.48	7.18	6.56	5.91	4.62	2.78
	C	109.0	11941	8.00	7.43	7.09	6.46	5.82	4.52	2.74
	C	108.8	11918	8.01	7.45	7.12	6.49	5.84	4.57	2.72
*	2	79.4	8696	5.76	5.43	5.19	4.72	4.24	3.31	1.95
*	2	79.3	8688	5.78	5.46	5.19	4.72	4.24	3.30	1.96
*	2	79.3	8692	5.76	5.47	5.20	4.73	4.25	3.35	1.96

File: C:\FWD\DATA\183002C2.FWD
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

*	2	79.5	8708	5.80	5.47	5.21	4.73	4.24	3.30	1.96
*	3	108.2	11850	7.97	7.46	7.11	6.48	5.83	4.53	2.72
*	3	109.0	11945	8.07	7.46	7.15	6.52	5.87	4.57	2.73
*	3	108.8	11922	8.06	7.48	7.15	6.53	5.87	4.57	2.73
*	3	108.5	11886	8.07	7.49	7.16	6.53	5.87	4.58	2.72
*	4	145.9	15985	10.60	9.89	9.43	8.61	7.76	6.10	3.68
*	4	146.3	16033	10.67	9.94	9.48	8.66	7.80	6.12	3.69
*	4	146.2	16021	10.70	9.98	9.51	8.67	7.82	6.15	3.69
*	4	146.1	16009	10.69	9.99	9.52	8.69	7.83	6.17	3.69

Stn: 488 Lane:J3 Temp: J/C: Air: 87 PvT: 101 11:57

	C	108.0	11838	6.22	5.92	5.76	5.39	5.01	4.24	2.70
*	2	78.7	8620	4.48	4.24	4.18	3.89	3.59	3.05	1.94
*	2	78.8	8636	4.46	4.19	4.18	3.83	3.48	2.96	1.94
*	2	78.8	8628	4.48	4.26	4.17	3.89	3.59	3.03	1.95
*	2	79.1	8664	4.48	4.23	4.20	3.86	3.54	2.99	1.96
*	3	107.8	11814	6.19	5.90	5.75	5.37	4.99	4.20	2.71
*	3	108.1	11846	6.23	5.91	5.77	5.37	4.98	4.19	2.71
*	3	108.2	11858	6.24	5.93	5.78	5.40	5.01	4.22	2.72
*	3	108.0	11838	6.24	5.91	5.80	5.38	4.98	4.20	2.73
*	4	144.9	15874	8.26	7.92	7.70	7.19	6.68	5.63	3.65
*	4	145.6	15950	8.28	7.97	7.72	7.23	6.71	5.67	3.67
*	4	145.8	15970	8.30	7.95	7.74	7.22	6.69	5.67	3.66
*	4	145.8	15970	8.30	7.98	7.75	7.22	6.69	5.66	3.68

Stn: 503 Lane:J2 Temp: J/C: Air: 86 PvT: 103 12:00

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.6	11898	7.76	7.14	6.78	6.12	5.51	4.27	2.65
	C	108.4	11882	7.63	7.04	6.64	6.05	5.41	4.23	2.56
	C	109.0	11937	7.65	6.96	6.63	6.02	5.41	4.20	2.59
*	2	79.3	8692	5.59	5.14	4.90	4.43	3.97	3.09	1.85
*	2	79.6	8724	5.57	5.10	4.87	4.39	3.95	3.04	1.83
*	2	79.6	8724	5.59	5.11	4.87	4.41	3.94	3.01	1.85
*	2	79.5	8716	5.57	5.08	4.87	4.37	3.94	3.03	1.83
*	3	108.2	11850	7.63	6.96	6.64	6.03	5.41	4.23	2.55
*	3	108.6	11898	7.65	6.98	6.64	6.02	5.40	4.20	2.55
*	3	108.6	11902	7.66	7.04	6.67	6.06	5.41	4.21	2.56
*	3	108.7	11906	7.68	7.00	6.67	6.05	5.42	4.22	2.56
*	4	145.8	15978	10.07	9.24	8.75	7.93	7.13	5.59	3.44
*	4	146.3	16033	10.12	9.28	8.79	7.96	7.18	5.59	3.46
*	4	146.2	16017	10.15	9.33	8.80	7.96	7.17	5.56	3.47
*	4	146.3	16029	10.16	9.33	8.82	7.99	7.20	5.61	3.44

Stn: 511 Lane:J3 Temp: J/C: Air: 83 PvT: 104 12:03

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.2	11854	5.85	5.62	5.47	5.13	4.78	4.05	2.65
	C	107.9	11818	5.74	5.46	5.35	5.01	4.67	3.93	2.57
	C	107.9	11822	5.74	5.45	5.35	5.01	4.67	3.93	2.57
*	2	79.0	8660	4.16	3.94	3.87	3.61	3.37	2.83	1.83
*	2	78.7	8620	4.15	3.94	3.86	3.61	3.36	2.83	1.83
*	2	78.6	8616	4.12	3.93	3.84	3.59	3.34	2.81	1.82
*	2	78.8	8632	4.14	3.94	3.86	3.60	3.35	2.83	1.83
*	3	107.5	11783	5.69	5.40	5.31	4.97	4.63	3.89	2.53
*	3	108.0	11838	5.76	5.44	5.33	4.99	4.64	3.91	2.54
*	3	108.2	11850	5.75	5.45	5.34	5.00	4.65	3.92	2.56
*	3	108.3	11870	5.76	5.44	5.33	4.99	4.65	3.91	2.55
*	4	145.3	15918	7.63	7.31	7.08	6.64	6.19	5.26	3.45
*	4	146.1	16009	7.67	7.35	7.13	6.69	6.24	5.27	3.46
*	4	146.3	16025	7.71	7.35	7.17	6.73	6.31	5.28	3.49
*	4	146.1	16009	7.67	7.35	7.15	6.70	6.25	5.28	3.47

Stn: 521 Lane:J2 Temp: J/C: Air: 85 PvT: 105 12:05

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.5	11783	6.85	6.31	5.96	5.43	4.98	4.00	2.48
	C	108.2	11850	6.74	6.22	5.88	5.35	4.89	3.93	2.44
	C	107.9	11822	6.77	6.22	5.89	5.35	4.89	3.93	2.43
*	2	78.9	8644	4.95	4.53	4.31	3.92	3.57	2.84	1.74
*	2	79.1	8664	4.93	4.54	4.32	3.92	3.58	2.85	1.74

File: C:\FWD\DATA\183002C2.FWD
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: J83002

*	2	79.1	8664	4.94	4.53	4.32	3.92	3.58	2.85	1.75
*	2	79.2	8672	4.96	4.55	4.33	3.93	3.59	2.85	1.74
*	3	107.8	11814	6.78	6.23	5.92	5.37	4.91	3.94	2.43
*	3	107.9	11822	6.83	6.25	5.95	5.40	4.92	3.96	2.44
*	3	107.9	11822	6.83	6.26	5.96	5.41	4.94	3.96	2.44
*	3	107.8	11810	6.85	6.27	5.96	5.41	4.94	3.96	2.45
*	4	144.0	15779	9.04	8.32	7.87	7.17	6.54	5.28	3.29
*	4	144.5	15831	9.04	8.33	7.89	7.18	6.55	5.28	3.30
*	4	145.0	15886	9.10	8.39	7.94	7.23	6.60	5.33	3.33
*	4	144.8	15862	9.08	8.39	7.95	7.23	6.60	5.31	3.32

	C	108.7	11914	6.51	6.27	6.13	5.72	5.35	4.50	2.91
	C	108.8	11926	6.50	6.28	6.13	5.72	5.39	4.55	2.88
*	2	79.7	8728	4.72	4.56	4.44	4.14	3.96	3.27	2.09
*	2	79.7	8728	4.75	4.55	4.44	4.15	3.91	3.26	2.09
*	2	79.4	8704	4.74	4.62	4.42	4.16	3.92	3.27	2.08
*	2	79.7	8736	4.71	4.62	4.45	4.17	3.97	3.26	2.11
*	3	108.2	11854	6.50	6.26	6.10	5.69	5.33	4.46	2.89
*	3	108.8	11926	6.51	6.29	6.14	5.73	5.35	4.52	2.92
*	3	108.5	11890	6.52	6.30	6.14	5.74	5.37	4.53	2.89
*	3	108.4	11882	6.56	6.25	6.14	5.74	5.41	4.54	2.87
*	4	145.3	15918	8.59	8.35	8.11	7.60	7.11	6.01	3.91
*	4	145.9	15989	8.64	8.37	8.13	7.63	7.18	6.05	3.92
*	4	146.0	16001	8.66	8.40	8.16	7.66	7.19	6.06	3.95
*	4	145.6	15954	8.65	8.38	8.16	7.65	7.21	6.07	3.93

Mileage:-.003 -> .1

File: C:\FWD\DATA\I83002C3.FWD
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: I83002

FWD S/N : 8002-060
Operator ID : STONESTROM, ERIC, L.

Stationing...: Feet

Diameter of Plate: 11.8
Deflector distances : 12 12 18 24 36 60

SHRP TESTING - RIGID/CRCP - JOINT AND CRACK TEST (J4/C4, J5/C5)
Sequence: CCC222233334444

File: C:\FWD\DATA\183002C3.FWD
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

Stn:	-17	Lane:J4	Temp:		J/C: 44	Air: 82		PvT: 109		12:18
Sto Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
C	109.9	12037	10.70	4.34	4.36	3.87	3.42	2.69	1.60	
C	111.1	12168	10.72	4.37	4.40	3.90	3.44	2.70	1.65	
C	110.7	12128	10.76	4.33	4.37	3.89	3.45	2.68	1.58	
* 2	79.1	8664	8.65	3.06	3.06	2.74	2.44	1.98	1.20	
* 2	79.4	8696	8.68	3.04	3.07	2.76	2.46	1.89	1.13	
* 2	79.2	8680	8.78	3.09	3.07	2.74	2.40	1.91	1.13	
* 2	79.4	8704	8.75	3.11	3.11	2.80	2.43	1.92	1.11	
* 3	110.1	12065	10.68	4.29	4.31	3.84	3.42	2.67	1.61	
* 3	110.3	12088	10.63	4.31	4.35	3.87	3.41	2.69	1.62	
* 3	110.4	12096	10.71	4.35	4.38	3.89	3.44	2.68	1.57	
* 3	110.3	12084	10.65	4.30	4.34	3.85	3.44	2.68	1.63	
* 4	145.3	15918	13.03	5.91	5.95	5.30	4.70	3.70	2.22	
* 4	145.6	15954	13.07	5.91	5.97	5.32	4.72	3.68	2.20	
* 4	146.0	15993	13.18	5.94	5.96	5.32	4.70	3.67	2.18	
* 4	145.8	15978	13.13	5.94	5.98	5.34	4.72	3.70	2.21	

Stn:-	15	Lane:J5	Temp:		J/C: 44	Air: 82		PvT: 108		12:20
Sto Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
C	107.9	11822	5.89	4.50	4.63	4.16	3.72	2.95	1.78	
C	107.8	11806	5.94	4.56	4.52	4.17	3.70	2.88	1.81	
C	107.8	11806	5.96	4.56	4.61	4.17	3.73	2.94	1.77	
* 2	78.8	8628	4.21	3.26	3.30	2.99	2.67	2.11	1.25	
* 2	78.8	8636	4.28	3.24	3.28	2.99	2.68	2.09	1.28	
* 2	78.7	8620	4.24	3.21	3.31	2.97	2.66	2.12	1.23	
* 2	78.8	8632	4.20	3.18	3.29	2.97	2.65	2.12	1.23	
* 3	107.2	11747	5.92	4.55	4.66	4.13	3.71	3.00	1.71	
* 3	107.4	11763	5.94	4.52	4.63	4.14	3.70	2.94	1.74	
* 3	107.3	11755	5.97	4.57	4.61	4.17	3.73	2.92	1.78	
* 3	107.4	11763	5.96	4.53	4.64	4.16	3.71	2.93	1.74	
* 4	144.1	15787	8.06	6.20	6.25	5.63	5.05	3.96	2.42	
* 4	144.6	15842	8.08	6.25	6.31	5.70	5.08	4.01	2.41	
* 4	144.6	15838	8.13	6.28	6.31	5.69	5.09	4.00	2.44	
* 4	144.3	15815	8.12	6.27	6.32	5.68	5.09	4.04	2.42	

NOTE: MOVED SIGN OVER

'H-SEV. CORNER BREAK UNDER D2

Stn:	-4	Lane:J4	Temp:		J/C: 47	Air: 82		PvT: 102		12:25
Sto Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
C	108.0	11838	6.76	4.67	4.55	3.96	3.55	2.76	1.66	
C	109.0	11945	6.78	4.71	4.56	3.97	3.56	2.77	1.64	
C	109.4	11985	6.83	4.73	4.58	4.00	3.58	2.77	1.66	
* 2	78.3	8577	4.87	3.36	3.27	2.83	2.53	1.99	1.18	
* 2	78.5	8597	4.93	3.37	3.28	2.84	2.52	1.98	1.18	
* 2	78.4	8593	4.85	3.36	3.24	2.83	2.54	1.98	1.18	
* 2	78.5	8597	4.86	3.40	3.28	2.85	2.53	2.02	1.18	
* 3	108.7	11914	6.76	4.68	4.52	3.95	3.53	2.72	1.62	
* 3	108.8	11926	6.79	4.67	4.54	3.97	3.56	2.72	1.63	
* 3	109.0	11945	6.81	4.72	4.55	3.98	3.56	2.74	1.64	
* 3	109.2	11965	6.84	4.74	4.56	3.98	3.55	2.78	1.65	
* 4	142.8	15660	9.27	6.46	6.26	5.48	4.88	3.79	2.25	
* 4	143.4	15707	9.34	6.49	6.31	5.52	4.90	3.81	2.26	
* 4	143.5	15727	9.37	6.50	6.30	5.52	4.92	3.81	2.27	
* 4	143.8	15751	9.42	6.54	6.33	5.54	4.95	3.83	2.28	

'H-SEV. CORNER BREAK UNDER LP

Stn:	-2	Lane:J5	Temp:		J/C: 47	Air: 82		PvT: 102		12:28
Sto Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7	
C	108.3	11870	6.30	4.97	4.69	4.15	3.77	2.98	1.78	
C	107.9	11818	6.30	4.98	4.67	4.16	3.76	2.98	1.76	
C	107.9	11818	6.30	4.97	4.67	4.16	3.75	2.97	1.76	
* 2	78.9	8648	4.60	3.54	3.35	2.95	2.69	2.10	1.27	
* 2	78.9	8640	4.57	3.51	3.32	2.96	2.65	2.11	1.25	
* 2	79.0	8660	4.60	3.54	3.34	2.97	2.67	2.12	1.24	
* 2	79.1	8668	4.60	3.52	3.34	2.99	2.67	2.14	1.25	

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*	3	107.5	11779	6.31	4.96	4.65	4.17	3.74	2.97	1.76
*	3	107.9	11818	6.36	4.97	4.68	4.16	3.76	2.96	1.77
*	3	107.5	11775	6.28	4.92	4.62	4.10	3.70	2.90	1.71

*	4	144.6	15842	8.61	6.83	6.41	5.71	5.14	4.05	2.40
*	4	144.4	15823	8.61	6.85	6.42	5.71	5.16	4.05	2.39

'H-SEV. CORNER BREAK BETWEEN LP AND D2

Stn: 6 Lane:J4 Temp: J/C: 43 Air: 85 PvT: 103 12:31

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.6	11790	4.78	4.08	4.49	3.95	3.55	2.81	1.76
	C	107.8	11814	4.73	4.03	4.43	3.91	3.52	2.75	1.73
	C	107.9	11818	4.72	4.05	4.42	3.90	3.50	2.74	1.74
*	2	78.7	8620	3.46	2.96	3.14	2.81	2.51	1.96	1.26
*	2	79.0	8660	3.43	2.96	3.16	2.81	2.53	2.00	1.27
*	2	79.2	8672	3.44	2.93	3.20	2.83	2.52	2.02	1.26
*	2	79.4	8700	3.45	2.93	3.15	2.80	2.52	1.99	1.26
*	3	107.4	11767	4.72	4.02	4.39	3.89	3.50	2.78	1.73
*	3	108.2	11854	4.75	4.04	4.44	3.90	3.51	2.78	1.73
*	3	108.0	11830	4.74	4.04	4.44	3.89	3.51	2.74	1.74
*	3	107.9	11818	4.74	4.05	4.43	3.89	3.51	2.75	1.74
*	4	144.5	15831	6.39	5.42	5.91	5.21	4.66	3.67	2.31
*	4	145.2	15906	6.44	5.44	5.95	5.24	4.69	3.70	2.33
*	4	145.3	15922	6.44	5.45	5.94	5.26	4.70	3.70	2.31
*	4	144.8	15862	6.43	5.45	5.93	5.23	4.69	3.71	2.31

Stn: 8 Lane:J5 Temp: J/C: 43 Air: 83 PvT: 102 12:34

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.9	11818	4.80	4.41	4.03	3.67	3.30	2.72	1.78
	C	107.8	11814	4.84	4.43	4.04	3.67	3.32	2.73	1.78
	C	107.9	11822	4.85	4.43	4.06	3.66	3.33	2.73	1.78
*	2	78.6	8616	3.47	3.21	2.92	2.65	2.43	2.01	1.29
*	2	78.8	8632	3.44	3.22	2.89	2.65	2.42	2.01	1.29
*	2	78.8	8632	3.46	3.19	2.91	2.64	2.42	2.00	1.29
*	2	79.0	8652	3.43	3.19	2.91	2.64	2.42	2.01	1.28
*	3	107.6	11790	4.81	4.42	4.04	3.65	3.31	2.70	1.76
*	3	108.0	11834	4.82	4.42	4.05	3.64	3.31	2.69	1.76
*	3	107.9	11826	4.80	4.42	4.06	3.63	3.32	2.70	1.76
*	3	107.4	11771	4.80	4.43	4.04	3.64	3.30	2.70	1.75
*	4	145.1	15898	6.41	5.95	5.37	4.84	4.39	3.56	2.33
*	4	145.5	15938	6.47	5.95	5.37	4.87	4.40	3.57	2.33
*	4	145.3	15918	6.44	5.96	5.34	4.87	4.40	3.55	2.32
*	4	145.1	15902	6.42	5.93	5.35	4.85	4.39	3.54	2.31

Stn: 25 Lane:J4 Temp: J/C: 53 Air: 82 PvT: 104 12:36

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.6	11787	6.11	5.00	5.22	4.58	4.03	3.10	1.88
	C	107.5	11779	6.04	4.95	5.19	4.54	4.00	3.08	1.83
	C	107.5	11779	6.05	4.96	5.19	4.55	4.02	3.10	1.84
*	2	78.3	8581	4.30	3.54	3.74	3.26	2.87	2.20	1.33
*	2	78.9	8640	4.39	3.61	3.79	3.30	2.91	2.26	1.33
*	2	78.7	8620	4.32	3.57	3.76	3.26	2.83	2.17	1.32
*	2	78.9	8640	4.30	3.56	3.75	3.25	2.82	2.18	1.31
*	3	107.1	11739	6.07	4.97	5.20	4.53	3.97	3.04	1.83
*	3	107.4	11763	6.08	4.97	5.19	4.54	3.99	3.07	1.83
*	3	107.5	11783	6.12	4.98	5.21	4.56	4.00	3.08	1.83
*	3	107.0	11727	6.10	4.97	5.19	4.54	4.01	3.08	1.83
*	4	144.3	15811	8.29	6.77	7.02	6.14	5.40	4.14	2.48
*	4	145.1	15898	8.28	6.74	7.04	6.12	5.38	4.14	2.47
*	4	145.0	15886	8.28	6.75	7.03	6.12	5.39	4.13	2.46
*	4	145.0	15882	8.31	6.76	7.04	6.14	5.41	4.15	2.47

Stn: 26 Lane:J5 Temp: J/C: 53 Air: 82 PvT: 103 12:38

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.5	11779	5.96	5.07	4.86	4.32	3.88	3.08	1.92
	C	107.6	11787	5.93	5.10	4.81	4.28	3.83	3.02	1.88
	C	107.3	11755	5.96	5.14	4.86	4.32	3.86	3.08	1.93
*	2	78.6	8608	4.26	3.67	3.55	3.15	2.75	2.22	1.37

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*	2	78.6	8612	4.30	3.68	3.54	3.15	2.75	2.25	1.37
*	2	78.8	8632	4.29	3.69	3.53	3.13	2.76	2.24	1.38
*	2	78.9	8644	4.30	3.67	3.56	3.15	2.71	2.22	1.35
*	3	107.0	11723	5.94	5.15	4.85	4.31	3.85	3.05	1.91
*	3	107.4	11771	5.98	5.15	4.84	4.31	3.89	3.08	1.91

*	4	144.3	15811	8.00	6.91	6.48	5.75	5.16	4.08	2.56
*	4	144.8	15866	8.00	6.92	6.51	5.78	5.14	4.06	2.53
*	4	145.0	15882	8.00	6.94	6.50	5.78	5.16	4.08	2.55
*	4	144.9	15870	8.01	6.95	6.51	5.78	5.17	4.09	2.56

Stn: 55 Lane:J4 Temp: J/C: 53 Air: 84 PvT: 107 12:41

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.9	11818	5.36	4.49	4.61	4.09	3.65	2.92	1.77
	C	108.2	11858	5.28	4.45	4.54	4.04	3.60	2.93	1.72
	C	108.2	11858	5.27	4.43	4.52	4.01	3.59	2.89	1.71
*	2	79.3	8684	3.81	3.26	3.24	2.94	2.55	2.01	1.25
*	2	79.0	8660	3.76	3.24	3.24	2.93	2.56	2.00	1.25
*	2	79.3	8692	3.77	3.26	3.23	2.95	2.54	1.98	1.26
*	2	79.2	8676	3.76	3.20	3.24	2.89	2.58	2.01	1.24
*	3	108.2	11858	5.30	4.46	4.52	4.04	3.61	2.94	1.72
*	3	108.2	11854	5.31	4.45	4.53	4.03	3.59	2.90	1.74
*	3	108.1	11842	5.32	4.46	4.54	4.04	3.59	2.90	1.74
*	3	108.2	11850	5.31	4.47	4.54	4.05	3.59	2.86	1.74
*	4	146.0	15993	7.04	5.94	6.07	5.39	4.82	3.89	2.33
*	4	146.0	15993	7.05	5.99	6.07	5.43	4.81	3.85	2.34
*	4	145.8	15978	7.06	5.98	6.07	5.41	4.82	3.85	2.35
*	4	145.8	15978	7.07	5.99	6.07	5.42	4.81	3.85	2.35

Stn: 56 Lane:J5 Temp: J/C: 53 Air: 87 PvT: 105 12:44

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.8	11814	5.30	4.49	4.31	3.91	3.53	2.87	1.77
	C	108.0	11838	5.30	4.52	4.31	3.87	3.50	2.79	1.75
	C	108.2	11850	5.31	4.51	4.32	3.89	3.52	2.82	1.76
*	2	79.2	8672	3.87	3.34	3.14	2.79	2.50	1.98	1.28
*	2	79.4	8696	3.89	3.33	3.16	2.80	2.52	2.06	1.28
*	2	79.1	8668	3.85	3.31	3.12	2.76	2.48	1.96	1.27
*	2	78.9	8644	3.84	3.33	3.12	2.78	2.49	1.96	1.28
*	3	107.6	11787	5.30	4.49	4.30	3.89	3.51	2.82	1.76
*	3	108.0	11834	5.31	4.49	4.32	3.91	3.51	2.84	1.76
*	3	107.9	11822	5.31	4.52	4.33	3.91	3.51	2.86	1.76
*	3	107.8	11814	5.32	4.50	4.32	3.89	3.52	2.87	1.76
*	4	145.1	15898	7.07	6.06	5.72	5.16	4.64	3.71	2.34
*	4	145.4	15930	7.09	6.08	5.73	5.15	4.65	3.77	2.34
*	4	145.6	15954	7.10	6.07	5.74	5.17	4.67	3.80	2.34
*	4	145.6	15954	7.17	6.12	5.81	5.25	4.75	3.87	2.43

Stn: 67 Lane:J4 Temp: J/C: 56 Air: 83 PvT: 102 12:46

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.9	11826	5.34	4.55	4.93	4.44	3.97	3.20	1.98
	C	108.0	11830	5.27	4.49	4.85	4.39	3.91	3.12	1.93
	C	107.8	11814	5.27	4.49	4.86	4.38	3.92	3.14	1.94
*	2	78.9	8640	3.83	3.24	3.53	3.10	2.79	2.26	1.41
*	2	79.4	8696	3.82	3.22	3.55	3.08	2.76	2.23	1.43
*	2	79.3	8688	3.84	3.24	3.56	3.11	2.77	2.24	1.44
*	2	79.5	8708	3.82	3.24	3.52	3.14	2.84	2.27	1.40
*	3	107.9	11822	5.26	4.47	4.83	4.36	3.91	3.13	1.93
*	3	108.2	11854	5.26	4.48	4.85	4.37	3.90	3.13	1.93
*	3	108.0	11838	5.27	4.48	4.85	4.37	3.89	3.13	1.93
*	3	107.8	11814	5.30	4.49	4.87	4.34	3.87	3.12	1.93
*	4	144.9	15874	7.05	5.96	6.49	5.82	5.19	4.16	2.59
*	4	145.7	15962	7.11	5.97	6.48	5.80	5.22	4.17	2.59
*	4	145.9	15982	7.11	5.99	6.50	5.82	5.24	4.19	2.59
*	4	145.5	15942	7.13	5.97	6.51	5.79	5.19	4.17	2.59

Stn: 68 Lane:J5 Temp: J/C: 56 Air: 86 PvT: 102 12:48

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.4	11882	5.14	4.82	4.46	4.09	3.72	3.09	1.98
	C	108.8	11926	5.17	4.86	4.49	4.12	3.72	3.09	1.98
	C	108.5	11886	5.16	4.85	4.49	4.11	3.73	3.09	1.98

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*	2	79.5	8708	3.75	3.54	3.28	2.98	2.73	2.24	1.45
*	2	79.0	8656	3.74	3.54	3.25	2.96	2.70	2.22	1.43
*	2	79.6	8724	3.76	3.53	3.27	3.00	2.70	2.24	1.43
*	2	79.2	8680	3.73	3.52	3.24	2.94	2.71	2.22	1.44

*	3	108.6	11854	5.16	4.86	4.46	4.12	3.72	3.03	1.38
*	4	145.4	15930	6.85	6.47	5.95	5.43	4.95	4.07	2.53
*	4	146.0	15997	6.88	6.51	5.97	5.46	4.96	4.09	2.62
*	4	146.1	15005	6.89	6.50	5.97	5.46	4.98	4.09	2.64
*	4	145.8	15974	6.89	6.51	5.98	5.45	4.98	4.09	2.63

Stn: 106 Lane:J4 Temp: J/C: 44 Air: 86 PvT: 109 12:51

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.0	11834	4.85	4.21	4.41	3.94	3.56	2.85	1.84
	C	107.8	11810	4.79	4.20	4.36	3.91	3.52	2.81	1.81
	C	107.8	11806	4.79	4.19	4.37	3.91	3.51	2.83	1.78
*	2	78.9	8640	3.44	3.06	3.07	2.76	2.50	1.97	1.32
*	2	79.0	8660	3.48	3.13	3.07	2.77	2.51	1.94	1.37
*	2	78.8	8632	3.44	3.11	3.07	2.76	2.51	1.94	1.37
*	2	79.2	8676	3.48	3.11	3.12	2.81	2.54	1.97	1.33
*	3	107.6	11790	4.80	4.19	4.37	3.91	3.52	2.83	1.79
*	3	107.5	11779	4.81	4.19	4.38	3.91	3.52	2.85	1.79
*	3	107.4	11771	4.82	4.18	4.37	3.91	3.52	2.83	1.79
*	3	107.5	11775	4.83	4.19	4.36	3.90	3.52	2.80	1.80
*	4	144.6	15846	6.39	5.51	5.84	5.22	4.69	3.77	2.39
*	4	145.3	15922	6.43	5.62	5.81	5.20	4.71	3.75	2.43
*	4	145.5	15942	6.45	5.59	5.82	5.21	4.70	3.77	2.42
*	4	145.3	15918	6.44	5.61	5.83	5.20	4.69	3.76	2.43

Stn: 107 Lane:J5 Temp: J/C: 44 Air: 87 PvT: 107 12:53

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.0	11834	4.67	4.33	4.08	3.75	3.41	2.83	1.85
	C	108.0	11834	4.69	4.40	4.09	3.74	3.40	2.82	1.85
	C	107.8	11810	4.66	4.37	4.09	3.75	3.41	2.82	1.85
*	2	79.0	8660	3.41	3.15	2.96	2.72	2.47	2.05	1.36
*	2	79.1	8664	3.41	3.15	2.97	2.72	2.48	2.05	1.36
*	2	78.9	8640	3.40	3.20	2.96	2.68	2.43	2.03	1.33
*	2	79.1	8664	3.41	3.19	2.95	2.68	2.43	2.03	1.33
*	3	107.6	11784	4.67	4.38	4.07	3.74	3.41	2.82	1.85
*	3	108.0	11834	4.69	4.40	4.11	3.78	3.44	2.85	1.88
*	3	107.9	11822	4.69	4.41	4.09	3.75	3.41	2.82	1.84
*	3	107.8	11814	4.67	4.38	4.09	3.78	3.42	2.84	1.86
*	4	145.1	15902	6.25	5.84	5.43	4.99	4.57	3.75	2.46
*	4	145.4	15926	6.25	5.87	5.43	4.97	4.54	3.76	2.46
*	4	145.5	15938	6.28	5.85	5.44	5.00	4.56	3.77	2.47
*	4	145.8	15978	6.29	5.87	5.45	5.00	4.56	3.77	2.48

Stn: 119 Lane:J4 Temp: J/C: 50 Air: 88 PvT: 105 12:55

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.9	11818	5.55	4.77	5.27	4.70	4.21	3.33	2.02
	C	107.8	11806	5.49	4.75	5.20	4.63	4.16	3.28	1.97
	C	107.5	11779	5.48	4.72	5.18	4.61	4.14	3.24	1.99
*	2	78.5	8597	3.95	3.44	3.72	3.31	2.97	2.34	1.42
*	2	78.9	8640	3.96	3.44	3.75	3.34	3.00	2.36	1.45
*	2	78.8	8628	3.95	3.40	3.74	3.32	2.98	2.33	1.40
*	2	78.4	8593	3.94	3.41	3.73	3.33	2.97	2.34	1.43
*	3	107.0	11727	5.46	4.72	5.16	4.59	4.11	3.24	1.99
*	3	107.4	11767	5.49	4.74	5.17	4.60	4.13	3.25	1.97
*	3	107.2	11743	5.48	4.71	5.17	4.60	4.13	3.25	1.98
*	3	107.3	11755	5.50	4.76	5.17	4.61	4.13	3.27	2.00
*	4	144.5	15835	7.31	6.28	6.91	6.16	5.51	4.37	2.67
*	4	145.1	15894	7.33	6.30	6.94	6.18	5.55	4.39	2.70
*	4	145.4	15926	7.36	6.33	6.95	6.21	5.55	4.39	2.71
*	4	145.5	15946	7.37	6.27	6.95	6.19	5.54	4.38	2.68

Stn: 121 Lane:J5 Temp: J/C: 50 Air: 87 PvT: 104 12:57

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.3	11751	5.57	5.20	4.80	4.36	3.96	3.20	2.02
	C	107.3	11755	5.60	5.22	4.77	4.35	3.95	3.15	2.04

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	C	107.5	11779	5.64	5.23	4.80	4.35	3.94	3.20	2.02
*	2	78.7	8624	3.98	3.77	3.44	3.16	2.85	2.29	1.45
*	2	78.5	8597	3.94	3.77	3.44	3.17	2.87	2.29	1.46
*	2	78.4	8589	4.01	3.77	3.46	3.14	2.85	2.31	1.44
*	2	78.6	8616	4.02	3.77	3.45	3.15	2.85	2.30	1.41

* 3	107.3	11759	5.66	5.22	4.79	4.35	3.92	3.19	2.02
* 4	144.5	15831	7.46	6.97	6.36	5.76	5.23	4.23	2.67
* 4	145.1	15894	7.46	7.00	6.39	5.79	5.25	4.24	2.67
* 4	144.9	15870	7.46	6.98	6.37	5.78	5.25	4.23	2.65
* 4	145.0	15882	7.47	7.00	6.40	5.79	5.26	4.27	2.68

Stn: 150 Lane:J4 Temp: J/C: 43 Air: 88 PvT: 109 13:00

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.8	11814	5.67	4.97	5.12	4.59	4.11	3.33	2.12
	C	107.6	11790	5.62	4.91	5.08	4.56	4.08	3.29	2.09
	C	107.9	11822	5.60	4.93	5.04	4.49	4.04	3.27	2.08
*	2	78.5	8601	4.04	3.51	3.65	3.29	2.93	2.33	1.47
*	2	78.8	8632	4.06	3.54	3.67	3.28	2.94	2.35	1.47
*	2	78.9	8644	4.06	3.57	3.63	3.21	2.89	2.36	1.51
*	2	79.0	8660	4.07	3.52	3.67	3.30	2.93	2.35	1.47
*	3	107.4	11763	5.61	4.91	5.05	4.52	4.06	3.25	2.06
*	3	107.5	11783	5.61	4.93	5.06	4.53	4.06	3.26	2.07
*	3	107.5	11779	5.63	4.93	5.07	4.55	4.07	3.26	2.06
*	3	107.5	11779	5.63	4.93	5.07	4.55	4.07	3.26	2.07
*	4	144.7	15858	7.50	6.57	6.76	6.08	5.43	4.35	2.78
*	4	145.5	15946	7.56	6.63	6.78	6.06	5.48	4.39	2.80
*	4	145.6	15958	7.57	6.61	6.81	6.10	5.47	4.38	2.80
*	4	145.6	15950	7.57	6.61	6.80	6.11	5.46	4.37	2.78

Stn: 153 Lane:J5 Temp: J/C: 43 Air: 83 PvT: 108 13:02

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.2	11747	5.52	5.00	4.76	4.36	4.04	3.40	2.22
	C	107.6	11794	5.51	5.02	4.79	4.39	4.04	3.39	2.22
	C	107.4	11767	5.54	5.03	4.78	4.37	4.04	3.41	2.22
*	2	79.2	8672	3.85	3.61	3.43	3.23	2.97	2.39	1.65
*	2	78.7	8620	3.87	3.62	3.45	3.20	2.94	2.41	1.60
*	2	79.0	8660	3.88	3.60	3.43	3.21	2.96	2.41	1.62
*	2	78.9	8640	3.91	3.62	3.44	3.21	2.96	2.39	1.62
*	3	107.1	11731	5.53	5.01	4.74	4.36	4.02	3.34	2.21
*	3	107.5	11779	5.59	5.04	4.76	4.39	4.04	3.35	2.23
*	3	107.5	11775	5.57	5.02	4.77	4.35	4.01	3.41	2.20
*	3	107.3	11759	5.56	5.03	4.76	4.38	4.02	3.35	2.23
*	4	144.3	15811	7.31	6.69	6.30	5.80	5.32	4.45	2.93
*	4	145.3	15922	7.34	6.73	6.33	5.83	5.39	4.42	2.97
*	4	145.0	15886	7.34	6.73	6.34	5.82	5.35	4.46	2.96
*	4	144.9	15874	7.35	6.74	6.32	5.83	5.37	4.42	2.97

Stn: 170 Lane:J4 Temp: J/C: 46 Air: 87 PvT: 107 13:04

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.1	11731	5.05	4.43	4.64	4.24	3.90	3.21	2.10
	C	107.5	11783	5.03	4.40	4.62	4.23	3.89	3.17	2.09
	C	108.1	11842	5.03	4.43	4.63	4.22	3.87	3.20	2.09
*	2	79.0	8652	3.66	3.20	3.35	3.06	2.81	2.31	1.53
*	2	79.2	8672	3.64	3.19	3.36	3.07	2.83	2.31	1.52
*	2	78.3	8577	3.63	3.17	3.36	3.01	2.81	2.29	1.52
*	2	79.0	8656	3.61	3.17	3.35	3.06	2.82	2.30	1.52
*	3	106.9	11711	5.04	4.43	4.64	4.23	3.89	3.20	2.11
*	3	107.6	11794	5.03	4.44	4.62	4.24	3.85	3.19	2.09
*	3	107.3	11759	4.99	4.43	4.60	4.20	3.83	3.17	2.07
*	3	107.4	11763	5.03	4.43	4.63	4.22	3.87	3.19	2.08
*	4	144.8	15862	6.65	5.89	6.13	5.63	5.13	4.24	2.78
*	4	145.6	15958	6.66	5.93	6.15	5.65	5.15	4.27	2.78
*	4	145.5	15938	6.66	5.90	6.15	5.65	5.17	4.24	2.77
*	4	145.6	15950	6.66	5.90	6.17	5.65	5.20	4.27	2.78

Stn: 173 Lane:J5 Temp: J/C: 46 Air: 85 PvT: 104 13:08

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7

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C	107.3	11759	5.00	4.62	4.46	4.15	3.85	3.23	2.15
C	108.0	11830	5.04	4.64	4.48	4.17	3.85	3.24	2.15
C	107.8	11814	5.03	4.64	4.47	4.15	3.84	3.23	2.15
* 2	78.7	8624	3.56	3.33	3.24	3.01	2.78	2.37	1.51
* 2	78.8	8628	3.53	3.35	3.24	3.01	2.80	2.35	1.56

*	3	107.4	11771	5.04	4.63	4.45	4.13	3.81	3.20	2.10
*	3	107.8	11806	5.06	4.63	4.46	4.14	3.83	3.23	2.14
*	3	107.8	11810	5.07	4.63	4.44	4.13	3.82	3.22	2.12
*	4	144.8	15862	6.56	6.15	5.86	5.43	5.01	4.20	2.82
*	4	145.6	15954	6.56	6.18	5.90	5.48	5.07	4.23	2.82
*	4	145.6	15950	6.55	6.16	5.89	5.50	5.05	4.23	2.79
*	4	145.7	15966	6.56	6.17	5.90	5.50	5.06	4.23	2.82

Stn: 212 Lane:J4 Temp: J/C: 44 Air: 85 PvT: 107 13:11

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.1	11731	4.53	4.02	4.10	3.74	3.37	2.71	1.71
	C	107.2	11747	4.49	3.97	4.06	3.70	3.34	2.67	1.67
	C	107.4	11771	4.50	3.97	4.06	3.70	3.32	2.67	1.64
*	2	78.4	8593	3.26	2.88	2.94	2.64	2.36	1.97	1.16
*	2	78.5	8605	3.22	2.83	2.93	2.65	2.37	1.94	1.14
*	2	78.6	8608	3.22	2.87	2.94	2.66	2.39	1.96	1.18
*	2	78.7	8620	3.22	2.88	2.96	2.65	2.35	1.98	1.15
*	3	107.0	11727	4.55	4.02	4.06	3.68	3.30	2.72	1.63
*	3	107.5	11775	4.54	4.00	4.06	3.69	3.32	2.68	1.62
*	3	107.3	11751	4.54	3.96	4.05	3.69	3.33	2.66	1.63
*	3	107.0	11727	4.54	3.98	4.05	3.68	3.33	2.67	1.63
*	4	144.5	15831	6.02	5.28	5.41	4.91	4.44	3.56	2.16
*	4	145.2	15910	6.03	5.28	5.45	4.95	4.51	3.57	2.19
*	4	145.0	15890	6.04	5.30	5.44	4.93	4.49	3.54	2.22
*	4	145.2	15914	6.05	5.32	5.45	4.95	4.49	3.59	2.19

Stn: 213 Lane:J5 Temp: J/C: 44 Air: 85 PvT: 105 13:13

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.8	11810	4.35	4.04	3.84	3.53	3.20	2.61	1.61
	C	107.8	11810	4.34	4.06	3.84	3.53	3.20	2.60	1.60
	C	107.8	11814	4.34	4.06	3.83	3.53	3.21	2.62	1.62
*	2	78.7	8624	3.11	2.91	2.76	2.52	2.30	1.86	1.13
*	2	79.0	8660	3.09	2.94	2.77	2.56	2.29	1.90	1.15
*	2	78.9	8640	3.10	2.91	2.76	2.53	2.28	1.88	1.14
*	2	78.8	8636	3.11	2.89	2.77	2.50	2.34	1.86	1.19
*	3	107.5	11779	4.33	4.04	3.83	3.50	3.23	2.56	1.61
*	3	108.0	11838	4.35	4.05	3.85	3.51	3.23	2.58	1.63
*	3	107.8	11806	4.35	4.05	3.83	3.51	3.21	2.59	1.61
*	3	107.8	11810	4.32	4.05	3.82	3.51	3.19	2.58	1.61
*	4	144.4	15823	5.78	5.40	5.09	4.66	4.27	3.46	2.13
*	4	145.6	15958	5.80	5.44	5.12	4.69	4.29	3.47	2.14
*	4	145.4	15926	5.80	5.43	5.13	4.68	4.30	3.46	2.15
*	4	145.5	15946	5.78	5.40	5.11	4.67	4.30	3.46	2.16

Stn: 231 Lane:J4 Temp: J/C: 45 Air: 85 PvT: 105 13:16

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.9	11826	4.90	4.11	4.53	4.12	3.74	2.98	1.84
	C	108.4	11882	4.80	4.13	4.53	4.12	3.72	2.96	1.76
	C	108.6	11898	4.81	4.13	4.51	4.10	3.72	2.97	1.77
*	2	78.7	8620	3.40	2.96	3.22	2.92	2.63	2.11	1.27
*	2	79.2	8672	3.33	2.95	3.22	2.93	2.65	2.12	1.28
*	2	78.8	8636	3.36	2.94	3.24	2.96	2.65	2.12	1.25
*	2	78.7	8624	3.35	2.94	3.20	2.93	2.65	2.11	1.25
*	3	107.5	11783	4.77	4.09	4.46	4.07	3.69	2.94	1.78
*	3	107.8	11814	4.84	4.09	4.48	4.09	3.69	2.95	1.80
*	3	107.8	11806	4.80	4.11	4.46	4.07	3.70	2.96	1.83
*	3	107.5	11775	4.79	4.10	4.45	4.05	3.69	2.95	1.81
*	4	145.5	15938	6.35	5.50	6.02	5.51	4.96	3.99	2.41
*	4	145.0	15886	6.33	5.51	6.02	5.48	4.98	3.99	2.41
*	4	145.5	15946	6.33	5.52	6.02	5.51	4.97	3.99	2.44
*	4	145.1	15902	6.33	5.51	6.03	5.52	4.97	3.99	2.44

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Stn: 233 Lane:J5 Temp: J/C: 45 Air: 86 PvT: 104 13:18

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.0	11834	4.83	4.48	4.30	3.95	3.59	2.93	1.75
	C	107.9	11826	4.86	4.52	4.33	3.96	3.58	2.95	1.78
	C	108.0	11834	4.87	4.52	4.30	3.94	3.58	2.90	1.75
*	2	79.1	8664	3.40	3.20	3.09	2.82	2.59	2.00	1.24

*	2	79.0	8652	3.42	3.24	3.12	2.85	2.58	2.10	1.27
*	3	107.9	11822	4.85	4.50	4.33	3.97	3.58	2.91	1.74
*	3	108.0	11830	4.88	4.49	4.33	3.96	3.59	2.85	1.71
*	3	108.1	11846	4.87	4.50	4.33	3.96	3.58	2.87	1.74
*	3	108.0	11838	4.88	4.50	4.34	3.96	3.58	2.91	1.76
*	4	145.1	15902	6.48	6.04	5.77	5.29	4.80	3.87	2.34
*	4	145.9	15989	6.47	6.04	5.77	5.28	4.80	3.85	2.28
*	4	145.9	15985	6.49	6.07	5.78	5.31	4.83	3.91	2.33
*	4	146.0	15997	6.51	6.05	5.79	5.32	4.85	3.86	2.30

Stn: 275 Lane:J4 Temp: J/C: 45 Air: 85 PvT: 110 13:20

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.5	11775	5.41	4.87	5.00	4.57	4.17	3.41	2.19
	C	107.4	11767	5.39	4.86	4.98	4.55	4.15	3.40	2.23
	C	107.4	11771	5.39	4.85	4.97	4.54	4.15	3.41	2.20
*	2	79.1	8668	3.91	3.52	3.64	3.31	3.02	2.48	1.57
*	2	78.9	8640	3.94	3.55	3.66	3.32	3.04	2.49	1.63
*	2	78.8	8628	3.93	3.56	3.65	3.31	3.02	2.47	1.62
*	2	79.0	8660	3.94	3.55	3.64	3.33	3.03	2.48	1.61
*	3	107.4	11763	5.37	4.86	4.98	4.54	4.14	3.38	2.20
*	3	107.1	11731	5.40	4.86	4.96	4.54	4.14	3.39	2.21
*	3	107.5	11775	5.39	4.87	4.97	4.55	4.15	3.38	2.20
*	3	107.1	11739	5.40	4.87	4.98	4.55	4.15	3.39	2.23
*	4	144.7	15858	7.08	6.39	6.54	5.98	5.45	4.48	2.92
*	4	145.4	15934	7.14	6.43	6.59	6.02	5.49	4.51	2.93
*	4	145.4	15930	7.14	6.44	6.58	6.02	5.49	4.49	2.94
*	4	145.4	15926	7.13	6.44	6.59	6.02	5.49	4.51	2.96

Stn: 276 Lane:J5 Temp: J/C: 45 Air: 86 PvT: 108 13:22

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.7	11798	5.26	4.97	4.67	4.30	3.97	3.33	2.15
	C	107.6	11790	5.29	4.99	4.67	4.29	3.96	3.27	2.15
	C	107.6	11794	5.26	4.98	4.67	4.30	3.96	3.30	2.18
*	2	78.8	8636	3.78	3.60	3.38	3.11	2.88	2.38	1.54
*	2	78.7	8620	3.79	3.59	3.37	3.11	2.87	2.37	1.57
*	2	78.7	8620	3.80	3.59	3.39	3.11	2.88	2.43	1.56
*	2	78.8	8628	3.82	3.59	3.38	3.07	2.85	2.39	1.57
*	3	107.8	11806	5.26	4.97	4.66	4.28	3.97	3.29	2.12
*	3	107.5	11775	5.25	4.96	4.65	4.30	3.96	3.28	2.16
*	3	107.4	11763	5.26	4.96	4.65	4.29	3.96	3.30	2.15
*	3	107.3	11751	5.25	4.94	4.66	4.28	3.98	3.30	2.14
*	4	145.0	15882	6.91	6.54	6.13	5.66	5.21	4.33	2.81
*	4	145.5	15946	6.92	6.52	6.13	5.63	5.18	4.31	2.84
*	4	145.8	15970	6.93	6.54	6.14	5.69	5.22	4.35	2.84
*	4	145.5	15942	6.94	6.54	6.15	5.65	5.19	4.31	2.85

Stn: 294 Lane:J4 Temp: J/C: 45 Air: 86 PvT: 107 13:25

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.6	11794	5.17	4.54	4.78	4.42	4.03	3.34	2.15
	C	108.0	11838	5.17	4.53	4.76	4.38	4.01	3.32	2.17
	C	109.1	11949	5.21	4.58	4.81	4.42	4.03	3.35	2.19
*	2	78.9	8648	3.70	3.29	3.46	3.17	2.91	2.39	1.59
*	2	79.3	8684	3.65	3.29	3.45	3.15	2.90	2.38	1.59
*	2	79.6	8720	3.65	3.29	3.45	3.17	2.90	2.38	1.56
*	2	79.1	8664	3.66	3.28	3.43	3.14	2.89	2.37	1.57
*	3	108.2	11854	5.14	4.54	4.76	4.38	4.01	3.34	2.20
*	3	108.4	11882	5.19	4.58	4.80	4.42	4.02	3.38	2.17
*	3	108.6	11902	5.17	4.57	4.80	4.41	4.02	3.37	2.18
*	3	108.7	11910	5.20	4.59	4.81	4.43	4.03	3.41	2.17
*	4	147.5	16164	6.83	6.08	6.37	5.89	5.37	4.41	2.92
*	4	147.5	16164	6.85	6.11	6.39	5.88	5.41	4.41	3.01
*	4	148.3	16244	6.87	6.11	6.40	5.91	5.41	4.46	2.98
*	4	148.1	16232	6.92	6.11	6.41	5.88	5.43	4.44	3.03

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Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
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Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

Stn:	295	Lane:J5	Temp:		J/C: 45	Air: 86		PvT: 106		13:27
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.9	11930	5.26	4.82	4.71	4.42	4.11	3.36	2.32
	C	108.6	11898	5.25	4.81	4.72	4.42	4.08	3.44	2.29
	C	109.0	11937	5.26	4.81	4.72	4.42	4.11	3.45	2.31
*	2	79.5	8716	3.83	3.54	3.47	3.25	2.99	2.54	1.70
*	2	79.1	8664	3.79	3.52	3.46	3.22	2.95	2.54	1.69
*	2	79.2	8676	3.82	3.52	3.47	3.23	2.98	2.52	1.70
*	2	79.3	8692	3.80	3.51	3.44	3.24	2.97	2.52	1.69
*	3	108.3	11862	5.23	4.81	4.69	4.41	4.07	3.42	2.29
*	3	108.7	11906	5.26	4.81	4.69	4.42	4.14	3.43	2.31
*	3	108.9	11933	5.25	4.84	4.72	4.43	4.09	3.45	2.30
*	3	108.5	11890	5.26	4.83	4.72	4.43	4.10	3.46	2.31
*	4	147.1	16113	6.96	6.39	6.24	5.83	5.41	4.55	3.04
*	4	147.4	16152	7.02	6.41	6.29	5.87	5.43	4.61	3.02
*	4	147.4	16148	7.04	6.44	6.28	5.88	5.45	4.57	3.08
*	4	147.4	16148	7.02	6.44	6.29	5.87	5.43	4.59	3.06

Stn:	319	Lane:J4	Temp:		J/C: 42	Air: 87		PvT: 107		13:30
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.8	11918	5.22	4.61	4.86	4.37	3.96	3.18	1.98
	C	108.7	11914	5.23	4.62	4.80	4.34	3.90	3.15	1.95
	C	108.4	11878	5.24	4.57	4.81	4.34	3.92	3.15	1.96
*	2	79.1	8668	3.74	3.31	3.49	3.14	2.84	2.28	1.41
*	2	78.9	8644	3.75	3.32	3.50	3.15	2.84	2.29	1.43
*	2	79.2	8676	3.75	3.32	3.50	3.15	2.84	2.28	1.42
*	2	78.9	8644	3.79	3.31	3.50	3.14	2.84	2.29	1.43
*	3	107.8	11814	5.17	4.54	4.77	4.29	3.88	3.12	1.94
*	3	108.6	11898	5.22	4.57	4.80	4.33	3.91	3.14	1.96
*	3	108.3	11866	5.21	4.58	4.80	4.33	3.91	3.15	1.96
*	3	108.5	11890	5.22	4.60	4.83	4.35	3.92	3.17	1.98
*	4	146.2	16021	6.97	6.08	6.40	5.76	5.19	4.18	2.60
*	4	147.1	16117	7.06	6.11	6.44	5.80	5.24	4.22	2.63
*	4	147.0	16105	7.04	6.09	6.43	5.80	5.23	4.22	2.63
*	4	146.8	16089	7.06	6.10	6.45	5.81	5.24	4.22	2.64

Stn:	321	Lane:J5	Temp:		J/C: 42	Air: 87		PvT: 108		13:32
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.5	11890	5.18	4.78	4.53	4.15	3.81	3.11	2.00
	C	109.1	11949	5.19	4.76	4.56	4.16	3.84	3.14	2.01
	C	108.7	11914	5.15	4.78	4.56	4.17	3.85	3.13	2.01
*	2	79.2	8676	3.80	3.52	3.30	3.03	2.76	2.27	1.48
*	2	79.4	8704	3.75	3.56	3.29	3.03	2.75	2.25	1.48
*	2	79.1	8664	3.75	3.49	3.30	3.03	2.78	2.30	1.48
*	2	78.8	8636	3.73	3.51	3.28	3.02	2.75	2.24	1.47
*	3	107.9	11826	5.14	4.75	4.51	4.13	3.79	3.09	1.98
*	3	108.4	11874	5.17	4.77	4.53	4.15	3.83	3.11	2.01
*	3	108.4	11882	5.16	4.76	4.54	4.14	3.82	3.11	2.00
*	3	108.4	11882	5.15	4.78	4.56	4.15	3.83	3.11	2.01
*	4	146.3	16025	6.74	6.43	5.98	5.49	5.00	4.10	2.66
*	4	146.7	16073	6.78	6.44	6.02	5.52	5.07	4.13	2.69
*	4	146.8	16085	6.75	6.39	6.01	5.51	5.04	4.10	2.67
*	4	146.7	16077	6.79	6.41	6.02	5.52	5.05	4.11	2.67

Stn:	338	Lane:J4	Temp:		J/C: 43	Air: 86		PvT: 108		13:34
Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.2	11858	5.30	4.67	4.80	4.38	3.96	3.18	2.03
	C	107.6	11790	5.23	4.61	4.72	4.33	3.92	3.19	2.02
	C	107.7	11798	5.28	4.65	4.74	4.34	3.93	3.18	2.01
*	2	78.4	8589	3.70	3.34	3.38	3.11	2.79	2.23	1.43
*	2	78.4	8589	3.83	3.37	3.45	3.12	2.85	2.33	1.46
*	2	78.5	8597	3.83	3.37	3.45	3.13	2.85	2.34	1.46
*	2	78.1	8561	3.85	3.38	3.44	3.14	2.85	2.34	1.46
*	3	107.1	11735	5.24	4.65	4.74	4.31	3.88	3.16	1.99
*	3	107.3	11759	5.26	4.65	4.74	4.30	3.87	3.17	1.98
*	3	107.3	11751	5.24	4.65	4.74	4.31	3.88	3.14	2.00
*	3	107.6	11794	5.27	4.70	4.77	4.31	3.90	3.17	2.01
*	4	145.5	15942	7.04	6.28	6.38	5.76	5.21	4.22	2.69
*	4	145.4	15930	7.06	6.28	6.37	5.73	5.17	4.18	2.67
*	4	145.4	15934	7.05	6.28	6.36	5.74	5.19	4.16	2.67

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*	4	145.4	15934	7.07	6.30	6.38	5.78	5.19	4.17	2.66

Stn: 339 Lane:J5 Temp: J/C: 43 Air: 88 PvT: 107 13:37

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.3	11755	5.06	4.68	4.47	4.15	3.83	3.20	2.11
	C	107.4	11763	5.03	4.67	4.48	4.15	3.83	3.21	2.12
	C	107.4	11771	5.02	4.69	4.50	4.18	3.85	3.22	2.13
*	2	78.8	8632	3.61	3.39	3.26	3.02	2.79	2.35	1.56
*	2	78.6	8612	3.58	3.37	3.25	3.00	2.78	2.31	1.56
*	2	79.0	8660	3.53	3.38	3.26	3.02	2.80	2.32	1.55
*	2	79.1	8664	3.58	3.37	3.27	3.04	2.81	2.33	1.56
*	3	107.8	11810	5.04	4.70	4.51	4.18	3.85	3.23	2.14
*	3	107.5	11779	5.05	4.69	4.50	4.17	3.85	3.22	2.12
*	3	107.4	11771	5.03	4.69	4.50	4.19	3.86	3.22	2.13
*	3	107.4	11771	5.04	4.70	4.52	4.20	3.88	3.22	2.13
*	4	145.8	15970	6.80	6.31	6.02	5.59	5.17	4.31	2.85
*	4	145.6	15958	6.83	6.31	6.02	5.57	5.15	4.32	2.87
*	4	145.6	15950	6.80	6.31	6.02	5.58	5.15	4.31	2.86
*	4	145.6	15958	6.81	6.31	6.03	5.59	5.16	4.32	2.85

Stn: 370 Lane:J4 Temp: J/C: 41 Air: 86 PvT: 113 13:40

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.9	11822	5.90	5.25	5.52	5.01	4.53	3.68	2.38
	C	107.6	11794	5.85	5.19	5.45	4.91	4.46	3.61	2.35
	C	107.6	11794	5.84	5.18	5.46	4.93	4.46	3.63	2.34
*	2	79.4	8700	4.31	3.78	4.01	3.57	3.33	2.66	1.65
*	2	79.0	8652	4.28	3.79	4.01	3.59	3.29	2.66	1.68
*	2	78.9	8648	4.28	3.78	4.01	3.58	3.32	2.66	1.66
*	2	79.0	8660	4.32	3.83	4.04	3.65	3.32	2.70	1.67
*	3	108.1	11842	5.84	5.24	5.49	4.96	4.54	3.67	2.34
*	3	107.5	11779	5.86	5.18	5.46	4.94	4.50	3.65	2.30
*	3	107.5	11775	5.89	5.20	5.47	4.92	4.49	3.63	2.31
*	3	107.4	11771	5.86	5.21	5.48	4.97	4.53	3.67	2.35
*	4	145.7	15966	7.83	6.96	7.32	6.64	6.03	4.88	3.11
*	4	145.6	15954	7.84	6.97	7.33	6.65	6.00	4.88	3.11
*	4	145.8	15974	7.86	6.98	7.35	6.65	6.00	4.90	3.07
*	4	145.6	15958	7.85	6.98	7.35	6.69	6.01	4.90	3.07

Stn: 371 Lane:J5 Temp: J/C: 41 Air: 86 PvT: 111 13:42

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.3	11751	5.80	5.47	5.11	4.70	4.33	3.66	2.31
	C	107.8	11806	5.81	5.48	5.16	4.70	4.32	3.69	2.33
	C	107.4	11771	5.80	5.49	5.15	4.71	4.33	3.65	2.33
*	2	78.7	8624	4.18	4.06	3.68	3.42	3.17	2.63	1.68
*	2	78.6	8608	4.17	4.03	3.70	3.41	3.14	2.64	1.66
*	2	78.8	8632	4.19	3.99	3.72	3.42	3.14	2.70	1.69
*	2	78.9	8644	4.20	4.02	3.71	3.43	3.15	2.68	1.70
*	3	108.1	11842	5.81	5.52	5.11	4.70	4.35	3.56	2.31
*	3	107.6	11794	5.82	5.51	5.13	4.71	4.33	3.60	2.32
*	3	107.6	11794	5.83	5.52	5.13	4.70	4.33	3.61	2.31
*	3	107.7	11798	5.85	5.52	5.15	4.73	4.35	3.61	2.32
*	4	145.7	15962	7.67	7.29	6.78	6.24	5.74	4.74	3.06
*	4	145.4	15930	7.67	7.30	6.76	6.21	5.72	4.74	3.04
*	4	145.5	15946	7.67	7.31	6.79	6.22	5.72	4.77	3.05
*	4	145.4	15930	7.68	7.30	6.78	6.21	5.72	4.79	3.06

Stn: 382 Lane:J4 Temp: J/C: 41 Air: 84 PvT: 108 13:44

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.1	11731	5.19	4.52	4.72	4.26	3.87	3.13	2.00
	C	107.3	11751	5.15	4.50	4.69	4.23	3.83	3.10	1.97
	C	107.0	11723	5.15	4.52	4.69	4.24	3.85	3.11	1.96
*	2	78.4	8593	3.67	3.21	3.41	3.09	2.81	2.27	1.50
*	2	78.7	8624	3.68	3.34	3.35	3.04	2.75	2.24	1.36
*	2	78.5	8605	3.69	3.34	3.37	3.05	2.77	2.25	1.37
*	2	78.5	8597	3.66	3.24	3.39	3.07	2.79	2.24	1.44
*	3	107.0	11723	5.17	4.63	4.66	4.23	3.82	3.11	2.03
*	3	107.1	11731	5.16	4.55	4.68	4.24	3.84	3.11	1.98
*	3	107.5	11779	5.18	4.56	4.69	4.25	3.85	3.11	2.00
*	3	107.5	11779	5.16	4.54	4.69	4.24	3.84	3.11	1.98
*	4	145.5	15942	6.94	6.09	6.28	5.67	5.15	4.16	2.63

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*	4	145.2	15914	6.95	6.06	6.31	5.70	5.17	4.17	2.67
*	4	145.3	15918	6.95	6.06	6.30	5.69	5.17	4.17	2.67
*	4	145.3	15918	6.94	6.09	6.28	5.66	5.14	4.17	2.64

Stn: 383 Lane:J5 Temp: J/C: 41 Air: 82 PvT: 107 13:46

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.9	11826	5.08	4.64	4.45	4.11	3.76	3.17	2.09
	C	107.8	11810	5.08	4.65	4.47	4.13	3.77	3.11	2.05
	C	108.1	11842	5.09	4.64	4.49	4.15	3.77	3.19	2.10
*	2	78.5	8601	3.74	3.43	3.25	3.00	2.77	2.24	1.49
*	2	78.6	8612	3.73	3.39	3.26	3.01	2.76	2.29	1.50
*	2	78.2	8573	3.71	3.41	3.25	3.02	2.76	2.25	1.50
*	2	78.7	8624	3.63	3.41	3.20	2.99	2.70	2.26	1.46
*	3	107.8	11814	5.09	4.65	4.46	4.12	3.77	3.17	2.10
*	3	108.3	11870	5.11	4.62	4.49	4.14	3.77	3.19	2.11
*	3	107.7	11802	5.09	4.64	4.45	4.12	3.76	3.17	2.05
*	3	108.7	11906	5.10	4.67	4.46	4.12	3.77	3.16	2.10
*	4	145.8	15978	6.69	6.22	5.91	5.46	5.02	4.18	2.74
*	4	146.2	16013	6.66	6.20	5.90	5.44	5.00	4.18	2.69
*	4	145.9	15985	6.74	6.24	5.93	5.48	5.04	4.18	2.73
*	4	145.7	15966	6.71	6.22	5.93	5.47	5.04	4.13	2.70

Stn: 417 Lane:J4 Temp: J/C: 45 Air: 83 PvT: 110 13:49

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.0	11723	4.95	4.40	4.47	4.04	3.65	2.89	1.71
	C	106.9	11715	4.92	4.37	4.43	3.98	3.60	2.83	1.72
	C	107.2	11743	4.94	4.36	4.38	3.96	3.53	2.88	1.77
*	2	78.4	8589	3.52	3.18	3.28	2.93	2.67	2.06	1.20
*	2	78.2	8573	3.52	3.15	3.23	2.90	2.65	2.02	1.13
*	2	78.5	8605	3.50	3.16	3.19	2.89	2.61	2.05	1.23
*	2	78.7	8624	3.48	3.16	3.21	2.89	2.63	2.04	1.17
*	3	107.4	11763	4.95	4.40	4.44	4.00	3.61	2.87	1.74
*	3	107.1	11735	4.93	4.39	4.41	3.99	3.57	2.86	1.76
*	3	106.9	11715	4.98	4.39	4.45	4.00	3.62	2.84	1.69
*	3	106.9	11711	4.96	4.38	4.43	3.99	3.59	2.87	1.75
*	4	145.1	15898	6.60	5.89	5.93	5.35	4.80	3.84	2.33
*	4	145.2	15906	6.61	5.90	5.93	5.35	4.81	3.84	2.33
*	4	144.9	15874	6.60	5.89	5.91	5.34	4.79	3.84	2.35
*	4	144.8	15866	6.60	5.89	5.93	5.35	4.81	3.84	2.30

Stn: 419 Lane:J5 Temp: J/C: 45 Air: 83 PvT: 108 13:51

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.3	11751	4.69	4.39	4.07	3.70	3.35	2.70	1.69
	C	107.4	11771	4.68	4.41	4.08	3.71	3.37	2.72	1.65
	C	108.4	11874	4.70	4.45	4.11	3.74	3.39	2.75	1.69
*	2	79.0	8652	3.42	3.24	3.00	2.72	2.47	1.98	1.23
*	2	78.7	8624	3.35	3.15	2.93	2.67	2.43	1.97	1.23
*	2	79.3	8692	3.36	3.18	2.95	2.69	2.44	1.99	1.22
*	2	78.8	8632	3.41	3.22	2.99	2.71	2.47	2.00	1.24
*	3	107.7	11798	4.68	4.41	4.09	3.72	3.37	2.72	1.68
*	3	107.6	11794	4.69	4.41	4.07	3.71	3.36	2.71	1.67
*	3	108.5	11890	4.72	4.44	4.12	3.75	3.40	2.73	1.69
*	3	107.5	11775	4.68	4.41	4.07	3.70	3.35	2.71	1.67
*	4	145.7	15966	6.29	5.92	5.46	4.97	4.52	3.63	2.26
*	4	146.5	16049	6.28	5.91	5.45	4.96	4.53	3.67	2.29
*	4	145.7	15962	6.28	5.91	5.46	4.98	4.52	3.67	2.24
*	4	145.6	15958	6.27	5.91	5.46	4.98	4.50	3.59	2.23

Stn: 430 Lane:J4 Temp: J/C: 43 Air: 83 PvT: 107 13:53

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	106.4	11659	5.56	4.83	5.15	4.67	4.21	3.46	2.16
	C	106.8	11699	5.52	4.78	5.09	4.62	4.18	3.42	2.16
	C	106.9	11715	5.52	4.82	5.09	4.59	4.15	3.43	2.15
*	2	78.3	8577	3.96	3.47	3.70	3.34	3.04	2.48	1.55
*	2	77.6	8501	3.93	3.43	3.69	3.35	3.03	2.48	1.56
*	2	77.6	8501	3.95	3.44	3.70	3.35	3.02	2.47	1.54
*	2	78.3	8577	3.93	3.38	3.70	3.38	3.07	2.46	1.54
*	3	106.9	11707	5.54	4.84	5.10	4.59	4.15	3.43	2.16
*	3	106.8	11703	5.53	4.85	5.09	4.58	4.14	3.43	2.15
*	3	107.1	11731	5.52	4.81	5.10	4.63	4.19	3.43	2.15
*	3	106.7	11687	5.52	4.77	5.11	4.66	4.22	3.41	2.15

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*	4	144.0	15775	7.34	6.37	6.79	6.15	5.57	4.54	2.84
*	4	144.8	15862	7.41	6.47	6.83	6.13	5.55	4.59	2.86
*	4	144.9	15874	7.41	6.42	6.84	6.20	5.61	4.57	2.87
*	4	144.9	15878	7.40	6.44	6.83	6.18	5.59	4.57	2.85

Stn: 430 Lane:J5 Temp: J/C: 43 Air: 83 PvT: 107 13:56

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.7	11802	5.50	5.11	4.83	4.46	4.11	3.37	2.19
	C	107.6	11790	5.49	5.10	4.83	4.46	4.13	3.39	2.17
	C	107.6	11790	5.50	5.10	4.83	4.46	4.12	3.39	2.20
*	2	78.3	8577	3.93	3.69	3.48	3.22	2.98	2.48	1.57
*	2	78.1	8561	3.89	3.69	3.45	3.22	2.95	2.49	1.59
*	2	78.8	8636	3.92	3.73	3.45	3.23	2.96	2.43	1.54
*	2	78.8	8632	3.94	3.72	3.44	3.22	2.95	2.43	1.55
*	3	108.0	11838	5.52	5.14	4.85	4.47	4.12	3.40	2.17
*	3	107.5	11779	5.47	5.10	4.80	4.44	4.08	3.37	2.14
*	3	108.3	11862	5.48	5.11	4.83	4.45	4.11	3.38	2.16
*	3	107.4	11771	5.47	5.09	4.81	4.45	4.10	3.37	2.18
*	4	144.3	15811	7.19	6.77	6.38	5.87	5.40	4.48	2.84
*	4	145.8	15970	7.22	6.81	6.41	5.92	5.42	4.48	2.83
*	4	146.0	15997	7.24	6.82	6.43	5.93	5.43	4.48	2.85
*	4	145.9	15989	7.22	6.83	6.43	5.93	5.44	4.51	2.85

Stn: 459 Lane:J4 Temp: J/C: 45 Air: 84 PvT: 108 13:58

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.3	11751	4.82	4.19	4.44	4.05	3.71	3.11	2.02
	C	108.2	11850	4.85	4.26	4.51	4.12	3.77	3.11	2.06
	C	107.9	11822	4.85	4.23	4.51	4.10	3.75	3.12	2.07
*	2	78.9	8648	3.48	3.09	3.27	2.99	2.74	2.30	1.50
*	2	78.9	8640	3.50	3.10	3.31	3.02	2.75	2.29	1.52
*	2	78.7	8624	3.51	3.09	3.27	3.00	2.72	2.24	1.51
*	2	78.9	8648	3.54	3.11	3.32	3.01	2.75	2.30	1.51
*	3	107.3	11751	4.85	4.22	4.48	4.09	3.75	3.12	2.06
*	3	107.1	11731	4.85	4.21	4.49	4.06	3.72	3.13	2.04
*	3	107.2	11743	4.82	4.20	4.47	4.04	3.71	3.09	2.03
*	3	107.1	11735	4.84	4.20	4.47	4.05	3.72	3.07	2.02
*	4	145.8	15978	6.43	5.64	5.99	5.46	5.00	4.16	2.73
*	4	145.5	15942	6.41	5.63	5.98	5.45	5.00	4.18	2.73
*	4	145.3	15922	6.42	5.64	5.98	5.44	5.00	4.16	2.73
*	4	145.5	15942	6.43	5.65	5.98	5.46	5.02	4.17	2.74

Stn: 461 Lane:J5 Temp: J/C: 45 Air: 85 PvT: 107 14:00

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.3	11751	4.83	4.44	4.39	4.09	3.83	3.23	2.15
	C	107.4	11771	4.84	4.45	4.40	4.11	3.83	3.24	2.15
	C	107.6	11794	4.84	4.46	4.41	4.12	3.86	3.24	2.15
*	2	78.7	8624	3.46	3.23	3.17	2.94	2.85	2.36	1.57
*	2	79.0	8652	3.44	3.21	3.16	2.94	2.80	2.36	1.57
*	2	79.1	8664	3.47	3.22	3.17	2.93	2.81	2.35	1.58
*	2	79.0	8652	3.47	3.22	3.17	2.94	2.78	2.35	1.56
*	3	107.4	11767	4.88	4.47	4.43	4.11	3.83	3.29	2.20
*	3	107.4	11771	4.83	4.45	4.42	4.10	3.82	3.25	2.17
*	3	107.3	11755	4.84	4.46	4.41	4.11	3.83	3.24	2.15
*	3	107.4	11771	4.82	4.46	4.41	4.11	3.85	3.24	2.15
*	4	144.6	15842	6.46	5.93	5.84	5.44	5.07	4.31	2.86
*	4	145.5	15938	6.49	5.95	5.87	5.46	5.10	4.32	2.87
*	4	145.5	15946	6.53	5.96	5.87	5.46	5.11	4.33	2.88
*	4	145.7	15962	6.53	5.97	5.89	5.48	5.12	4.33	2.89

Stn: 480 Lane:J4 Temp: J/C: 48 Air: 86 PvT: 107 14:02

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.0	11727	5.45	4.70	5.03	4.65	4.26	3.41	2.14
	C	107.9	11826	5.48	4.72	5.06	4.68	4.26	3.45	2.14
	C	107.4	11763	5.41	4.68	5.00	4.57	4.20	3.37	2.10
*	2	78.5	8597	4.00	3.43	3.66	3.40	3.14	2.54	1.56
*	2	78.4	8589	3.89	3.35	3.57	3.27	2.99	2.44	1.53
*	2	78.2	8573	3.93	3.37	3.58	3.28	3.00	2.46	1.52
*	2	78.6	8608	3.94	3.36	3.59	3.26	3.04	2.46	1.56
*	3	107.1	11735	5.42	4.68	5.02	4.61	4.21	3.40	2.10
*	3	107.3	11758	5.42	4.65	4.98	4.59	4.22	3.35	2.09
*	3	107.1	11735	5.43	4.67	5.01	4.59	4.26	3.39	2.09

NOTE: CHANGE STA 430 TO STA 431

File: C:\FWD\DATA\183002C3.FWD
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

*	3	107.1	11735	5.42	4.67	5.00	4.58	4.24	3.42	2.11
*	4	145.0	15886	7.25	6.28	6.72	6.16	5.68	4.58	2.84
*	4	145.6	15950	7.25	6.31	6.75	6.17	5.62	4.59	2.83
*	4	145.9	15989	7.26	6.33	6.77	6.18	5.63	4.60	2.84
*	4	145.8	15978	7.26	6.32	6.76	6.17	5.62	4.62	2.83

Stn: 481 Lane:J5 Temp: J/C: 48 Air: 85 PvT: 105 14:05

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.8	11806	5.48	5.06	4.90	4.52	4.15	3.39	2.09
	C	108.4	11874	5.54	5.11	4.95	4.58	4.17	3.37	2.16
	C	108.7	11906	5.53	5.11	4.94	4.58	4.17	3.41	2.11
*	2	78.8	8632	3.99	3.70	3.58	3.25	3.08	2.53	1.57
*	2	78.6	8608	4.02	3.71	3.57	3.24	3.02	2.51	1.55
*	2	78.6	8612	4.01	3.69	3.57	3.27	3.02	2.52	1.51
*	2	78.7	8624	3.99	3.70	3.57	3.28	3.06	2.48	1.49
*	3	107.9	11818	5.54	5.09	4.93	4.56	4.14	3.39	2.09
*	3	108.3	11866	5.54	5.10	4.93	4.61	4.19	3.36	2.09
*	3	108.4	11882	5.53	5.11	4.94	4.61	4.16	3.41	2.11
*	3	108.4	11878	5.54	5.11	4.96	4.60	4.19	3.40	2.12
*	4	146.3	16025	7.42	6.83	6.58	6.06	5.56	4.54	2.85
*	4	146.5	16065	7.45	6.85	6.60	6.06	5.59	4.56	2.86
*	4	147.4	16148	7.48	6.89	6.64	6.10	5.59	4.57	2.87
*	4	147.0	16105	7.47	6.88	6.62	6.09	5.59	4.58	2.84

Stn: 502 Lane:J4 Temp: J/C: 43 Air: 85 PvT: 107 14:07

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	107.5	11775	5.70	4.97	5.37	4.88	4.49	3.62	2.22
	C	108.1	11842	5.67	4.96	5.33	4.87	4.46	3.56	2.18
	C	107.8	11814	5.65	4.94	5.33	4.85	4.44	3.57	2.14
*	2	78.5	8597	4.14	3.60	3.85	3.50	3.22	2.53	1.59
*	2	78.4	8589	4.15	3.56	3.88	3.53	3.20	2.56	1.60
*	2	78.3	8581	4.09	3.56	3.88	3.50	3.19	2.63	1.50
*	2	78.2	8573	4.10	3.55	3.86	3.48	3.18	2.54	1.54
*	3	107.0	11727	5.62	4.89	5.29	4.80	4.43	3.54	2.15
*	3	107.5	11775	5.64	4.92	5.30	4.83	4.44	3.49	2.20
*	3	107.5	11779	5.65	4.95	5.31	4.85	4.43	3.56	2.15
*	3	107.8	11814	5.65	4.93	5.31	4.83	4.44	3.53	2.15
*	4	146.0	15993	7.50	6.57	7.09	6.48	5.94	4.74	2.90
*	4	145.5	15942	7.48	6.57	7.07	6.47	5.90	4.68	2.94
*	4	145.5	15942	7.50	6.57	7.08	6.47	5.92	4.74	2.90
*	4	145.4	15926	7.49	6.56	7.07	6.46	5.89	4.74	2.91

Stn: 504 Lane:J5 Temp: J/C: 43 Air: 84 PvT: 104 14:11

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.0	11838	5.74	5.36	5.06	4.67	4.23	3.44	2.09
	C	108.3	11870	5.74	5.37	5.07	4.67	4.26	3.45	2.09
	C	108.1	11846	5.76	5.35	5.06	4.66	4.24	3.44	2.09
*	2	78.9	8640	4.20	3.94	3.69	3.34	3.11	2.50	1.52
*	2	78.6	8612	4.15	3.92	3.66	3.33	3.09	2.49	1.51
*	2	78.8	8632	4.17	3.90	3.68	3.36	3.08	2.49	1.51
*	2	78.4	8593	4.16	3.89	3.69	3.38	3.08	2.49	1.50
*	3	107.5	11779	5.69	5.33	5.04	4.63	4.22	3.42	2.08
*	3	108.2	11858	5.71	5.36	5.07	4.65	4.24	3.44	2.10
*	3	108.1	11846	5.71	5.34	5.05	4.64	4.22	3.43	2.08
*	3	107.9	11818	5.72	5.35	5.05	4.64	4.23	3.43	2.09
*	4	145.3	15922	7.63	7.14	6.71	6.16	5.61	4.55	2.77
*	4	146.9	16097	7.69	7.18	6.74	6.17	5.63	4.57	2.78
*	4	146.4	16041	7.66	7.18	6.73	6.17	5.65	4.57	2.78
*	4	146.6	16057	7.68	7.15	6.77	6.21	5.64	4.58	2.78

Stn: 521 Lane:J4 Temp: J/C: 42 Air: 84 PvT: 106 14:13

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	108.0	11830	5.38	4.60	4.97	4.52	4.11	3.35	2.04
	C	108.1	11842	5.33	4.58	4.96	4.47	4.08	3.28	2.02
	C	108.0	11834	5.33	4.59	4.96	4.47	4.08	3.28	2.02
*	2	78.6	8612	3.92	3.29	3.57	3.22	2.93	2.38	1.45
*	2	78.8	8628	3.92	3.36	3.58	3.22	2.94	2.32	1.44
*	2	78.6	8608	3.91	3.30	3.57	3.23	2.94	2.37	1.46
*	2	78.7	8620	3.91	3.28	3.58	3.24	2.94	2.40	1.46
*	3	107.1	11731	5.29	4.56	4.91	4.43	4.05	3.24	2.01

File: C:\FWD\DATA\18300203.FWD
Road: US-41 SOUTHBOUND LANES, 7 MILES WEST OF FOWLER, IN.
Subsection: 183002

*	3	107.2	11747	5.31	4.54	4.91	4.44	4.05	3.26	2.00
*	3	107.0	11723	5.32	4.56	4.91	4.44	4.04	3.26	2.01
*	3	107.6	11794	5.32	4.59	4.94	4.47	4.07	3.26	2.01
*	4	145.8	15974	7.12	6.16	6.62	5.98	5.48	4.39	2.74
*	4	145.7	15962	7.08	6.12	6.62	5.98	5.45	4.40	2.72
*	4	145.4	15934	7.10	6.11	6.63	5.99	5.44	4.41	2.72
*	4	145.6	15954	7.12	6.13	6.62	6.01	5.46	4.39	2.71

Stn: 522 Lane:J5 Temp: J/C: 42 Air: 87 PvT: 104 14:15

Sto	Hgt	psi	lbf	Df1	Df2	Df3	Df4	Df5	Df6	Df7
	C	105.7	11691	5.46	4.95	4.71	4.30	3.92	3.19	2.00
	C	107.1	11735	5.49	4.95	4.71	4.29	3.94	3.19	2.01
	C	107.0	11719	5.46	4.96	4.71	4.30	3.93	3.21	2.01
*	2	78.4	8585	3.98	3.56	3.34	3.11	2.83	2.32	1.44
*	2	78.4	8589	3.98	3.56	3.46	3.09	2.84	2.31	1.44
*	2	78.2	8573	4.01	3.60	3.49	3.13	2.91	2.35	1.48
*	2	78.3	8577	4.01	3.61	3.48	3.13	2.89	2.34	1.47
*	3	107.1	11735	5.48	4.98	4.76	4.30	3.93	3.19	2.02
*	3	107.0	11727	5.48	4.96	4.70	4.30	3.96	3.19	1.99
*	3	107.1	11731	5.48	4.95	4.70	4.31	3.91	3.22	2.00
*	3	107.1	11739	5.48	4.93	4.72	4.29	3.96	3.20	1.99
*	4	145.3	15922	7.27	6.57	6.33	5.77	5.28	4.31	2.72
*	4	145.4	15930	7.28	6.71	6.30	5.78	5.23	4.30	2.73
*	4	145.4	15930	7.27	6.69	6.31	5.77	5.27	4.30	2.74
*	4	145.4	15930	7.26	6.69	6.32	5.77	5.25	4.28	2.72

Mileage:-.003 -> .099

Summary of Data for section 183002C
Analyzed by: Bob Van Sambeek on 07-24-1995

UNCORRECTED Overall Deflection Statistics

Mean Values (mils/kip)

Test Loc.	Drop Ht	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Sensor 5	Sensor 6	Sensor 7
1	2	0.3698	0.3469	0.3384	0.3147	0.2893	0.2385	0.1472
	3	0.3710	0.3488	0.3392	0.3158	0.2906	0.2398	0.1479
	4	0.3705	0.3484	0.3387	0.3156	0.2903	0.2397	0.1476

Standard Deviations

Test Loc.	Drop Ht	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Sensor 5	Sensor 6	Sensor 7
1	2	0.0416	0.0383	0.0379	0.0345	0.0323	0.0265	0.0163
	3	0.0399	0.0367	0.0358	0.0333	0.0306	0.0258	0.0160
	4	0.0371	0.0342	0.0336	0.0312	0.0286	0.0245	0.0156

Coefficient of Variation

Test Loc.	Drop Ht	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Sensor 5	Sensor 6	Sensor 7
1	2	11.24%	11.05%	11.20%	10.96%	11.17%	11.10%	11.09%
	3	10.75%	10.52%	10.54%	10.54%	10.51%	10.75%	10.82%
	4	10.01%	9.82%	9.91%	9.88%	9.85%	10.22%	10.56%

Rigid Pavement Deflection Statistics - 183002C

Mean Values (mils/kip)

Test Loc.	Drop Ht	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Sensor 5	Sensor 6	Sensor 7
1	2	0.3698	0.3469	0.3384	0.3147	0.2893	0.2385	0.1472
	3	0.3710	0.3488	0.3392	0.3158	0.2906	0.2398	0.1479
	4	0.3705	0.3484	0.3387	0.3156	0.2903	0.2397	0.1476

Standard Deviations

Test Loc.	Drop Ht	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Sensor 5	Sensor 6	Sensor 7
1	2	0.0416	0.0383	0.0379	0.0345	0.0323	0.0265	0.0163
	3	0.0399	0.0367	0.0358	0.0333	0.0306	0.0258	0.0160
	4	0.0371	0.0342	0.0336	0.0312	0.0286	0.0245	0.0156

Coefficient of Variation

Test Loc.	Drop Ht	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Sensor 5	Sensor 6	Sensor 7
1	2	11.24%	11.05%	11.20%	10.96%	11.17%	11.10%	11.09%
	3	10.75%	10.52%	10.54%	10.54%	10.51%	10.75%	10.82%
	4	10.01%	9.82%	9.91%	9.88%	9.85%	10.22%	10.56%

Outlier Statistics - 183002C

Station	Height	Sensor	Number of Std. Dev.
-12	2	6	-2.06
-12	2	7	-2.39
-12	3	6	-2.12
-12	3	7	-2.50
-12	4	6	-2.11
-12	4	7	-2.52
299	2	1	2.41
299	2	2	2.62
299	2	3	2.53
299	2	4	2.65
299	2	5	2.63
299	2	6	2.61
299	3	1	2.28
299	3	2	2.43
299	3	3	2.48
299	3	4	2.55
299	3	5	2.54
299	3	6	2.44
299	4	1	2.25
299	4	2	2.36
299	4	3	2.43
299	4	4	2.52
299	4	5	2.50
299	4	6	2.37
472	2	1	2.17
472	3	1	2.24
472	3	2	2.08
472	4	1	2.34
472	4	2	2.12
472	4	3	2.01

Pavement Construction Information - 183002C

Material Code	Material Name	Layer Thickness
730	Portland Cement Concrete	9.5
303	Crushed Stone	5.5

RIGID Pavement Thickness Data - 183002C
(comparison of each calculation to the expected value)

Minimum expected thickness: 6.17
Maximum expected thickness: 10.92

Height	Station	Effective Thickness

No predicted thickness values fall outside the expected range...

RIGID Pavement Thickness Statistics - 183002C

Drop height 4

Subsection	Station	Volumetric k	Effective Thickness
No test pit data found, therefore no results exist...			
1	-12	416	9.50
	1	377	9.88
	15	357	9.88
	35	318	9.50
	63	350	9.50
	77	334	9.50
	113	330	9.50
	126	323	9.13
	161	305	9.13
	177	334	9.13
	221	368	9.50
	237	354	9.50
	283	312	9.50
	299	264	8.75
	326	320	9.50
	345	329	9.13
	371	310	9.13
	386	276	9.13
	424	334	9.50
	437	315	8.94
	472	285	8.38
	483	298	9.13
	511	309	9.50
	530	296	9.50
Subsection 1 Overall Mean:		326	9.32
Standard Deviation:		34	0.34
Coeff Of Variation:		10.32%	3.63%

le includes tests outside section limits for SMP instrumentation areas.
attempt to identify subsections for SMP analysis.

Summary of Results

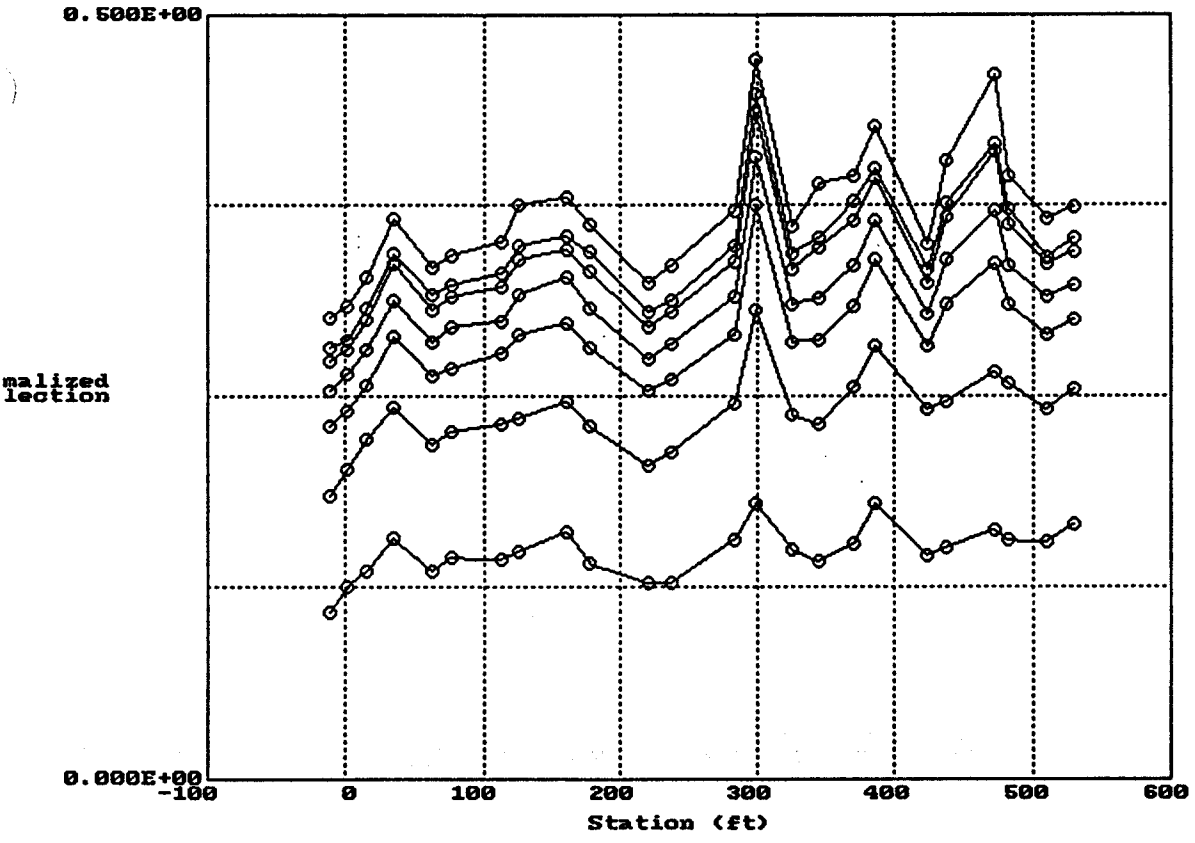
Section uniformity:
NO Subsections were identified within the section.

Outliers - Test pits: 21 combinations at each test pit
NO Test pit data was present.

Outliers - Section data: 504 total combinations within the section
30 height/sensor/station combinations are data outliers in subsection 1.

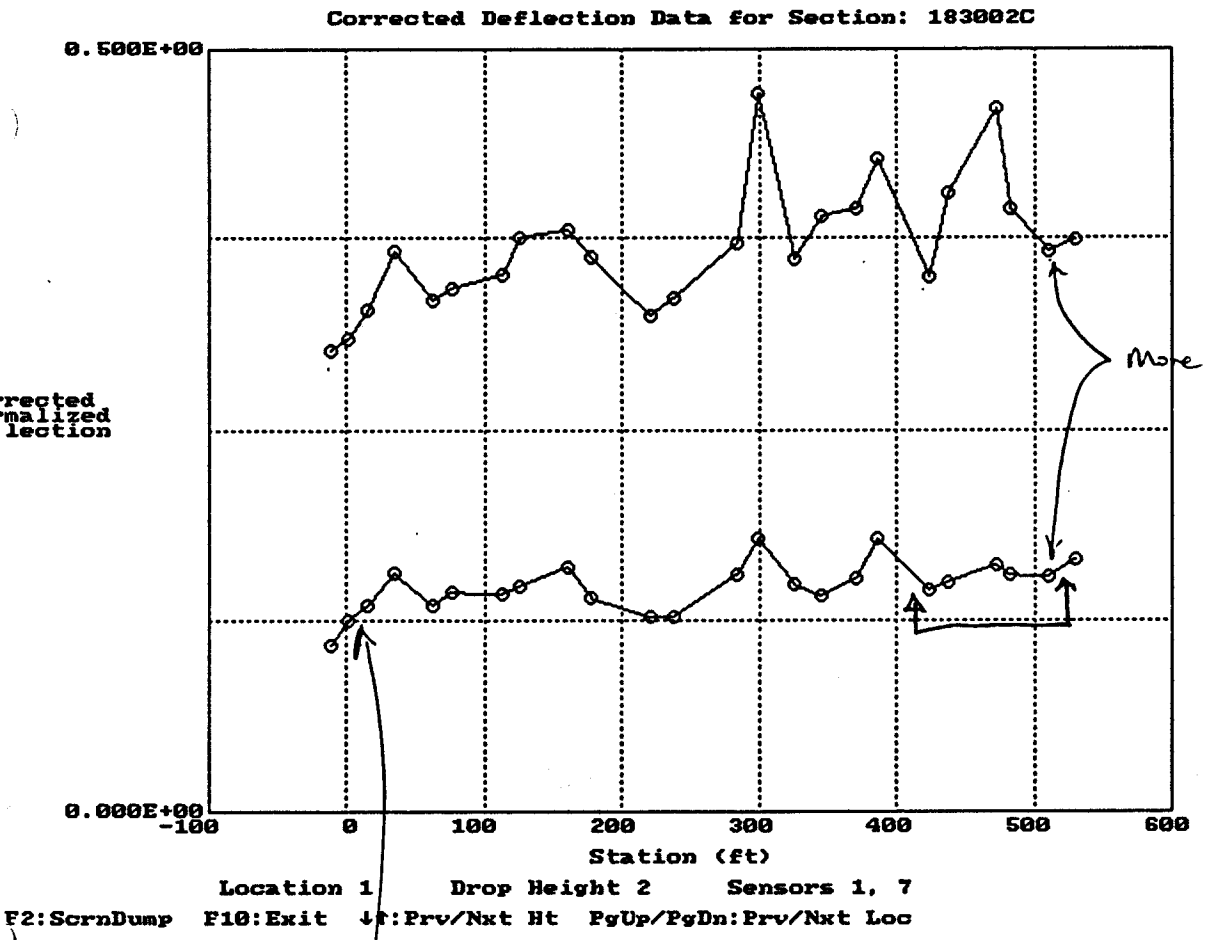
Structural capacity - Test pits: 3 combinations at each test pit
All results for TP 1 are within the range of expected values.
All results for TP 2 are within the range of expected values.

Structural capacity - Section data: 72 total combinations within the section
All results are within the range of expected values.



Location 1 Drop Height 2 Sensors 1, 2, 3, 4, 5, 6, 7

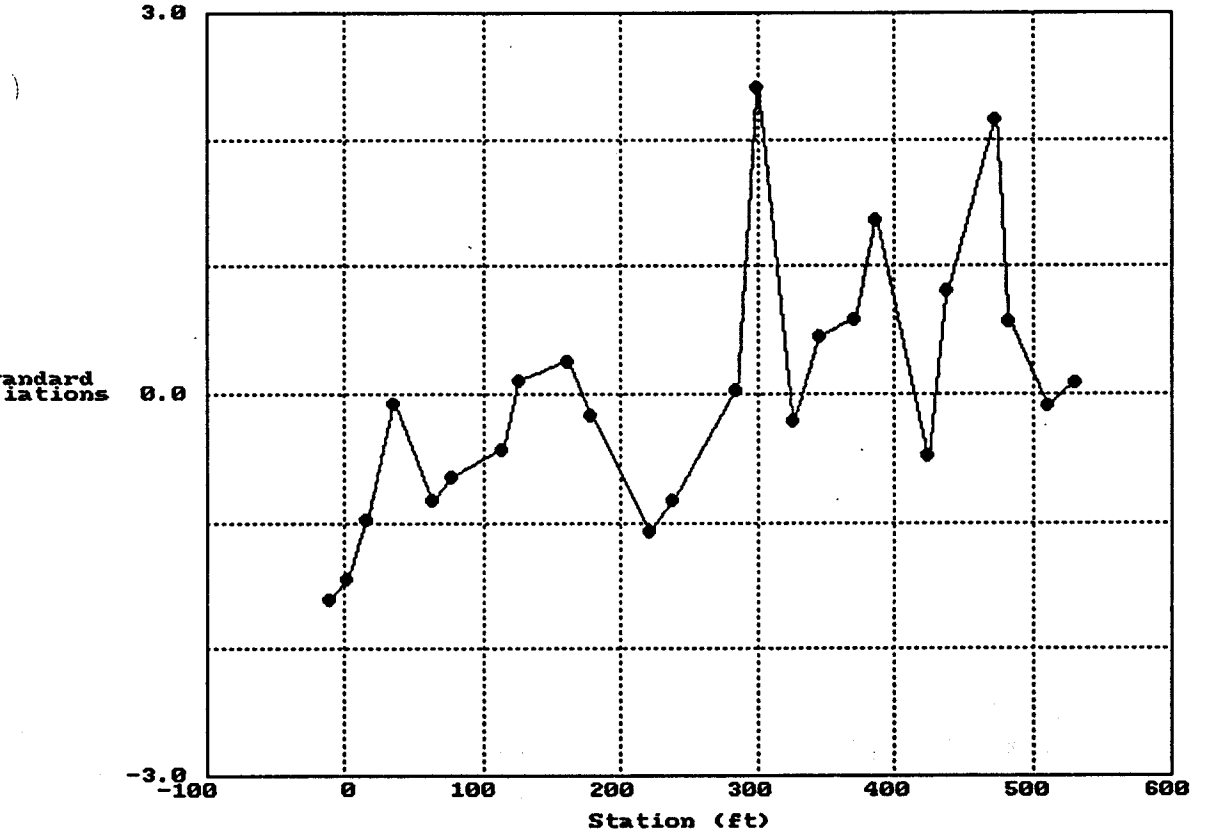
F2:ScrnDump F10:Exit ↓↑:Prv/Nxt Ht PgUp/PgDn:Prv/Nxt Loc



More representative of 5 panels?

Corner break @ jt.
- site visit
- concerns w/ two joints @ sta. across end
  - use sta across end.

Deflection Deviation Data for Section: 183002C

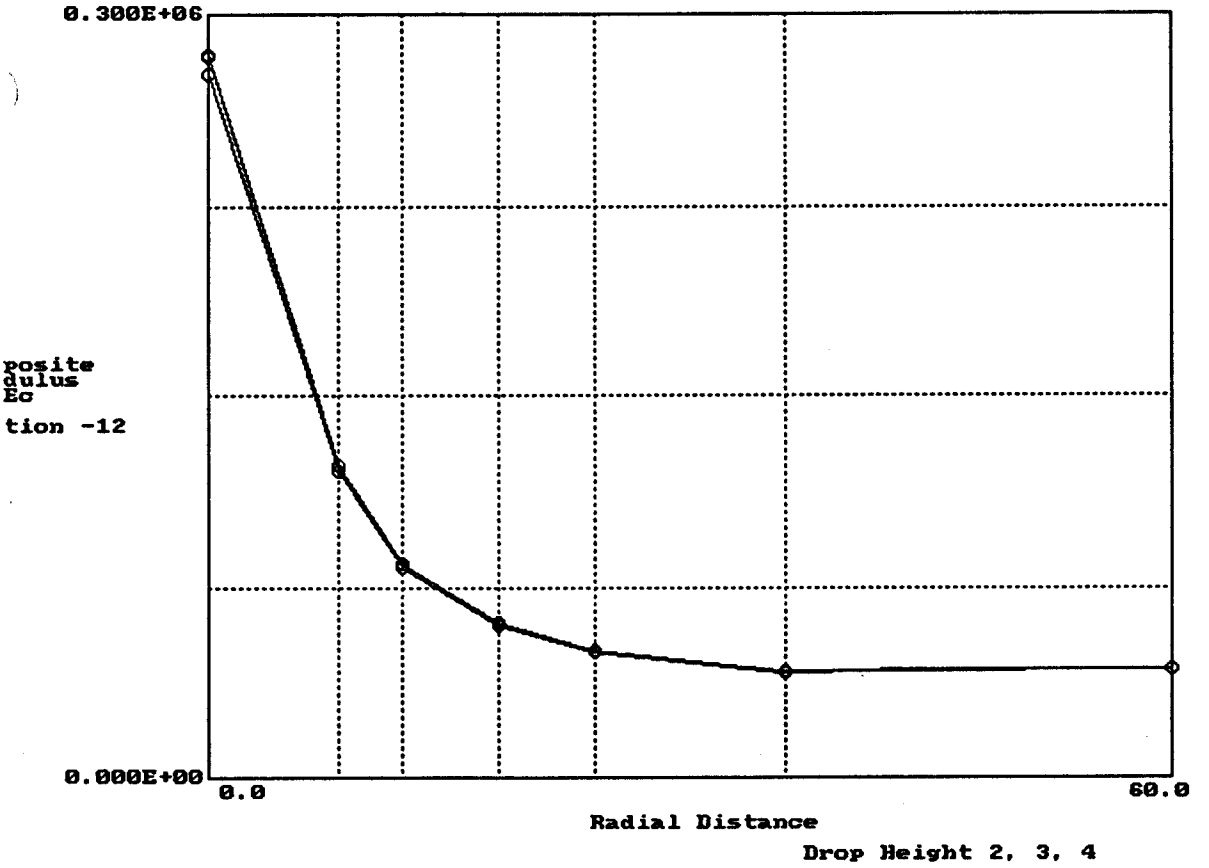


andard
iations

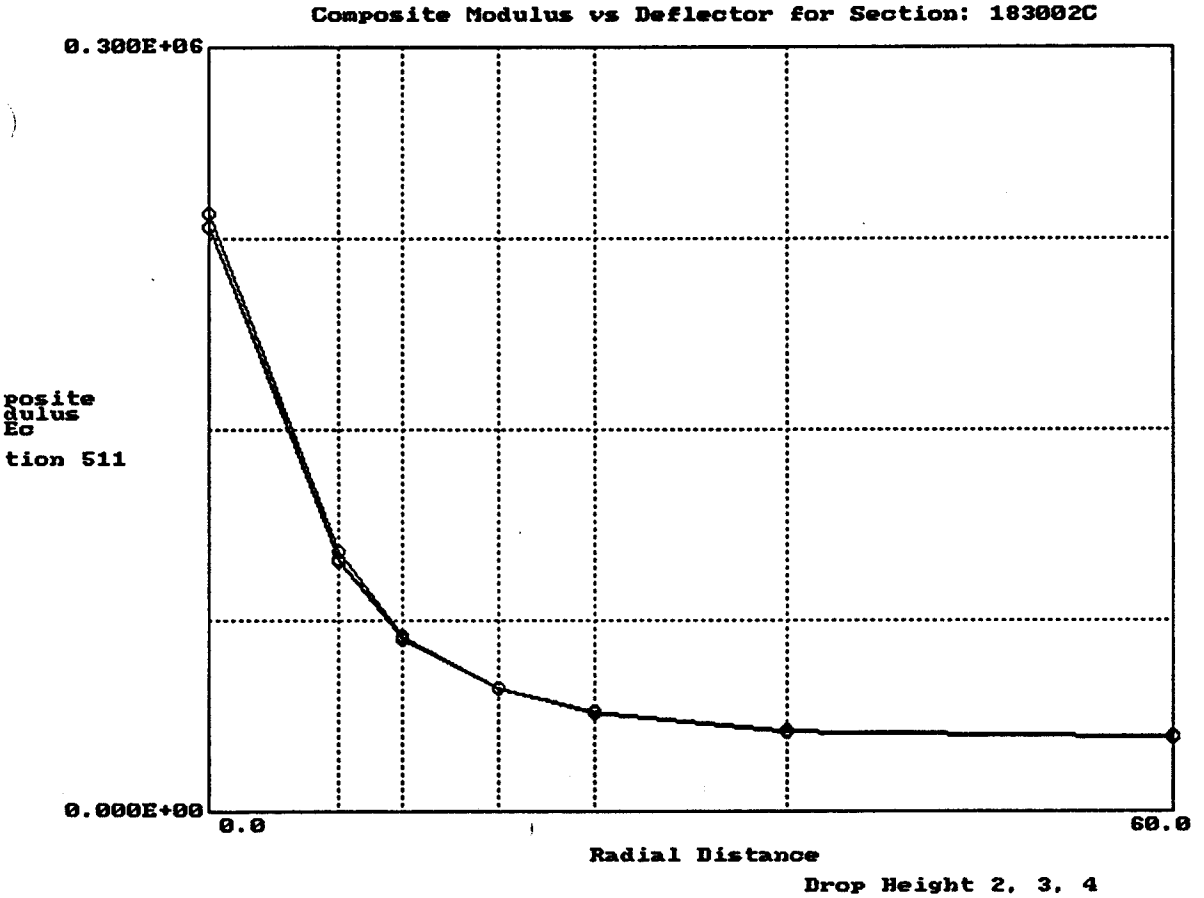
Location 1 Drop Height 2 Sensor 1

F2:ScrnDump F10:Exit ↓↑:Prv/Nxt Ht ↔:Prv/Nxt Defl PgUp/PgDn:Prv/Nxt Loc

Composite Modulus vs Deflector for Section: 183002C

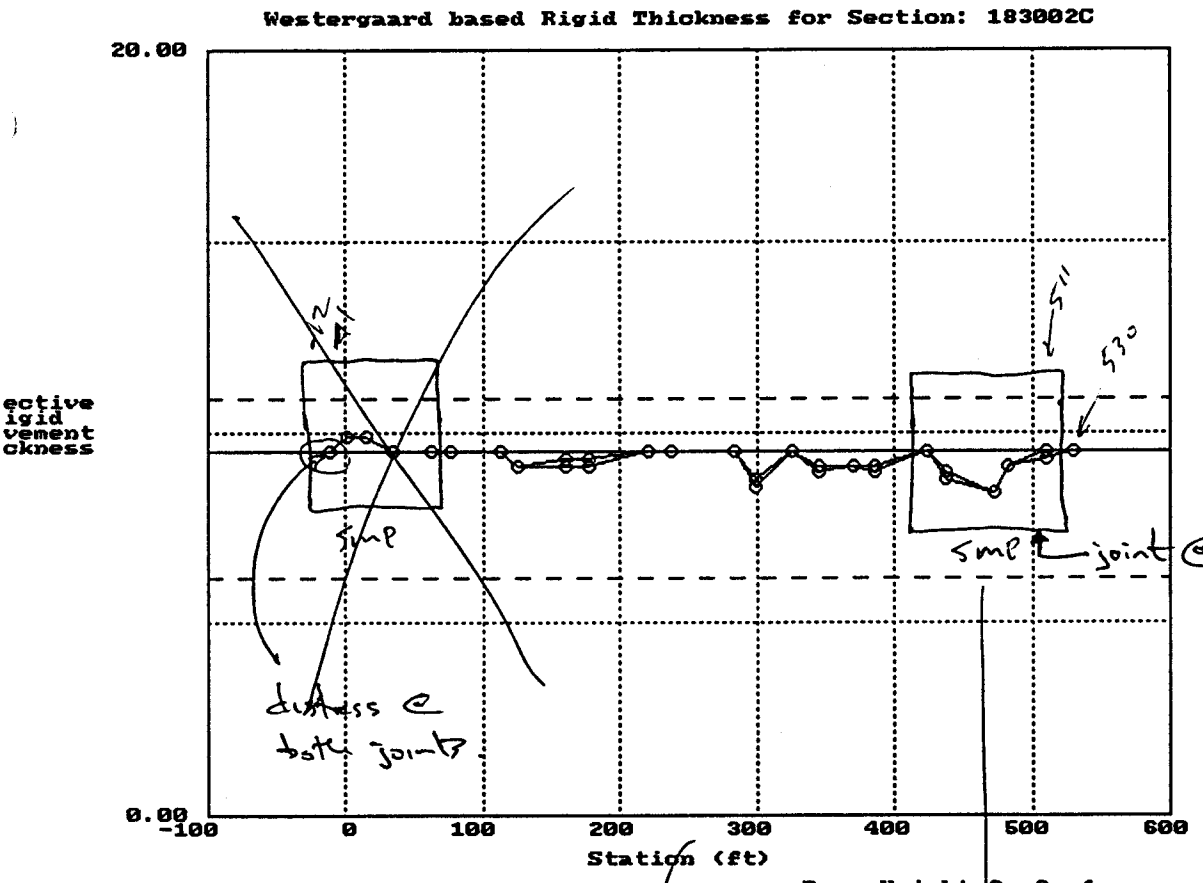


F10:ExitPlots Home End PgUp PgDn



F10:ExitPlots Home End PgUp PgDn

MP for mtr.



Sta. 0 to 5

10 13 13 18 15

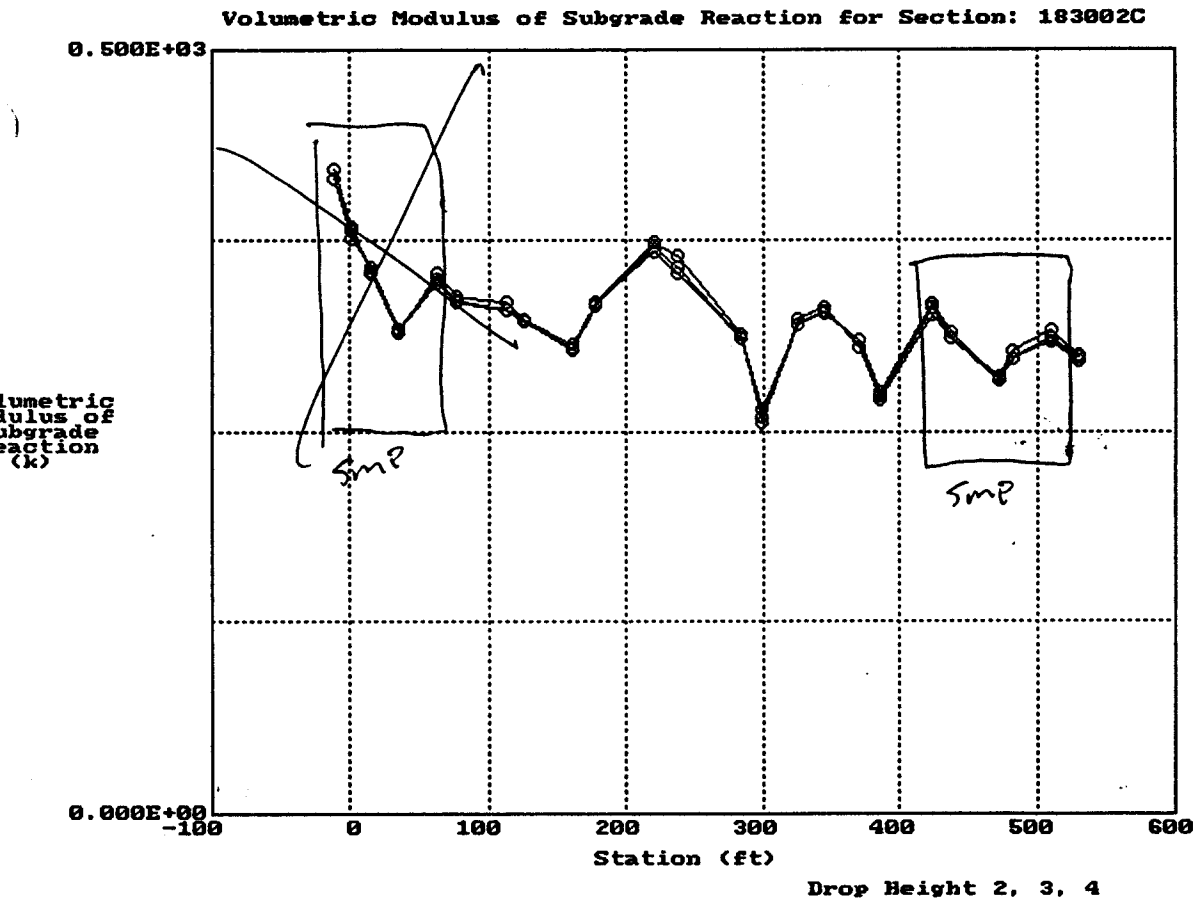
Sta. 5 to 10

18 19 13 12 18

panel size

- nominal size from distress survey
- jt @ 5+04 between 12' and 18' panel

- H. Seg. Corner break @ Sta. 0
- problem w/ two joints
- core @ Sta. 0-01



F10:ExitPlots

See notes on previous page

_ use sta. 5400 end

for monitoring.

Appendix B-1: Pre-Installation Site Recruitment and Coordination Information

Appendix B-1 contains the following pre-installation site recruitment and coordination information:

- SMP site recruitment notes;
- Pre-installation meeting agenda, list of participants, and notes; and
- Site visit field notes.

NATIONAL RESEARCH COUNCIL

STRATEGIC HIGHWAY RESEARCH PROGRAM

North Central Region, 1404 Concordia Ave., St. Paul, MN 55101, Tel: (612) 644-2996 Fax: (612) 644-1045

RICHARD C. INGBERG
Regional Engineer

June 26, 1991

Mr. Donald W. Lucas
Chief Engineer
IN Department of Highways
1101 State Office Building
100 North Senate Avenue
Indianapolis, IN 46204-2249

Dear ~~Mr. Lucas~~ Don;

Re: Seasonal monitoring of SHRP GPS Sections

The SHRP LTPP program will be monitoring 64 GPS sections located throughout the United States and Canada to determine daily, seasonal, and yearly effects of temperature, moisture and frost on pavement structures. Detailed monitoring is needed to fully understand critical pavement characteristics, and link these characteristics at specific points in time to design factors.

The monitoring activities include: running pavement deflection tests; measuring transverse and longitudinal pavement profiles; and recording temperature, moisture, and frost conditions in the pavement structure and subgrade. Each section will be monitored once a month throughout the year and several additional times during spring thaw on a two year cycle.

The agency will be responsible for helping install the instrumentation, and for providing traffic control for the monitoring activities. Typically, the monitoring activities will start at 5 to 6 a.m. or daylight, whichever is earlier, and continue up to 12 hours. The instrumentation to be installed includes temperature probes, frost probes, and moisture sensors at each site. SHRP will furnish all instrumentation but will need assistance with traffic control, coring, drilling, sawing and any other activity needed for installing the instrumentation. The latest plan calls for deflection testing to begin by late summer, and the installation of instrumentation completed by this fall.

A site selection process was used based on such factors as: surface thickness, joint spacing, frost depth, ground water table, location, section uniformity, pavement condition, sites per region and sites per agency. The following Indiana monitoring is based on the above factors:

184042 on US 62 westbound, east of Mt. Vernon

already planned
Substitute 183002?

We hope that Indiana can participate in this part of the SHRP LTPP program. We are asking for a preliminary response on whether your agency is willing to include the site in the seasonal monitoring plan. If the site can not be included, an alternative site will have to be found in the North Central Region. Please respond as soon as possible, but no later than July 12, 1991. Should you have any questions or wish to respond by telephone or fax instead of writing, please do not hesitate to call. If I am not available, please talk to Gene Skok, Erland Lukanen or Bob Van Sambeek.

Sincerely,

Richard C. Ingberg
Regional Engineer

rci/bw

cc: Starr Kohn
Keith J. Kercher, LTPP Contact
E.L. Skok
R.J. Van Sambeek

soil and materials engineers, inc.
43980 Plymouth Oaks Blvd. Plymouth, MI 48170-9873 (313) 454-9900 FAX (313) 454-0629

May 4, 1993

Mr. Yi Jiang
Special Projects Engineer
Division of Research
Indiana Dept. of Transportation
P.O. Box 2279
West Lafayette, IN 47906

Re: Seasonal Monitoring Activities
FHWA - LTPP
SME Project No. PP18400

Dear Mr. Yiang:

FHWA now has responsibility for the Seasonal Monitoring Study initiated by SHRP and is seeking agency approval to locate sites in the North Central Region. The seasonal monitoring sites will be located adjacent to an existing GPS site. Since it is desired to obtain data for a period of at least ten years, test sections which you believe may be rehabilitated before the end of ten years should not be considered. In Indiana there are three potential sites which are presented in the table below.

SHRP ID	LOCATION	TOTAL SITES REQUIRED	TOTAL AVAILABLE
182008	US-27, Allen Co.	1	5*
182009	SR-37, Hamilton Co.	1	5*
183002	US-41, Benton Co.	1	5

* These sections are in the same seasonal monitoring experimental cell.

Should you be willing to participate, your primary responsibility will be to provide traffic control for the testing activities at the section. This includes 15 days of traffic control during the first year and 14 days every other year for a period of 10 years. Lane closure will generally be required for 8 to 10 hours. However, once the lane closure is in place, no further assistance would be required from your agency.

Your agency would also be required to assist with the initial installation of the instrumentation. This would involve the use of a drill rig to core

a 12 inch diameter core (or alternatively a saw to remove the pavement) and auger a 10 inch diameter hole for placement of some of the instrumentation. Equipment for cutting a conduit channel in the asphalt concrete or portland cement concrete shoulder would also be necessary as would small quantities of patching material. At this time we do not anticipate that your state would be responsible for any instrumentation or monitoring activities after the initial installation.

Should you have any questions concerning the seasonal monitoring program or your role, please contact our office. We look forward to working with you to achieve the goals of the seasonal monitoring program.

Very truly yours,

SOIL AND MATERIALS ENGINEERS, INC.

Cary T. Keller
Staff Engineer

Chuck A. Gemayel, P.E.
Project Engineer

pc: Gene Skok, BIP
Richard Ingberg, FHWA
Don Lucas, INDOT
Robert Van Sambeek, BIP

soil and materials engineers, inc.

43980 Plymouth Oaks Blvd. Plymouth, MI 48170-2584 (313) 454-9900 FAX (313) 454-0629

June 15, 1993

Mr. Bob Van Sambeek
Braun Intertec, Inc.
1983 Sloan Place
St. Paul, MN 55117-2004

Re: Indiana Prospective Seasonal Monitoring Sites
FHWA - LTPP
SME Project PP18400

Dear Mr Van Sambeek:

We have recently been informed by Mr. Yi Jiang of the Indiana Department of Transportation that all three of the districts which have GPS sites selected for the seasonal monitoring program have agreed to participate in the study. The GPS sites requested and the respective districts are:

SHRP ID	DISTRICT
182008	Fort Wayne
182009	Greenfield
183002	Crawfordsville

? okay. They cover 1/6th of the state. FW (in Benton Co.)

However, GPS site 182009 is currently scheduled to be rehabilitated by milling and overlaying this year. We are working with the SHA in an attempt to delay rehabilitation of the site but we anticipate it will be overlaid within the next 10 years. In addition, they have informed us GPS site 182008 is also under consideration for major rehabilitation either this year or next year. In the event pavements which are rehabilitated with an asphalt concrete overlay are to be allowed in the seasonal monitoring program, they would be willing to include these sites.

GPS site 183002 is in excellent condition and is not scheduled for rehabilitation in the near future. The site should be a good candidate for the seasonal monitoring program.

Should you have any questions concerning this information, please contact our office.

Very truly yours,

SOIL AND MATERIALS ENGINEERS, INC.

Cary T. Keller
Staff Engineer

Starr D. Kohn, PhD, P.E.
Principal

pc: Gene Skok, Braun Intertec
Richard Ingberg, Regional Engineer
Yi Jiang, INDOT

soil and materials engineers, inc.

43980 Plymouth Oaks Blvd. Plymouth, MI 48170-2584 (313) 454-9900 FAX (313) 454-0629

nneth W. Kramer, PE
chard O. Anderson, PE
arrett H. Evans, PE
ank A. Henderson, PG
arr D. Kohn, PhD, PE
dward S. Lindow, PE
obert C. Rabeler, PE
obert E. Zayko, PE

rry P. Jedele, PE
aul C. Larsen, PE
erard P. Madej, PE
ancis F. Widrig, PE
mothy H. Bedenis, PE
William Coberly, CET
heryl Kehres-Dietrich, CGWP
rry B. Givens, PE
uman F. Maxwell, CPA
mothy J. Mitchell, PE
hn C. Zarzecki, CWI
hristine R. Rollinson
onald C. Templin, PE

August 6, 1993

Ms. Rebecca S. McDaniels
Materials Research & Special Projects Section Engineer
Division of Research
P.O. Box 2279
West Lafayette, IN 47906

Re: FHWA Seasonal Monitoring Program
FHWA - LTPP
SME Project No. P18400

Dear Ms. McDaniels:

This letter is to confirm our conversation regarding the participation of GPS test section 183002 in the seasonal monitoring (SM) program. The site has received final approval and has been selected for seasonal experimental cell 20. The experimental cell within the SM study is based on soil type, surface type and thickness, and environmental conditions.

The requirements for participation in the program were outlined in our letter to you dated May 4, 1993.

Should you have any questions concerning the seasonal monitoring program or your role, please contact our office.

Very truly yours,

SOIL AND MATERIALS ENGINEERS, INC.

Cary T. Keller, P.E.
Senior Engineer

Chuck A. Gemayel, P.E.
Project Engineer

pc: Gene Skok, Braun Intertec
Richard Ingberg, Regional Engineer
Don Lucas, INDOT
Robert Van Sambeek, Braun Intertec

troit
y City
lamazoo
nsing
edo

BRAUN[SM]
INTERTEC

Braun Intertec Corporation
6875 Washington Avenue South
P.O. Box 39108
Minneapolis, Minnesota 55439-0108
612-941-5600 Fax: 942-4844

Engineers and Scientists Serving the Built and Natural Environments®

May 18, 1995

- GENE
- DICK
- CHUCK
- FILE

Ms. Rebecca S. McDanials
Division of Research, Indian Department of Transportation
1205 Montgomery St., P.O. Box 2279
West Lafayette, IN 47906

Re: LTPP Seasonal Monitoring Program Information

Dear Ms. McDanials:

In 1993, the Indiana Department of Transportation expressed interest in using GPS section 183002 on US-41 in Benton County in the LTPP Seasonal Monitoring Program (SMP). Initially, this section was scheduled for sensor installation and monitoring starting in 1994. However, the program was delayed one year to allow a full year of monitoring on the first sections installed late in 1993.

At this time, we are looking to confirm participation on the six additional sections to install in July and August of 1995.

For each section, the goal is to get a minimum of three 12-month monitoring cycles collected every other year on sections with original construction. Section 183002 would be monitored September 1995 to August 1996, September 1997 to August 1998, and September 1999 to August 2000. A maximum of five monitoring cycles is expected. In this respect, we would like you to determine if any major maintenance is scheduled for this section prior to the year 2000.

If the agency is still willing to participate, we will schedule a pre-installation meeting in June or July to cover details about an anticipated installation in August.

Included with this letter is additional information on the SMP as described below.

A video tape produced by the Colorado DOT at the pilot SMP installation, which provides a quick overview of the program. For the most part, the video is still current except for minor changes to installation procedures.

Two copies of the current "LTPP Seasonal Monitoring Program: Instrumentation Installation and Data Collection Guidelines." This detailed report is for you to keep as a reference.

A partial pre-installation meeting agenda which would be scheduled if GPS section 183002 is approved by the Indiana Department of Transportation and FHWA for seasonal monitoring. The last four pages of the draft agenda are most important at

this point, and include sections titled as follows.

Installation and Monitoring Schedule

Indiana Department of Highways Responsibilities

NCRCO (Braun Intertec) and FHWA Staff Responsibilities

I have reviewed previous FWD data and distress data for Section 183002. Unfortunately, no FWD testing or distress surveys were done April 26, 1995 when RCOC staff were in the area. We will try again to get this monitoring when the FWD is in the area, so final installation details can be based on the most current data.

If you have any questions regarding participation in the Seasonal Monitoring Program, please call me at 800-344-7477.

Tested June 14, 1995.

Sincerely,

Robert Van Sambeek

Robert J. Van Sambeek
Project Engineer

cc. Gene Skok, Braun Intertec
Richard Ingberg, SHRP/FHWA-LTPP
Cary Keller, SME

C:\SMP\WP\IN1995.SMP

BRAUN SM
INTERTEC

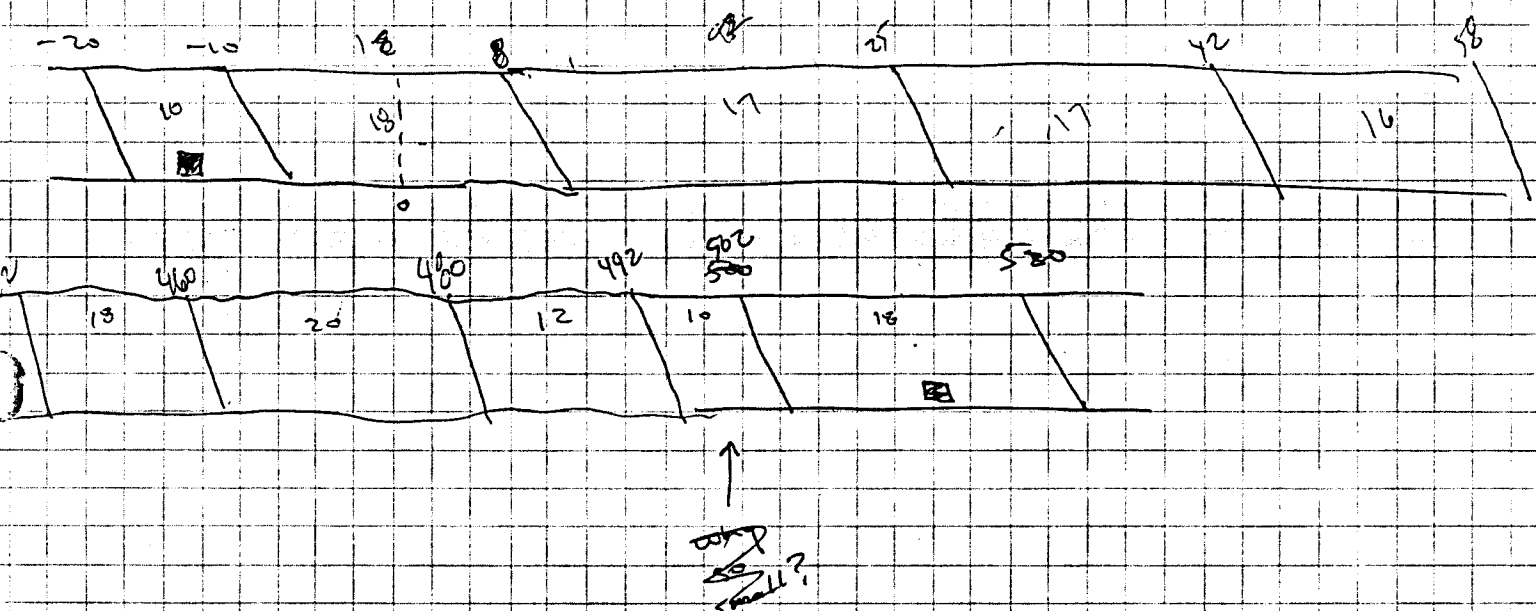
Description: INDIANA VIDEO OF PRE-SMP

Project No: DIBNX 92700 B6

Date: 11-JUL-95 By: RV

3002 — new seals / re-seal on long & trans. jts.
(11/26/95)

— wide seals — est. 3" to 4" wide on the concrete surface



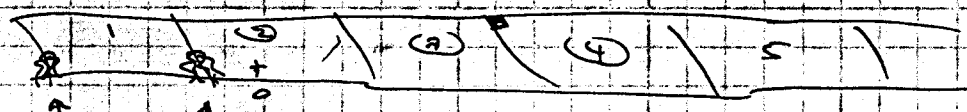
-20/12/10/18 pattern?

SITE VISIT PRIOR TO PRE-INSTALL MTG.

-SR 45 US-41 - about 1.7 miles south of SR 18

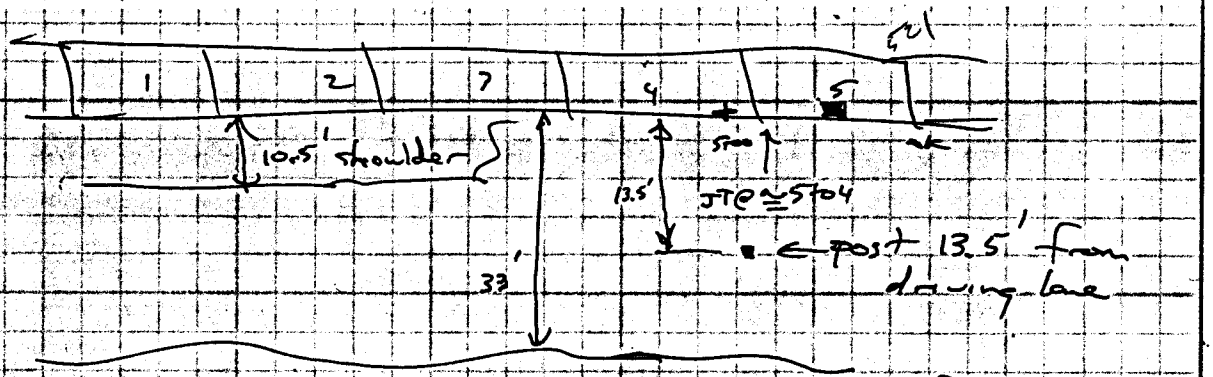
Sta. 0+00 - END

Sta. 0-5 - coring w/ mult. up to 3' into lane
Sta. 0+25 (0-20)? " " " " " " "
Sta. 0-1 - Core @ ML



will require repairs ∴ Sta 0+00 is out

Sta. 5+00 - END



sharp drop off @ 33'
- drill rig should be ok w/ cabinets 26' off

- ditch is dry

- Sta 5+00 - END is it

- No utility markers

- No secondary BM's seen ?

– May want to stay @ Radisson Univ. Inn

Bob V-Copy

–Cumberland → to Dot off Hwy 52
– Yeager Rd →

FHWA-LTPP SEASONAL MONITORING PROGRAM IN INDIANA

MEETING AGENDA

July 25, 1995 at 1:00 PM to 3:00 PM

Indiana Department of Transportation - Division of Research

1205 Montgomery Street, West Lafayette, Indiana

~~Crawfordsville~~ ?

Dist. to Boswell ?

Introductions

I FHWA-LTPP Seasonal Monitoring Program in Indiana

- Introduction
- Test Sections
- Sensor Description and Installation Procedures

(break)

II Planning Session for Agency Staff Involved with Instrumentation and Monitoring

- Installation and Monitoring Schedule
- Special Concerns
- Indiana Department of Transportation Responsibilities
- NCRCO and FHWA Staff Responsibilities
- Closing Comments

– Bring Becky additional SMP Guidelines

FHWA-LTPP Seasonal Monitoring Program in Indiana

Introduction

Objectives of the Seasonal Monitoring Program

- Collect and analyze data on select SHRP sections to better understand the short and long term impacts of environmental factors including temperature, moisture, and frost/thaw depth on a pavement structure for improving pavement design.

- Factors defined in the core experiment monitored by FHWA-LTPP include
  - wet or dry climate
  - freeze or no freeze climate
  - pavement surface type (AC or PCC)
  - pavement surface thickness
  - original construction

- Agencies are encouraged to monitor supplemental sections to study factors not included in the core experiment
  - reduced monitoring requirements
  - use existing GPS or SPS sections

Overview of Sensor Installation and Monitoring Activities for the Core Experiment

- Two days for initial instrumentation installation and monitoring

- About $10,000 of equipment installed at each site

- Monitor sections every other year (70 days over a 10 year period)

- Relate environmental variations to changes in pavement performance
  - pavement, base and subgrade strength calculated from deflection data
    - collected monthly most of year and bi-weekly in the spring

  - ride quality determined from profile data
    - collected five times per year

  - pavement distress documented using detailed distress surveys
    - collected two times per year in addition to PASCO photo logging

  - frost heave/swelling soil monitored using elevation data
    - collected five times in the first year and two times per year after that

- for Traffic control
* refer to section as site on SB. US-41 1.5 miles south of SR 18

Test Sections

Section Location

- 64 sections in the Core Experiment for the United States and Canada monitored under FHWA-LTPP contract

- 16 sections in the North Central Region with one in Indiana
  - SHRP ID (State Code 3007)
  - 183002 (GPS-3), SB US-41 in Benton Co., About 1.7 miles south of SR 18,
  - SMP Cell 20 - Wet, Freeze, Fine Subgrade, and JPC Pavement
    - 9.5 inch PCC on 5.5 Crushed Stone on Sandy Lean clay.

- see map of core sections in the North Central Region on the next page

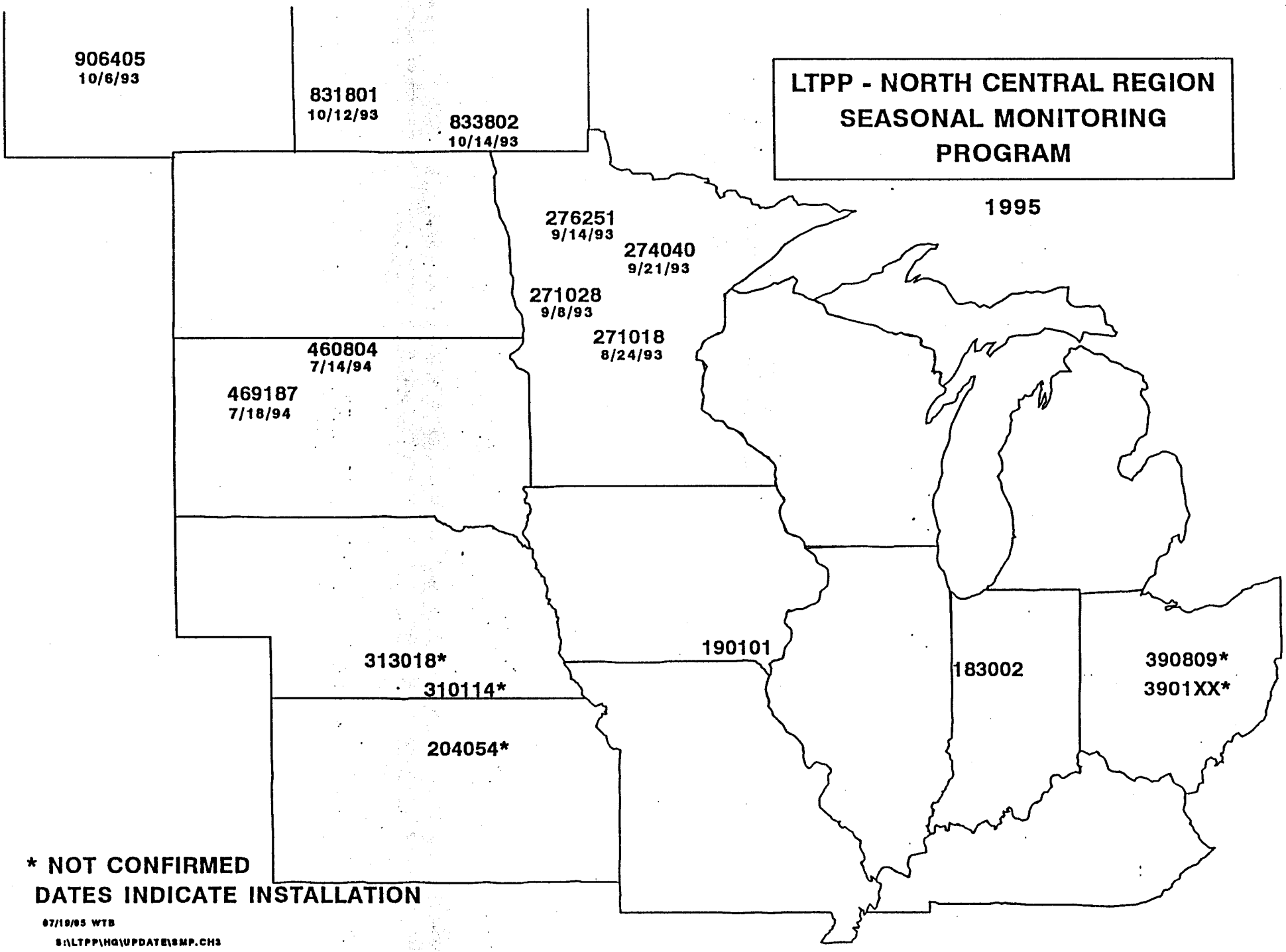
- south of 18
- town to refer site by ?

Allowable Maintenance

- any routine maintenance scheduled for this section? - prior to 2000?
  - shoulder work?
- no structural rehabilitation preferred for ten years - year 2005!
  - safety is primary concern
- careful around buried cables and equipment if doing routine maint.
  - temperature probe one inch below pavement surface
  - piezometer cover two inches below the shoulder material
  - conduit one foot below ditch surface from pavement edge to the cabinet
- careful plowing heavy snow and slush into the equipment cabinet

1995 route+Seal - ctrw/ Ben. on forms

only concern is with two joints on begining of section - should not be a problem with instr@ Sta. 5+00


LTPP - NORTH CENTRAL REGION
SEASONAL MONITORING
PROGRAM
1995
906405
10/6/93
831801
10/12/93
833802
10/14/93
276251
9/14/93
274040
9/21/93
271028
9/8/93
271018
8/24/93
460804
7/14/94
469187
7/18/94
313018*
310114*
204054*
190101
183002
390809*
3901XX*
* NOT CONFIRMED
DATES INDICATE INSTALLATION
07/19/95 WTB
S:\LTPP\HQ\UPDATE\SMP.CH3

- Moisture, Temp., Frost,

Sensor Description and Installation Procedure

TDR (Time Domain Reflectometry) Probes

Moist

- FHWA design available through Campbell Scientific @ $60.00 each (1993)

- measure dielectric of material between probes and relate to moisture content
  - material dielectrics - air = 1.0, dry soil = 3 to 4, and water = 80

- calibration
  - laboratory in air, water, and shorted
  - field moisture test on material placed around each probe
  - retain soil samples for additional laboratory calibration

- 10 probes per installation
  - one mid-depth in the base, seven at six inch intervals in the top of the subgrade, and two at 12 inch intervals approximately seven feet below the surface

Thermistor (Temperature) Probe

Temp

- Measurement Research Corporation (MRC) @ $1000.00 (1993)
  - built in multiplexer for automated readings on 18 channels

- thermistors change resistance with change in temperature

- stainless steel section (13 inches long) monitor pavement temperature gradient
  - one inch deep, mid depth, and one inch above bottom of pavement

- plexiglass section (72 inches long) monitor base and subgrade temperature gradient
  - 15 depths - three-inch intervals to 12 inch depth and six-inch intervals from 18 inch depth to 72 inch depth

- laboratory calibration (check) at 32°F and 100°F

Resistivity Instrumentation

Frost

- CRREL design probe @ $800.00 (1993)
  - PVC probe with 36 electrodes at two inch intervals

- large increase in resistance when moisture in the soil freezes
  - used to determine both frost and thaw depth

- require signal generator and multimeters for manual readings and CRREL multiplexer for automated readings

Air Temperature Probe

Temp

- Campbell Scientific @ $150.00 (1993)

- air probe and radiation shield mount on instrument pole nine feet above the ground

Rain Gauge/Tipping Bucket

- Texas Electronics @ $255.00 (1993)

- 0.1 mm (0.004 inches) liquid precipitation per tip (250 tips per inch of rain)

- mount on instrument pole nine feet above the ground

Equipment Cabinet and Instrument Pole

- telephone pedestal (break away classification)
  - contain power supply, data logger, sensor connections for mobile reader
  - conduit runs into cabinet from instrumentation hole
  - pea rock inside base to prevent condensation
  - located about 26 feet off edge of driving lane (limited by cable length)

- two-inch diameter instrument pole (break away classification)
  - extend below frost line
  - holds rain gauge and air temperature probe
  - located about 27 feet off edge of driving lane behind equipment cabinet

Interface/Communications Equipment

- FHWA "mobile" unit @ $5000.00 (1993)
  - used each site visit to automatically read TDR probes and resistivity probe

- Tektronics model 1502 cable reader @ $8000.00 (1993)
  - generates signal and monitors reflected energy from TDR probes
  - relate time for pulse to travel through probe to dielectric constant
    - relate dielectric constant to moisture content

- computer and software
  - "onsite" used to monitor temperatures and rainfall continuously
  - "mobile" used to monitor resistivity probe and TDR probes during site visits

Observation Piezometer

- monitor depth to ground water table

- designed to act as frost free bench mark with anchor at 14 foot depth — IND. fine grain
  - sliding section filled with grease extends eight feet below the surface

Measuring Points for Joint Movement on PCC Pavements

- install three sets of snap rings on each joint monitored
  - bonded 0.3 inched deep in the pavement at one, six and eleven feet from edge of slab

- measure distance between rings to the nearest 0.001 inch with digital caliper
  - use "hot" measurement as zero opening on the joint

Break

Planning Session for Staff Involved with Instrumentation and Monitoring

Installation and Monitoring Schedule

Instrumentation Installation and Initial Monitoring

- two days required with third day as contingency
  - first day complete instrument installation
  - second day collect data

- tentative schedule
  - September 7 and 8 for 183002 on US-41

Long Term Monitoring — No problem @ ~~this~~ point

- one day every month with the exception of two times per month in the spring

- every other year for 10 year period to obtain about 70 days of FWD monitoring data

Special Concerns

Safety Issues

- bring up any safety concerns during installation

- buried utility markers and hazard markers for the cabinet and instrument pole?
  - standard "Buried Utility" marker for conduit?
  - hazard markers for snowmobiles? no

- any special agency requirements other than safety vests and work boots?
  - orange hats

yes is required

Indiana Department of Transportation Responsibilities

Project Contacts for Maintenance Activities and Traffic Control — one of three in Fowler shop. #(317)-834-1500
- will set up traffic control directly with district if desired

Utility Clearance
- ~~600~~ 150 foot section (extend 50 foot outside sta. 5+00 and ~~both ends of 500 foot test section~~) (clear 4+00 to 5+50)
- utility clearance on driving lane and 40 feet into the ditch on the right side

Traffic Control
- two days for initial installation and monitoring in September (7+8) Sept
- full lane closure for 700 foot section
- set up as early as possible - ~~7:30~~ AM? 8:00 AM — 7:30 to 3:
- may want to mark locations for placing traffic control signs

Establish Elevation Reference for Piezometer or Install Local Frost Free Bench Mark — because of fine grain soil want 2nd BM.
- actual elevation not required (local reference only)
- check piezometer elevation every other year?

Equipment — Becky look into
- pavement saw and operator
  - only required for first day during instrument installation
  - saw 16 inch square block out of the pavement surface or option to core
    - located in the outer wheel path 16" X 38" Block (will patch)
    - agency ~~has option~~ to ~~epoxy block or core back in place or~~ patch hole — Sef 45
  - equipment capable of cutting one inch deeper than estimated pavement thickness
    - 183002 has 9.5 inches PCC (cut 10.5 inches deep) 12-3" = 9" deep? — 24" blade will be close!
  - saw four-inch wide trench for conduit unless conduit is installed by other means
    - extend from outer wheel path to edge of 10.5 foot paved PCC shoulder
  - saw 13 inch slot for temperature probe or drill hole if coring (Epoxy for Saw cuts
- drill rig and operator — May use D.O.T. or Contract
  - only required for first day during instrument installation
  - able to reach location for instrument pole 27 feet off edge of driving lane — 8" ϕ Hollow or 10" ϕ Hollow
  - bore one six-inch (8"ϕ) diameter hole for piezometer (4-holes) — license to install — LTAP still provide pipe!
    - 14 feet deep
    - located just off paved shoulder
  - bore one 12-inch-diameter hole for instrumentation
    - eight feet deep in the outer wheel path
    - solid stem auger preferred
      - continuous flighting not required
      - NCRCO has 12-inch-diameter auger with 1-5/8 inch male hex drive (Bring!)

Mobile: CME 55

Larry — choose Sef 45 because saw may not get through

AYYAR ... DNR — license to install well (D.O.T. had to contract w/ driller on piez. installed by Indianapolis.)

Don

Loosen Soil

- bore one 12-inch-diameter hole for equipment cabinet (or will dig by hand)
    - two feet deep
    - located about 26 feet outside the driving lane in the ditch

- bore one six-inch-diameter hole for the instrumentation pole (8" ⌀)
    - 10 feet deep
    - located one foot behind the equipment cabinet in the ditch

- small portable generator if readily available to run small power tools

Materials for the Site

- cover assembly for piezometer (Braun Intertec can provide)
    - must function for ten years and be able to open in the winter
    - minimum four-inch inside diameter and 18 inches to 24 inches long

NAY YAR checking on special cap that may be required - Bring other cap as a backup.

- sackcrete for piezometer cover and instrumentation pole
    - estimate six bags

Becky

- bentonite pellets for sealing piezometer
    - five-gallon pail

NAY

- clean filter sand for piezometer
    - 400 pounds (four bags)
    - particle size not critical (silica sand will work)

Becky

- pea gravel or trap rock for equipment cabinet
    - 500 pounds (four five-gallon pails)
    - 3/8 inch or 1/2 inch size preferred

Don

- agency option to patch hole versus epoxy old block back in the pavement
    - additional materials required if patching
        - quick set patch or replace block?
        - re-bar and epoxy if patching?

- patch for conduit trench
    - 10.5 foot long by four inch wide by ___ inch deep

LARRY? drill Epoxy bars

16" x 38" x 9.5"
4" x ? x 10.5'
↑ 6"?
Set 45

- water for mixing sackcrete and equipment clean-up
    - estimate 30 gallons (available on drill rig?) — w/saw

~~- hazard markers for cabinet and instrument pole (if required by the agency)~~

Pavement Repairs

- patch conduit trench + block
- ~~assist with block replacement or patching~~

Miscellaneous Activities

- mow tall grass in area identified for utility clearance if needed

only if needed

NCRCO (Braun Intertec) and FHWA Staff Responsibilities

Instrumentation

- provide all instrumentation
- install all instrumentation with assistance from anyone on-site
- collect all required monitoring data
- NCRCO phone 1-800-344-7477 or 612-942-3047
  - main contacts for the Seasonal Monitoring Program
    - Bob Van Sambeek (Coordination and instrumentation)
    - Ron Urbach (Geotechnical and materials)

Closing Comments

Questions or concerns?

Hwy. 469 – Tom White – instr. grant } Cmnt. from Becky on additional work

– Fort. Wayne

– Becky – D.O.T. Lab moistures – day.

JULY 25 1995 | DBWX 92700 B6 | INDIANA PRE-INST. MTG

NAME	DEPT. / DIV.	PHONE #
ROBERT VAN SAMBEEK	BRAUN INTERTEC	800-744-7477
NAYYAR ZIA (Dan Chase - 317-232-5280)	Geotechnical section / INDOT	317-232-5280
DON CARROLL	Indot - Fowler	317 884 1500
GARY E. BLACK	INDOT - Fowler	317 884-1500
ROSS KURTZ	Indot - Fowler	317- 884-1500
LARRY VAUGHAN	INDOT / CRAWFORDSVILLE DISTRICT	317-362-3700
Rebecca McDaniel	INDOT Research	317/463-1521

→ Contact + some mats.

Saw + paint repairs — set 45
— Bars
—

...ill Rig.
Piez
...ic
...ol

D. 114

INDIANA DEPARTMENT OF TRANSPORTATION

INDIANAPOLIS, INDIANA 46204-2249

INTER-DEPARTMENT COMMUNICATION

July 26, 1995

To: Larry Vaughan, Crawfordsville District
Nayyar Zia, Materials and Tests Division
Don Carroll, Fowler Subdistrict
Ross Kurtz, Fowler Subdistrict
Gary E. Black, Fowler Subdistrict

Thru: Barry K. Partridge, Chief
Division of Research

From: Rebecca S. McDaniel, Section Engineer
Pavements, Materials and Accelerated Testing

Subject: Seasonal Monitoring Site on US-41 1.7 miles South of SR-18

Thank you all for attending yesterday's meeting on relatively short notice. Your cooperation is appreciated.

Attached is a summary of the decisions made at yesterday's meeting for your reference as we make preparations for the equipment installation September 7th and 8th.

If any problems arise between now and September, please let me know as soon as possible. I look forward to working with you on this installation.

rsmsmp1
BKP:RSM

Attachment

cc: Robert Van Sambeek

Seasonal Monitoring Project
Meeting

July 25, 1995

Present: Gary E. Black, Don Carroll, Ross Kurtz, Rebecca McDaniel, Robert Van Sambeek. Larry Vaughan, Nayyar Zia.

1. Bob Van Sambeek outlined the Seasonal Monitoring Program and showed slides of the equipment that would be installed. He also described the instrumentation and what information it would be generating.

2. No special safety issues exist for this site. Standard safety practices will be followed and standard safety clothing (hats or hard hats and vests) will be worn.

3. Bob will contact the Fowler Sub directly to schedule traffic control during the monitoring phase. Testing will be performed 14 times every other year for ten years. During years when the testing is done, tests will be performed monthly except during the Spring when tests will be twice a month (for a total of 14 times per year).

4. Discussion then ensued regarding what equipment, supplies and services would be necessary for the installation. The following items will be provided by the person noted:

Utility Clearance - Don Carroll will call Holey Moley to find out about buried utilities in the area.

Benchmark - Becky McDaniel will check to see if there is a benchmark nearby that can be used to check the elevation of the piezometer.

Saw and Operator - Larry Vaughan will arrange for a saw and operator. The saw should be 24 inch minimum.

Drill Rig and Operator - Nayyar Zia will arrange for September 7th only. Related to this, Nayyar will check with DNR to see if Bob can install a piezometer in a hole INDOT drills. If not, Nayyar will arrange for a geotechnical consultant to do the drilling and piezometer. If INDOT's drill rig is used, Nayyar will check if the NCRCO 12-inch diameter auger is compatible with INDOT's rig.

Generator - if needed, Subdistrict has one on shop truck.

Cover Assembly for piezometer - Nayyar will check if DNR has any regulations on this. If not, Nayyar will supply locking cap.

Sackcrete - Becky McDaniel will arrange to get 6-8 bags.

Bentonite pellets - will come with drill rig.

Filter Sand - Becky will arrange to get 400 lbs.

Pea Gravel - Subdistrict will arrange to get, perhaps from Carbondale.

Patching materials for hole - Larry Vaughan will arrange all things required for patching. Patching a rectangular hole is preferred to replacing the lifted block.

Water - available on drill rig.

29-Aug.-1995 - TF Gonzalo - NCR w/ set probe - first choice is to use on AC section - 2nd on PCC - check Michigan to see if participate - if not, then install @ Indiana ?

FACSIMILE MEMORANDUM

Braun Intertec Corporation
6875 Washington Avenue South, P.O. Box 39108, Minneapolis, MN 55439-0108
(612) 941-5600 FAX: (612) 942-3059

TO: Gonzalo Rada PCS/Law 301-210-5053 — Pages 4
Gary Elkins PCS/Law 702-827-0137
Aramis Lopez FHWA 703-285-2767

FROM: Robert J. Van Sambeek (612) 942-3047

DATE: August 28, 1995

SUBJECT: SMP Site 183002 Resistivity Probe and Installation Details
C:\SMP\WP\18SAREST.SMP

SMP site 18SA (183002), located west of Lafayette, Indiana, is scheduled for installation on September 7, 1995, with the installation crew traveling on September 6, 1995. This section was approved in 1993 to use in SMP cell 20. The pavement structure includes a 9.5 inch JPC surface, a 5.5 inch crushed stone base, and a sandy lean clay subgrade.

Listed below are issues specific to the installation.

Resistivity Probe.

The NCRCO SMP equipment inventory sent to Aramis Lopez and John Klemumes on March 16, 1995 noted a shortage of resistivity probes. Three installations have been completed using the three probes available. Aramis indicated one additional resistivity probe was available during the SMP telephone conference meeting held on July 6, 1995. Environmental data was requested for sections from the NARCO and the NCRCO regarding the best location for the remaining probe. The LTPP Data Sampler has 11 years of climate data for section 183002, with the following numbers.

784	F-Days (Freezing index)
37	Inches Precipitation
87	Freeze/Thaw Cycles
17	Days above 90°F
120	Days below 32°F
131	Wet Days

Please review the above data in relation to other sections, and advise the NCRCO whether section 183002 will have a resistivity probe for installation.

Monitoring End

Pre-SMP installation FWD was done this spring, and I visited the site on July 25, 1995 as part of the pre-installation meeting with the DOT. After reviewing the available data, I have selected the Sta. 5 end to monitor based on the following.

Sta. 0 - The joints at about Sta. 0-20 and Sta. 0-05 have distress extending from the pavement edge to about three feet into the driving lane. These joints defining the panel to instrument for SMP. A core was also taken midlane at Sta. 0-01. These items would affect SMP installation and monitoring.

Sta. 5 - The joints at about Sta. 5+04 and Sta. 5+21 define the panel to instrument for SMP. No distress was noted in the five panels to monitor, except for a few pop outs. This end of the section has fairly uniform subgrade reaction and "expected" effective rigid pavement thickness. See attached FWDCHECK plots.

Block.

The DOT will saw a PCC block 16" X 38" to allow re-bar installation prior to patching the hole with quick set concrete.

If you have any questions about the above information or would like to see the installation changed, please call me by Friday, September 1, 1995. Also, please have the resistivity probe arrive by this date, if it is to be installed on 183002.

08-NOV-95	DTRX92700 B6	183002 — 185A

TF - DAVE WARD — 317-463-1521

D.O.T. BM —

Becky McDaniels
Gordon Hooker — also for BM

— typically drive post to 5' or 6'
- no casing
- place @ fence line

— described current piezometer — surprise that it would move

— asked about driving 8' to 10' min. and placing a sleeve down to 3' or 4'

- sounded okay.

— Emergency — had to go — daughter in accident

— will call back

Appendix B-2: Pre-Installation Equipment Checks/Calibration Information

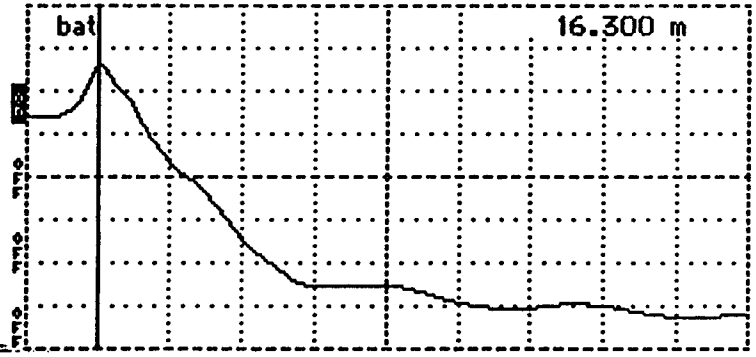
Appendix B-2 contains the following data sheets for the pre-installation equipment checks/calibration:

- Data Sheet SMP-C01: TDR Probe Check;
- Data Sheet SMP-C02: Thermistor and Air Temperature Probe Check;
- Data Sheet SMP-C03: Electrical Resistivity Probe Check;
- Data Sheet SMP-C04: Function Generator, Multi-meter, and Switch Box Checks; and
- Data Sheet SMP-C05: Tipping-Bucket Rain Gauge Calibration.

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [18] LTPP Section ID [3002]

01

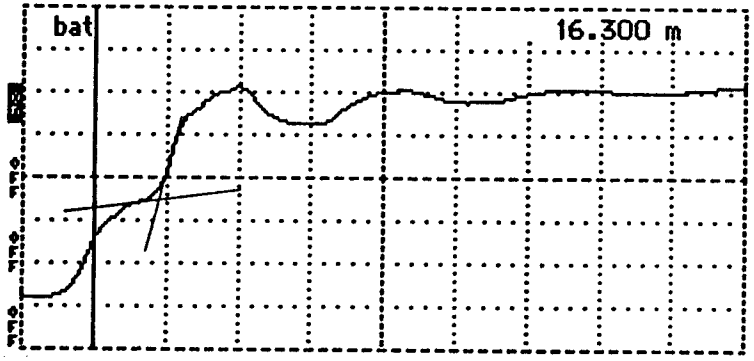
Cursor ..... 16.300 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat/low



Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A01 ~~01~~
Notes Short
L = 0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"		

Cursor ..... 16.300 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat/low



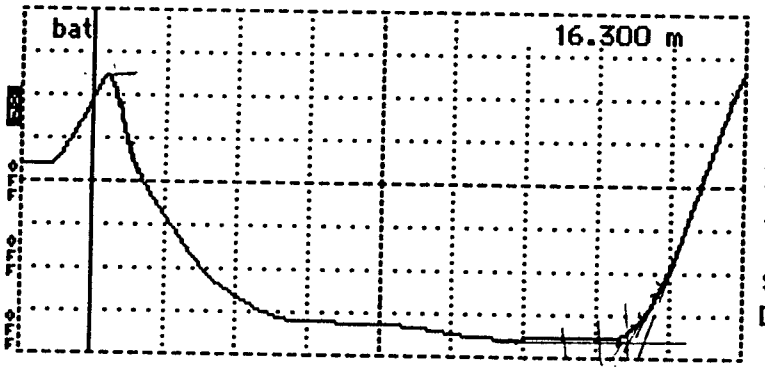
Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A01
Notes Air
La = 0.23
Di = 1.30
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant[1]
"In Air"	0.23	1.30

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [30027]

01

Cursor ..... 16.300 m
Distance/Div..... .25 m/div
Vertical Scale.... 74.8 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat/low



Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A01
Notes Water @ Am temp.
Lo = 1.93
Di = 91.32
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant[2]
"In Water"	1.78	27.65

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18A01 TDR Probe Length, L: 0.204 m Length of Coax Cable: ___.__ m

Comments: _____

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/1995

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [18] LTPP Section ID [3002]

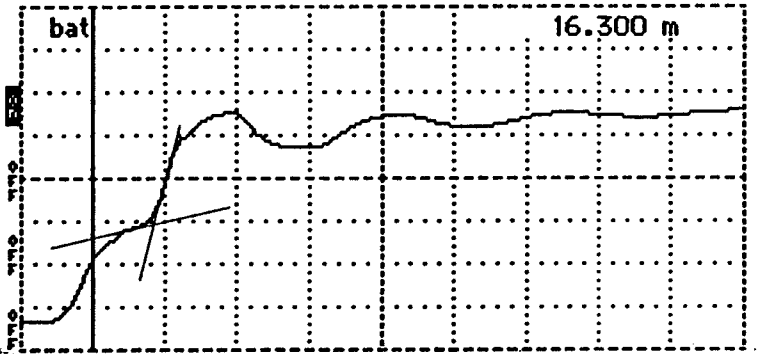
02

Cursor ..... 16.300 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... bat/low

Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A 02
Notes Short
L=0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"		

Cursor ..... 16.300 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... bat/low



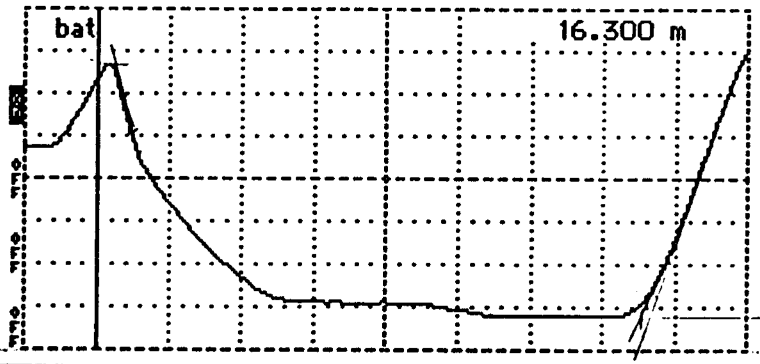
Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A02
Notes Air
La = 0.21
n' = 1.08
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"In Air"	0.21	1.08

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [3002]

02

Cursor .... 16.300 m
Distance/Div..... .25 m/div
Vertical Scale.... 74.8 mρ/div
Vp 0.99
Noise Filter...... 1 avg
Power.......... bat/low



Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A 02
Notes Water @ Rm temp.
t = 1.91
D = 89.44
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant[2]
"In Water"	1.82	81.18

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18A02 TDR Probe Length, L: 0.204 m Length of Coax Cable: __._ m

Comments:

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/95

Data Sheet SMP-C01: TDR Probe Check (Continued)

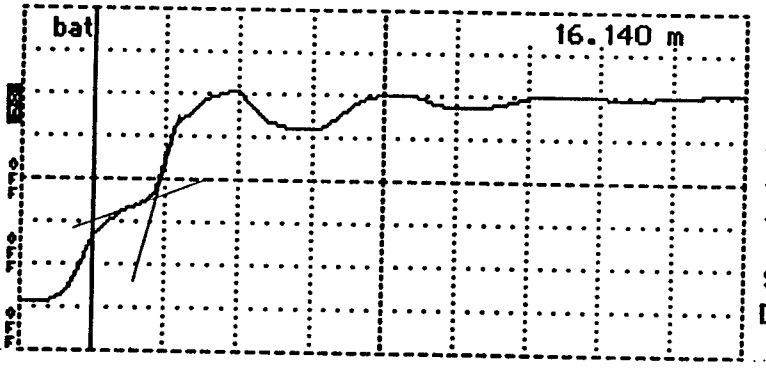
LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [18] LTPP Section ID [3002]

Cursor ..... 16.140 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat/low

Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A03
Notes short
L = 0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"		

Cursor ..... 16.140 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat/low

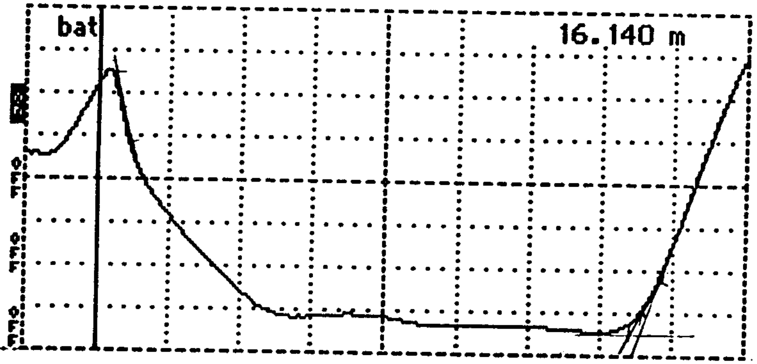


Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A03
Notes Air
La = 0.21
Di = 1.08
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"In Air"	0.21	1.08

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [3002]

Cursor .... 16.140 m
Distance/Div..... .25 m/div
Vertical Scale.... 74.8 mρ/div
Vp 0.99
Noise Filter...... 1 avg
Power........... bat/low



Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A03
Notes Water @ Rm Temp.
~~La = 1.89~~
~~ε = 87.58~~
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)[1]	Dielectric Constant[2]
"In Water"	1.79	28.52

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18A03 TDR Probe Length, L: 0.204 m Length of Coax Cable: __._ m

Comments: ____

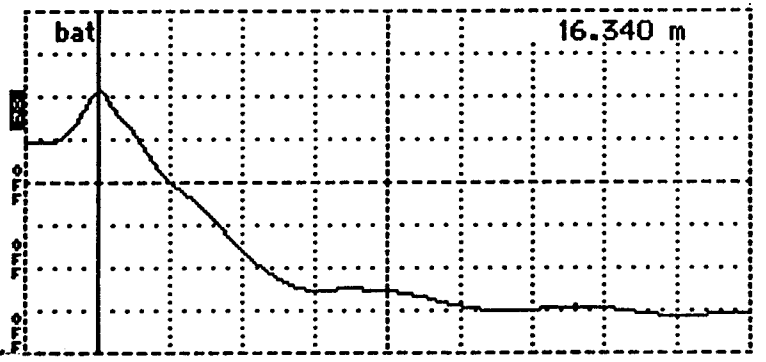
Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/95

Data Sheet SMP-C01: TDR Probe Check (Continued)

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [18] LTPP Section ID [3003]

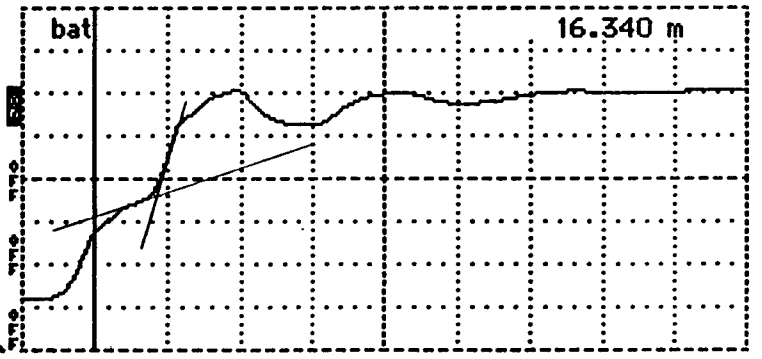
Cursor ..... 16.340 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat



Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A04
Notes Short
L=0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"		

Cursor ..... 16.340 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat

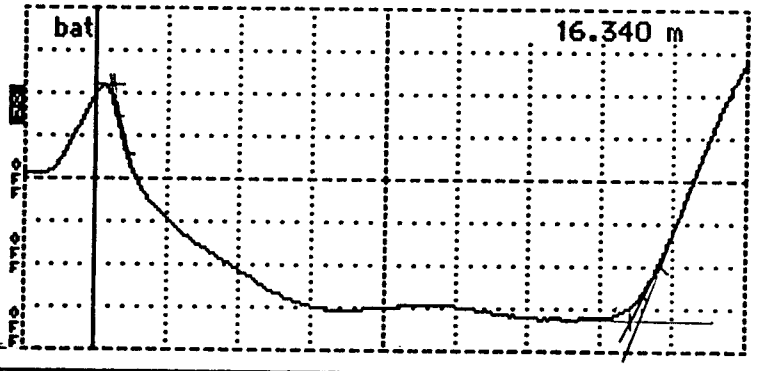


Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A04
Notes Air
La=0.22
Di=1.19
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant[1]
"In Air"	0.22	1.19

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [30072]

Cursor ..... 16.340 m
Distance/Div..... .25 m/div
Vertical Scale.... 74.8 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... bat/low



Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A04
Notes Water Run temp -
~~Lo = 1.89~~
~~Di = 87.58~~
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant[2]
"In Water"	1.80	79.40

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18A04 TDR Probe Length, L: 0.204 m Length of Coax Cable: ___.__ m

Comments: _____

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/95

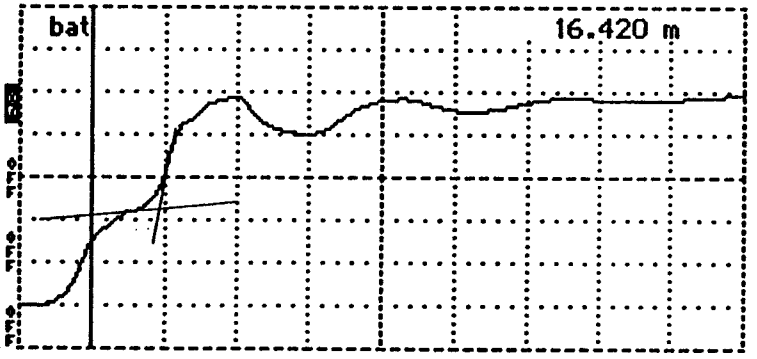
LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [18] LTPP Section ID [3002]

Cursor ..... 16.420 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... bat/low

Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A 05
Notes Short
L = 0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"	___	___

Cursor ..... 16.420 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... bat/low

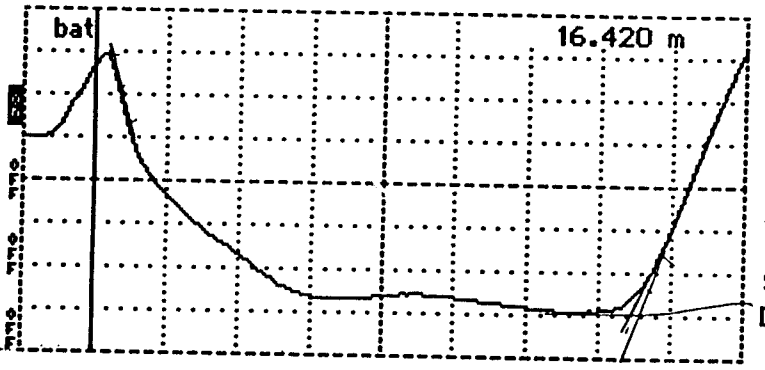


Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A 05
Notes Air
La = 0.24
Di = 1.41
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"In Air"	0.24	1.41

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [30624]

Cursor ..... 16.420 m
Distance/Div..... .25 m/div
Vertical Scale.... 74.8 mP/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat/low



Tektronix 1502B TDR
Date 27 July 95
Cable 18A05
Notes Water
La = 1.90
Di = 88.54
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant[2]
"In Water"	1.80	79.40

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18105 TDR Probe Length, L: 0.204 m Length of Coax Cable: __.__ m

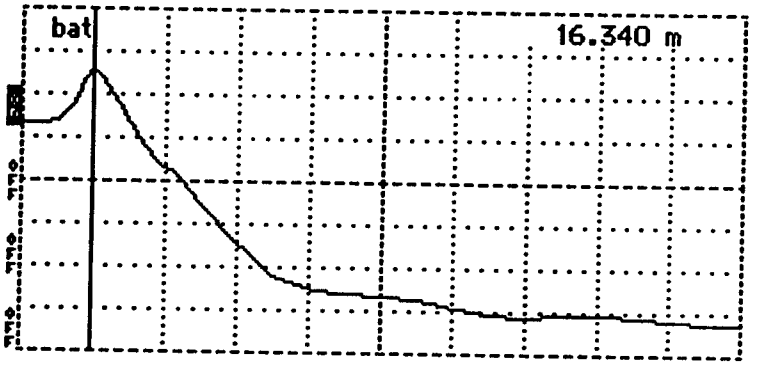
Comments: _____

Prepared by: Jerome Aicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/95

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [18] LTPP Section ID [30002]

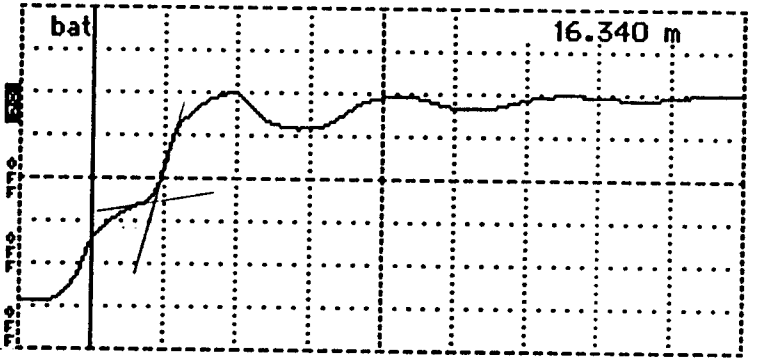
Cursor ..... 16.340 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat



Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A06
Notes Short
L = 0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"		

Cursor ..... 16.340 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat

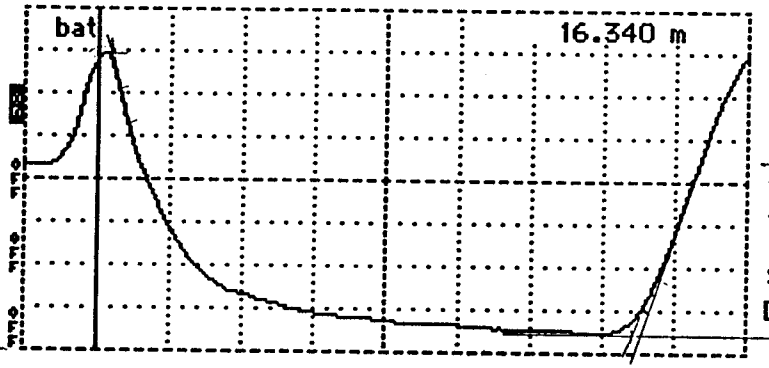


Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A06
Notes Air
La = 0.21
Di = 1.08
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"In Air"	0.21	1.08

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [30024]

Cursor ..... 16.340 m
Distance/Div..... .25 m/div
Vertical Scale.... 74.8 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... bat



Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A06
Notes Water @ Room temp.
La = 1.89
Di = 87.78
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant[2]
"In Water"	1.80	79.40

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18A06 TDR Probe Length, L: 0.204 m Length of Coax Cable: ___.__ m

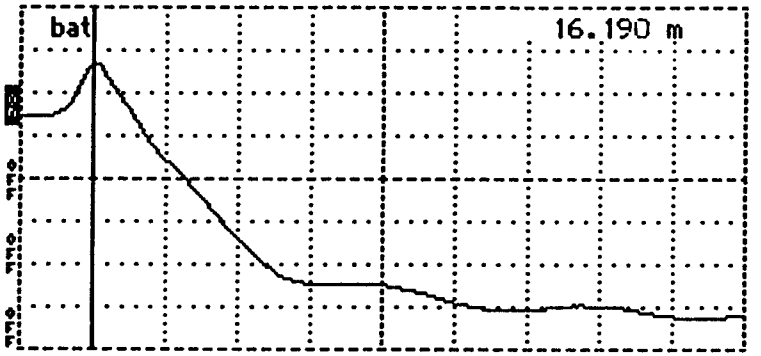
Comments: _____

Prepared by: Jerome Wicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/95

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [18] LTPP Section ID [30072]

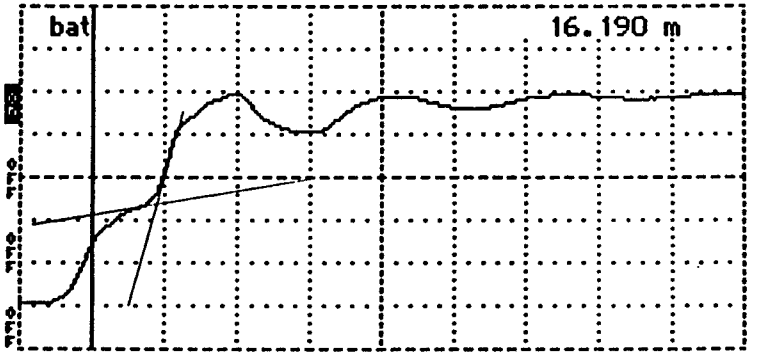
Cursor ..... 16.190 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... bat



Tektronix 1502B TDR
Date 27 July 95
Cable 18A07
Notes Short
L=0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"		

Cursor ..... 16.190 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... bat

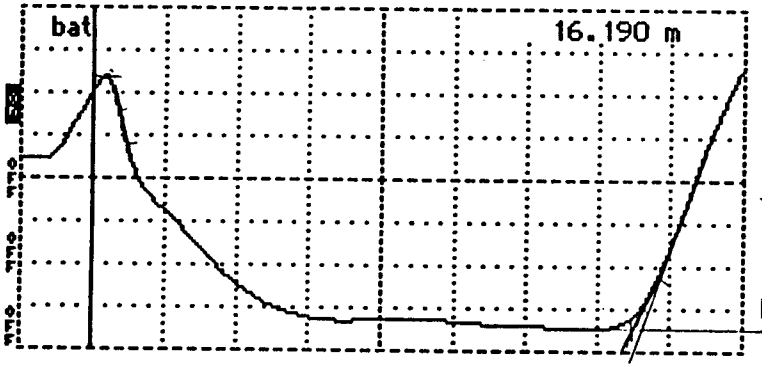


Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A07
Notes Air
La = 0.23
Di = 1.30
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"In Air"	0.23	1.30

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [30072]

Cursor ..... 16.190 m
Distance/Div..... .25 m/div
Vertical Scale.... 74.8 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... bat



Tektronix 1502B TDR
Date 27 Jul 95
Cable 18A07
Notes Water
~~La = 1.91~~
~~Dia = 89.44~~
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant[2]
"In Water"	1.80	79.40

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18A07 TDR Probe Length, L: 0.204 m Length of Coax Cable: ___.__ m

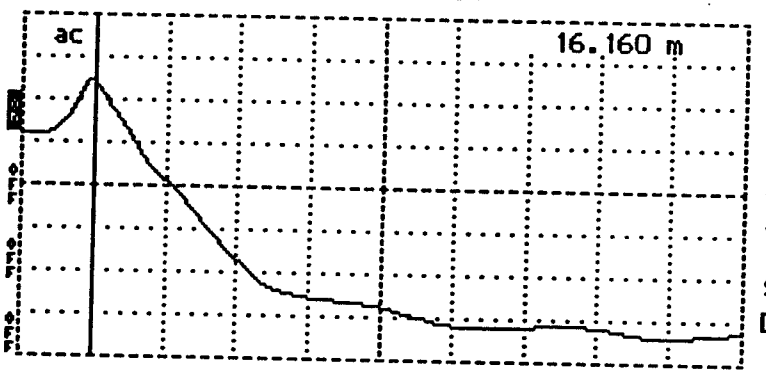
Comments: _____

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/95

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [18] LTPP Section ID [3002]

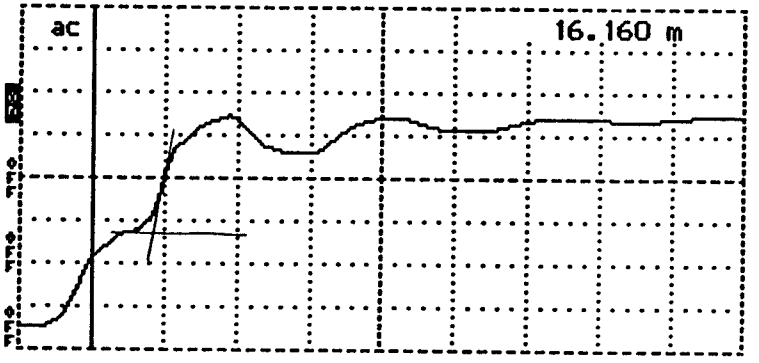
Cursor ..... 16.160 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... ac



Tektronix 1502B TDR
Date 27 July 95
Cable 18A08
Notes Short
L = 0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"		

Cursor ..... 16.160 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... ac

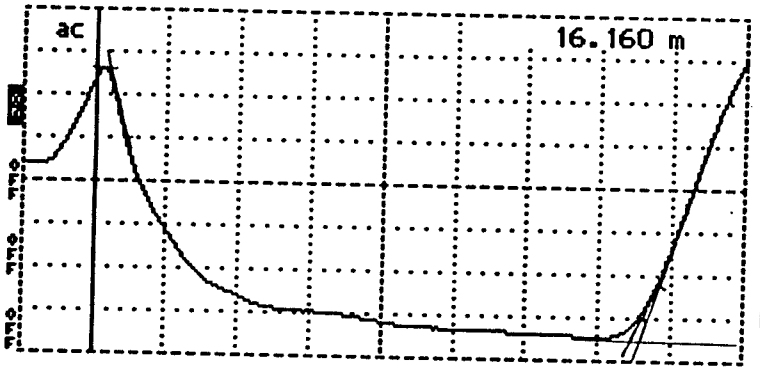


Tektronix 1502B TDR
Date 27 July 95
Cable 18A08
Notes Air
La = 0.21
Di = 1.08
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"In Air"	0.21	1.08

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [30024]

Cursor ..... 16.160 m
Distance/Div..... .25 m/div
Vertical Scale.... 77.0 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... ac



Tektronix 1502B TDR
Date 27 July 95
Cable 18A08
Notes Water @ Room temp.
ta = 1.90
Dt = 88.5
Input Trace _____
Stored Trace _____
Difference Trace _____

TDR Trace	Apparent Length, (m)	Dielectric Constant[2]
"In Water"	1.81	80.29

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18A08 TDR Probe Length, L: 0.204 m Length of Coax Cable: ___.__ m

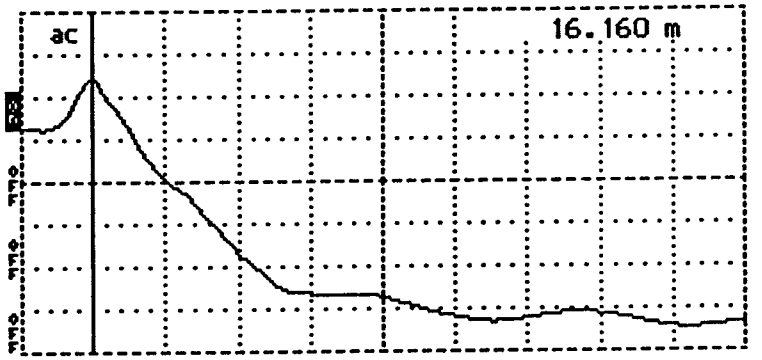
Comments: _____

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/95

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [18] LTPP Section ID [3-027]

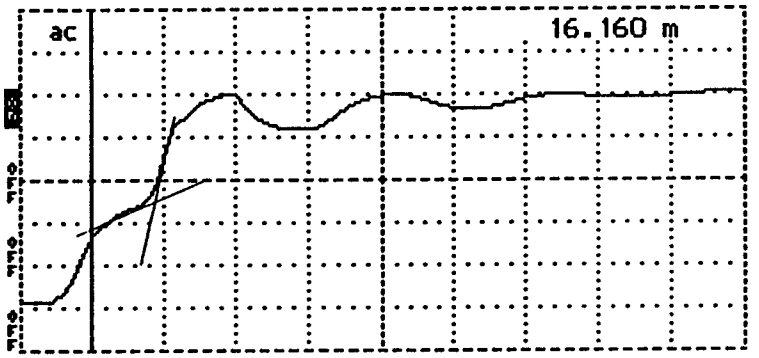
Cursor ..... 16.160 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... ac



Tektronix 1502B TDR
Date 27 July 95
Cable 18A09
Notes Short
L = 0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"	___.___	___.___

Cursor ..... 16.160 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... ac



Tektronix 1502B TDR
Date 27 July 95
Cable 18A09
Notes Air
Lg = 0.22
Di = 1.19
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"In Air"	0.22	1.19

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [30072]

Cursor ..... 16.160 m
Distance/Div..... .25 m/div
Vertical Scale.... 77.0 mρ/div
VP 0.99
Noise Filter..... 1 avg
Power..... ac

Tektronix 1502B TDR
Date 27 July 95
Cable 18A09
Notes Water @ Room temp.
La = 1.88
Pi = 86.7
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant[2]
"In Water"	1.81	80.29

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18A09 TDR Probe Length, L: 0.204 m Length of Coax Cable: ___.__ m

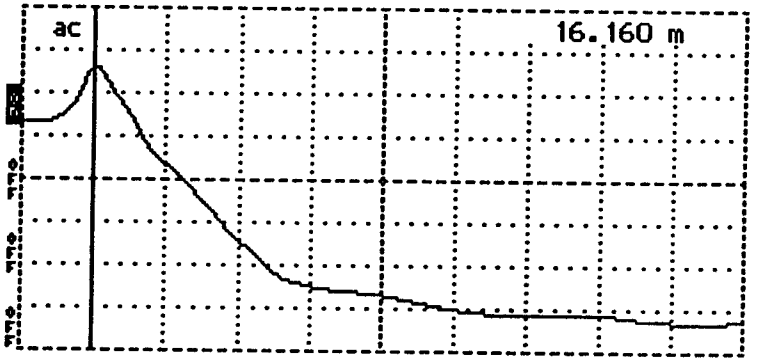
Comments: _____

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/95

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 1) TDR Probe Check	Agency Code [19] LTPP Section ID [30072]

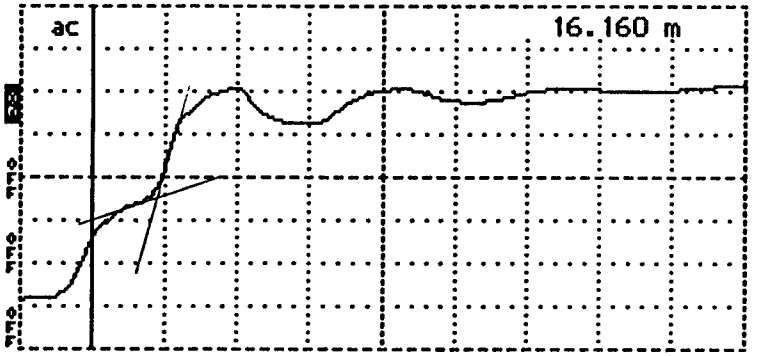
Cursor ..... 16.160 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... ac



Tektronix 1502B TDR
Date 27 July 95
Cable 18A10
Notes Short
L = 0.204
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)	Dielectric Constant
"Shorted at Start"	___.___	___.___

Cursor ..... 16.160 m
Distance/Div..... .25 m/div
Vertical Scale.... 177 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... ac

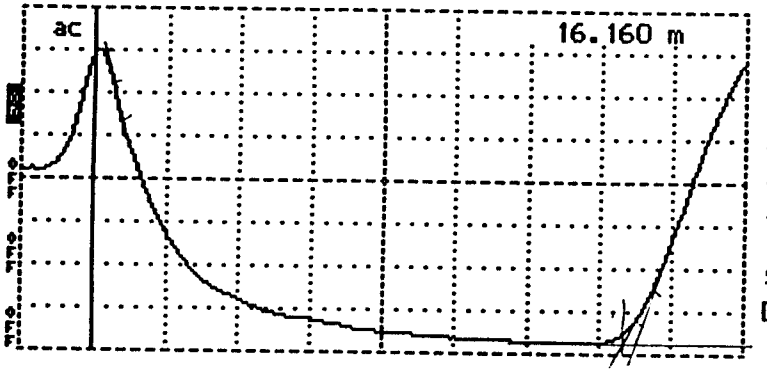


Tektronix 1502B TDR
Date 27 July 95
Cable 18A10
Notes Air
La = 0.23
Di = 1.3
Input Trace
Stored Trace
Difference Trace

TDR Trace	Apparent Length, (m)[1]	Dielectric Constant[1]
"In Air"	0.23	1.3

LTPP Seasonal Monitoring Program Data Sheet SMP-C01 (Page 2) TDR Probe Check	Agency Code [18] LTPP Section ID [30024]

Cursor ..... 16.160 m
Distance/Div..... .25 m/div
Vertical Scale.... 74.8 mρ/div
Vp 0.99
Noise Filter..... 1 avg
Power..... ac



Tektronix 1502B TDR
Date 27 July 95
Cable 18A10
Notes Water @ Room temp.
~~ta = 1.88~~
~~D = 86.7~~
Input Trace _____
Stored Trace _____
Difference Trace _____

TDR Trace	Apparent Length, (m)	Dielectric Constant[2]
"In Water"	1.79	78.52

[1] If dielectric constant not between 0.75 and 2.0, contact FHWA LTPP Division
[2] If dielectric constant not between 76 and 84, contact FHWA LTPP Division

Note: Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

TDR Probe Serial Number: 18A10 TDR Probe Length, L: 0.204 m Length of Coax Cable: ___.__ m

Comments: _____

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 27/Jul/95

LTPP Seasonal Monitoring Program Data Sheet SMP-C02 Thermistor Probe Check	Agency Code [18] LTPP Section ID [3004]

Thermistor Probe Assigned Serial Number : [18A T]

Air Temperature Probe Assigned Serial Number: [18A A T]

Thermistor Number	Distance from Top (m)	Temperature (°C) – Calibration in: Ice-Bath; T = 1.4 °C	Other HOT; T = 38.9 °C	Comments
1	.____	1.79	38.4	
2	.____	1.86	38.5	
3	.____	1.61	38.5	
4	.023	1.90	38.5	
5	.095	1.90	38.5	
6	.172	1.97	38.4	
7	.248	2.07	38.5	
8	.325	2.00	38.4	
9	.482	2.04	38.5	
10	.628	2.07	38.2	
11	.788	2.07	38.2	
12	.934	2.07	38.1	
13	1.085	2.07	38.1	
14	1.238	2.04	38.1	
15	1.390	2.08	38.1	
16	1.541	2.04	38.5	
17	1.695	2.01	38.5	
18	1.845	1.97	38.4	
End	1.854	n/a	n/a	
Air Probe	n/a	0.85	38.8	

Comments:

COLD CYCLE: 3 Aug 95 TIME: 12:46, DISPLAY TEMP = 0.89 °C, HG TEMP = 1.39 °C

HOT CYCLE: 2 Aug 95 TIME: 1347, DISPLAY TEMP = 38.2 °C, HG TEMP = 38.9 °C

Prepared by: Jeff Henrichson Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 12/JUL/95

LTPP Seasonal Monitoring Program Data Sheet SMP-C03 Resistivity Probe Check	Agency Code [18] LTPP Section ID [3002]

Electrical Resistivity Serial Number: 18AR

DB37 Connector Pin Number	Electrode Number	Distance from Top (m)			Continuity ✓	Spacing (m)	Comments
		Line 1	Line 2	Avg			
36	1	0.031	0.030	0.031	✓	———	
35	2	0.083	0.082	0.083	✓	.052	
34	3	0.133	0.132	0.133	✓	.050	
33	4	0.183	0.182	0.183	✓	.050	
32	5	0.234	0.232	0.233	✓	.050	
31	6	0.284	0.284	0.284	✓	.051	
30	7	0.335	0.334	0.335	✓	.051	
29	8	0.385	0.385	0.385	✓	.050	
28	9	0.436	0.435	0.436	✓	.051	
27	10	0.488	0.486	0.487	✓	.051	
26	11	0.539	0.537	0.538	✓	.051	
25	12	0.589	0.587	0.588	✓	.050	
24	13	0.639	0.639	0.639	✓	.051	
23	14	0.692	0.691	0.692	✓	.053	
22	15	0.741	0.740	0.741	✓	.049	
21	16	0.793	0.791	0.792	✓	.051	
20	17	0.843	0.841	0.842	✓	.050	
19	18	0.894	0.893	0.894	✓	.052	
18	19	0.945	0.943	0.944	✓	.050	
17	20	0.994	0.994	0.994	✓	.050	
16	21	1.043	1.046	1.045	✓	.051	
15	22	1.099	1.096	1.098	✓	.053	
14	23	1.148	1.147	1.148	✓	.050	
13	24	1.199	1.198	1.199	✓	.051	
12	25	1.250	1.249	1.250	✓	.051	
11	26	1.300	1.299	1.300	✓	.050	
10	27	1.353	1.351	1.352	✓	.052	
9	28	1.402	1.401	1.402	✓	.050	
8	29	1.453	1.452	1.453	✓	.051	
7	30	1.504	1.503	1.504	✓	.051	
6	31	1.554	1.553	1.554	✓	.050	
5	32	1.606	1.605	1.606	✓	.052	
4	33	1.655	1.655	1.655	✓	.049	
3	34	1.702	1.706	1.704	✓	.049	
2	35	1.757	1.757	1.757	✓	.053	
1	36	1.804	1.808	1.806	✓	.049	
	Bottom	1.830	1.830	1.830	n/a	n/a	

Comments: -checked out good :)

Prepared by: Jeff Henrichsen Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 01SEP95

LTPP Seasonal Monitoring Program Data Sheet SMP-C04 Function Generator, Multimeter, and Switch Box Checks	Agency Code [18] LTPP Section ID [30027]

Start Time (military): _ _ _ _

Test Position	Switch Settings		Voltage (ACV)		Current (ACA)		Measured Resistance R = V/I (ohms)	Known Resistance (ohms)
	I_1, V_1	I_2, V_2	Range Setting	Reading	Range Setting	Reading		
36	36	37					R1 =	R1 =
37	37	38					R2 =	R2 =
38	38	39					R3 =	R3 =
39	39	00					R4 =	R4 =
36	36	37					R1 =	R1 =
37	37	38					R2 =	R2 =
38	38	39					R3 =	R3 =
39	39	00					R4 =	R4 =
36	36	37					R1 =	R1 =
37	37	38					R2 =	R1 =
38	38	39					R3 =	R1 =
39	39	00					R4 =	R2 =

Comments: SEE SHEET FOR 315A AND 315B FOR FG, mm, +5B CHECK FOR 1995 INSTALLATIONS

Prepared by: Robert Van Tambelg Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 07/SEP/95

LTPP Seasonal Monitoring Program Data Sheet SMP-C05 Rain Gauge Calibration	Agency Code [18] LTPP Section ID [3002]

General Information:

Manufacturer: Texas Electronics Inc.

Model Number: TRP-525M

Serial Number: 12075

Note: The screen should be tacked inside the funnel using silicon at three to four points to prevent loss from wind.

Rain Gauge Calibration Data

Trial	Start Time (Military)	End Time (Military)	Volume (ml)	Number of Tips	Adjustment[1] No. of Turns
1	1300	1400	473.	97.	+0.5
2	1600	1700	473.	100.	0.0
3	0700	0800	473.	97.	+.5
4	1100	1200	473	98	+ = cw

02 Aug 95

[1] Adjust gauge to obtain 100 tips ± 3 for 473 ml of water.

Comments: _____

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 01/Aug/95

Appendix C-1: Instrumentation Installation Information

Appendix C-1 contains the following installation data sheets and associated field notes, as well as, certificate of registration for instrumentation, and photographs documenting the installation:

- Data Sheet SMP-D10: SMP Field Activity Report;
- Data Sheet SMP-I01: List of Installed Instrumentation;
- Data Sheet SMP-I02: Instrumentation Locations;
- Data Sheet SMP-I03: Log of Piezometer Hole;
- Data Sheet SMP-I04: Log of Instrumentation Hole;
- Data Sheet SMP-I05: Field Gravimetric Moisture Contents;
- Data Sheet SMP-I05(A): Lab Gravimetric Moisture Contents;
- Data Sheet SMP-I05(B): Gravimetric Moisture Comparison;
- Data Sheet SMP-I06: TDR Moisture Content;
- Data Sheet SMP-I07: Representative Dry Density;
- Plot of Gravimetric Moisture Results; and
- Installation Photographs.

18 SA95A

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-D10 SMP Field Activity Report	Agency Code [18] LTPP Section ID [3002]

Onsite Datalogger and Instrumentation		
File Name - *.ONS	INSTALL	Comments: —
Battery Replace	Yes (No)	Voltages
Repairs/Calib.	INSTALL	
Other:		

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

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

FWD and Associated Data		
FWD Testing	Sets (12)	Operator: Jerome Dicks
JCP - Snap Rings	Sets (0)	NOT INSTALLED
JCP - Faulting	Sets (0)	
Other:	Only partial FWD Data Set	

IF REQUIRED, ATTACH SKETCHES TO THIS DATA SHEET

Comments: Only got tests on slab instrumented — Rain

Prepared by: _____ Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 07/SEP/95 Daylight Savings Time (Y or (N)): __ EASTERN

18 S A 9 5 A

LTPP Seasonal Monitoring Program Data Sheet SMP-I01 Instrumentation Installed and Participants	Agency Code [18] LTPP Section ID [3002]

List of Equipment:

Equipment	Quantity	Serial Number(s)
Instrument Hole:		
Thermistor Probe	01	18AT
Resistivity Probe	01	18AR
TDR Sensors	10	18A01 to 18A10
Equipment Cabinet:		
Campbell Scientific CR10 Datalogger	01	16588
Battery Package	01	5660
Weather Station:		
Rain Gauge	01	12075
Air Temperature Probe	01	18AAT
Radiation Shield	01	18A—
Observation Piezometer/Bench Mark:	01	n/a

List of Participants:

Name of Participant	Agency/Employer
Robert Van Sambeek	Braun Intertec
Ron Urbach	"
Jerome Dicks	"
Becky McDaniel	Indiana DOT
INDIANA DOT (DIST.)	Indiana DOT
Consultant →	Drill Rig
Dan Chase	Indiana DOT

Prepared by: Robert Van Sambeek Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 07/SEP/95

18 S A 9 5 A

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-I02 Installed Instrument Location	Agency Code [18] LTPP Section ID [3002]

Longitudinal and Transverse Location of Instrumentation:

Instrument	Station (Customary Units)		Offset (m)[1]	
	Planned	Actual	Planned	Actual
Instrumentation Hole	5+13	5+12	+0.76	+0.76
Observation Piezometer	4+86	4+86	-3.50	-3.80
Equipment Cabinet	5+13	5+12	-7.62	-7.45
Weather Station	5+13	5+12	-7.93	-7.70

DOT BM INSTALLED 16-NOV-95 @ 5+19 OFFSET -6.86

[1] ~~Transverse distance in meters from pavement edge (see LTTP Manual for FWD Testing)~~ with (+) values toward mid-lane and (-) towards shoulder

Depth Location of Instrumentation:

Instrument		Depth from Pavement Surface to Top of Probe (m)		Comments
		Planned	Actual	
Thermistor Probe	Metal Top	0.025	0.020	Placed in saw cut for
	Metal Bottom	0.216	0.210	the thick removed.
	PVC Top	0.290	0.312	
Resistivity Probe		0.290	0.238	

PIEZ. IS 0.3696 Meters below the PE @ Sta: 4484 (13-Oct-95)

TDR Number	Depth from Pavement Surface to Probe (m)		Comments
	Planned Location	Actual Location	
12 1	0.300	0.320	mid depth of base
18 2	0.450	0.456	(#1 upside down)
24 3	0.605	0.628	
30 4	0.755	0.756	
36 5	0.915	0.908	
42 6	1.065	1.080	
48 7	1.200	1.226	
54 8	1.370	1.373	Hard to place in small
66 9	1.675	1.704	ϕ hole
78 10	1.980	1.926	

ATTACH TOP-VIEW SKETCH OF INSTRUMENTATION HOLE SHOWING DIRECTION OF TRAFFIC AND LOCATION OF THERMISTOR AND RESISTIVITY PROBES. LABEL PROBES "T" AND "R", RESPECTIVELY

Prepared by: Robert Van Sambeek Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 07/SEP/95

18SA95A

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-I03 Log of Piezometer Hole	Agency Code [18] LTPP Section ID [3002]

Operator: _____ Equipment Used: MOBIL DRILL B 59

Location: Station: 4+86 Offset: -3.80 m (from lane edge) ABOUT 2' OFF SHOULDER (Shoulder 10.5)

Bore Hole Diameter: 160 . mm Auger Type: 6 1/4" HOLLOW STEM AUGER

Scale (m)	Depth from Surface[1] (m)	Material Description	Material Code[2]
0.5	.5	CL SILTY CLAY BROWN WET	113
	.75	CL SILTY CLAY DARK BROWN WET	113
1.0		CL SILTY CLAY BROWN MOIST	113
1.5			
2.0			
2.5			
3.0			
3.5			
4.0	4.38		
4.5	PIEZOMETER 4.30M LONG	(1) 5 GAL. PAIL OF SOIL FROM .75M TO 1.3M DEPTH.	
5.0	FILTER SAND 3.34M TO 4.38M BENTONITE LAYER 3.04M TO 3.34M SOIL FROM BOREHOLE 0.6M TO 3.04M OUT SIDE STEEL PIPE .05 TO .6 M CONCRETE AROUND OUTSIDE OF STEEL PIPE		

[1] Format: __.____ m; [2] Format: ___

Prepared by: RON URBACH Employer: BRAUN INTERTEC

Date (dd/mmm/yy): 07/SEP/95

18SA95A

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-I04 Log of Instrumentation Hole	Agency Code [18] LTPP Section ID [3002]

Operator: ✓ Equipment Used: MOBIL DRILL B59

Location: - Station: 5+12 Offset: 0.76 m (from lane edge)

Bore Hole Diameter: 205. mm (VARIABLE ϕ WITH DEPTH)

Scale (m)	Strata Change[1] (m)	Material Description	Probe #	Material Code[2]
0.10 / 0.20	.24	PCC		730
0.30	.38	BASE CRUSHED LIME STONE	1	303
0.40 / 0.50	.59	CL SILTY CLAY GRAY AND DARK GRAY MOIST	2	113
0.60 / 0.70 / 0.80	.91	CL SILTY CLAY BLACK SLIGHTLY ORGANIC MOIST	3	113
0.90 / 1.00 / 1.10 / 1.20	1.21	CL SILTY CLAY DARK GRAY MOIST	4	113
1.30 / 1.40	1.40	CL SILTY CLAY BROWN MOIST	5	113
1.50	1.53	CL SILTY CLAY BROWN MOIST	6	113
1.60 / 1.70 / 1.80	1.80	CL SILTY CLAY BROWN MOIST	7	113
1.90 / 2.00 / 2.10 / 2.20	2.21	CL SILTY CLAY BROWN MOIST	8	113
2.30 / 2.40 / 2.50				

[1] Format: __.____ m; [2] Format: ____

Prepared by: RON URBACH Employer: BRAUN INTERTEC

Date (dd/mmm/yy): 07/SEP/95

LTPP Seasonal Monitoring Program Data Sheet SMP-I05 Field Gravimetric Moisture Content	Agency Code [18] LTPP Section ID [30023]

TDR Probe	Probe Depth[1] (m)	Moisture Sample No.	Pan No.	Wt. of Pan (gms) = A	Wt. of Pan + Wet Soil (gms) = B	Wt. of Pan + Dry Soil (gms) = C	Wt. of Dry Soil (gms) = D = C - A	Wt. of Water (gms) = E = B - C	Moisture Content (%) = w = E/D * 100
1	0.300	1	1	0.0	507.1	469.8	469.8	37.3	7.9
2	0.450	2	2	0.0	229.8	201.5	201.5	28.3	14.0
3	0.605	3	1	0.0	377.3	313.4	313.4	63.9	20.3
4	0.755	4	2	0.0	294.1	239.5	239.5	54.6	22.7
5	0.915	5	3	0.0	319.9	250.0	250.0	69.9	27.9
6	1.065	6	1	0.0	490.7	401.0	401.0	89.7	22.3
7	1.200	7	1	0.0	349.7	294.8	294.8	54.9	18.6
8	1.370	8	3	0.0	398.0	336.8	336.8	61.2	18.1
9	1.675	9	1	0.0	357.1	312.3	312.3	44.8	14.3
10	1.980	10	1	0.0	276.9	236.7	236.7	34.2	14.4
					287.2	246.0	246.0	41.2	16.7

[1] Distance in meters from pavement surface to TDR probe

ONE POINT PROCTOR 2 00

Comments:

Prepared by: INDIANA DOT – Dan Chase Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 07/SEP/95

12/12/95

DES NO. 9500005

SUMMARY OF SPECIAL LABORATORY TEST RESULTS

DES. NO. 9500005
PROJECT NO.
STRUCTURE NO.
COUNTY BENTON

LABORATORY NUMBER	PART	BORING NUMBER	SAMPLE NUMBER	DEPTH (ft.)	NATURAL WATER CONTENT (%)	pH VALUE	LOI (%)	CA & MG (%)	NATURAL WET DENSITY (PCF)	NATURAL DRY DENSITY (PCF)	MAX DRY DENSITY (PCF)	OPT. MOIST (%)	CBR @93%	CBR @97%	COHESION (Qu/2) (KSF)
957071611752		P-1	SS 2T	1.2-1.3m	24.1	6.9									
957071611754		P-1	SS 3T	2.0-2.1m	13.9										
957071611756		P-1	SS 4T	2.7-2.9m	16.1										
957071611760		I-1	TDR-1	.25-.35m	6.1										
957071611761		I-1	TDR-2	.4-.5m	13.9										
957071611762		I-1	TDR-3	.55-.65m	20.7										
957071611763		I-1	TDR-4	.7-.8m	19.7										
957071611764		I-1	TDR-5	.85-.95m	24.9										
957071611765		I-1	TDR-6	1.05-1.10m	16.3										
957071611766		I-1	TDR-7	1.15-1.25m	20.1										
957071611767		I-1	TDR-8	1.3-1.4m	15.3										
957071611768		I-1	TDR-9	1.6-1.7m	13.5										
957071611769		I-1	TDR-10	1.9-2.0m	14.5										
957071611770		I-1	IPP-1	2.0-2.1m	15.4										

Post-it® Fax Note 7671

Date 12-12-95	# of pages ▶ 2
To Bob VanSanbeek	From DAN CHASTE
Co./Dept. Braun Intertech	Co. INDOT
Phone # 800-344-7477	Phone # 317-232-5280
Fax # 612-942-3059	Fax # 317-356-9351

SMP I05(A) CAB

185A95A

18549SA

SUMMARY OF CLASSIFICATION TEST RESULTS

DES. NO. 9500005
PROJECT NO.
STRUCTURE NO.
COUNTY BENTON

LABORATORY NUMBER	P A R T	BORING NUMBER	STATION	OFFSET LINE	SAMPLE NUMBER	SAMPLE DEPTH	TEXTURAL/ UNIFIED	AASHTO	NO. 10	NO. 40	NO. 200	GRAVEL 76.2 - 2.00 mm	SAND 2.00- 0.074 mm	SILT 0.074- 0.002 mm	CLAY BELOW 0.002 mm	BELOW 0.001 mm	LL	PL	PI
95707161752		P-1	4+88	18.75 m RT	SS 2T	1.2-1.3m	CLAY LOAM/CL	A-7-6(15)	94.9	91.3	71.9	5.1	23.0	45.5	26.4	24.3	44.5	23.0	21.5

LTPP Seasonal Monitoring Program Data Sheet SMP-I05 (B) Gravimetric Moisture Comparison	Agency Code [18] LTPP Section ID [30021]

TDR	SMP-I02 TDR Depth (m)	SMP-I04 Material Code	Lab Data Dry Density (pcf)	TDR Installation Data		Gravimetric Moistures		Comments
				SMP-I06 La (m)	Calculated Gravimetric (percent)	SMP-I05 Field (percent)	SMP-I05A Lab (percent)	
1	0.320	303	129.2	0.71	11.4	7.9	6.1	
2	0.450	113	114.0	0.23	13.6	14.0	13.9	
3	0.628	113	114.0	0.93	19.9	20.3	20.7	
4	0.756	113	114.0	0.92	19.6	22.7	19.7	
5	0.908	113	114.0	1.20	26.5	27.9	24.9	
6	1.080	113	114.0	0.95	20.5	22.3	16.3	
7	1.226	113	114.0	1.08	23.9	18.6	20.1	
8	1.372	113	114.0	0.94	20.2	18.1	15.3	
9	1.704	113	114.0	0.87	18.1	14.3	13.5	
10	1.926	113	114.0	0.87	18.1	14.4	14.5	

TDR Gravimetric moistures calculated using equations on pages II-2 and II-5 of FHWA-RD-94-110 with La = 0.203 m, and Vp = 0.99.

Comments: Dry Density from Form 504 at test location 5+72. { 129.2 pcf @ 0.24 M depth. 114.0 pcf @ 0.44 M depth. }
~~DATA SHEET~~ SMP I07 — 111.8 pcf for subgrade sample 1.3 meters below pavement surface.

Prepared by: _____ Employer: Braun Intertec Corporation Date (dd/mmm/yy): __/____/__

$$\omega = \left(-330.72 + 4526.78\,La^2 - 2103.88\,La^4 + 402.25\,La^6\right)/\gamma_d$$; La (meters), γ_d (pcf), ω (%)

18SA95A

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-I06 TDR Moisture Content	Agency Code [18] LTPP Section ID [30021]

Required Settings:

Dist./Division: 0.25 m
Phase Velocity: 0.99
Noise Filter: 1 average

Probe Number	Probe Depth[1] (m)	Time (military)	Apparent Length (m)	Dielectric Constant[2]	Comments
1	0.320	(1)	0.71	12.48	middepth of Base
2	0.450		0.73	13.19	
3	0.628		1.93	21.41	
4	0.756		1.92	20.95	
5	0.908		1.20	35.64	
6	1.080		0.95	22.34	
7	1.226		1.08	28.87	
8	1.372		0.94	21.87	
9	1.704		0.87	18.73	
10	1.926		0.87	18.73	

[1] Distance in meters from pavement surface to TDR probe
[2] Dielectric constant is determined as follows:

$$\varepsilon = \left[\frac{(L_a)}{(L)(V_p)}\right]^2 = \left[\frac{(D_2 - D_1)}{(L)(V_p)}\right]^2$$

where ε = dielectric constant; L_a = apparent length of probe, m; L = actual length of probe units (= 0.203 m (8 in) for FHWA probes); V_p = phase velocity setting (= 0.99).

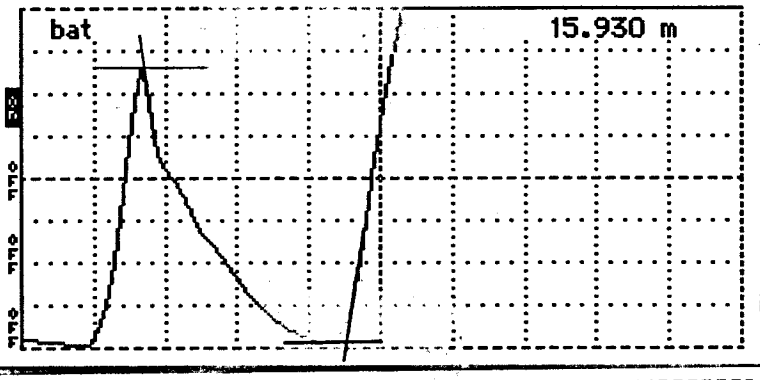
ATTACH TDR TRACES TO THIS DATA SHEET.

Comments: (1) NOT RECORDED - ALL PROBES INSTALLED FROM ABOUT 1400 HOURS TO 1600 HOURS.

Prepared by: RSV Employer: Braun Intertec Corporation

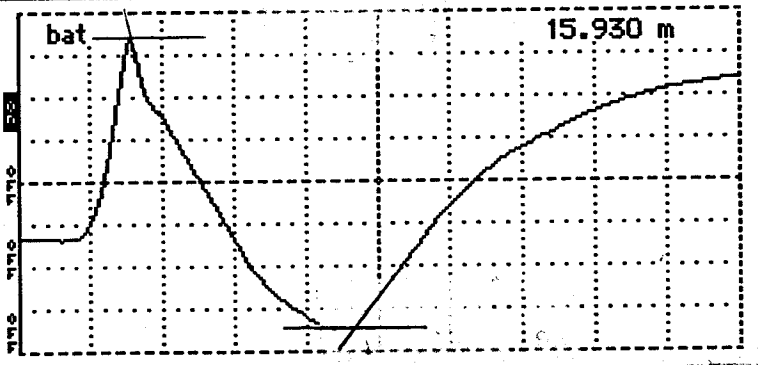
Date (dd/mmm/yy): 07/SEP/95

.....15.930 m
ce/Div..... .25 m/div
Scale.... 33.4 mρ/div
..... 0.99
Filter..... 1 avg
..... bat



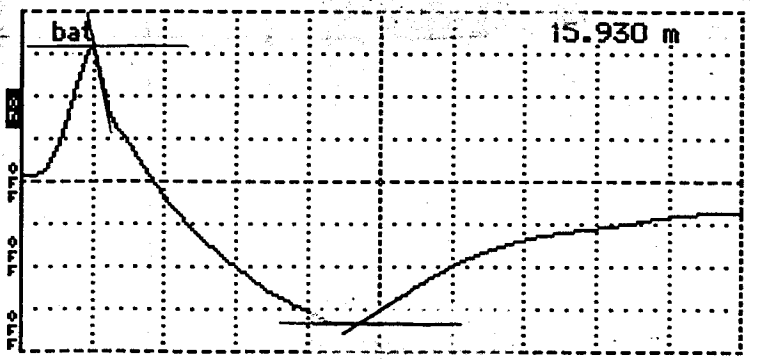
Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A01
Notes Installation
Input Trace
Stored Trace
Difference Trace

or ..... 15.930 m
nce/Div..... .25 m/div
cal Scale.... 45.9 mρ/div
..... 0.99
Filter..... 1 avg
r..... bat



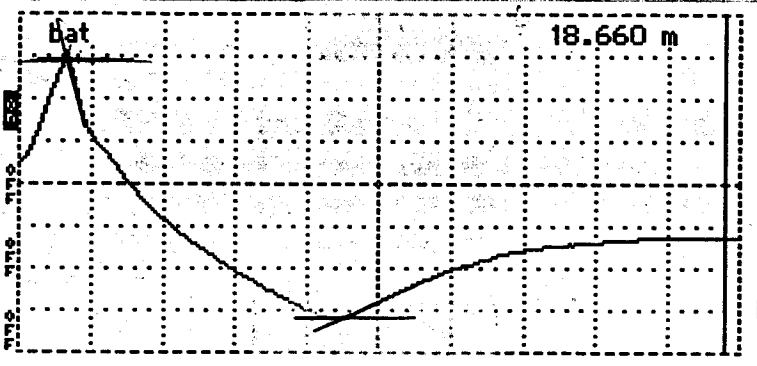
Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A02
Notes Installation
Input Trace
Stored Trace
Difference Trace

or ..... 15.930 m
nce/Div..... .25 m/div
cal Scale.... 66.7 mρ/div
..... 0.99
Filter..... 1 avg
..... bat



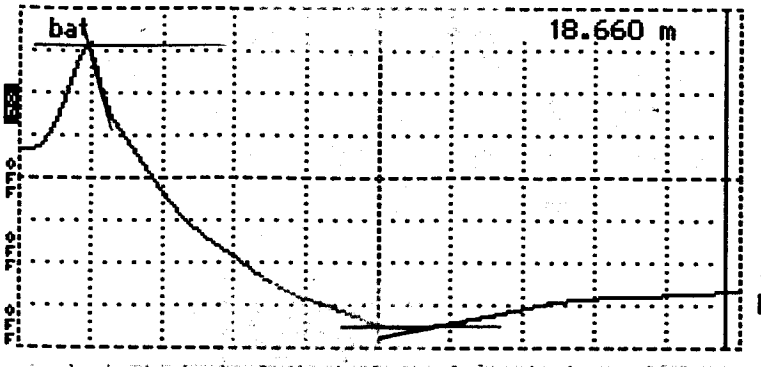
Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A03
Notes Installation
Input Trace
Stored Trace
Difference Trace

or ..... 18.660 m
nce/Div..... .25 m/div
ical Scale.... 74.8 mρ/div
..... 0.99
Filter..... 1 avg
r..... bat



Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A04
Notes Installation
Input Trace
Stored Trace
Difference Trace

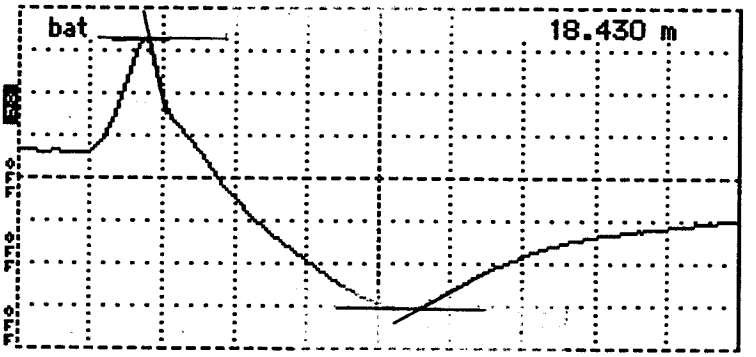
or ..... 18.660 m
nce/Div..... .25 m/div
cal Scale.... 79.2 mρ/div
..... 0.99
Filter..... 1 avg
r..... bat



Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A05
Notes Installation
Input Trace
Stored Trace
Difference Trace

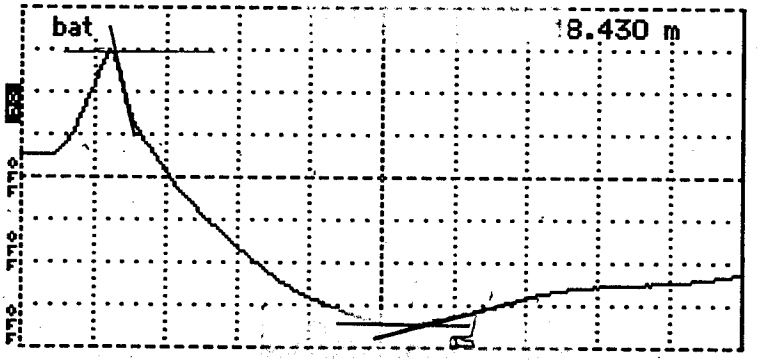
07-Sept.-1995 | DBLX92700 B6 | TDR TRACES - INSTALL 3/2 | 185A

sor ..... 18.430 m
ance/Div..... .25 m/div
al Scale.... 68.6 mΩ/div
..... 0.99
e Filter..... 1 avg
er..... bat



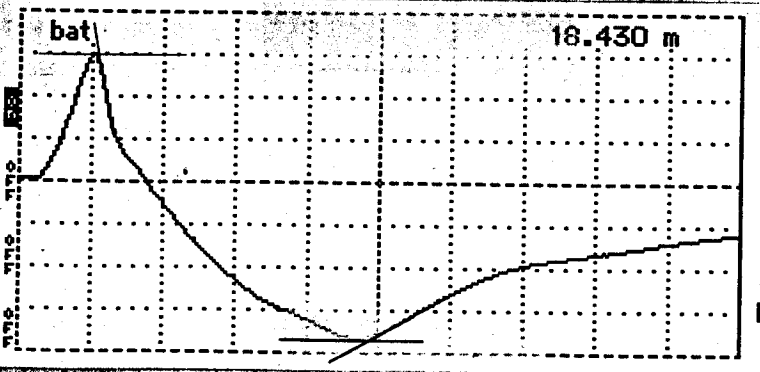
Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A06
Notes Installation
Input Trace
Stored Trace
Difference Trace

sor ..... 18.430 m
ance/Div..... .25 m/div
ical Scale.... 77.0 mΩ/div
..... 0.99
e Filter..... 1 avg
er..... bat



Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A07
Notes Installation
Input Trace
Stored Trace
Difference Trace

or ..... 18.430 m
ance/Div..... .25 m/div
ical Scale.... 61.2 mΩ/div
..... 0.99
Filter..... 1 avg
..... bat



Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A08
Notes Installation
Input Trace
Stored Trace
Difference Trace

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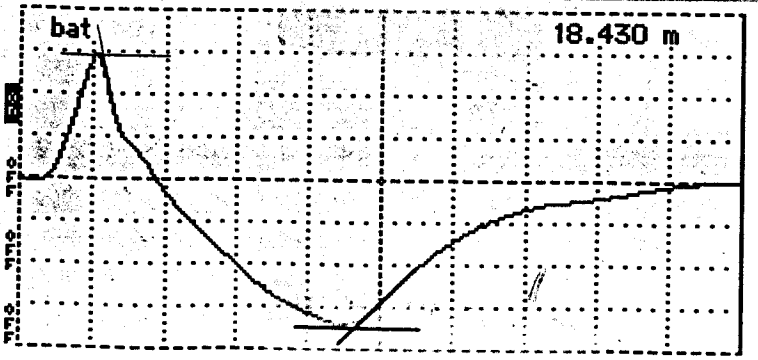
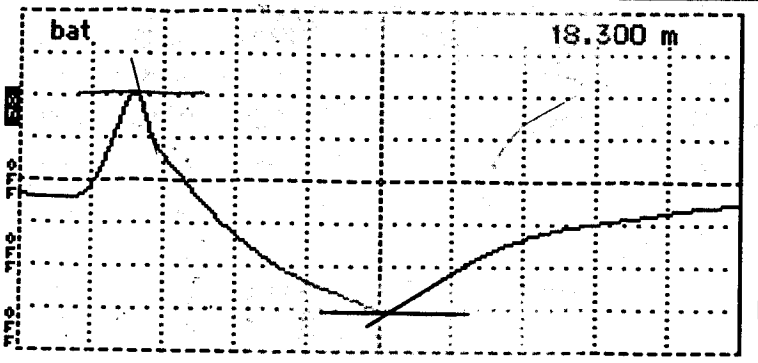
ance/Div..... .25 m/div
ical Scale.... 61.2 mΩ/div
..... 0.99
Filter..... 1 avg
r..... bat



Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A09
Notes Installation
Input Trace
Stored Trace
Difference Trace

or ..... 18.300 m
nce/Div..... .25 m/div
cal Scale.... 77.0 mΩ/div
..... 0.99
Filter..... 1 avg
..... bat



Tektronix 1502B TDR
Date 7 Sept 95
Cable 185A10
Notes Installation
Input Trace
Stored Trace
Difference Trace

185A 95A

LTPP Seasonal Monitoring Program Data Sheet SMP-I07 Representative Dry Density	Agency Code [18] LTPP Section ID [3002]

PAIL #5
1.21M TO 1.40M

Depth of Representative Sample (from pavement surface): 1.3 m

4549 m/#

Dry Density Determination:

a. Tare Weight of Empty Mold: 4286 g (9.44 lb)

b. Weight of Mold and Compacted Soil: 6261 g (13.79 lb)

c. Weight of Compacted Soil (b - a): 1975 g (4.35 lb)

d. Unit Weight of Compacted Soil = (c / 943.0) = 2.09 g/cm³

([c / (1 / 30)] = .03333 = WET 130.5 lb/ft³)

e. Dry Density of Compacted Soil = [d / (1 + r/100)] = 1.79 g/cm³

1.79 X 62.4 = 111.9 PCF

DRY (111.8 lb/ft³)

Moisture Content Determination: FIELD MOISTURE CONTENT

m. Tare Weight of Pan: 000.0 g

n. Weight of ~~Pan~~ and Moisture Sample: WET SOIL 287.2 g

o. Weight of ~~Pan~~ and Dry Sample: 246.0 g

p. Weight of Moisture (n - o): 41.2 g

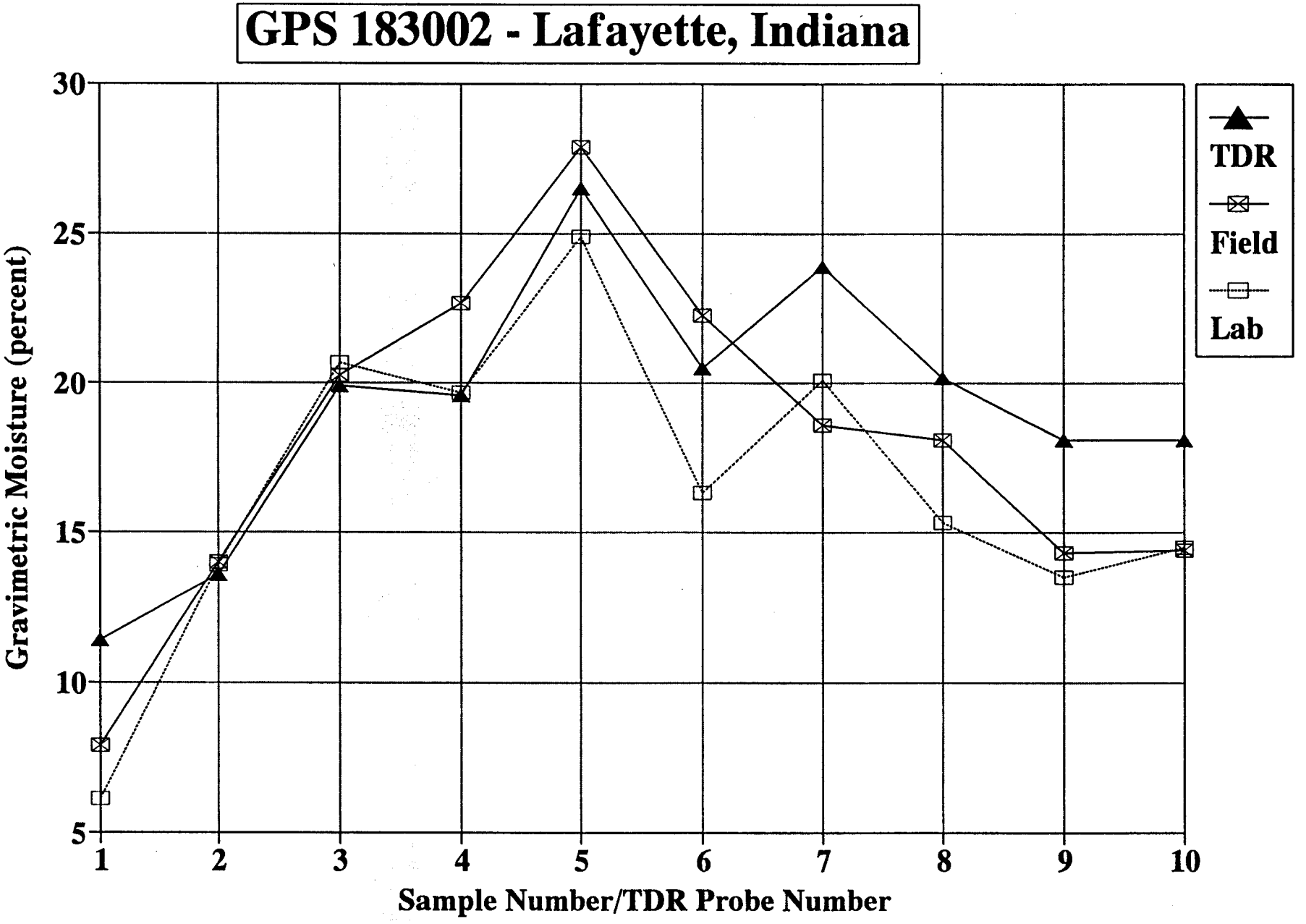
q. Weight of Dry Sample (o - m): 246.0 g

r. Moisture Content by Weight = [(p / q) * 100] = 16.7 %

Comments: _____

Prepared by: RON URBACH Employer: BRAUN INTERTEC

Date (dd/mmm/yy): 07/SEP/95


GPS 183002 - Lafayette, Indiana
Gravimetric Moisture (percent)
30
25
20
15
10
5
1
2
3
4
5
6
7
8
9
10
Sample Number/TDR Probe Number
TDR
Field
Lab

BRAUN SM
INTERTEC

183002

Data Panel #5 has had its data logger switched.

Original ~~Panel~~ Data Logger: SN # 16545

New Data Logger: SN# 16588 ← from 905A?

cc. - Site info sheet
- Installation Report

INDIANA DEPARTMENT OF TRANSPORTATION
100 North Senate Avenue
Room 1101
Indianapolis, Indiana 46204-2249
(317) 232-5533 *Fax (317)-232-0238*

OFFICE OF THE COMMISSIONER
Room 1101
State Office Building
Indianapolis, Indiana 46204-2249
317-232-5526

November 30, 1995

Mr. Robert Van Sambeek, Project Manager
P.O. Box 39108
Minneapolis, Minn. 55439

Dear Mr. Van Sambeek;

On November 16, 1995 Mr. Gordon Hooker and Dave Ward set a temporary bench marker (TBM) for SHRP site #3002 located on U.S. 41 (SBL) approximately 1.2 miles south of SR 18. A 3/4" reinforcing rod was driven by a sign crew to a tip elevation approximately 14' below original ground. The top 4' was sleeved with PVC pipe and an oil treated sand. The top and bottom were sealed with end caps. The TBM is 33' north of the ground water table sensor and about 12' off of the shoulder and marked with a fence post and covered with a plastic bucket surrounded by gravel.

The TBM elevation was measured at .9266' below the top (plastic cover removed) of the steel pipe housing the ground water table sensor.

We expect this TBM to give reliable results over the next ten years. Please verify our elevation difference on your first trip to the site.

Please do not hesitate to contact Mr. Ward if you have any questions.

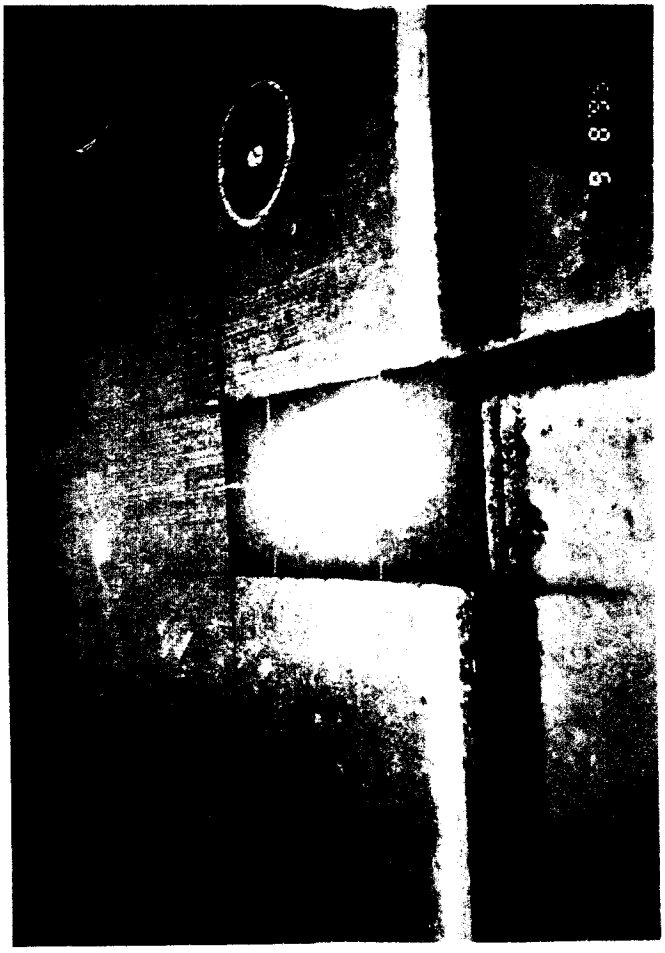
Sincerely;

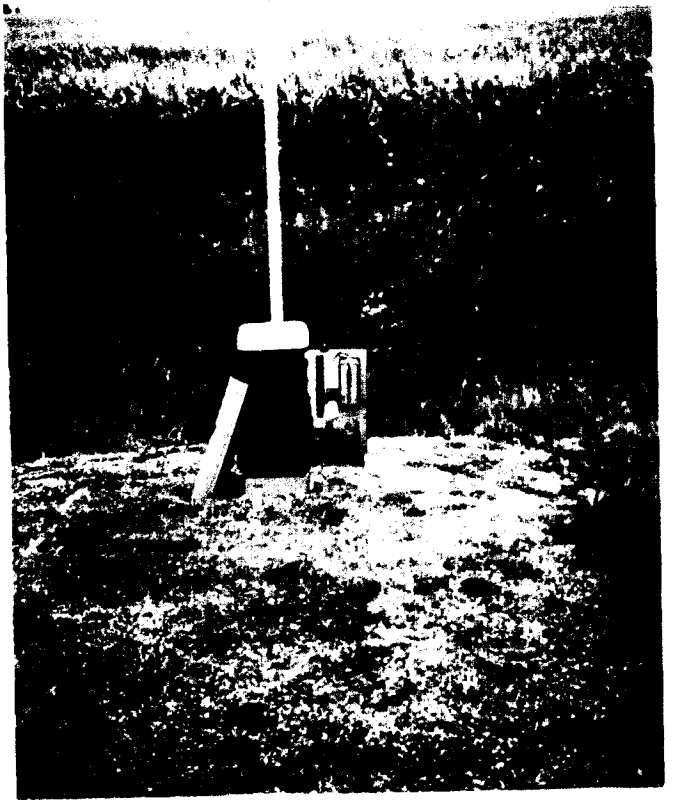
Barry K. Partridge, Chief
Division of Research

BKP:DRW:agi
dd112712

cc: David Pluckebaum

183002





Appendix D-1: Initial SMP Monitoring Data Collection

Appendix D-1 contains the following data sheets with information collected the day after instrumentation installation:

- Data Sheet SMP-D10: SMP Field Activity Report;
- Data Sheet SMP-D03: Contact Resistance Measurements;
- Data Sheet SMP-D04: Four-Point Resistivity Measurements;
- Data Sheet SMP-D05: Ground Water Table Measurements; and
- Data Sheet SMP-D06: Joint Opening Measurement;
- Data Sheet SMP-D07: Joint Faulting Measurement; and
- Data Sheet SMP-D09: Surface Elevation Measurements - PCC Pavements.

18 SA95B

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-D10 SMP Field Activity Report	Agency Code [18] LTPP Section ID [3002]

Onsite Datalogger and Instrumentation		
File Name - *.ONS	18SA95BI	Comments: —
Battery Replace	Yes - (No)	Voltages 12.6
Repairs/Calib.	—	
Other:		

Mobile Datalogger		
File Name - *.MOB	18SA95BI	Comments: adjusted cable lengths
TDR/Resistance Voltages	Sets (02)	- 18SAMOB.DLD file
Other: —	—	

Manual Data Collection		
Piezometer	(Yes) - No	Comments: 2.29 m
Resistance 2 pt.	Sets (01)	—
Resistivity 4 pt.	Sets (01)	—
Elevations	Sets (0)	Both batteries dead
Distress Survey	Yes - (No)	—
Long. Dipstick Profile	Yes - (No)	—
Photos or Video	Yes - (No)	—
Other:	—	

FWD and Associated Data		
FWD Testing	Sets (02)	Operator: Jerome. Dicks
JCP - Snap Rings	Sets (0)	Not installed yet
JCP - Faulting	Sets (02)	
Other:		

IF REQUIRED, ATTACH SKETCHES TO THIS DATA SHEET

Comments: _____

Prepared by: _____ Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 08/SEP/95 Daylight Savings Time (Y or (N)) — EASTERN TIME

18 5A95 B

LTPP Seasonal Monitoring Program Data Sheet SMP-M1 (Page 2) Distress Survey of Instrumentation Area	Agency Code [18] SHRP Section ID [3002] Survey Date [08/SEP/95]

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: _____

Additional Comments Day after install – filled saw cuts w/ crack sealant where epoxy was down

PLEASE REMEMBER TO ATTACH COLOR PHOTOGRAPH(S) OF INSTRUMENTATION AREA TO THIS DATA SHEET.

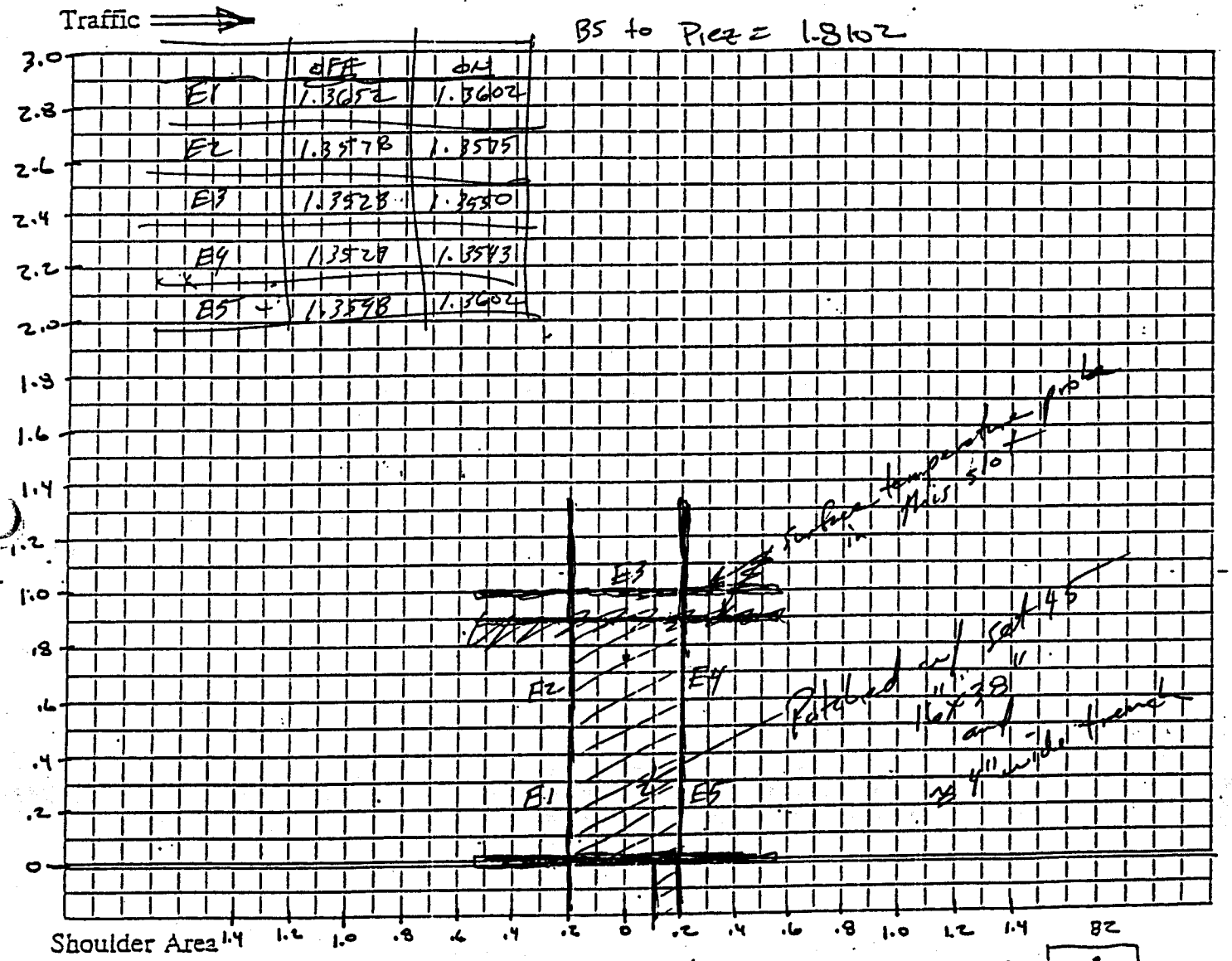
Prepared by: Robert Van Sambeek Employer: BRAUN INTERTEC CORP.

Date: (ddmmmyy) 08/SEP/95

185A95B

LTPP Seasonal Monitoring Program Data Sheet SMP-M1 (Page 1) Distress Survey of Instrumentation Area	Agency Code [18] SHRP Section ID [3002] Survey Date [08/SEP/95]

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: ~~FAULTMETER~~ See readings above

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

* with trench centered on block, take reading on each side of trench and average.

18SA95B

LTPP Seasonal Monitoring Program
Data Sheet SMP-D03
Contact Resistance Measurements

Agency Code [18]
LTPP Section ID [3002]

RECEIVED JAN 22 1996 LTPP Section ID BY:

Start Time (military): 1120

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	MILL	105.6	MIC	12.5	
2	2	3		64.1		9.5	
3	3	4		62.5		9.4	
4	4	5		31.8		3.7	
5	5	6		77.1		7.5	
6	6	7		68.2		9.1	
7	7	8		~~12.4~~		~~1.6~~	
8	8	9		65.3		7.7	
9	9	10		53.1		8.8	
10	10	11		49.7		8.5	Do not enter
11	11	12		45.8		7.7	
12	12	13		50.2		7.3	
13	13	14		58.9		7.5	
14	14	15		~~5.9~~		~~1.4~~	Problem w/ cnct box
15	15	16		60.2		7.7	
16	16	17		50.6		7.7	
17	17	18		51.2		7.8	
18	18	19		53.6		8.6	
19	19	20		66.1		8.7	
20	20	21		73.8		8.5	
21	21	22		74.6		9.7	
22	22	23		82.7		11.5	
23	23	24		82.3		13.2	
24	24	25		81.0		13.2	
25	25	26		84.0		13.5	
26	26	27		77.5		12.3	
27	27	28		77.3		12.9	
28	28	29		73.4		13.1	
29	29	30		82.4		13.1	
30	30	31		78.5		13.5	
31	31	32		76.4		12.1	
32	32	33		73.3		13.6	
33	33	34		70.8		14.8	
34	34	35		65.8		11.9	
35	35	36		77.8		13.2	
36	36	37		0.4		129.6	R1 = 3.1
37	37	38		12.0		115.1	R2 = 104
38	38	39		67.5		67.6	R3 = 1004
39	39	00		227.3		0.3	R4 = 0.76 Ma

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

Comments: Day after install

Prepared by: Bob V. / Ron U. Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 08/SEP/95

18SA95B

LTPP Seasonal Monitoring Program
Data Sheet SMP-D04
Four-Point Resistivity Measurements

Agency Code [48]
LTPP Section ID [3002]
JAN 2 2 1996

Start Time (military): 1129

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	200	6.1	2m	2.7	
2	2	3	4	5		4.1		2.5	
3	3	4	5	6		4.2		2.4	
4	4	5	6	7		~~3.4~~		~~1.8~~	
5	5	6	7	8		3.2		2.0	
6	6	7	8	9		4.4		2.0	Do not Enter
7	7	8	9	10		~~2.7~~		~~1.4~~	
8	8	9	10	11		3.6		1.7	
9	9	10	11	12		3.7		2.1	
10	10	11	12	13		3.6		2.2	
11	11	12	13	14		3.3		2.2	
12	12	13	14	15		3.0		2.2	
13	13	14	15	16		3.4		2.2	
14	14	15	16	17		~~0.3~~		~~1.5~~	Problem w/ Switch box
15	15	16	17	18		3.2		2.3	
16	16	17	18	19		3.0		2.3	
17	17	18	19	20		3.1		2.3	
18	18	19	20	21		3.7		2.3	
19	19	20	21	22		4.3		2.3	
20	20	21	22	23		3.8		2.3	
21	21	22	23	24		4.4		2.9	
22	22	23	24	25		4.9		3.0	
23	23	24	25	26		6.2		3.8	
24	24	25	26	27		5.7		3.7	
25	25	26	27	28		6.3		3.5	
26	26	27	28	29		5.5		3.5	
27	27	28	29	30		5.5		3.5	
28	28	29	30	31		6.0		3.5	
29	29	30	31	32		6.0		3.3	
30	30	31	32	33		6.4		3.6	
31	31	32	33	34		5.2		3.7	
32	32	33	34	35		5.8		4.4	
33	33	34	35	36		5.3		4.8	
36	36	36	37	37		0.4		130.0	R1 = 3.1
37	37	37	38	38		12.0		115.5	R2 = 104
38	38	38	39	39		67.5		67.2	R3 = 1004
39	39	39	00	00		230.1		0.3	R4 = 0.77MΩ

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

Comments: Day after install

Prepared by: Bob V. / Ron U. Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 08/SEP/95

18SA95B

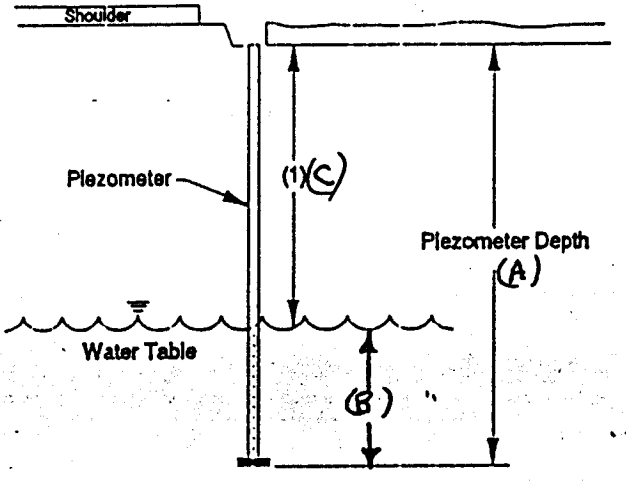
LTPP Seasonal Monitoring Program Data Sheet SMP-D05 Ground Water Table Measurement	Agency Code LTPP Section-ID	[18] [3002]

Piezometer Depth (m): (A) 4.290

Measurement Number	Time (military)	(C) Calculated (A−B) Depth to Water[1,2] (m)	(B) Measure Depth of Water (m)	Comments
1	0935	2.30	1.99C	
2	1219	2.28	2.01C	

[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 AFTER INSTALL — READINGS MAY NOT HAVE STABILIZED

Prepared by: Ron Urbach Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 08SEP95

18SA95B

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-D06 Joint Opening Measurement	Agency Code [18] LTPP Section ID [3002]

Station	Time (military)	Joint Opening (mm) Offset (PE): 0.30 m	Offset (ML): 1.83 m	Offset (ILE): 3.35 m	Joint Width (mm)	
4+40	1155	114.19	113.68	113.75	11.	43
		114.01	113.68	113.74		
		114.03	113.57	113.72		
					+1.	
4+59	1158	113.12	114.28	114.24	12.	47
		113.02	114.37	114.13		
		113.06	114.37	114.08		
					12.	
4+78	1202	113.87	113.61	111.72	14.	53
		113.69	113.77	111.29		
		112.88	113.46	111.34		
					+1.	
4+91	1215				14.	54
					+1.	
5+04	1217				12.	47
					12.	
5+21	1220				11.	45
					+1.	

Comments: No snapring measurements were taken, because snaprings were not installed.

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 08SEP95

See Comment Below before SMP check entry.

185A95B

Seasonal Monitoring Program Guidelines: Version 2.1/April 1994

LTPP Seasonal Monitoring Program Data Sheet SMP-D07 Joint Faulting Measurement	JAN	Agency Code State/Province/Section ID	[L 8] [3 0 0 2]

Station	Time (military)	Joint Faulting (mm) Offset (OWP): 0.76 m	Offset (ML): 1.83 m	Offset (IWP): 2.90 m	
4+41	0940	-0.2	+0.4	+0.3 ~~-0.8~~	43
	1155	-0.1 ~~+0~~	+0.3	+00.3	
	____	____.__	____.__	____.__	
4+59	0941	+1.0	+0.5	+0.8	47
	1200	+0.7	+0.3	0 +0.5	
	____	____.__	____.__	____.__	
4+78	0955	-0.4	+1.4	+1.1	52
	1207	-0.9	+0.9	+1.1	
	____	____.__	____.__	____.__	
4+91	0958	+0.5	+0.9	+0.7	55
	1209	+0.3	+0.8	+0.2	
	____	____.__	____.__	____.__	
5+03	1000	~~-~~0.3	+0.4	+0.8	47
	1210	+0.4	+0.4	+0.5	
	____	____.__	____.__	____.__	
5+21	1004	+0.6	-0.0	+0.5	45
	1225	+0.5	-0.0	+0.8	
	____	____.__	____.__	____.__	

Comments: Check date on FHWA repair of faultmeter. These readings may have incorrect polarity, Correct polarities are in red.

Prepared by: Jerome Dicks Employer: BRAUN INTERTEC

Date (dd/mm/yy): 08/Sept/95

18SA95B

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-D09 Elevation Measurements - PCC	Agency Code [18] LTPP Section ID [3002]

Type of Instrument: NA2000

Start Time (military): _____

check "close" at midpoint of survey.

BM	Station	BS	HI	~~HPS~~	FS	ELEV	CLOSE
Piez.	_____	1.8102		_._____		_._____	_._____
D.O.T. BM Other	_____	_._____			_._____		_._____

Station	Offset (PE): -.3 m	Offset (ML): 1.83 m	Offset (ILE): 3.35 m	Comments
4+40	1.5669	1.5440	1.5168	
4+50	1.5441	1.5197	1.4913	
4+59	1.5201	1.4964	_._____	
4+59	1.5194	1.4944	_._____	
4+68	_._____	_._____	_._____	
4+78	_._____	_._____	_._____	
4+78	_._____	_._____	_._____	
4+85	_._____	_._____	_._____	
4+91	_._____	_._____	_._____	
4+91	_._____	_._____	_._____	
4+96	_._____	_._____	_._____	
5+04	_._____	_._____	_._____	
5+04	_._____	_._____	_._____	
5+12	_._____	_._____	_._____	
5+21	_._____	_._____	_._____	

95 U

Comments: BATTERY DEAD

Prepared by: _____ Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 08/SEP/95

18SA95C

Seasonal Monitoring Program Guidelines: Version 2.1a/March 1995

LTPP Seasonal Monitoring Program Data Sheet SMP-D10 SMP Field Activity Report	Agency Code [18] LTPP Section ID [3002]

Onsite Datalogger and Instrumentation		
File Name - *.ONS	18SA95CJ	Comments:
Battery Replace	Yes - (No)	Voltages 12.3
Repairs/Calib.		
Other:	On "Monitor" screen thermosters #1, 2, and 3 read -273.	

Mobile Datalogger		
File Name - *.MOB	~~18SA95CJ~~ 18SA40	Comments:
TDR/Resistance Voltages	Sets (0 2)	
Other:	*Resistance Results show points 10 and 11 at ~~-1000~~ -1100. Otherwise all points are at around 700. in a nice line.	

Manual Data Collection		
Piezometer	(Yes) - No	Comments: 2.560 m
Resistance 2 pt.	Sets (0 1)	Note: Number 10 is having
Resistivity 4 pt.	Sets (0 1)	low readings. Look at data sheets.
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 3)	Operator: Jerome. Dicks
JCP - Snap Rings	Sets (0 3)	
JCP - Faulting	Sets (0 0)	No Faultmeter.
Other:		

IF REQUIRED, ATTACH SKETCHES TO THIS DATA SHEET

Comments: Three of the first five MRL's plunge to -90° around Sept 23 or 24. They do not collect good data after that date. All other probes and MRL's work fine.

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 13/Oct/95 Daylight Savings Time (Y or (N)): N

18 5A 95 C

LTPP Seasonal Monitoring Program Data Sheet SMP-M1 (Page 2) Distress Survey of Instrumentation Area	Agency Code [18] SHRP Section ID [3002] Survey Date dd-mmm-yr [13/Oct/95]

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 This patch is one month old and is showing considerable spalling. Plus the A2 edge is about a ¼ inch sunk below the road.

PLEASE REMEMBER TO ATTACH COLOR PHOTOGRAPH(S) OF INSTRUMENTATION AREA TO THIS DATA SHEET.

Prepared by: Jerome Dicks Employer: BRAUN INTERTEC CORP.

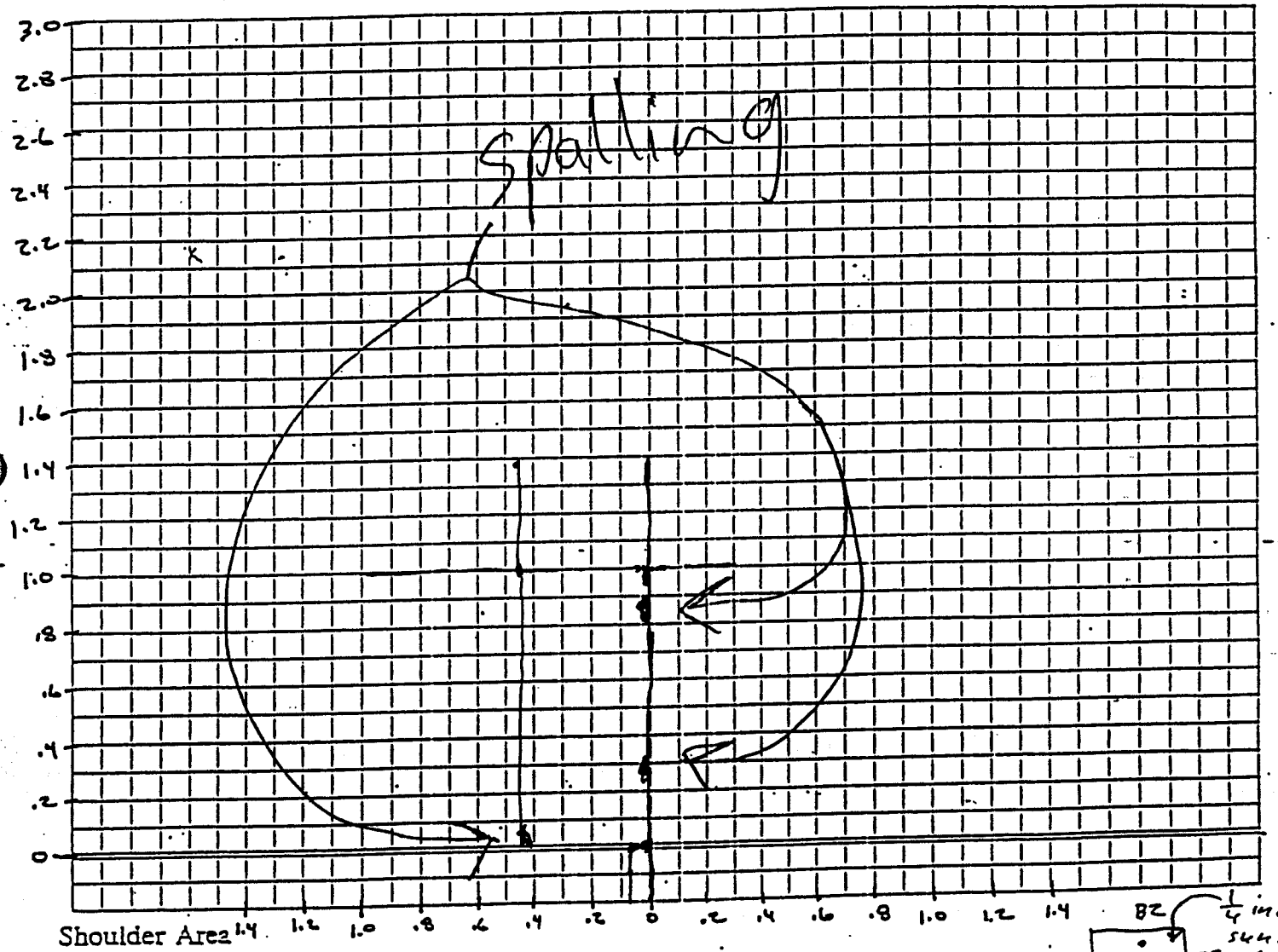
Date: (ddmmm-yy) 13/Oct/95

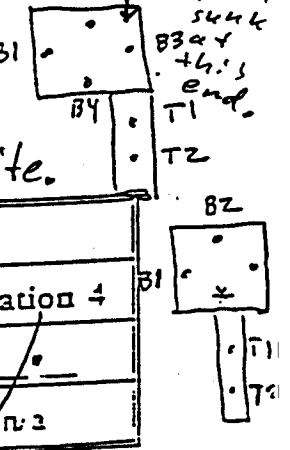
18SA95C

LTPP Seasonal Monitoring Program Data Sheet SMP-M1 (Page 1) Distress Survey of Instrumentation Area	Agency Code [18] SHRP Section ID [3602] Survey Date dd-mmm-yr [13 Oct 95]

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 No Faultmeter at site.

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

each

L 8 S A 4 5 C

ENTERED JAN 22 1996 BY

LTPP Seasonal Monitoring Program — Agency Code: [18]
Data Sheet SMP-D06 — LTPP Section ID: [3002]
Joint Opening Measurement

Station	Time (military)	Joint Opening (mm) Offset (PE): 0.30 m	Offset (ML): 1.83 m	Offset (ILE): 3.35 m	Joint Width (mm)	
4+41	0930 (0930)	116.57	116.19	116.25	12.	48
	(0931)	116.61	116.24	116.34		
	(0932)	116.63	116.24	116.22		
	1140	116.19	115.95	115.93	11.	45
	1325	116.08	115.76	115.78	11.	44
4+59	0935 (0935)	115.46	115.75	116.68	12.	49
	(0936)	115.44	115.72	116.70		
	(0937)	115.51	115.79	116.68		
	1142	115.08	115.40	116.41	12.	47
	1328	114.96	115.30	116.22	12.	47
4+78	0945 (0945)	116.25	115.73	113.91	13.	52
	(0946)	116.29	115.84	113.94		
	(0947)	116.33	115.82	113.90		
	1144	116.06	115.55	113.80	13.	51
	1332	115.85	115.45	113.49	13.	50
4+91	0950 (0950)	115.75	115.26	115.62	14.	57
	(0951)	115.65	115.28	115.61		
	(0952)	115.66	115.25	115.64		
	1150	115.42	115.08	115.48	14.	54
	1340	115.28	115.13	115.41	13.	53
5+03	0955 (0955)	116.51	116.20	116.26	12.	47
	(0956)	116.52	116.28	116.34		
	(0957)	116.50	116.20	116.26		
	1151	116.28	116.02	116.01	12.	46
	1350	116.16	115.96	115.92	10.	44
5+21	1000 (1000)	118.88	116.51	115.04	12.	46
	(1001)	118.94	116.35	115.02		
	(1002)	119.00	116.35	115.00		
	1155	118.58	116.02	114.78	11.	44
	1355	118.37	115.89	114.69	11.	43

Comments: _____

Prepared by: Jerome Dicks Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 13 Oct 95

18SA95C

LTPP Seasonal Monitoring Program
Data Sheet SMP-D09
Elevation Measurements - PCC

Agency Code [18]

LTPP Section ID [3002]

ENTERED JAN 23 1996 BY:

Type of Instrument: NA2000

Start Time (military): 1230

"Check close" at midpoint of survey.

BM	Station	BS	HI	~~IFS~~ *	FS	ELEV	CLOSE
Piez.	4+86	1.5436	//////	1.5435	//////	//////	1.5434
D.O.T. BM Other	NA	NA	//////	//////	//////	//////	NA

Station	Offset (PE): 0.30 m	Offset (ML): 1.83 m	Offset (ILE): 3.35 m	Comments
4+41 AJ	~~1.3017~~ 1.3008	1.2772	1.2506	
4+50	1.2773	1.2530	1.2245	
4+59	1.2541	~~1.2535~~ 1.2299	1.2037	
4+59	1.2535	1.2281	1.2011	
4+68	1.2294	1.2029	1.1819	
4+78	1.1963	1.1753	1.1543	
4+78	1.1954	1.1736	1.1526	
4+84	1.1740	1.1513	1.1302	
4+91	1.1512	1.1291	1.1068	
4+91	1.1510	1.1277	1.1041	
4+97	1.1360	1.1130	1.0901	
5+03	1.1207	1.0980	1.0745	
5+03	1.1198	1.0974	1.0739	
5+12	1.0954	1.0742	1.0524	
5+21 BJ	1.0693	1.0492	1.0253	

Comments: ~~Make sure to do this one.~~ No Problems in survey. Windy.

Prepared by: Jerome Dicks   Employer: Braun Intertec Corporation

Date (dd/mmm/yy): 13/Oct/95

Appendix D-2: Routine SMP Monitoring Data Collection Summary

Appendix D-2 contains the following information:

- Standard LTPP SMP data tracking log;
- Field testing information sheet; and
- Screen prints and photographs documenting equipment problems.

18SA - 183002, US-41 SB LANES, ABOUT 30 MILES NW OF LAFAYETTE, IN. (1.7 MILES S OF SR-18)

Date		ONSITE Data			MOBILE Data		Manual Data								FWD Data				Distress		Profile		Comments
dd/mmm/yy (ctrl+shft+d)	Visit ID	Pvmt. Temp.	Air Temp.	Rain	TDR	Frost Volts	Backup Temp	Backup TDR	Frost 2-Pt.	Frost 4-Pt.	Water Table	Pvmt. Elev.	Joint Open.	Joint Fault	Man. Temp.	No. of Cycles/Visit OWP	ML	PE	M	P	P	D	
16-Mar-95																					X		
14-Jun-95															X	1	1	1	X				DISTRESS SURVEY/FWD PRIOR TO INSTALLATION.
07-Sep-95	95A														X		1						INSTALLATION
08-Sep-95	95B	X	X	X	X	X			X	X	X			X	X	2	2	2					SNAPRINGS NOT INSTALLED YET.
13-Oct-95	95C		X	X	X	X			X	X	X	X	X		X	3	3	3					FAULTMETER IN SHOP. MRC 1,2,3 OUT.
24-Oct-95																					X		
20-Nov-95	95D		X	X	X	X			X	X	X	X	X	X	X	3	3	3					MRC 1,2,3 OUT. RESET TIME TO STANDARD TIME.
08-Dec-95	95E		X	X	X	X					X		X	X	X	1	1	1					BAD WEATHER, LIMITED TESTING.
26-Jan-96	96A		X	X	X	X			X	X	X	X	X	X	X	2	2	2	X				REPLACED ONE SNAPRING.

S:\LTPP\SMP\QPRO\SMPLOGNW.WB2

183002 - 18SA

Updated 31-Oct-95

LOCATION - US-41 SB Lanes, about 30 miles NW of Lafayette, IN (1.7 miles S of SR-18)
CONTACTS - Don Carrol (also Gary or Ross) 317-884-1500, Becky McDaniel 317-463-1521
TEMP HOLES - Sta 5+05, Depths about 1.0?", 4.7?", and 8.5?" (PCC = 9.5").

TEST LOCATIONS:	J1	J2	J3	J4	J5
	450	442	450	441	442
	468	460	469	459	460
	484	479	485	478	479
	497	492	496	491	492
	512	504	BLK	503	504
	---	---	---	521	522

DISTRESS COMMENTS:

Sta J1 - Midpanel tests.

512 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 4+86, 2 feet from edge of paved shoulder, Depth = 4.290M.
(Located longitudinally at midpanel of third panel tested.)

ELEVATIONS - DOT BM @ Sta. 5+19, 12 feet off paved shoulder.

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

Sta:
- BJ/AJ 441 459 478 491 503 521
- at MP 450 468 484 497 512
  (Only AJ at 441 and BJ at 521)

FAULTMETER

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

Sta: 441 459 478 491 503 521

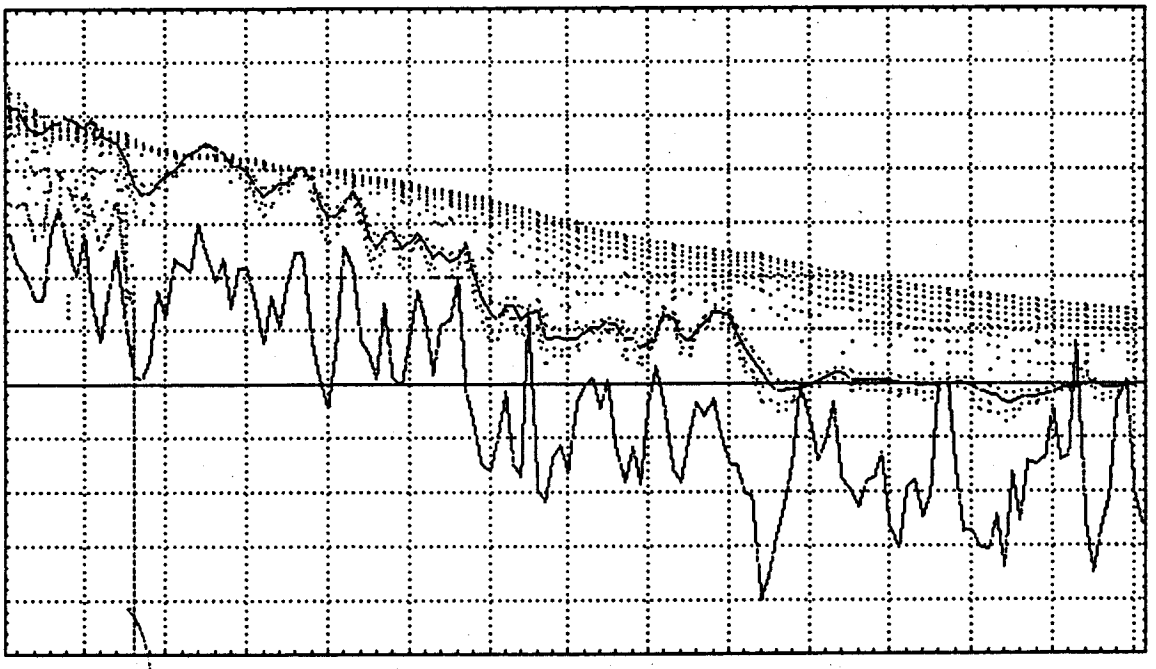
COMMENTS
- use "18SAMOB" versus "MOBILE"
- Tri-way Inn (219-474-5141) in Kentland, IN at Highways 41, 24, and 52. (Time at motel is one hour behind the time at the site.)
- **Eastern Time, but area does not observe DST!**


183002
18SA95F


183002
BLOCK
SETTLE


183002
18SA95 D

Record Type 4 - Daily Minimum Air & 18 MRC Sensor Temperatures
State: Indiana Site: A



250 (07/09/95) Day Number (25/01/96) 25

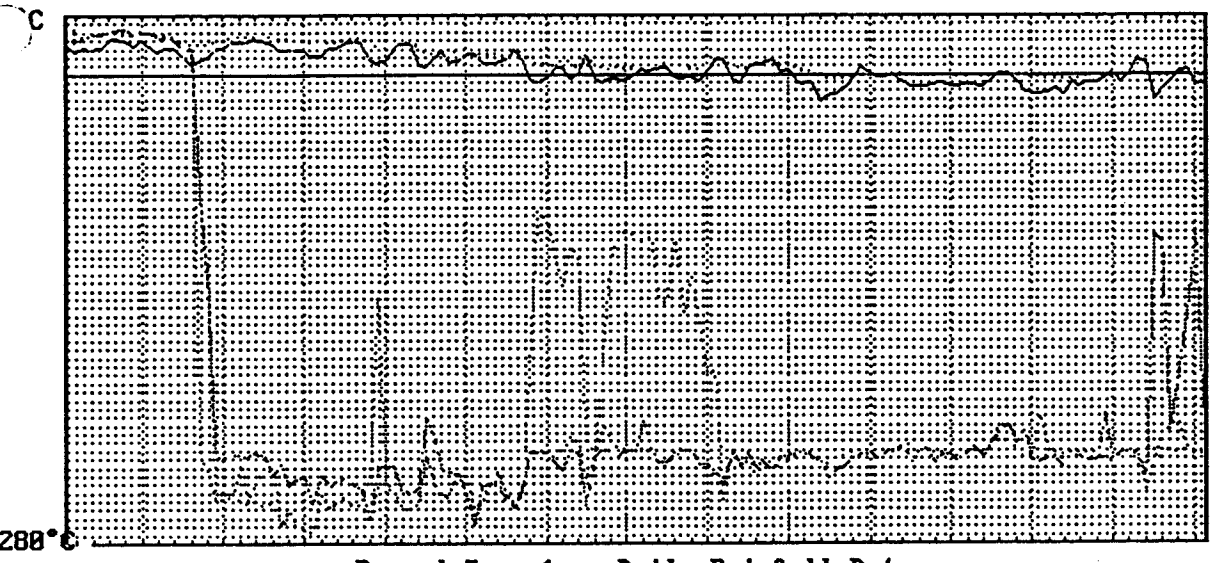
Legend: Min. Air Temperature — First MRC Sensor Temperature —

MRC Sensor: 6

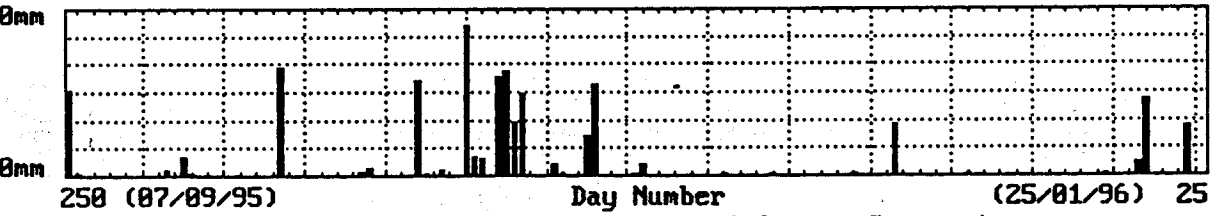
Esc=Exit: ↑↓=Sensor: F8,F9=Edit Ln: F2=PrntScrn

MRC #1, 2, + 3 FAIL - 8 DAYS

Record Type 1 & 2 - Daily Average Air & First 5 MRC Sensor Temperatures
State: Indiana Site: A



Record Type 1 - Daily Rainfall Data



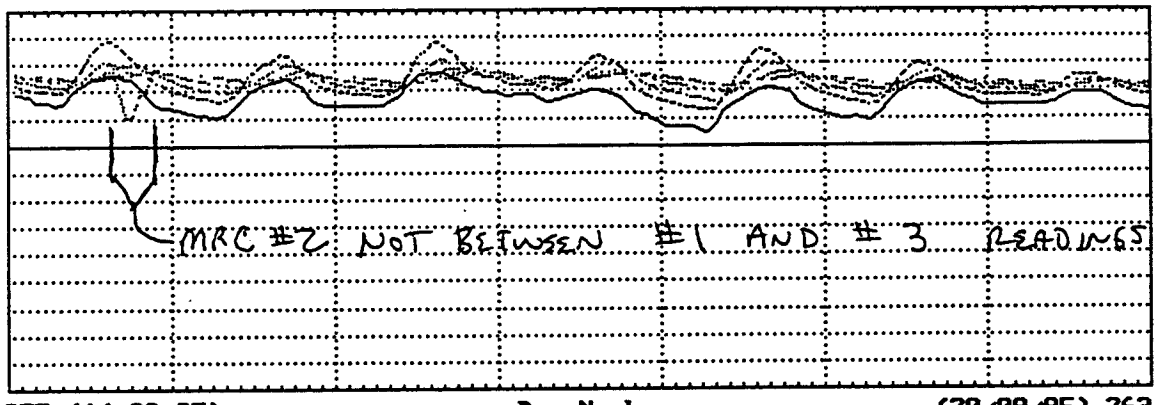
250 (07/09/95) Day Number (25/01/96) 25

Legend: Avg. Air Temperature — First MRC Sensor Temperature —

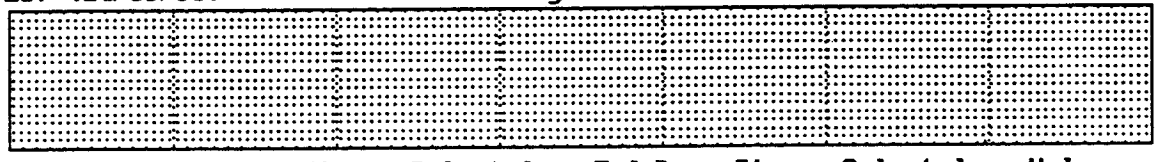
Esc=Menu F2=PrintScreen

MRC 1, 2 + 3 FAIL —

Record Type 5 & 6 - Hourly Air & First 5 MRC Sensor Temperatures
State: Indiana Site: A



257 (14/09/95) Day Number (20/09/95) 263



Legend	Start Day	Time	Selected	End Day	Time	Selected	Value
AirT	0 257	100		0 264	000		
MRC1	1 257	100		1 264	000		
MRC2	2 257	100		2 264	000		
MRC3	3 257	100		3 264	000		
MRC4	4 257	100		4 264	000		
MRC5	5 257	100		5 264	000		
Rain	6 257	100		6 264	000		

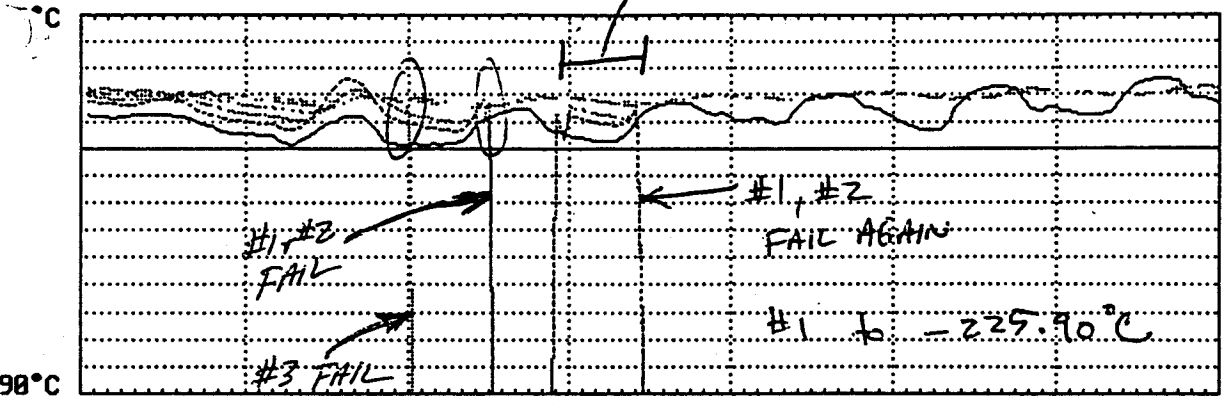
Menu: PgUp.PgDn=Prior/Next Week: F8.F9=Edit: Ctrl+F10=Remove: F2=PrintScreen

EDIT MRC #2 DATA

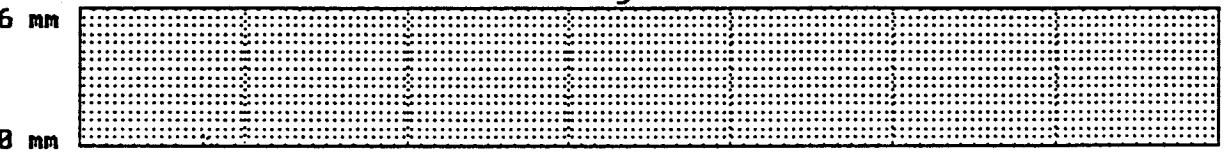
12 days

#1, #2 okay

Record Type 5 & 6 - Hourly Air & First 5 MRC Sensor Temperatures
State: Indiana Site: A



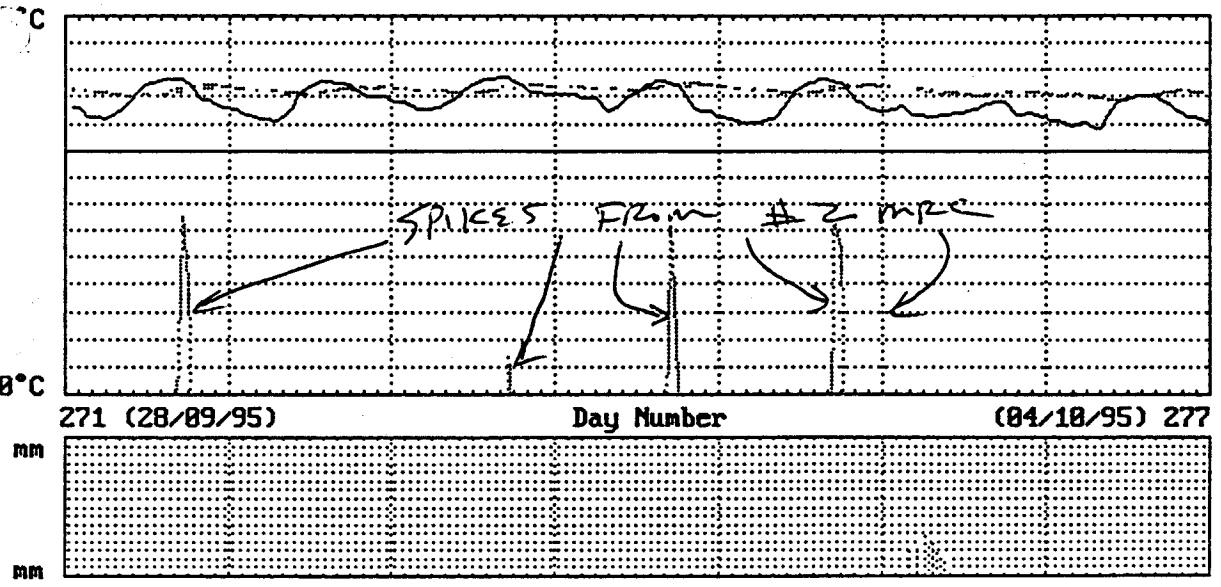
264 (21/09/95) Day Number (27/09/95) 270



Legend	Start	Day	Time	Selected	End	Day	Time	Selected	Value
AirT	0	264	100		0	271	000		
MRC1	1	264	100		1	271	000		
MRC2	2	264	100		2	271	000		
MRC3	3	264	100		3	271	000		
MRC4	4	264	100		4	271	000		
MRC5	5	264	100		5	271	000		
[illegible]	6	264	100		6	271	000		

Menu: PgUp.PgDn=Prior/Next Week: F8.F9=Edit: Ctrl+F10=Remove: F2=PrintScreen

Record Type 5 & 6 - Hourly Air & First 5 MRC Sensor Temperatures
State: Indiana Site: A

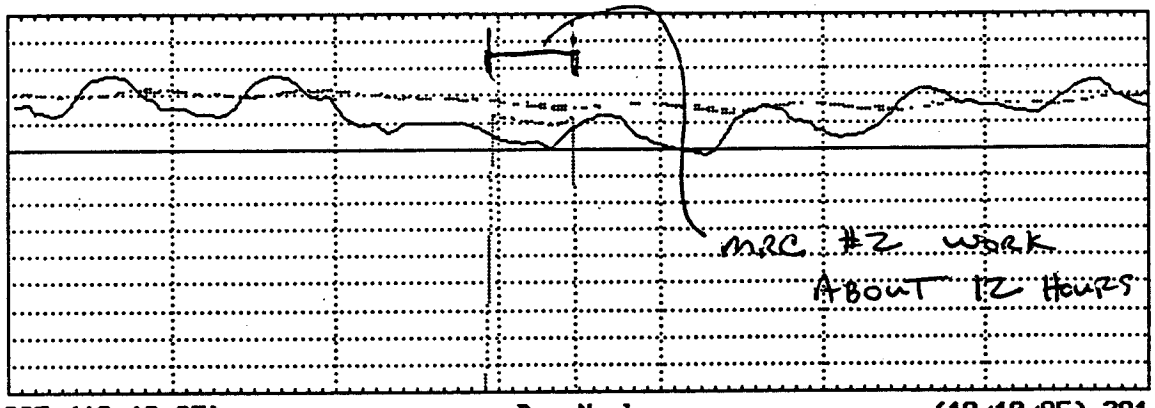


271 (28/09/95) Day Number (04/10/95) 277

Legend	Start	Day	Time	Selected	End	Day	Time	Selected	Value
AirT	0	271	100		0	278	000		
MRC1	1	271	100		1	278	000		
MRC2	2	271	100		2	278	000		
MRC3	3	271	100		3	278	000		
MRC4	4	271	100		4	278	000		
MRC5	5	271	100		5	278	000		
[illegible]	6	271	100		6	278	000		

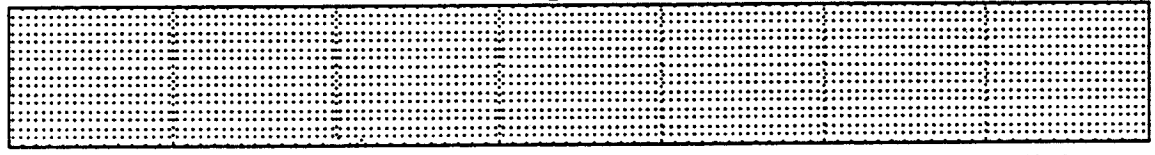
Menu: PgUp.PgDn=Prior/Next Week: F8.F9=Edit: Ctrl+F10=Remove: F2=PrintScreen

Record Type 5 & 6 - Hourly Air & First 5 MRC Sensor Temperatures
State: Indiana Site: A



00°C

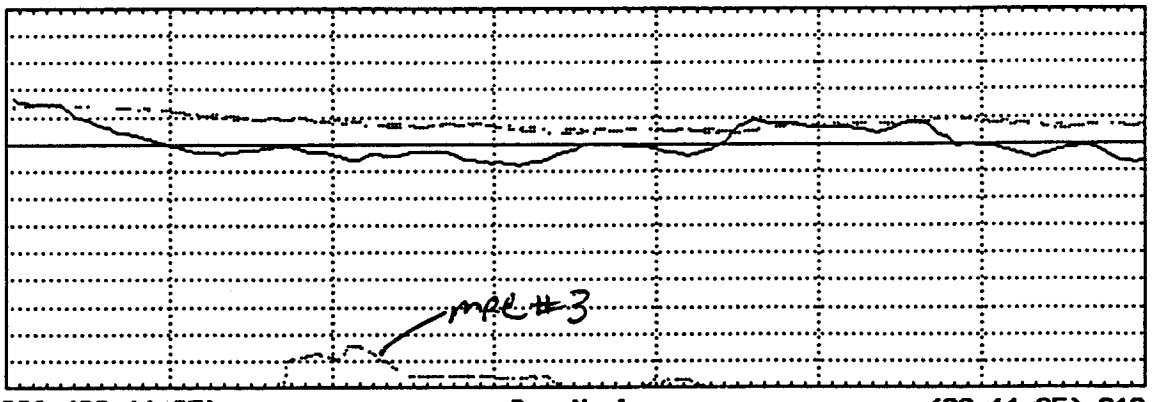
285 (12/10/95) Day Number (18/10/95) 291



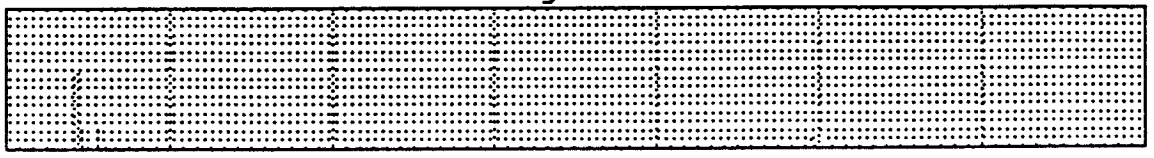
Legend	Start Day	Time	Selected	End Day	Time	Selected	Value
AirT	0 285	100		0 292	000		
MRC1	1 285	100		1 292	000		
MRC2	2 285	100		2 292	000		
MRC3	3 285	100		3 292	000		
MRC4	4 285	100		4 292	000		
MRC5	5 285	100		5 292	000		
[illegible]	6 285	100		6 292	000		

Menu: PgUp.PgDn=Prior/Next Week: F8.F9=Edit: Ctrl+F10=Remove: F2=PrintScreen

Record Type 5 & 6 - Hourly Air & First 5 MRC Sensor Temperatures
State: Indiana Site: A

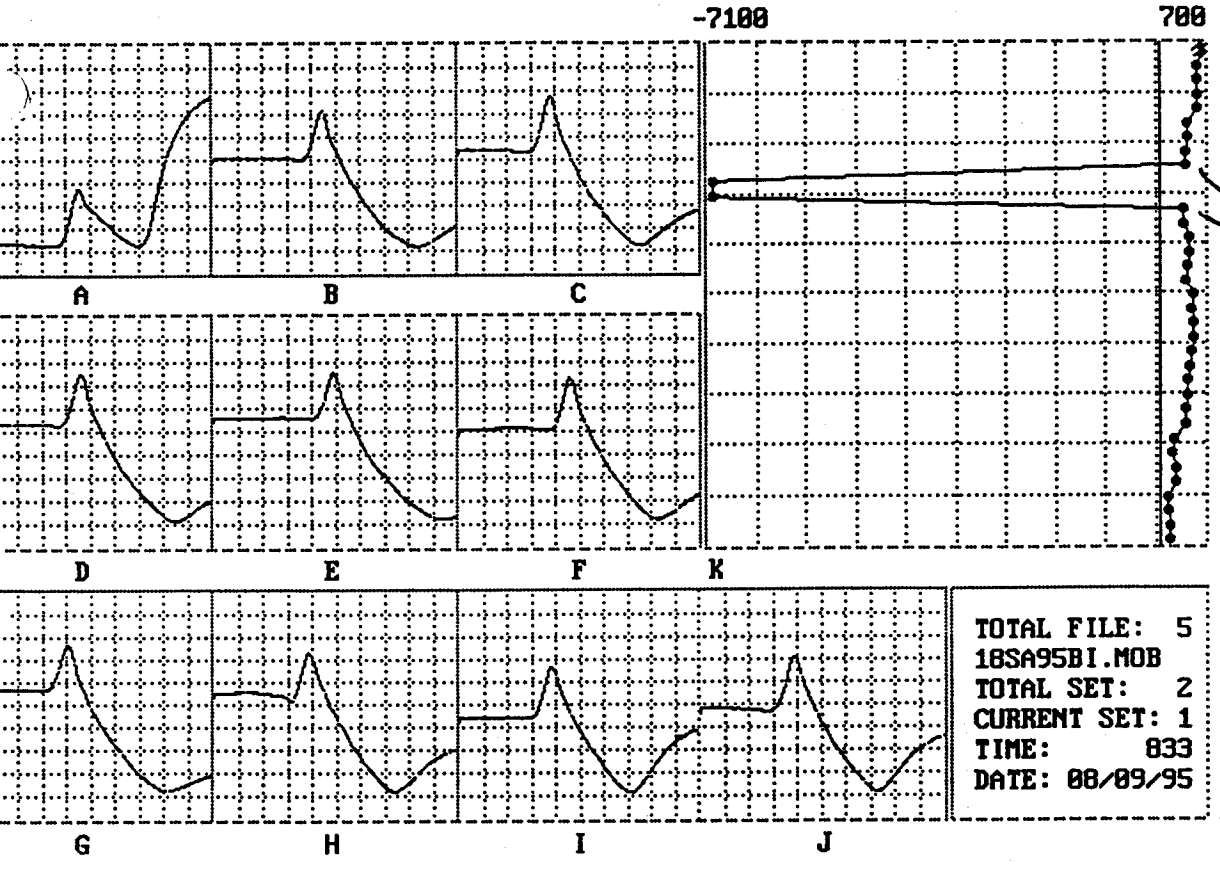


306 (02/11/95) Day Number (08/11/95) 312



Legend	Start Day	Time	Selected	End Day	Time	Selected	Value
AirT	0 306	100		0 313	000		
MRC1	1 306	100		1 313	000		
MRC2	2 306	100		2 313	000		
MRC3	3 306	100		3 313	000		
MRC4	4 306	100		4 313	000		
MRC5	5 306	100		5 313	000		
[illegible]	6 306	100		6 313	000		

Menu: PgUp,PgDn=Prior/Next Week: F8,F9=Edit: Ctrl+F10=Remove: F2=PrintScreen



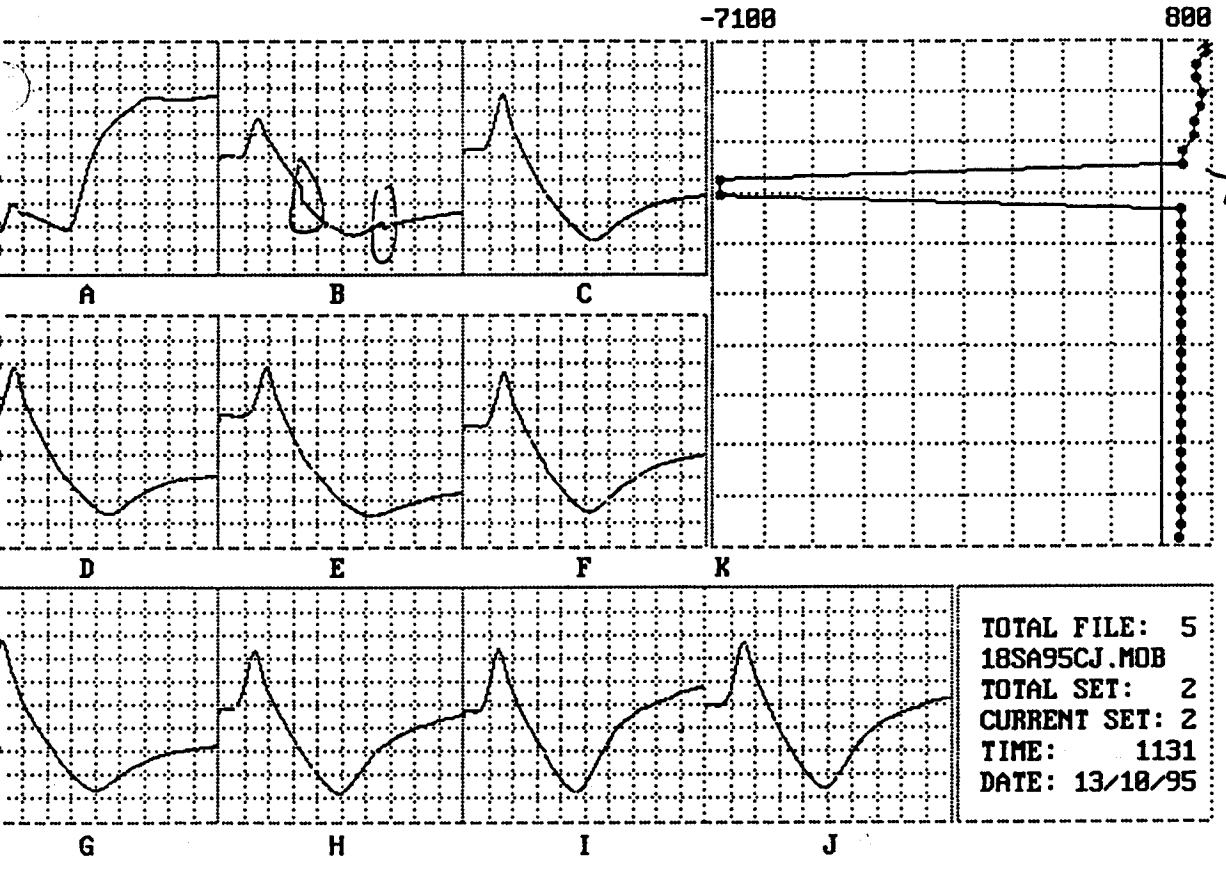
PROBLEM WITH CABLE ON POSITION 10/11.

ASSIGN -6999 to -1

TOTAL FILE: 5
18SA95BI.MOB
TOTAL SET: 2
CURRENT SET: 1
TIME: 833
DATE: 08/09/95

)er=Curve to select (↵): PgU/PgD=Prior/Next set: Ctrl+PgU/PgD=Prior/Next File

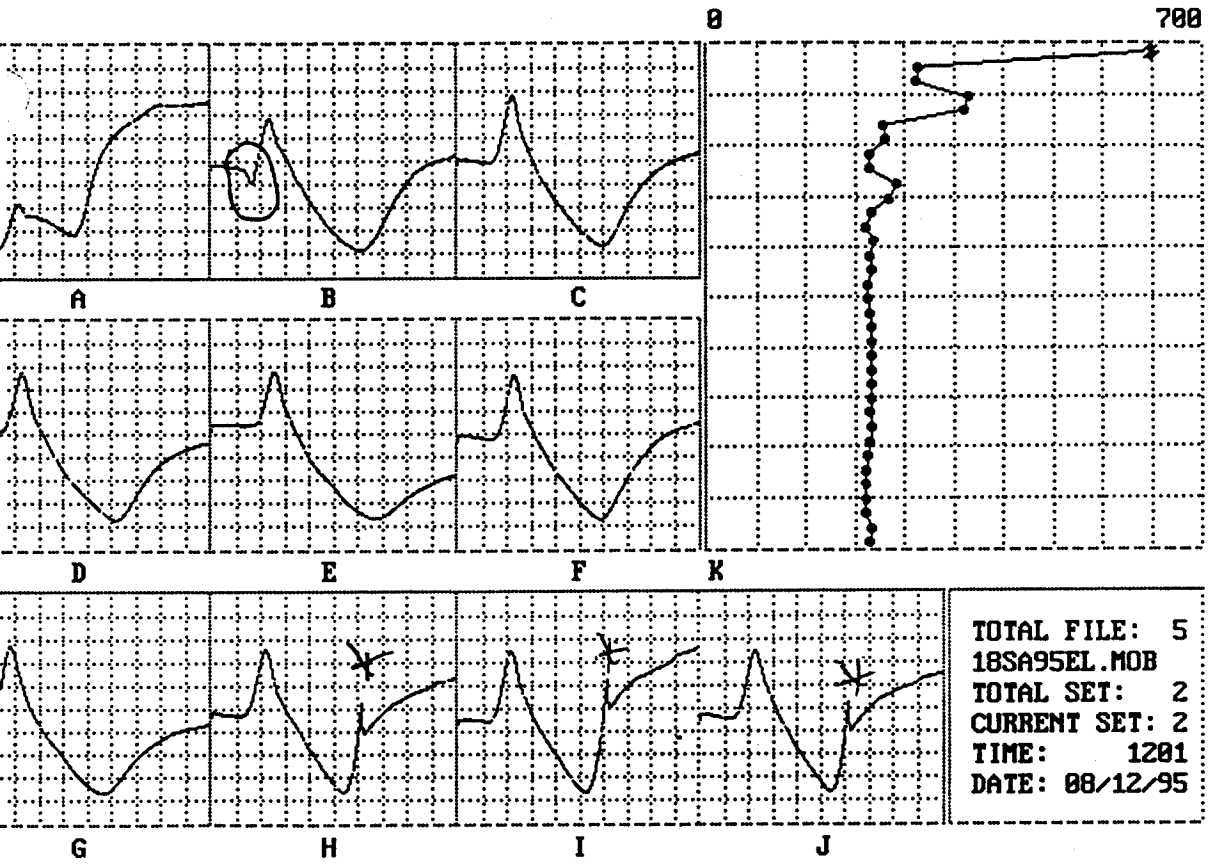
CABLE LENGTHS ADJUSTED ON NEXT LOOP.



ASSIGN -6999 to -1

er=Curve to select (*): PgU/PgD=Prior/Next set: Ctrl+PgU/PgD=Prior/Next File

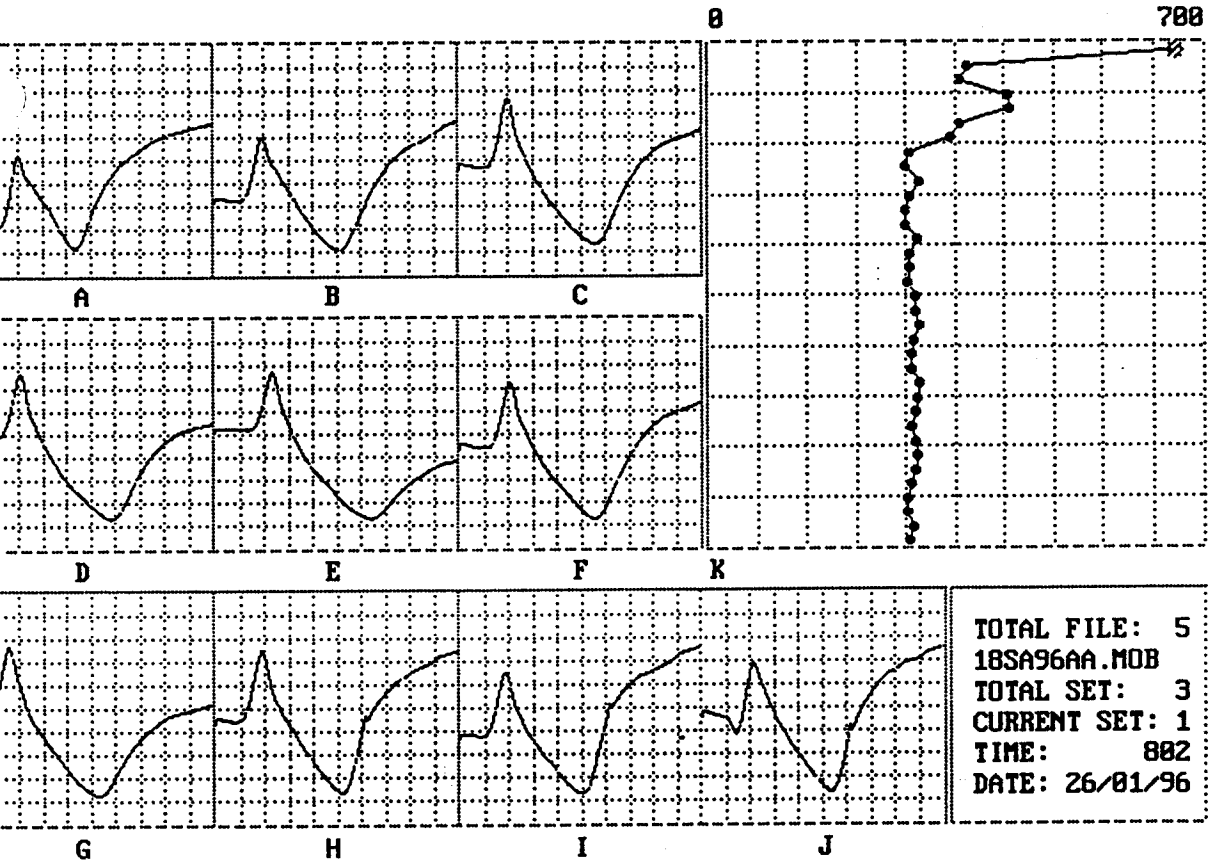
0 - Vertical shift from Cold Cable reader



er=Curve to select (*): PgU/PgD=Prior/Next set: Ctrl+PgU/PgD=Prior/Next File

O - May have water getting into BNC Connector

* - Spikes - Cold Cable Reader



> FROST ?

ier=Curve to select (↔); PgU/PgD=Prior/Next set; Ctrl+PgU/PgD=Prior/Next File

LAST SET BEFORE REPORT