REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	November 1989	Final Report

4. TITLE AND SUBTITLE
CABLE STAYED BRIDGE STATIC TESTS--AN EXPERIMENTAL STUDY for the CAPTAIN WILLIAM MOORE CREEK BRIDGE

5. FUNDING NUMBERS
HPR 88-7

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8. PERFORMING ORGANIZATION REPORT NUMBER
INE88.47

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
State of Alaska
Department of Transportation and Public Facilities
Statewide Research M/S 2554
2301 Peger Road
Fairbanks, Alaska 99709-5316

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
88NX174
FHWA-AK-RD-90-08

11. SUPPLEMENTARY NOTES
Conducted in cooperation with the U.S. Department of Transportation, Federal Highway Administration.

12a. DISTRIBUTION/AVAILABILITY STATEMENT

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

A 300-ft fracture-critical bridge--located on the highway between Skagway, Alaska and Carcross, Canada--supports automobiles, campers, buses, and ore trucks during summer months. During the winter months, the bridge is subjected to predominantly ore truck traffic. At the time of the study, the loaded ore trucks weighed approximately 160,000 lbs.

The bridge is a two-lane structure with a laminated timber deck supported by transverse floor beams spanning two stiffened ASTM A588 steel box girders. The box girders have 30-, 123-, 127-, and 20-foot span lengths.

The bridge was instrumented to evaluate the static live-load performance when subjected to a loaded ore truck. Instrumentation included strain gages on the box girders, pylons, and an upstation column support. In addition, environmental sensors were installed to monitor solar radiation, wind speed, air temperature, and temperature distribution through a box girder. Tests were conducted to monitor static response for two types of loads at predetermined positions. The two loads were preweighed ore trucks and a Snooper truck which was used as a control vehicle.

Experimental strain data, girder deflections, and environmental data were recorded and reported.

14. SUBJECT TERMS
Keywords: Instrumentation, bridges, loads, temperatures, temperature distribution, load tests, testing

15. NUMBER OF PAGES
112

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UL

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CAPTAIN WILLIAM MOORE CREEK BRIDGE

Final Report

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November 1989

Prepared for

State of Alaska
Department of Transportation and Public Facilities
Statewide Research M/S 2554
2301 Peger Road
Fairbanks, Alaska 99709-5316

In cooperation with

U.S. Department of Transportation
Federal Highway Admission

Publication Cost $17.00

ACKNOWLEDGMENTS

The authors would like to thank the Alaska Department of Transportation and the Federal Highway Administration for providing the research funds to investigate the static behavior of the Captain William Moore Creek Bridge near Skagway Alaska.

The authors would also like to thank Mr. Rufus B. Bunch, a graduate student who helped prepare the instrumentation, conducted laboratory calibration studies, and assisted with the installation and data collection for the one-week period during field testing.

Thanks are due to Mr. Jim Miracle from Tok DOT Maintenance who drove the snooper truck and assisted with gage preparation, installation and traffic control. Mr. Keith Knorr from Skagway DOT Maintenance also provided assistance with the gage preparation, installation and traffic control.

Mr. George Imbsen and Mr. Mike Rieves both from DOT Bridge Design are to be thanked for their assistance with traffic control during the instrumentation installation and field data monitoring. Without efforts from each of the above personnel, this project would not have been possible.

ABSTRACT

The Captain William Moore Creek Bridge is an unusual 300 ft cable-stayed bridge located on the highway between Skagway, Alaska and Carcross, Canada. The bridge has a laminated timber deck supported by transverse floor beams spanning two stiffened ASTM A588 steel box girders. The box girders have span lengths of 30-123-127-20 ft.

This bridge was originally designed in 1974 to carry AASHTO HS20-44 highway loads and was strengthened in 1986 to carry B-Train trucks hauling ore weighing approximately 160,000 lbs.

The Captain William Moore Creek Bridge is a unique design that is fracture critical. It is subjected to a mix of automobiles, campers, and nonstandard ore trucks during the summer months. During the winter months, the bridge is subjected predominantly to nonstandard ore truck traffic and temperature extremes typical of an Alaskan winter. This combination of conditions provides a strong argument for studying the bridge's behavior. Thus, a two-part study was implemented to examine the static response when subjected to B-Train truck loads.

In the summer of 1988, this bridge was instrumented with strain gages on the box girders, pylons, and an upstation column abutment support. In addition, environmental sensors were installed to monitor solar radiation, wind speed, air temperature, and the temperature distribution through a box girder.

The bridge was subjected to a static snooper truck (used as the control load) and static B-Train loads. Experimental strain data, deflections, and environmental data were recorded. The investigation was conducted in the following manner:

> Part 1 involved instrumentation, experimentation, and presentation of results for controlled statically loaded field tests. This report is devoted to this part of the study.

Part 2 consisted of performing a two-dimensional finite element analysis of the bridge for the loads studied in Part 1. The results were compared with the experimental data. This information is presented in a separate report.

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1. INTRODUCTION

1.1 Development of Cable-Stayed Bridges

The basic elements of cable-stayed bridges have been used as structural components for centuries. The idea of supporting beams by inclined ropes or chains connected to a mast or a tower goes back to the times of the early Egyptians who applied the concept to their sailing ships. Tropical regions of the world applied the concept to primitive types of foot bridges using vines attached to trees on either bank to support a walk of vines and bamboo sticks(6).

The development of the cable-stayed system progressed very slowly at first. Although many applications have been recorded through history, the system initially met with little success. This was because early designers did not understand the type of materials needed for inclined bars and chains and lacked knowledge of the statics of the cable-stayed bridge. Thus, several of the first cable-stayed bridges collapsed. This led to a partial abandonment of that type of bridge.

During the post-war years in Western Europe, materials were in short supply and a need to obtain optimum material performance sparked a renewed interest in the cable-stayed system. However, it wasn't until the past twenty years that the concept received wide and successful application, due to the introduction of high-strength steels and orthotropic type decks, the development of welding techniques, and progress in structural analysis. Existing structural facilities have provided useful data in understanding the performance of cable-stayed systems. Through the above process, state-of-the-art advancements have nurtured the use of cable-stayed systems. Some of the advancements to date include:

1) New or improved structural analysis methods and application of electronic computers for complex statically indeterminate structures,

2) Introduction and use of orthotropic steel decks,

3) Experience with previously built bridges containing basic elements of cable-stayed bridges,

4) Application of high-strength steels combined with advances in fabrication and erection,

5) Evaluation of the behavior of cable-stayed bridges through the use of model-to-prototype studies (6), and

6) With this report, the successful instrumentation and experimental testing of an existing cable-stayed bridge.

1.2 Experimental Studies by Others

Cable-stayed bridges use high-strength cables to support girders from above instead of bearings and piers from below. The opportunity for long free spans is an obvious advantage of this type of bridge. But the complex combination of cables and beams generally leads to a nonlinear, highly indeterminate structure which is not well defined. Therefore experimental studies have been conducted by other researchers in an attempt to understand this complex behavior.

Model Studies

Kayser and Binbkhorst used a model to verify erection stresses calculated by the finite element method for the main girder and diaphragm for a nine-span 1055 m bridge (2). The bridge has a 36.4 m roadway width between parapets and is located on Highway 75 over the Waal river near Ewjik in the Netherlands. A tapered box-shaped steel tower located at each end of the 270 m main span was used to stay this and adjacent spans with high-strength cables in a fan shape.

A simplified 1:50 scale model of the main girder and diaphragm was used to simulate erection loads when the bridge was extended 30 m beyond the

pier. Three load cases were examined. These were pure moment, moment and shear, and torsion. Strain gages on the transverse cross-sections of the model box were used to determine strains in three directions in the transverse cross-section. The model was studied experimentally and used to confirm the results obtained from the finite element program "KOKER".

The construction sequence for the fan type double plane multi-cable Meiko-Nishi Bridge in Japan was investigated through the use of model studies in the laboratory (3). Models included a 1:55 scale model of an A-shaped tower and a 1:2.5 partial model of six main girder panels and anchorages. The models were tested as follows:

a) The model A-shaped tower was tested in a wind tunnel. This test was supplemented by field data taken during one phase of the construction when the towers were left in a free standing state for several months. Wind-induced ambient vibrations were examined during this period.

b) The partial model of six main girder panels was load tested for cable anchorage. This test was conducted to verify how force due to cable tension is transmitted to the girder and what the anchorage behavior exhibited in the elasto-plastic range.

Troitsky and Lazar (7) investigated experimental laboratory techniques with small-scale structural models as possible tools for the analysis and design of cable-stayed bridges. Two models (A and B) were used in the study. The prototype had six lanes of traffic supported by two box girders. The structure was a double-tower single-plane cable-stayed bridge with cables in a harp configuration.

Strain gages were mounted on cables and girder. Dial gages were placed at cable-to-girder intersection points to measure deflections; gages were also arranged to measure rotation and vertical displacements of the girder to allow computation of bending moments, and of axial and shear forces from joint displacements.

Model A was used to develop influence lines and Model B was used to predict nonlinear behavior. The nonlinear behavior was examined by loading the model with 20% of total load and then total load. The results from the second test were divided by the results from the first to obtain non-linear factors which can be applied to influence diaphragms to determine non-linear behavior of a structure.

Full Scale Static Tests

Previous static tests of cable-stayed bridges were not evident from a computer search of the literature. Thus, the work presented in this report should provide the basis for future studies.

Full Scale Dynamic Tests

The Tjorn Bridge in Sweden was subjected to dynamic tests one week prior to opening the bridge to traffic (4). This structure is a cable-stayed steel girder bridge with a free span of approximately 366 m.

Vertical acceleration measurements were made at 14 points located inside the main box girder at the outer stiffeners of the bottom flange. Piezoelectric accelerometers were used to measure accelerations.

Three types of tests were performed. These were:

a) A dynamic load was produced by driving a 20 ton lorry over a 200 mm high wooden obstacle placed on the bridge deck. Vertical acceleration measurements were recorded over an eight minute period beginning just before the truck began moving.

b) A free decay test was conducted in which the bridge was preloaded vertically and symmetrically by two wires connected to a free floating barge at the bottom. Hydraulic jacks attached to the wires were installed at the bridge deck and used to preload the wires. Once the wires were preloaded, they were released by

simultaneous explosions which produced free vibrations of the bridge.

c) Forced vibration tests were conducted by using a 2000 ton exciter mounted on the bridge deck.

1.3 Captain William Moore Creek Bridge

The Captain William Moore Creek Bridge is located on the highway between Skagway, Alaska and Carcross, Canada. This unusual cable-stayed bridge consists of a 7-inch laminated timber plank deck supported by transverse floor beams spanning between two stiffened ASTM A588 steel box-shaped girders. The girders are supported by column arrangements on their ends and are stayed at approximately mid-span by cable pairs in a double-plane arrangement. The bridge has an overall length of 300 ft. which is divided over four span lengths of 30-123-127-20 ft. (see Fig. 1.1.)

The two main box-shaped girders were fabricated from ASTM A588 steel plates welded at the corners in 60 ft. lengths. These sections were spliced together at the ends with bolted inside and outside plates. The original overall dimensions of the girders were 2 ft. 6-5/8 in. by 5 ft. 1 in. Each girder is stayed at approximately mid-span by two 3-inch diameter inclined cables constructed of galvanized structural strands which extend through the girders and are anchored to the underside of the bottom flange. The stays are supported above the deck by an inclined H-shaped tower which has two transverse beams near its top. The tower is supported by the canyon's rock wall at the base, extends up to and supports the girders, and continues up approximately 106 ft. with a tapered box-shaped cross section. The ASTM A588 steel tower is inclined forward over the canyon at approximately 15 degrees to the vertical. The back stays all terminate at tripod supports which are mounted downstation of the structure and affixed to the hillside by prestressed rock anchors. The structure was originally designed for AASHTO HS20-44 highway loads in 1974. In 1986, the bridge was strengthened to carry ore trucks weighing approximately

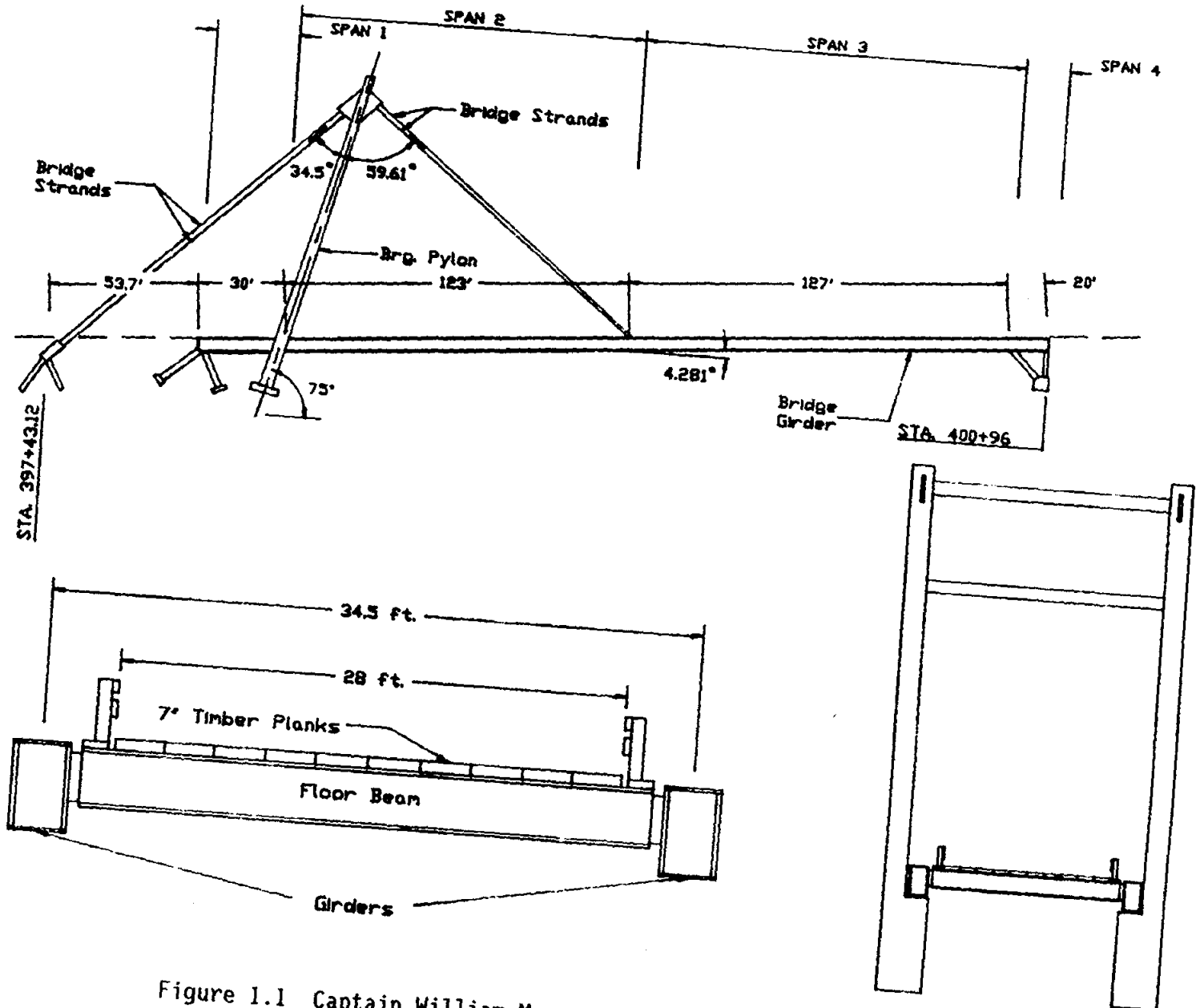


Figure 1.1 Captain William Moore Creek Bridge Geometry

160,000 lb. traveling from the Yukon Territory in Canada to Skagway.

Instrumentation

It was the objective of this study to instrument and test the William Moore Creek Bridge for statically applied ore truck loads. The instrumentation consisted of,

a) Strain gages on the girders, at the base of the pylons, and on the upstation abutment column;

b) A transducer on one cable to test the feasibility of monitoring cable strain;

c) Thermistors to monitor the temperature distribution through a bridge girder; and

d) Meteorological devices to monitor the air temperature, solar radiation, and wind speed.

Because of a limited budget, rosettes were not installed on the bridge structure. Thus, strain gages were installed along the principal axis of the members.

Beams and axial members are generally considered plane stress members. Assuming this is valid, the relation between stress and strain for a linear elastic isotropic material is given by (1,5)

$$\sigma_{xx} = \frac{E}{(1-\mu^2)}(\epsilon_{xx} + \mu\epsilon_{yy}) \tag{1a}$$

$$\sigma_{yy} = \frac{E}{(1-\mu^2)}(\mu\epsilon_{xx} + \epsilon_{yy}) \tag{1b}$$

$$\sigma_{zz} = 0 \tag{1c}$$

$$\sigma_{zx} = \sigma_{yz} = 0 \tag{1d}$$

$$\sigma_{xy} = \frac{E}{2(1+\mu)} \epsilon_{xy} \tag{1e}$$

All tests conducted in this study provided experimental strains in the x-direction only. Strains in the y and z directions were not measured and Poisson's ratio was not determined. However, if it is assumed that the member thickness is small (ie., that plane stress is valid) and restraints are insignificant in the direction transverse to the gage, the strain in the y-direction can be approximated by

$$\epsilon_{yy} \simeq -\mu\epsilon_{xx} \tag{2}$$

Based on the above assumption, and substituting Eq. 2 into Eq. 1a, the engineer is able to approximate the stress in the x-direction by the following relationship

$$\sigma_{xx} \simeq E\, \epsilon_{xx} \tag{3}$$

2. EXECUTIVE SUMMARY

The William Moore Creek Bridge was originally designed in 1974 to carry conventional AASHTO HS20-44 design loads. In 1986 it was strengthened to carry loaded ore trucks moving from the Yukon territory to Skagway, Alaska.

The behavior of the bridge under the influence of these unusual loads was questioned. Therefore, it was the objective of this study to experimentally evaluate the performance of the structure for the heavy ore truck (B-Train) loads.

Thus, an experimental investigation was conducted to evaluate the structural performance of the 300 ft. cable-stayed bridge under static loading conditions. The study consisted of five parts: instrumentation calibration in the laboratory, field instrumentation installation, field testing, data evaluation, and presentation of results.

A two-dimensional, finite-element, analytical comparison of the field results was also conducted and is presented in a separate report. This was Part 2 of the study.

Two types of test loads were applied to the bridge. These were a preweighed Snooper Truck, used as a control vehicle, and 160,000 lb. (approx.) loaded ore trucks. The axle weight distribution for each ore truck was obtained from a weight ticket. Each static test was carried out by positioning the truck's front axle on the bridge deck at a preselected location determined to produce the maximum stress in the box girder/girders.

After a truck was in place, strains, girder temperatures, cable deformation, ambient air temperature, wind speed, and horizontal solar radiation were recorded. When possible, top-of-girder elevations were also recorded for both the unloaded and loaded conditions.

A partial list of results are summarized herein for the reader's convenience. It should be noted that special emphasis was given to the heavy ore truck (B-Train) load conditions and only the stress, strain and displacement results are presented in this section.

2.1 Maximum Strains

Strains were recorded on the inside surface of the top and bottom plates of the box girders, on the exterior face of the pylon bases just above the stiffeners, and at the upstation left column support. The study showed that static truck loads were approximately distributed to the girders through floor beams as simply supported members. The maximum strains recorded are presented in Table 2.1, see below.

Table 2.1 William Moore Creek Bridge Maximum Strains and Stresses

Item	Location	Strains (Micro-strain)	Stresses (a) (ksi)
(Snooper Truck)			
Left girder	98 ft.	87.7	2.54
Right girder	98 ft.	96.7	2.80
Left Col.	upstation	10.0	0.29
Left pylon	base	41.8	1.21
Right pylon	base	26.9	0.78
(B-Trains)			
Left girder	98 ft.	223.6	6.48
Right girder	98 ft.	207.3	6.01
Left col.	upstation	26.9	0.78
Left pylon	base	133.6	3.87
Right pylon	base	102.9	2.98

(a) Stresses calculated by $\sigma = E\epsilon$

2.2 Girder Deflections

On each day of testing prior to any tests and without traffic, top-of-girder elevations were recorded for both box girders. During testing and when possible, top-of-girder elevations were recorded for the test load cases. Girder deflections were calculated by determining the elevation differences between the loaded and unloaded state. It was

found that the Snooper truck produced a maximum deflection of 0.84 in. and B-Trains produced a maximum deflection of 2.76 in.

Axle weights of the B-Trains did not vary significantly from truck to truck, and for like loading conditions, the experimental data showed excellent repeatability, thus validating the instrumentation technique and testing procedure.

3. INSTRUMENTATION

3.1. Project Objective

The objective of this project was to investigate, through experimentation, the behavior and load distribution of the Captain William Moore Creek Bridge.

In order to accomplish this objective, two types of loads were investigated: a Snooper truck (control load) placed at specified positions on the bridge, and loaded ore trucks (B-Trains) placed at positions previously determined to be critical to the performance of the box girders. Weight tickets were obtained for each test involving an ore truck.

3.2 General Information

Strain gages were installed at critical locations established through a pre-instrumentation analysis performed by the principal investigator and the Alaska DOT&PF Bridge Design Section. An LVDT extensiometer was also installed on the downstation forestay cable, on the left side of the bridge, to examine the feasibility of monitoring cable strains. Thermistors were installed on the exterior face of the right girder at a single station to measure the temperature distribution through the girder.

A summary of the instruments used in this study is provided below:

a) 25 full-bridge strain gages,

b) seven thermistors mounted on the side of the box girder at a single station to record girder temperature profile,

c) an extensiometer using an LVDT to monitor cable strains,

d) a transit and level to measure girder elevations for deflection monitoring,

e) a velocity probe to insure that structural vibration was insignificant and that static condition was available for the test, and

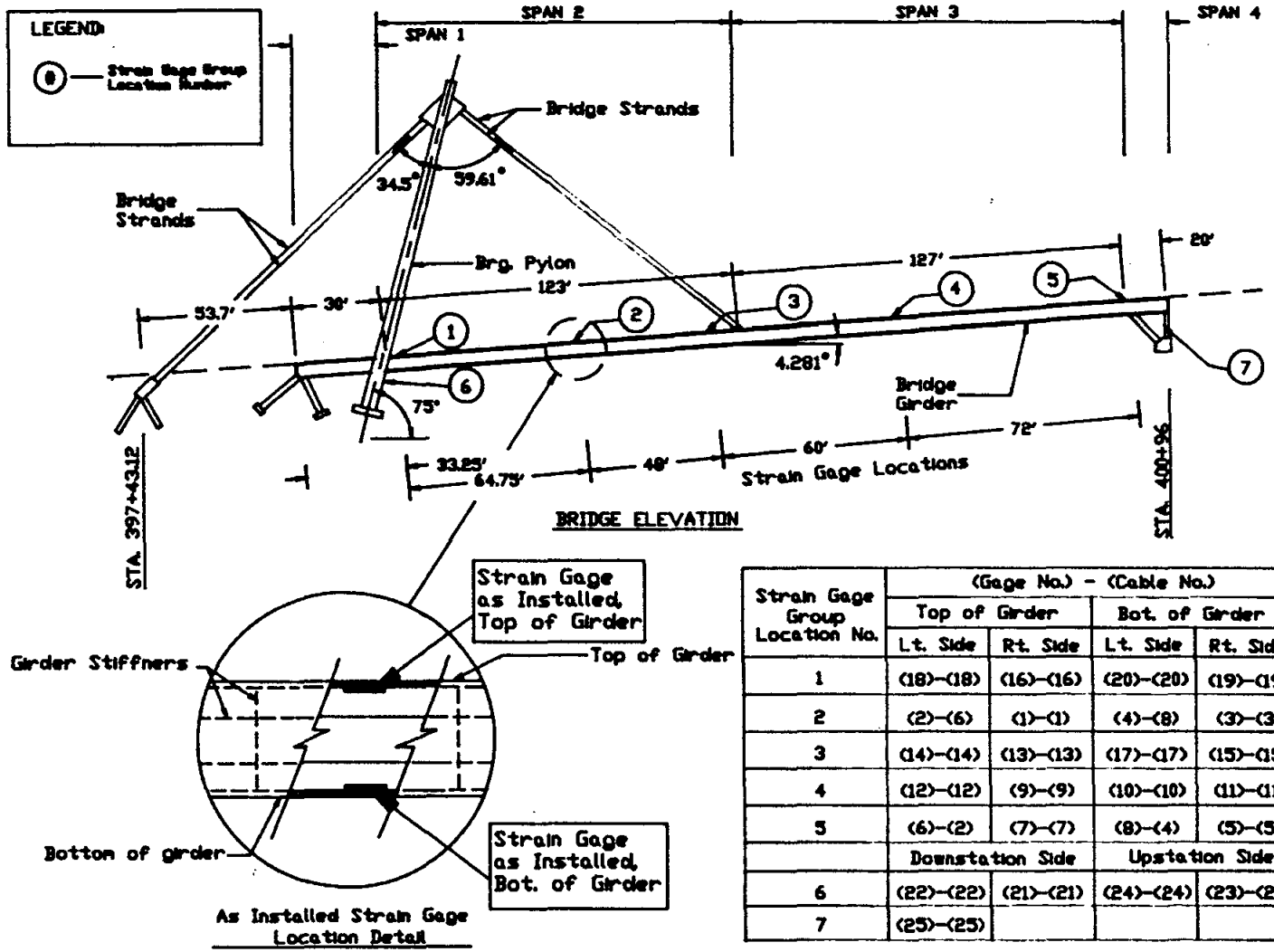
f) meteorological instruments consisting of a pyronometer for horizontal solar radiation, a temperature sensor for ambient air temperature, and an anemometer for wind speed measurements.

Fig. 3.1 illustrates the gage number scheme used, the gages' locations, and installed cable-number-to-gage-number correlation. Wind speed, air temperature, and horizontal solar radiation were also monitored during the testing period. A DOT van was used as a portable laboratory. All data acquisition equipment was located in the van. Twenty-six five-conductor Belden cables were used to connect the instruments to the monitoring equipment. Appendix A of this report provides the equations, sample calculations, calibration information, and appropriate data used to compile field data.

A Wild T-16 Theodolite transit and a Zeiss Ni2 automatic level were used to determine top girder elevations prior to application of the truck loads and after load applications for selected tests. The elevation difference between the loaded and unloaded states enabled these researchers to determine the box girder deflections. The elevations of the deflected top of girder were determined at five specific points for both the right and left girders using a separate surveying instrument for each side. Looking upstation, the transit was used on the left side of the bridge and the level on the right side.

3.3 Instruments/Monitoring Equipment

It is the purpose of this section of the report to provide the reader with a detailed understanding of the instrumentation, calibration, and procedures that were utilized in this study.



Strain Gage Group Location No.	(Gage No.) - (Cable No.)			
	Top of Girder		Bot. of Girder	
	Lt. Side	Rt. Side	Lt. Side	Rt. Side
1	(18)-(18)	(16)-(16)	(20)-(20)	(19)-(19)
2	(2)-(6)	(1)-(1)	(4)-(8)	(3)-(3)
3	(14)-(14)	(13)-(13)	(17)-(17)	(15)-(15)
4	(12)-(12)	(9)-(9)	(10)-(10)	(11)-(11)
5	(6)-(2)	(7)-(7)	(8)-(4)	(5)-(5)
	Downstation Side		Upstation Side	
6	(22)-(22)	(21)-(21)	(24)-(24)	(23)-(23)
7	(25)-(25)			

Figure 3.1 Strain Gage Locations and Numbering Scheme

Strain Instrumentation

The strain gages used to instrument the William Moore Creek Bridge were weldable, bonded-foil sensors manufactured by HITEC Products, Inc. The gage circuit is a 350-ohm, full bridge with the active arm attached to a rectangle of stainless steel shim stock, enabling the gage to be directly welded to the bridge steel. Three compensating gages are encapsulated in a proprietary compound and are located within 3 cm of the active gage to reduce noise pick-up and properly compensate for temperature effects on the circuit (Fig. 3.2).

A clamp-on extensiometer was built to assess the feasibility of monitoring static and dynamic strains on the forestay cables. A Linear Variable Displacement Transducer (LVDT) was threaded into a clamp assembly with a ten-inch gage length. The clamp was fitted with a dial indicator with a .0001 inch resolution to check LVDT operation in the field. Thumbscrews were used to facilitate installation and removal of the device.

Power for the strain gages and LVDT (5 volts and bipolar 15 volts) was provided by a custom-built power supply that contained a monolithic linear regulator for the strain gages and a TDK DC to DC converter for the LVDT. The power supply was fitted with barrier strips to serve as terminations for the 26 cables requiring power. A 12-volt storage battery provided input power with no ripple or noise to degrade accuracy.

Meteorological Instrumentation

Environmental data was logged by sensors on the down-station side of the bridge. Air temperature, girder temperature profile, wind speed, and the internal temperature of the two data loggers were recorded at the beginning of each test series. Incoming solar radiation was recorded during every scan because of its changeable nature. The following summary provides a brief description of the environmental sensors:

Air Temperature.- The ambient air temperature at the bridge site was measured at the down station end using a Type T thermocouple, with special limits of error wire.

Girder Temperature.- It has been previously determined by researchers that environmental effects can be significant. Thus, in order to quantify the strains due to the statically applied truck loads, it was necessary to identify girder temperature variation through the cross-section. Therefore eight YSI 3000 ohm thermistors were mounted on magnetic fixtures and placed on the exterior side of the right box girder near the pylon. (The girder is on the right, relative to someone looking upstation.)

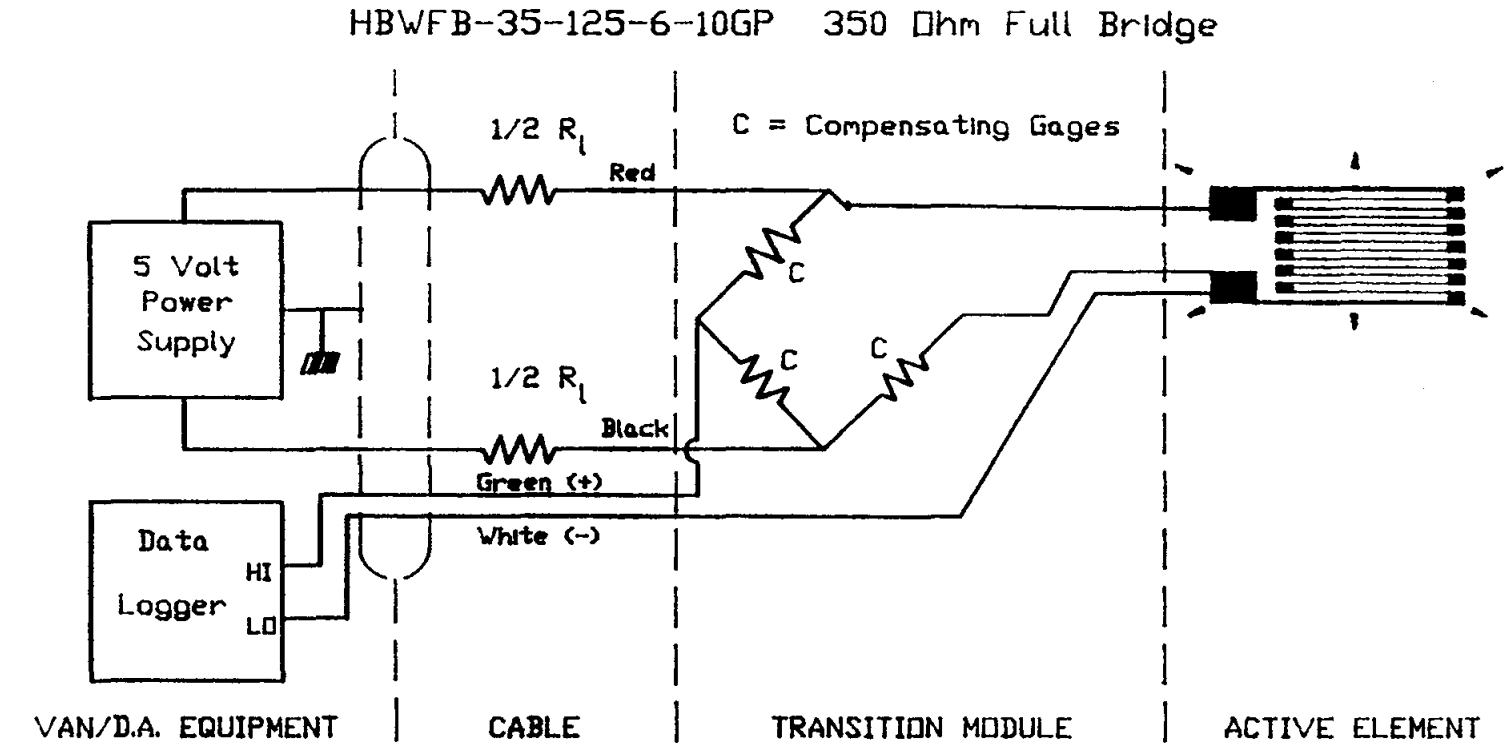
Wind Speed.- Cable-stayed bridges are typically flexible and respond more to nominal wind speeds than conventional short span bridges. Thus, the magnitude of the wind speed was monitored at the left downstation end of the bridge with a Met One three-cup anemometer.

Instrument Temperature.- Instrument accuracy is affected by surrounding temperatures. In a laboratory where temperatures can be held constant, the instrument temperature may not be a significant factor influencing experimental accuracy. However, for field instrumentation where temperature varies as a function of time it is important to identify this parameter. Thus, instrument temperatures were monitored by the use of a solid state transducer mounted on the data logger circuit board.

Incoming Solar.- The influence of solar radiation on the bridge structure was monitored during the test series. A Star pyranometer was mounted horizontally at the right downstation end to record global direct and diffuse radiation with a 0.3 to 3 micron response.

Monitoring Equipment

The data-acquisition system was assembled using two Hewlett-Packard 3421A data loggers controlled by an HP-71 handheld computer. Peripheral



GF = Gage Factor = 2.05

$$V_r = \left(\frac{V_{outs}}{V_{ins}} - \frac{V_{outu}}{V_{inu}} \right)$$

V_{outs} = Voltage out (Strained)

V_{outu} = Voltage out (Unstrained)

$$V_{in} = V * \left(\frac{R_g}{R_g + R_l} \right)$$

V = Power Supply Voltage at Terminals

R_l = Loop Resistance in Ohms (Depends on Cable Length)

R_g = Gage Resistance in ohms = 350 Nominal

$$\epsilon = \text{Strain} = \frac{-4V}{GF(1+2V_r)}$$

Fig. 3.2 Strain Gage Wiring Diagram

devices included a printer for hard copy and a 3.5" disk drive for the program and data storage. This system was designed to use a 12-volt DC battery for power, thereby eliminating the need for a portable generator. This feature has field recording advantages over other data-acquisition systems that rely on AC electricity. These advantages include: a) portable generators are not needed in the field; and b) sources of electric and acoustic noise are eliminated. Figs. 3.3 and 3.4 show the power supply and the data-acquisition system, respectively, were used for this project.

The HP3421A can scan up to 30 differential channels, measuring DC and AC volts, resistance, temperature and frequency. One HP3421A (Instrument 1) was wired to read the power supply, strain gage outputs, LVDT, pyranometer, anemometer and air temperature. The other HP3421A (Instrument 2) read the eight thermistors for the girder temperature profile. Since the accuracy of the data logger is dependent on temperature, the internal reference temperatures were logged at the beginning of each test series.

The HP-71 is a calculator-sized, battery-operated, BASIC language computer. With the help of a data-acquisition ROM, a menu-driven program was written to automate the collection, linearization, printing and storage of data. The use of a computer to control the instrumentation greatly increased the speed and accuracy in collecting data. No manual adjustments were necessary and the hard copy output enabled the researchers to see test results in the field (Fig. 3.4).

Data storage and hard copy were provided by a HP9114A disk drive and a HP2225B ink jet printer, respectively. Both units are powered by rechargeable batteries and can receive a trickle charge from the data logger. A 3.5-inch 640k disk stored all data points except temperatures in raw form (i.e. voltages) to facilitate data manipulation at the office. During setup of the instrumentation, the printer provided a graphics presentation of strain vs. time for static and dynamic

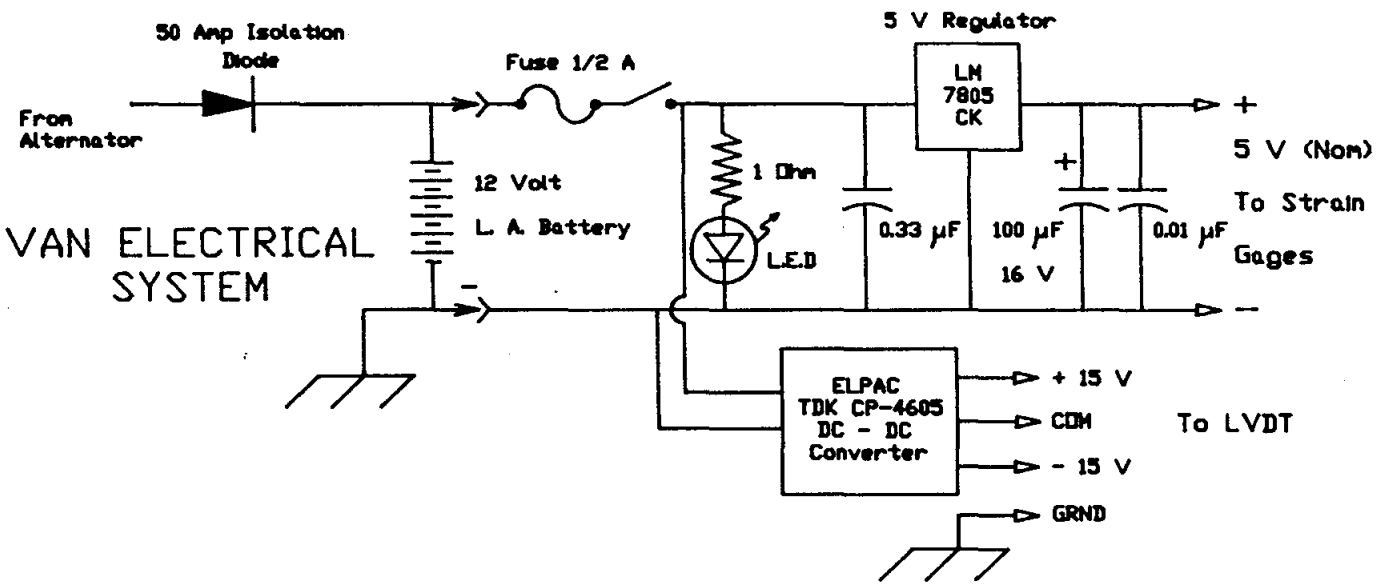


Figure 3.3 Power Supply for the Strain Gages and LVDT

recordings. This feature was extremely valuable in troubleshooting. Appendices B and C of this report provide reformatted copies of the field data as it was printed out on site.

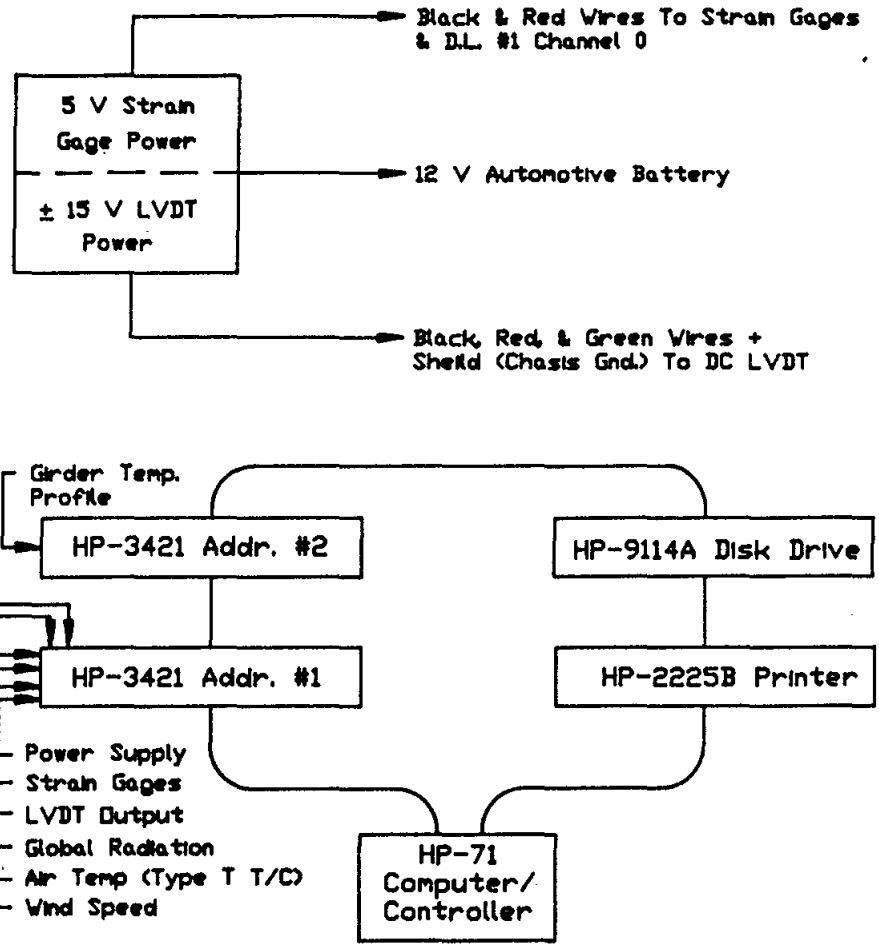
Truck static loads were obtained by moving the truck to the appropriate load position. Before the test was carried out, structural vibrations were allowed to dampen. This was accomplished by using a Bently-Nevada velocity seismoprobe with a visual needle read-out between data scans to insure that vibrations of the bridge structure reached a minimum. Since even a small amount of wind could cause perceptible movements, it was decided that a deck velocity of .1 inches per second would represent the maximum acceptable noise level. Thus, strain gage readings were postponed until this value was reached.

3.4 Laboratory Preparation and Calibration

Belden 8723 cable was chosen both for its electrical characteristics and because the weldable strain gage manufacturer used it for lead wire. The 22 gage, individually shielded, two-pair cable is suited for both static and dynamic measurements due to its low unit capacitance and low dielectric absorption.

Strain Gages

After the gage positions were located on the bridge plan, extension cables were cut to length, numbered with waterproof tape, and soldered to Lemo waterproof connectors. Under controlled temperature conditions in the laboratory, the loop resistance of each pair of wires was measured and recorded to account for desensitization effect. As strain gages are resistive devices, lead wire desensitization becomes significant when the magnitude of the lead wire resistance exceeds 0.1% of the nominal gage resistance. Some of the longer cables (450′) had resistances over 13 ohms (3-4%). All calibration measurements were conducted in a scientific manner. Thus, the same monitoring equipment used in the laboratory (such as the data logger) was used in the field.



EQUIPMENT LIST FOR COMPUTER/D.A. SYSTEM

HP-71B

Math ROM
D.A. ROM
HPIL ROM & Interface
2 ea. 4 KB Memory Modules

2 ea. HP3421A Data Loggers

HP-9114A Disk Drive

HP-2225B Thinkjet Printer

Backup Printer & Mass Memory

HP-2225B Thinkjet Printer
HP-82163 Cassette Drive

Figure 3.4 Data Acquisition System

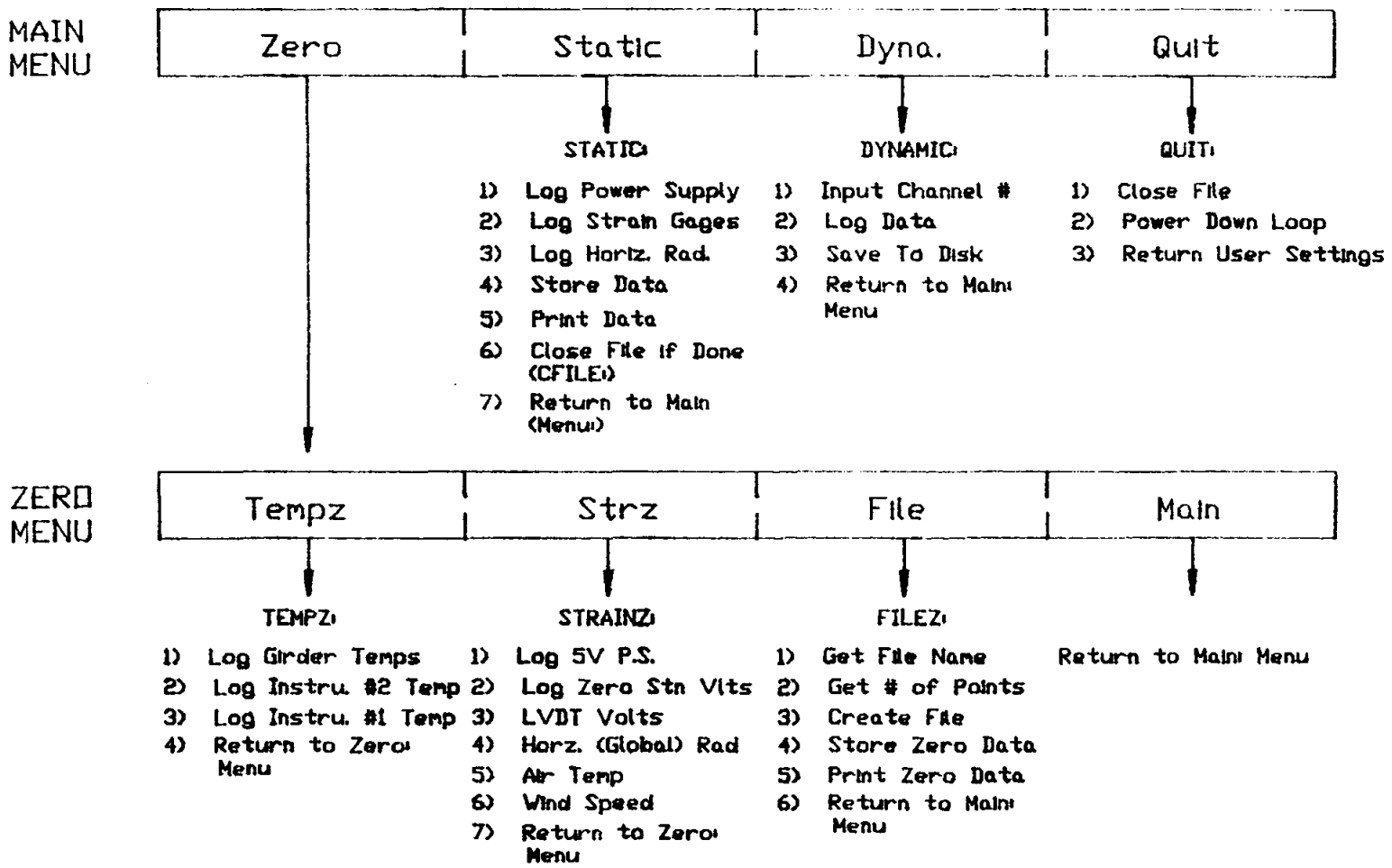


Fig. 3.5 Operator Interface for Data Collection.

Once all the connectors were installed on the cables and sensors, the waterproof connectors were tested in a 24 hour soak to confirm o-ring integrity after assembly.

Extensiometer

The forestay cable extensiometer was not calibrated prior to its usage in the field. When clamped to a cable, the linearized LVDT output was found to agree closely with the .0001" resolution dial indicator. Readings taken during testing seemed somewhat low, but it was not until the analytical model was being developed that the field data from the extensiometer came into question. The data collected from the extensiometer indicated cable strains an order of magnitude lower than expected.

After returning from the field and at the time the extensiometer data were evaluated, a complete laboratory calibration of the extensiometer was conducted. First the LVDT was removed from the clamp assembly and installed in a calibration fixture built by the LVDT manufacturer. Four twenty-point calibration runs were completed. These runs were:

1) Compression to tension at full scale;
2) Tension to compression at full scale;
3) Compression to tension at 1\50 full scale; and
4) Tension to compression at 1\50 full scale.

Each data point was the average of thirty readings taken over a 45 second time span. The results of a linear curve fit showed that the LVDT data was within factory specifications.

The next step in the laboratory calibration procedure involved simulation of a tensioned cable. Thus, the extensiometer apparatus (fixture, LVDT) was mounted to a 3 ft. section of pipe and installed in the University of Alaska Civil Engineering MTS load frame under laboratory conditions. The extensiometer was then connected to a power supply and data logger to monitor pipe displacement over a ten-inch gage

length. The MTS load frame consisted of a 50,000 lb. load cell, a servo-hydraulic control system and a set of grips. This 3-foot section of pipe was installed in the grips to simulate the forestay cable and the extensiometer attached. An MTS calibrated clip-on extensiometer was fastened to the pipe to accurately record the tensile strain.

Eight load-unload calibration tests were made with a maximum load of 13,610 lb at 460 micro-strains. The results of these tests showed that the slope of the calibration curve changed depending on whether the sample was being loaded or unloaded. Although the average slope of all eight tests was approximately 10% of true strain, it was determined that the calibrated percent error was too great, and the field data would not be accurate enough to be relied upon. Therefore, the field data recorded for the cable elongations over a ten-inch gage length (strains) were not used to model the forestay behavior.

Thermistors

The girder temperature profile was measured by thermistors mounted in two hardwood fixtures magnetically clamped to the exterior side of the steel box girder. The YSI 44030 thermistors were chosen for high resolution with the monitoring equipment, +/- .1°C interchangeability, and availability.

During assembly, possible thermal and mechanical stresses were reduced by first soldering the relatively heavy 8723 cable to a miniature printed circuit board. Next, the thermistor's leads were mechanically fastened to the circuit board and a heat sink was clamped just below the thermistor body. The free end of the cable was temporarily connected to the data logger to monitor resistance and insure that the maximum working temperature of the thermistor was not exceeded during soldering. After soldering, the assembly was coated with Dow 3140 RTV, a non-corrosive silicone rubber. A second coat was applied 24 hours later. When the cure was complete, heat shrink tubing was installed over the thermistor while observing its temperature rise. At this point, two coats of Scotchguard(TM) were added to finish the encapsulation.

Before final assembly of the magnetic fixtures, the eight thermistors were checked in an ice bath for accuracy. All were within the manufacturer's specifications. The thermistors with leads attached were divided into two groups and each group was soldered to an extension cable. It was at this point that thermistor number eight was inadvertently shorted out. This was not discovered until field testing was underway. Data records show a temperature of over 200°C on thermistor eight because of this short.

3.5 Field Installation

Strain Gages

The weldable gages were installed during the first three days of field work. Gages for the two main girders were mounted inside the structure as requested by ADOT Bridge Design so that the appearance of the bridge would not be degraded and the gages would not be damaged by winter snow removal efforts. At each location along the inside of the box girders where gages were to be installed, one gage was mounted on the ceiling and one was mounted on the floor. Lack of ventilation had produced a significant amount of rust in the box. Thus, large amounts of rust and scale had to be removed by electric grinders to prepare the surface for welding.

Once a smooth surface was obtained, a carpenter's square was used to scribe a reference line on the steel to insure proper alignment. The mounting area was cleaned and the gage assembly tacked in place by stainless steel tabs on the transition module. The gage was then placed in position, tacked and pattern welded in a manner that minimizes residual strain. Silicone RTV sealant was applied over the active part of the gage to inhibit corrosion and provide some mechanical protection. Floor gages were given additional protection with a short piece of galvanized "C" channel. Extension cables were then connected to the gages and these cables were passed through the box girder and brought out at the downstation end near the data logger location.

Remaining Instrumentation

The extensiometer was installed with integral thumbscrew clamps to facilitate removal at the close of each day. The two thermistor assemblies were placed on the right girder by the pylon. A ten-foot length of perforated steel tubing (PST) was nailed to the left guard rail approximately 50 feet south of the end of the bridge. A 3-cup anemometer was mounted to the top of this tubing. The air temperature thermocouple and pyranometer were located on the right side approximately 150 feet south of the end of the bridge.

All instrumentation cables were terminated with connectors to facilitate removal.

3.6 Field Program and Calibration

A BASIC program was written to automate the measurement, linearization, hard copy and storage of raw data from the various transducers. The program was written in two parts: a mainline program with a linear flow and five subprograms to perform specific tasks.

The mainline program set up the HPIL interface, allocated memory for variables and constants, and provided a user interface with two menus. Before the bridge was loaded, the operator of the data-acquisition system obtained initial readings of the sensors and printed the results and stored the data on disk. This was accomplished by pushing four user-defined keys, which logged temperatures, power supply voltage, 25 strain gage voltages, the LVDT voltage, and the voltages for the meteorological sensors. At this point the bridge was available for loading.

Static Tests

After a truck was positioned, i.e. when the bridge was loaded and the vibration was damped out, voltage data for each sensor was logged by pressing a single key. Results were available on the spot with one page of raw and linearized data. When the bridge was unloaded again, another keystroke would close the data file and put the system to sleep to conserve power.

Dynamic Tests

Although the stated objectives of the project did not call for a study of the bridge dynamics, the researchers conducted three tests with moving trucks: one for the Snooper, and two for B-Trains. These limited tests were performed to gain some insight into the cable dynamics of the bridge.

The data acquisition used for this study had a limited memory and sampling rate. Thus, only the voltages for the extensiometer were monitored during these three tests. However, because of questions relating to the accuracy of the extensiometer as stated above, these tests were inconclusive. The LVDT was used as the signal source in these tests.

The BASIC program dynamic routine was written to select an input channel (LVDT), dimension an array for 256 samples and configure the data logger for a maximum reading rate of 15 samples per second. The data was stored on disk in raw form for later analysis.

Prior to actual testing, system and calibration checks were carried out. The extensiometer was monitored with the data logger and the linearized data compared well with the dial indicator mounted adjacent to the LVDT. Because the resolution and accuracy of the LVDT was two orders of magnitude better than the mechanical dial, calibration was postponed until return to the laboratory.

General Comments

Using unbalanced bridge measurement techniques and compensating for leadwire and temperature effects in software kept the strain gage readings from requiring manual calibration. Power supply drift was in the millivolt range and was accounted for by reading the 5 volt nominal supply every time the gages were scanned. The bridge circuit is essentially a linear device at low strain values(<1000) and the combination of ratiometric techniques and specified low drift of the data logger results in stable, repeatable measurements. Strain resolution was .4 micro-strains and system accuracy was limited by the gage factor of the strain gages, +\- 1%. Repeated tests were made under no-load conditions and the residual noise was on the order of one or two micro-strains.

4. FIELD STUDY

4.1 Test Procedure

General Information

The William Moore Creek Bridge superstructure consists of a timber deck supported by floor beams connected to two longitudinal box girders. The box girders are supported by end bents, a pylon, cables, and a brace near the up station end. Prior to designing the instrumentation program, an analysis was conducted to determine maximum girder strain locations and front axle positions for both the Snooper truck and B-trains.

The extent of structural symmetry and the manner in which loads are distributed to girders were studied by putting control loads (Snooper truck) at different places on the bridge deck and recording the resulting experimental data. Based on the analysis, predetermined load positions were laid out on the deck of the bridge with fluorescent paint prior to testing. Fig. 4.1 shows the locations of these positions.

Each test was designed to provide static results for a known truck load at a given position on the bridge. This was accomplished by referencing the type of truck, position across the deck, location of the front axle along the girder, and direction of movement.

The structure was loaded either in a lane or on the bridge center line. The terms left and right were used to reference the truck position across the roadway. Hereafter in this report, all references to left and right mean when looking upstation.

Equipment Initialization and Calibration

At the beginning of a day's test, with no traffic on the bridge, elevations of the top of the girders were established using a Theodolite on the left side of the bridge and a Zeiss level on the right side. The

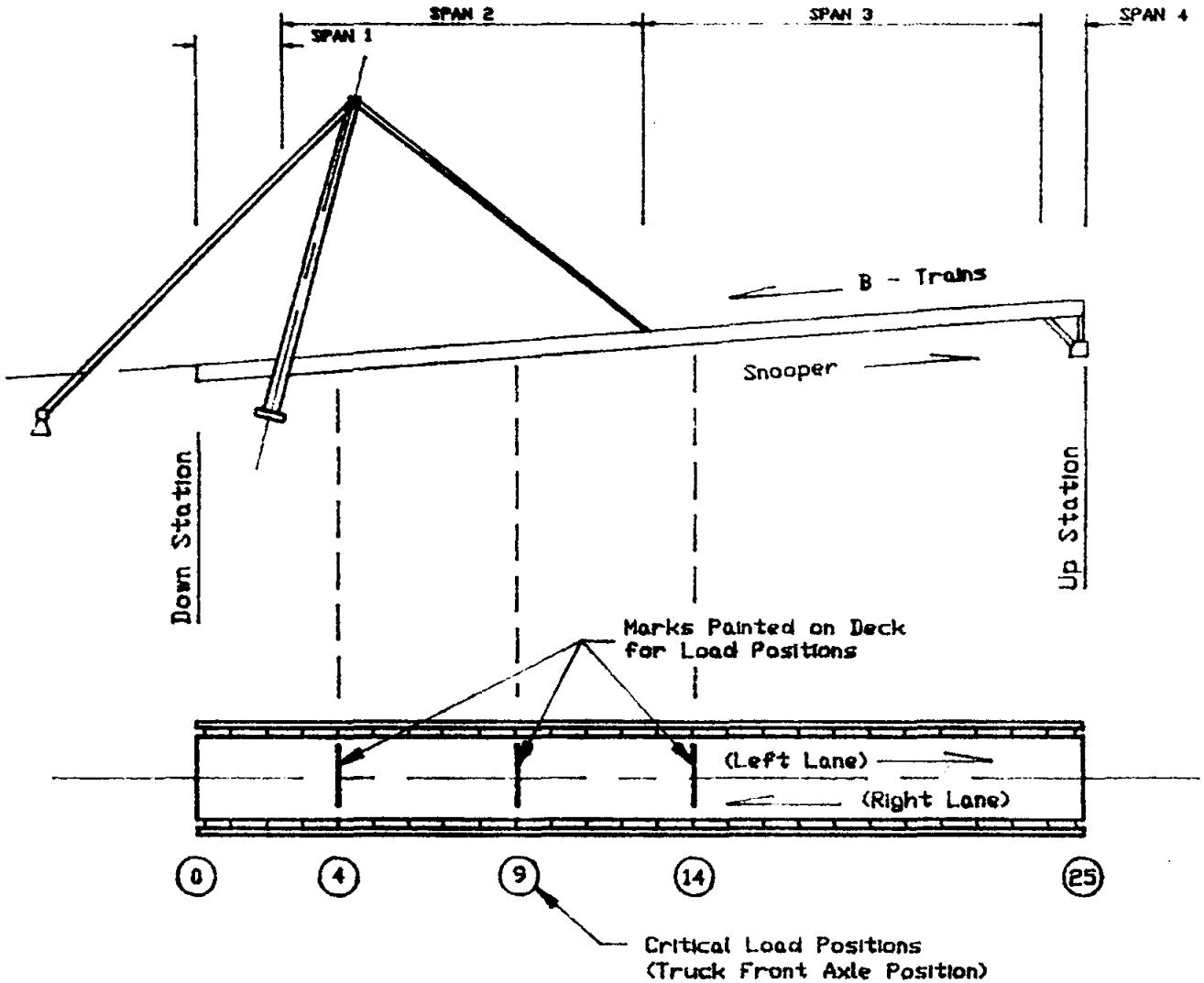


Fig. 4.1 Bridge Frame and Critical Load Positions.

end of each girder was supported at the upstation abutment and this was used to establish the height of the survey instrument.

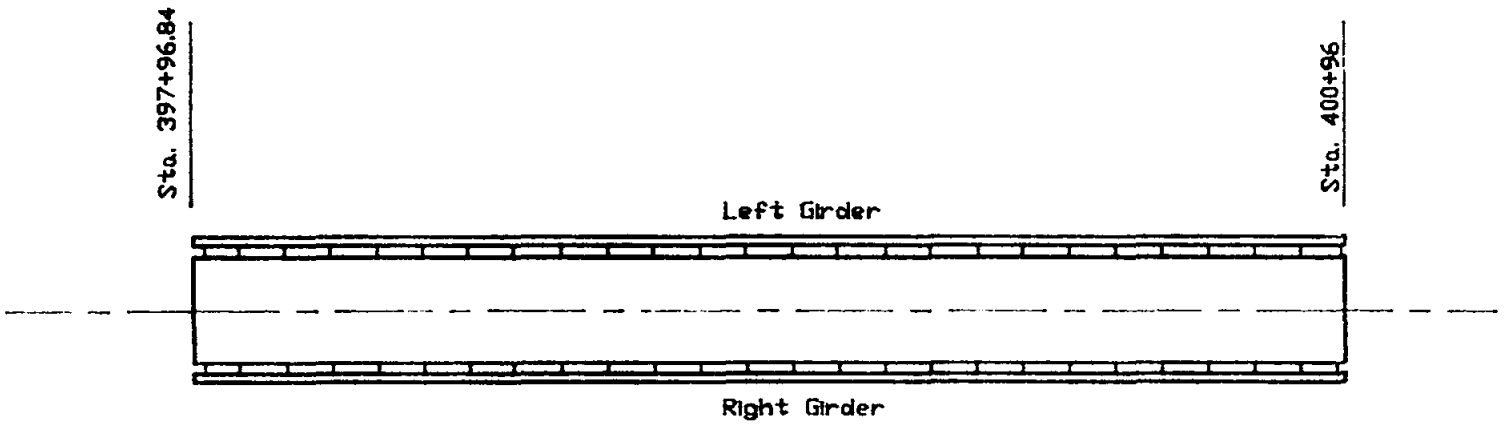
Girder elevation measurements with no traffic on the bridge provided zero live load baseline elevations for the two girders. At the end of the day's test, the height of instrument was again measured and when time permitted, top of girder elevations were measured with no traffic on the structure. This procedure provided for vertical elevation control.

Before each test series and while no traffic was on the bridge, an initial no-load voltage reading was taken for each strain gage and the LVDT. This procedure was used for the purpose of establishing a zero reading for each instrument prior to testing. These initial readings reduce residual strain in the gages remaining from the previous test, traffic, environmental change, and other possible causes of zero drift experienced by gages between tests. The air temperature, wind speed, girder temperatures, instrument temperatures, and horizontal solar radiation readings were also taken immediately before positioning the truck on the bridge.

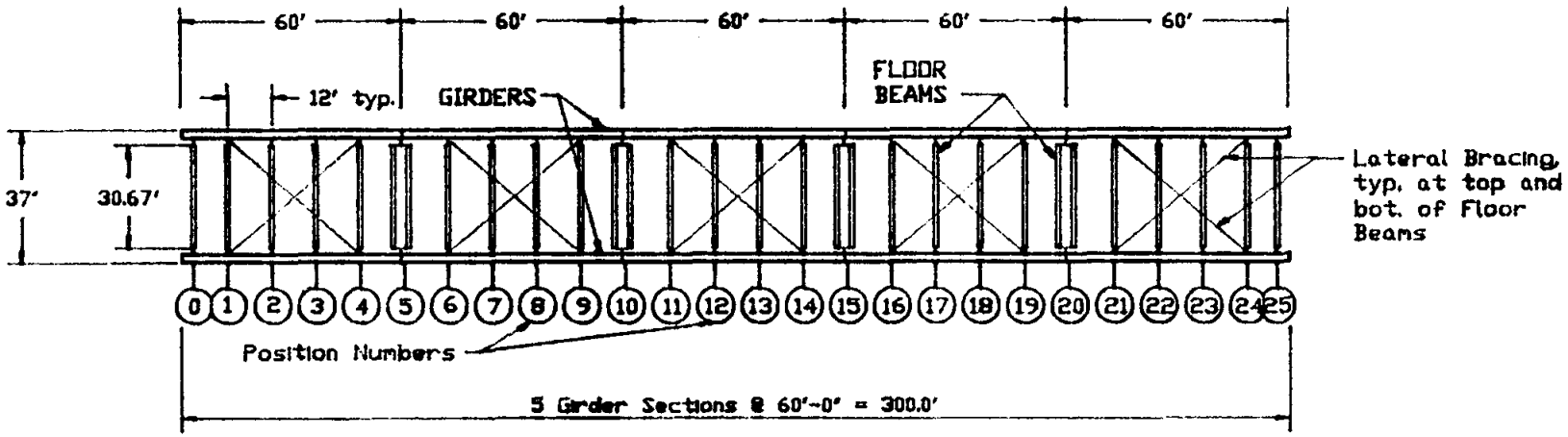
General Test Procedure

Once the instruments were initialized for the no traffic condition, a truck was positioned with the front axle centered over the appropriate floor beam. The load was referenced to the floor beam position number. For example, load position #0 corresponded to locating the front axle over the first floor beam (floor beam #0) at the downstation end of the bridge. Floor beams were numbered sequentially upstation to position #24 (the last beam) at the up station end of the bridge (Fig. 4.2).

Each test series was given a file name and the file name described the type of test, lane position, direction of the truck, and type of truck used for the test. The details of the file name description may be found in Appendices B AND C.



BRIDGE DECK PLAN VIEW



BRIDGE FRAME PLAN VIEW

Fig. 4.2 Bridge Frame and Floor Beam Positions

A typical static test series involved the following procedure. Depending on the type of test, a truck was moved either to the center of the left lane, center of the right lane, bridge center line, or the visible traffic wheel path of the left lane. With the truck positioned, and after vibration had dampened, the time and voltages for each strain gage, LVDT, thermistor, and horizontal solar radiation were recorded.

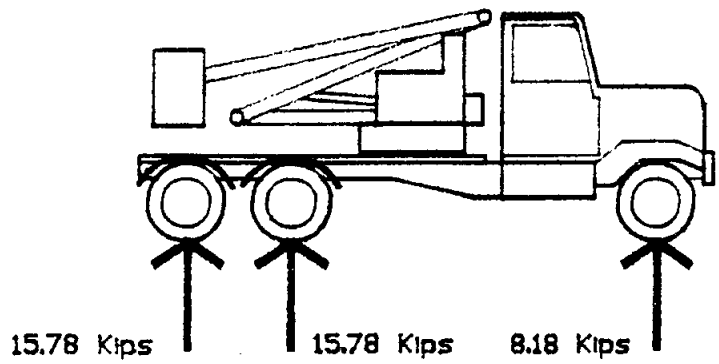
When possible, girder deflections were obtained by recording top of girder elevations at positions #4, 9, and 14 while the truck was parked with the front axle over the appropriate floor beam. Later in the office, the deflected top-of-girder elevations were compared with previously determined no-load elevations to evaluate the actual girder deflection.

4.2 Snooper Truck Tests

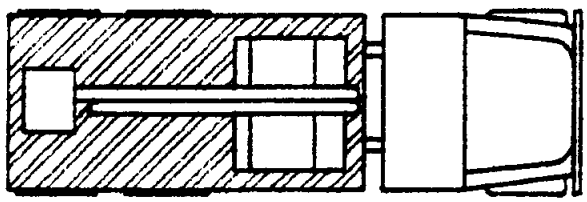
A Snooper truck type highway load was used for the control tests. The snooper truck was a standard flat-bed truck with a man basket connected to a maneuverable, folding hydraulic boom mounted on the bed. Fig. 4.3 shows the Snooper truck dimensions and axle loads used to load the bridge. The truck was selected to assist with instrumentation installation.

Test Series #1

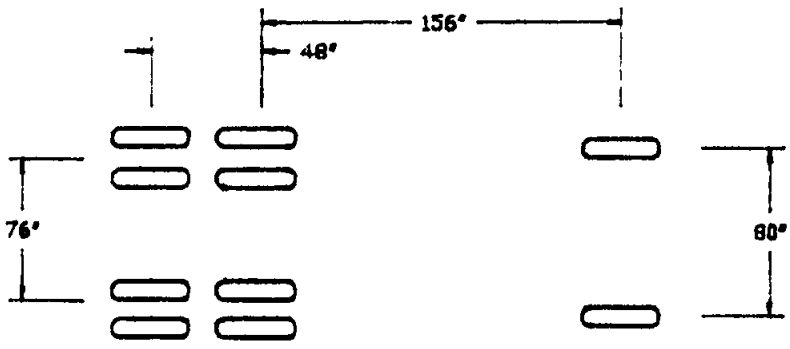
The first series of control tests were performed with the truck in the center of the left lane and this test series was given the filename SLDOS01. The first test began with the truck facing downstation and the front axle centered over the last floor beam (position #24) at the upstation end. Electronic sensor data were recorded for this static load and the truck was then moved down station to the next floor beam (position #23) and the procedure was repeated. A total of 25 static tests were recorded in this manner. No girder elevations were measured for this test series.



SIDE VIEW



TOP VIEW



TIRE FOOTPRINT

Fig. 4.3. Snooper Truck.

Because personnel safety was of paramount importance to these researchers, handheld transceivers (CB radios) were used to maintain traffic control and communicate during testing. Once this test series was completed, the data were examined for integrity. An examination of the data showed that the radios had introduced electronic data spikes and the amount of data recorded was inconsistent with the file names. Therefore, the testing procedure was modified to establish radio silence during electronic recording. Due to record-keeping difficulties and the electronic spikes in the data, this series of tests was not considered valid.

Subsequent Series of Tests

In the second series of tests (SLDOS02), the Snooper truck again started in the left lane facing downstation at the upstation end and progressed downstation. The third series of tests (SLRUS03) started in the center of the right lane at the downstation end, position #0, and progressed backwards upstation. Both of these series of tests were for all 25 positions but no deflection measurements were taken.

Two more series of tests were made with the Snooper truck. The first, test series 4 (SCDOS04), began with the truck centered on the center line of the bridge facing downstation with the front axle centered on the last upstation floor beam (position #24). The truck was then moved downstation. In this series, all 25 load positions were tested. Deflection measurements were taken only with the truck at positions #14, 9, and 4. The second, test series 5 (field test SCDOS05) was conducted with the Snooper truck positioned in the center of the right lane, facing downstation, with the front axle at position #4. The truck was then moved backward to positions #9 and #14, moved off the bridge over to the center of the left lane, and proceeded downstation. Data was recorded for this case when the truck was positioned at #14, 9, and 4. Deflection measurements were made for all truck positions of the latter test series.

Test Summary

Counting the first test series, data were recorded for a total of 106 load positions on the first day of testing. There were 53 load positions with the truck in the left lane, 28 with the truck in the right lane, and 25 with the truck on the centerline. Girder elevations were recorded for 9 of the 106 load positions. Table 4.1 summarizes these static load tests.

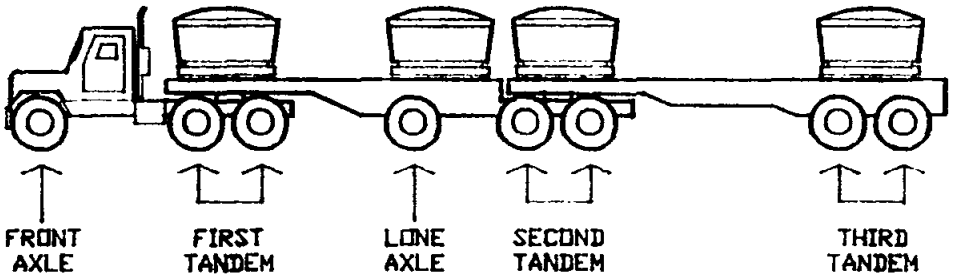
Table 4.1 Snooper Truck Test Series
(Left & Right refer to looking upstation)

Test #	Front Axle Pos.	Truck ---- Locations	Truck ---- Movement	Measured Deflection Locations
SLDOS01	24-0	Center of lt lane	downstation	none
SLDOS02	24-0	Center of lt lane	downstation	none
SLRUS03	0-24	Center of rt lane	upstation	none
SCDOS04	24-0	Center of Bridge	downstation	14,9,4
SCDOS05	4,9,14	Center of rt lane	upstation	4,9,14
SCDOS05	14,9,4	Center of lt lane	downstation	14,9,4

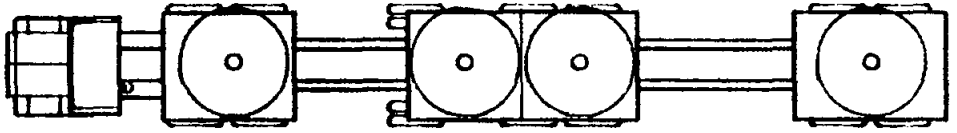
4.3 B-Train Tests

On the following day, testing resumed using ore trucks (B-Trains). The B-Trains were semi tractors towing two lowboy trailers containing a single dual axle and two sets of tandems. The B-Trains carried four pots mounted on the lowboy trailers. These trucks carried ore from the Yukon Territory in Canada to Skagway, Alaska. The average gross weight of these trains was approximately 160,000 lbs. Fig. 4.4 is a schematic of the B-Train showing the axle configuration and dimensions. Axle weights for the B-Trains used in the tests were obtained from a nearby weigh station in the Yukon Territory.

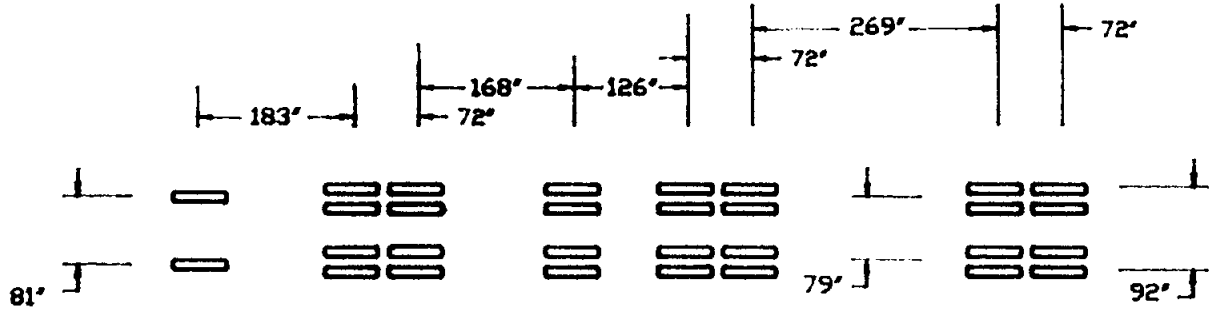
The same truck-positioning nomenclature and pattern used for the Snooper was utilized for the B-Train tests with the exception that these trucks were only placed at positions #4, 9, and 14. These positions were previously established with finite element analysis by both the principal investigator and the Alaska Department of Transportation



SIDE VIEW



TOP VIEW



TIRE FOOTPRINT

Fig. 4.4 Ore Truck Configuration (B-Train)

Division of Bridge Design as inducing the maximum strains in the box girders.

The first two B-Train tests were conducted with the truck in the left lane and positioned in the observable wheel path. For these tests the truck's transverse location with respect to the left guardrail was recorded for each position. The tests began with the front axle situated at position #14, facing downstation. No deflection measurements were made for the first of these two tests (field test #SLDOB06), but deflection measurements were taken during the second test for all three static locations (field test #SLDOB08).

The final two tests were for the B-Train centered on the center line of the bridge (field test #SCDOB10), and the B-Train in the center of the right lane (field test #SRDOB11). In these tests, the truck was again facing downstation, and the first test began with the front axle at position #14. Deflection data was recorded for only the first of these two tests.

A total of 12 B-Train load positions were tested. Six of these tests were with the truck in the observable wheel path of the left lane, three were with the truck in the right lane, and three loadings were with the truck on the center line of the bridge. Appendices B and C of this report provide the field test results for the Snooper truck and the B-Train tests respectively. Table 4.2 summarizes the static load tests that were carried out for the B-Trains.

Table 4.2 B-Train Tests
(Left & Right refer to looking upstation)

Test #	Front Axle Pos.	Truck ---- Locations	Truck -- Movement	Measured Deflection Locations
SLDOB06	4,9,14	Left lane wheel path	downstation	none
SLDOB08	4,9,14	Left lane wheel path	downstation	14,9,4
SCDOB10	4,9,14	Center of Bridge	downstation	14,9,4
SRDOB11	14,9,4	Center of Rt lane	downstation	none

5. EXPERIMENTAL RESULTS

The William Moore Creek Bridge field study was conducted for two types of trucks: a Snooper truck, which simulated a conventional AASHTO H20-44 highway load, and loaded B-Trains. The experimental results are presented below for consideration.

5.1 Snooper Truck Loads

During the third week of August in 1988, the William Moore Creek Bridge near Skagway, Alaska was instrumented and field tested. Part of the tests consisted of subjecting the bridge to static loads using a Snooper truck. These tests incorporated 106 load conditions. There were 53 cases with the truck in the left lane, 28 with the truck in the right lane and 25 with the truck on the bridge centerline. The first 25 tests in the left lane were not valid. All tests are described as if the reader were looking upstation toward Whitehorse.

The test load conditions were located at predetermined positions on the bridge deck to evaluate the performance of the structure. The truck used in these studies had a front axle weight of 8.18 kips and duals with axle weights of 15.78 kips giving a total truck weight of 39.74 kips.

Strains and Stresses

The strains in the girders, pylon bases, and the upstation column were examined for each test case and the maximum strains for each summarized and located. The results of this study enabled the researchers to identify the experimental maximum strains recorded for these tests. Based on this procedure, the maximum strain results for these tests are presented below in Table 5.1.

Table 5.1 Maximum Strains and Stresses for Snooper Truck Loads

Truck Location	Item (a)	Strain (micro-in/in)	Stress(b) (ksi)
-Left lane			
	Girder (98')	87.7	2.54
	Left column upstation end	10.0	0.29
	Pylon base (left pylon)	41.8	1.21
-Center line			
	Girder (33.25')	51.7	1.50
	Left column upstation end	6.0	0.17
	Pylon base (right pylon)	31.6	0.92
-Right lane			
	Girder (98')	96.7	2.80
	Left column upstation end	6.6	0.19
	Pylon base (right pylon)	26.9	0.78

a) Distances along bridge incline from downstation end
b) Stresses were calculated by $\sigma = E\epsilon$

Girder Deflections

The maximum deflection measured at the top of the girder was 0.84 in. for eccentric loading conditions and 0.48 in. for symmetric loading conditions.

Other Findings

The experimental results clearly showed that the bridge acted symmetrically with respect to its longitudinal center line. The Summary section of this report includes further discussion on this phenomenon.

5.2 B-Train Loads

It was the objective of this study to obtain experimental results (member strains and girder deflections) for static loads imposed by the loaded B-Train trucks moving from Whitehorse in the Yukon Territory to Skagway, Alaska. Because of time limitations, only four loaded ore trucks were tested in this study. These trucks were located at 12 positions and data were recorded for these positions. Prior to

recording data, a weight ticket for each truck was obtained from the driver and this weight was recorded. The results of these tests are summarized in the next subsection.

Strains and Stresses

Like the Snooper truck tests, strains were recorded for both girders, both pylon bases, and the axial strain in the upstation left column at the bridge abutment. The strain results are shown in Table 5.2.

Table 5.2 Maximum Strains and Stresses for B-Trains

Truck Location	Truck wt. (kips)	Item (a)	Strain (micro-in/in)	Stress(b) (ksi)
-Left lane	155.07			
		Girder (98′)	223.65	6.48
		Left column	26.03	0.75
		Pylon base (left)	133.57	3.87
-Center line	157.379			
		Girder (33.25′)	168.95	4.90
		Left column	21.72	0.63
		Pylon base (right)	98.85	2.87
-Right lane	157.556			
		Girder (98′)	207.26	6.01
		Left column	17.05	1.49
		Pylon base (right)	102.92	2.98

a) Distances along bridge incline from downstation end
b) Stresses were calculated by $\sigma = E\epsilon$

Girder Deflections

The difference between the girder elevations when subjected to the B-Train static loads and the unloaded girder elevations was calculated. The maximum deflection at the top of girder was found to be 2.76 in. for eccentric loads (truck in the driving lane) and 2.16 in. for symmetric loading (truck on the bridge center line).

Other Findings

For like loading conditions, excellent repeatability in recorded values was observed, thus endorsing the instrumentation technique and testing procedure.

B-Train axle weights did not vary significantly from truck to truck.

6. SUMMARY

It is the purpose of this chapter to summarize the experimental results of the field static load tests for the William Moore Creek Bridge. Two types of trucks were used to load the bridge: a Snooper truck with a weight of 39.74 kips and loaded B-Train ore trucks weighing between 155 and 158 kips.

6.1 Snooper Truck

The maximum strains measured in the field due to Snooper truck static loads are presented in Table 6.1.

Table 6.1 Maximum Strains Produced by the Snooper Truck

Load Condition	Type of Member	---Strain(micro-in/in)--- Tension	Compression
Symmetrical:	Along the girders	53.1	51.6
	Pylon base	15.0	31.6
	Upstation column (left side)	5.1	6.0
Asymmetrical:	Along the girders	93.4	96.6
	Pylon base	41.7	24.3
	Upstation column (left side)	4.3	10.0

6.2 B-Trains

The maximum strains measured in the field for the B-Train load tests are presented in Table 6.2.

Table 6.2 Maximum Strains Produced by B-Trains

Load Condition	Type of Member	---Strain(micro-in/in)--- Tension	Compression
Symmetrical:	Along the girders	162.9	168.9
	Pylon base	39.5	98.9
	Upstation column (left side)	21.7	----
Asymmetrical:	Along the girders	205.0	223.6
	Pylon base	53.7	133.6
	Upstation column (left side)	26.0	-----

Over the two-day testing period a total of 118 loading conditions were examined. Tests consisted of eccentric loadings (truck being placed in the left and right lanes), and symmetric loadings (truck placed on the bridge center line). The structure reacted according to the loading circumstance. Based on the test results, it was concluded that the structure experienced a symmetrical behavior for the symmetric loadings applied.

Under symmetrical loads, the strains measured in both girders at gages located directly opposite each other were approximately the same in magnitude and sign (tension or compression). It was further concluded that asymmetric loads induced larger strains in the girder nearest the load, and lower strains in the girder farthest from the load than was measured in either girder under a symmetric loading condition. This observation was made for both asymmetric loading circumstances (truck placed in the right or left lane).

The magnitude and sign of the strains measured in the girder nearest to or farthest from the load, for the eccentric loading conditions, were approximately the same. Tables 6.3 through 6.6 present the maximum measured strains for each gage over the testing period for both the Snooper and B-train tests, under either a symmetric or asymmetric loading condition.

Table 6.3 Strain Extremes for Symmetric Snooper Truck Loads
(All Strains in Micro-Strain)

Gage Location (ft)	Top of Girder				Bottom of Girder			
	Left Girder		Right Girder		Left Girder		Right Girder	
	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp
33.25	51.6	3.8	51.1	3.6	0.3	46.9	0.3	48.9
98.00	18.1	46.2	19.6	44.1	50.7	19.0	53.1	20.3
146.00	12.6	18.9	16.7	18.6	10.4	11.7	8.4	13.1
206.00	15.7	46.1	13.0	51.6	42.7	10.2	38.3	11.2
278.00	35.2	1.7	36.2	3.2	2.2	44.0	1.1	45.4

Note: 1) Blank entries imply girder did not go into compression/ tension at the gage location for the test series.
2) Gage locations are measured from downstation end of bridge, see Ch 4.

Table 6.4 Strain Extremes for Asymmetric Snooper Truck Loads
(All Strains in Micro-Strain)

Gage Location (ft)	Top of Girder				Bot. of Girder			
	Left Girder		Right Girder		Left Girder		Right Girder	
	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.
33.25	60.3	10.3	58.0	8.3	2.3	63.1	1.9	58.1
98.00	6.5	87.4	6.7	96.6	83.2	23.5	93.4	20.0
146.00	6.4	42.3	4.0	48.9	27.8	16.3	32.6	11.6
206.00	5.2	71.0	6.1	78.9	60.8	10.4	57.8	7.2
278.00	45.9	3.4	48.1	6.4	0.1	62.0	0.3	65.8

Note: 1) Blank entries imply girder did not go into compression/tension at the gage location for the test series.
2) Gage locations are measured from downstation end of bridge, see Ch 4.

Table 6.5 Strain Extremes for Symmetric B-Train Truck Loads
(All Strains in Micro-Strain)

Gage Location (ft)	Top of Girder				Bot. of Girder			
	Left Girder		Right Girder		Left Girder		Right Girder	
	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.
33.25	153.5	---	152.2	---	---	157.2	---	158.0
98.00	---	168.9	---	164.3	145.6	66.8	162.9	74.3
146.00	---	68.9	---	72.1	33.6	30.8	33.4	30.9
206.00	13.7	144.0	15.4	165.4	115.8	17.2	111.1	15.4
278.00	116.6	---	126.9	---	---	158.1	---	171.4

Note: 1) Blank entries imply girder did not go into compression/tension at the gage location for the test series.
2) Gage locations are measured from downstation end of bridge, see Ch 4.

Table 6.6 Strain Extremes for Asymmetric B-Train Truck Loads (All Strains in Micro-Strain)

Gage Location (ft)	Top of Girder				Bottom of Girder			
	Left Girder		Right Girder		Left Girder		Right Girder	
	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.	Max. Tens.	Max. Comp.
33.25	204.2	4.4	191.4	4.4	---	208.4	---	197.5
98.00	---	223.6	---	207.3	195.5	81.6	205.0	85.4
146.00	---	93.7	---	93.2	50.7	38.4	47.3	34.6
206.00	17.4	189.0	19.7	204.0	150.7	21.8	137.9	18.5
278.00	157.3	---	159.5	---	---	210.7	---	215.2

Note: 1) Blank entries imply girder did not go into compression/tension at the gage location for the test series.
2) Gage locations are measured from downstation end of bridge, See Ch 4.

7. CONCLUSIONS

An investigation of the Captain William Moore Creek Bridge was conducted to examine the load distribution and structural behavior under static load conditions. Two types of loads were experimentally tested: a Snooper truck which was used as a control load, and 160,000 lb. ore trucks (B-Trains). These test vehicles were statically positioned on the bridge at locations previously determined to be critical to the performance of the bridge girders.

The bridge was instrumented with strain gages, thermistors, an anemometer, a LVDT, and a horizontal all-wave radiometer. The strain gages were installed at locations determined critical by a pre-instrumentation mathematical analysis, thermistors were installed at a single location on one girder to monitor the temperature profile of the girder, and the LVDT was installed on one of the forestay cables to determine the feasibility of measuring cable strains. Wind speed, horizontal solar radiation, and ambient air temperature were also recorded during the testing period. Deflection measurements of the tops of both girders were made for selected tests using surveying instruments.

Five test series were conducted using the Snooper truck. The first test was with the truck in the left lane facing down station. Procedural flaws occurred during this test and therefore it was not considered valid. The remaining four tests were executed properly and used to study bridge behavior.

Four series of static tests were performed for B-Trains. Each of these test series involved three load positions (4,9,14). The truck was placed in the observable wheel path of the left lane, centered on the bridge center line, and in the center of the right lane. Deflection measurements were taken for the B-Train centered on the center line and in the observable wheel path of the left lane.

The maximum state of stress was 6.48 ksi due to the B-train load tested. The stress occurred in the left girder at 98 ft from the downstation end. The maximum measured girder deflection due to the B-train load was 2.76 inches. The maximum stress due to the Snooper truck load was 2.80 ksi. This stress occurred in the right girder 98 ft from the downstation end. The maximum measured girder deflection due to the Snooper truck load was 1.84 inches.

8. REFERENCES

1) Dally, J.W., Riley, W.F., "Experimental Stress Analysis", 2nd Edition, McGraw-Hill, Inc., New York, 1978.

2) Kayser, T.H., Binkorst, J., "Computer Calculations of a Complex Steel Bridge Verified by Model Investigations (Applied at the Steel Bridge Spanning the River Waal Near Ewijk)", Ministry of Transport, Netherlands, Rijkswaterstaat The Hague, Netherlands, No. 23, 1975.

3) Koizumi, M., et. al, "Construction of Meiko-Nishi Bridge", Nippon Kokan Technical Report, Report No. 45, Dec. 1985, pp. 22-12.

4) Ohleson, Sven, "Dynamic Properties of the Tjorn Bridge Experimental Program", Chalmers University of Technology, Sweden Institute of Transportation, Onsternik, Staal-och Traebvggnad, Report No. 81:3, Nov., 1981, 36 pages.

5) Roark,R.J., "Formulas for Stress and Strain", Fourth Edition, McGraw-Hill, Inc., New York, 1965.

6) Troitsky, M.S., "Cable-Stayed Bridges, An Approach To Modern Bridge Design", Van Nostrand Reinhold Company, New York, 1988.

7) Troitsky, M.S., Lazar, B.E., "Model Analysis and Design of Cable-Stayed Bridges", Inst of Civil Engineers, Proceedings, London, England, Proc. Vol 48, Paper 17375, March, 1971, pp. 439-464.

APPENDIX A

FIELD DATA REDUCTION INFORMATION

A.1 General Comments

This section is intended to provide the reader with an understanding of the data recorded and how the data were processed to obtain engineering units. This is accomplished by providing the equations used for the reduction of raw data recorded in the field. This appendix includes sample calculations for each parameter measured. Specific data records are available for review in Appendix B.

A.2 Conversion of Strain Gage Voltages to Strain

The experimental results from the static load tests for the William Moore Creek Bridge were obtained using a five volt DC power supply and data logger. Strain gage response to a given load was recorded in volts on a floppy disk (see Appendix B). Air temperature and girder temperatures measured with thermistors were recorded in degrees centigrade.

All strain gages used at the bridge were environmentally sealed weldable strain gages supplied by HITEC Products, Inc. (8), with a nominal resistance of 350 ohms. Each strain gage installation circuit incorporated three completion resistors in a transition module and an active gage (resistor) at the mounting. The Wheatstone Bridge circuit, power supply and monitoring equipment are shown in Figure A.1. An accurate conversion between voltage and strain must account for input voltage, gage resistance, cable resistance, etc.

Gage Factor

A given strain gage has a relationship between strain and resistance at a given temperature which is called the gage factor. The HITEC gages supplied had a gage factor of 2.05 at a calibration temperature of 24°C. The manufacturing data showed that the resistance changed .7% per 100°C. Thus, the gage factor for the weldable gages is given by

$$GF = 2.05\ [1 + \frac{.007(T_m - 24)}{100}] \qquad (A.1)$$

in which T_m is the temperature in degrees centigrade of the member in contact with the strain gage. At the bridge site, thermistors were used to monitor the temperature profile at the exterior surface of the right box girder near the downstation end. The average of these temperatures was used for the member temperature in Eq. A.1.

Circuit Resistance

The resistance of the Wheatstone Bridge circuit is affected by wire size used for cables, cable length, air temperature and strain gage resistance. The cables used were Belden 8273 5 conductor 22 gage individually shielded supplied by Belden Wire and Cable (1). The sensors were connected to the cables with Lemo connectors: Part #FE 2.305 NYLU/4.2 male plugs, and Part #RCE 2.305 NYLU/4.2 female receptacle provided by Lemo USA, Inc. (4). In order to properly account for the effects of various cable lengths and changes in the environment, the following laboratory calibration procedure was used.

1) Each 5 conductor Belden cable was cut for length, marked with a code member which identified the cable placement location, and fitted with a connector;

2) After the above procedure was completed, the wire resistance of each cable was measured at a temperature of 18°C and recorded, see Table A.1.

The total resistance of the appropriate cable connecting a gage is given by

$$R_l = R_{cal}\ [1 + 0.00434\ (T_a - T_{cal})] \qquad (A.2)$$

in which R_{cal} is the wire resistance obtained by the laboratory calibration tests, see Table A.1. T_a is the air temperature in degrees

centigrade at time of testing and T_{cal} is the temperature used to calibrate the cables which was 18°C. The term .00434 is the temperature coefficient of seven-strand tined copper wire (2).

The input voltage at the gage module is less than the voltage from the power supply due to desensitization of the gage circuit and is given by

$$V_{in} = \frac{V\ (R_g)}{(R_g + R_l)} \tag{A.3}$$

in which V is the power supply voltage, R_g is the gage resistance in ohms and R_l is given by Eq. A.2.

Gage Strain

The use of strain gages is based on the concept that any applied load or condition will change the gage resistance (voltage) from a beginning condition. The resulting change in voltage or voltage ratio is given by

$$Vr = \left(\frac{V_{out}}{V_{in}}\right) \text{ strained} - \left(\frac{V_{out}}{V_{in}}\right) \text{ unstrained} \tag{A.4}$$

Where V_{out} is the gage voltage and V_{in} is given by Eq. A.3, the unstrained voltages represent the initial gage conditions prior to the test. The data for these conditions are obtained from Group #2 of the recorded data for each test series presented in Appendices B and C. In a similar manner, the strained data represent the gage response to the applied load and these values may be found in Group 3, Appendices B & C.

The strain in the Wheatstone Quarter Bridge circuit shown in Figure A.1 is given by

$$\epsilon = \frac{-4\ V_r}{GF(1+2\ V_r)} \tag{A.5}$$

in which the voltage ratio (V_r) is given by Eq. A.4, and the GF is obtained from Eq. A.1.

Table A.1 Laboratory Measured Cable (2-Wire) Resistances

Cable or Wire No.	Length (ft.)	Red-Black Wires	Green-White Wires	Temp. (C)
1	450	13.448	13.164	18
2	450	13.471	13.18	18
3	450	13.22	13.514	18
4	450	13.24	13.16	18
5	450	13.755	13.614	18
6	450	13.588	13.231	18
7	450	13.677	13.72	18
8	450	13.214	13.149	18
9	350	10.301	10.235	18
10	350	10.488	10.278	18
11	350	10.478	10.254	18
12	350	10.287	10.517	18
13	300	8.825	8.776	18
14	300	9.093	9.088	18
15	300	9.064	8.833	18
16	300	9.13	9.164	18
17	150	4.549	4.433	18
18	150	4.583	4.597	18
19	150	4.431	4.422	18
20	150	4.561	4.567	18
21	150	4.511	4.421	18
22	150	4.511	4.422	18
23	150	4.434	4.527	18
24	150	4.431	4.399	18
25	450	13.631	13.611	18
26	300	9.081	9.074	18
28	300	9.122	9.422	18
29	300	9.086	9.376	18
30	300	9.127	9.426	18

Gage Strain Example

The following calculations are presented for cable No. 2 (gage No. 6) due to the snooper truck at position No. 16 (record 11). The data were recorded in file number SLD0502. See Appendix B, pages B-2 through B-29 for the referenced file.

Step 1. Find the Gage Factor (GF):

The gage factor is calculated by Eq. A.1;

$$GF = 2.05\ [1 + \frac{.007(T_m-24)}{100}]$$

- The member temperature, T_m is approximated by using the average girder temperature at the beginning of each test. This is determined from seven thermistor temperatures found in record 1, Group #1 of each file (see page B-2).

$$T_m = (12.44+13.38+13.44+13.25+12.93+12.58+12.65)/7 = 12.94°C$$

- Substituting T_m into Equation A.1 gives

$$GF = 2.05\ [1 + \frac{.007(12.94-24)}{100}] = 2.0484$$

Step 2. Find the Circuit Resistance (R_1)

The wire resistance of the cable, R_1, is given by Eq. A.2:

$$R_1 = R_{cal}\ [1+0.00434(T_a-T_{cal})]$$

- This equation accounts for wire resistance as a function of the ambient air temperature, T_a, at the time of the test.

- Record 2 in Group No. 2 of each file contains the ambient air temperature, T_a, in degrees centigrade at the beginning of each test as found on page B.2 of Appendix B.

  $T_a = 11.7°C$

- Table A.1 gives the laboratory calibration wire resistance measurement data for each cable. The red-black wire combination was used. The values for Cable No. 2 are

  $R_{cal} = 13.417$ ohms
  $T_{cal} = 18°C$

- Substituting these values into Eq. A.2 gives

  $R_l = 13.417\ [1+.00434(11.7-18)] = 13.1027$ ohms

Step 3. Find the Voltage Ratio (V_r)

The input voltage at the gage module is given by Eq. A.3:

$$V_{in} = \frac{V(R_g)}{(R_g+R_l)}$$

The results from this equation for the unstrained and strained conditions are substituted into Eq. A.4 to give

$$Vr = \left(\frac{V_{out}}{V_{in}}\right)_{strained} - \left(\frac{V_{out}}{V_{in}}\right)_{unstrained}.$$

- First, obtain V_{in} and V_{out} for the strained condition. Group No. 3 gives the strained power supply voltage and strained cable voltage. For this example, the power supply voltage (V) and gage voltage for cable No. 2 are given on page B-11 of Appendix B.

V = 4.9776 volts

Vout = +0.001765 volts

substituting these values into Eq. A.3 gives

$$Vin = \frac{4.9776\ (350)}{(350+13.1027)} = 4.798 \text{ volts}$$

- Obtain V_{in}, V_{out} for the unstrained condition. Group No. 2 provides these data, and for this example they may be found on page B.2 of Appendix B.

V = 4.9802 volts

V_{out} = +0.001657 volts

Substituting into Eq. A.3 gives

$$Vin = \frac{4.9802\ (350)}{(350+13.1027)} = 4.80 \text{ volts}$$

- When the strained and unstrained input module voltages and strain gage voltages are determined, they are substituted into Equation A.4 to give

$$V_r = \left(\frac{.001765}{4.798}\right)_{\text{strained}} - \left(\frac{.001657}{4.80}\right)_{\text{unstrained}} = 22.65$$

Step 4. Find the Gage Strain

Gage strain is given by Eq. A.5:

$$\epsilon = \frac{-4V_r}{GF(1+2V_r)}$$

The voltage ratio was found from Step 3 and the GF was determined from Step 1. Substituting these into the above equation gives

$$\epsilon = \frac{-4}{2.084}\left[\frac{22.65\ E\text{-}06}{1+\ 2(22.65E\text{-}06)}\right] = 44.3 \text{ micro-strain}$$

A.3 Girder Temperature Profile Thermistors

The exterior face of the right box girder near the pylon at the downstation end of the bridge was instrumented with eight equally spaced Thermistors. The eighth thermistor solder connection shorted out; therefore seven were used to establish the temperature profile through the depth of the girder.

The thermistors used to instrument the William Moore Creek Bridge were YSI 44030 precision thermistors supplied by YSI Incorporated (9). YSI recommends the Steinhart and Hart empirical temperature-resistance equation given as

$$\frac{1}{T_k} = a + b\ (\log_e R) + c\ (\log_e R)^3 \qquad (A.6)$$

in which a,b, and c are coefficients derived by measurements and supplied by the manufacturer, R is the resistance of the thermistor in ohms and T_k is the thermistor temperature in degrees Kelvin. The temperature of the thermistor in degrees centigrade is given by

$$T = T_k - 273.15^\circ \qquad (A.7)$$

Coefficients a,b, and c were calculated for the ambient temperature range from the type 44030 YSI thermistor calibration curve supplied by the manufacturer. These are

a = 0.001405076
b = 0.000236873
c = 1.019454E-07

The data acquisition program written by Mr. Richard W. Briggs for this project performed the conversion of resistance to temperature in degrees centigrade. Thus, all temperatures were recorded on floppy disk directly in degrees centigrade.

A.4 Windy Velocity

The wind speed was monitored at the left downstation end of the bridge with a Met One three-cup anemometer supplied by (5). This device was borrowed from the Alaska Department of Transportation Research Section. The anemometer counts the number of pulses in a given second. This data was recorded in this manner on a floppy disk. The wind speed is calculated in miles per hour by

$$W_V = 1.789\ (F) + 1 \tag{A.8}$$

where F is the frequency in count per second and is given by

$$F = \frac{C}{60} \tag{A.9}$$

in which C is the number of counts per minute measured by the instrument. Wind speed in mph was recorded on floppy disk.

A.5 Horizontal Solar Radiation

Global direct and diffuse solar radiation was monitored at the bridge site with a star pyranometer supplied by (7). This pyranometer was borrowed from the Alaska Department of Transportation Research section and provides for a 0.3 to 3 micron response.

The pyranometer was calibrated with a tractable Eppley pyranometer to give horizontal radiation, R, in watts per square meter. The calibration relationship is

$$R = \frac{V}{15.18E.06} \tag{A.10}$$

in which V is the output of the pyranometer in volts. Each record provides both raw voltage and the computed radiation in watts-per-square-meter (see Appendices B and C).

A.6 Monitoring Equipment

The data monitoring equipment consisted of two Hewlett Packard 3421A data loggers controlled by an HP-71 handheld computer. Peripheral devices included an HP battery-operated ink jet printer and a 3.5 inch disk drive. The monitoring equipment was supplied by Hewlett-Packard (3) and is owned by the Alaska Department of Transportation Research section; it was borrowed for use on this project. The data logger has excellent resolution (1 part in 602,000). The input resistance on strain gage measurements was 10E16 ohms which makes meter loading on the circuit negligible.

A.7 References

1) "Belden Wire and Cable Master Catalog 885"; Belden Wire and Cable; 2955 E. Main Street, Suite 300; Irvine, CA 92714; Telephone: 1-800-BELDEN-1.

2) Eshback, O.W., Souders, M., Handbook of Engineering Fundamentals, 3rd Edition, John Wiley & Sons, New York, 1975, p. 1442.

3) Hewlett Packard; Palo Alto, CA 94304; Telephone (213)970-7500.

4) Lemo USA, Inc., P.O. Box 1106, 335 Tesconi Cir, Santa Rosa, CA 95406, Telephone: (707) 578-8811

5) Met One, Wind Speed Sensor, Mode 014A, Met One, 481 California Avenue, Grant Pass, OR 97526, Telephone: (503) 479-1248.

6) Practical Strain Gage Measurements, Application Note 290-1, Hewlett Packard, 1501 Page Mill Road, Palo Alto, CA, 5952-8880, Sept. 1981.

7) Star Pyranometer Model R413, Weather Measure Corporation; PO Box 41257, Sacramento, CA 95841, Telephone (916) 481-7565.

8) Wnuk, V.P., Strain Gage Development Lab; HITEC Products, Inc., PO Box 790, Ayer, MA 01432, Telephone (508) 772-6963.

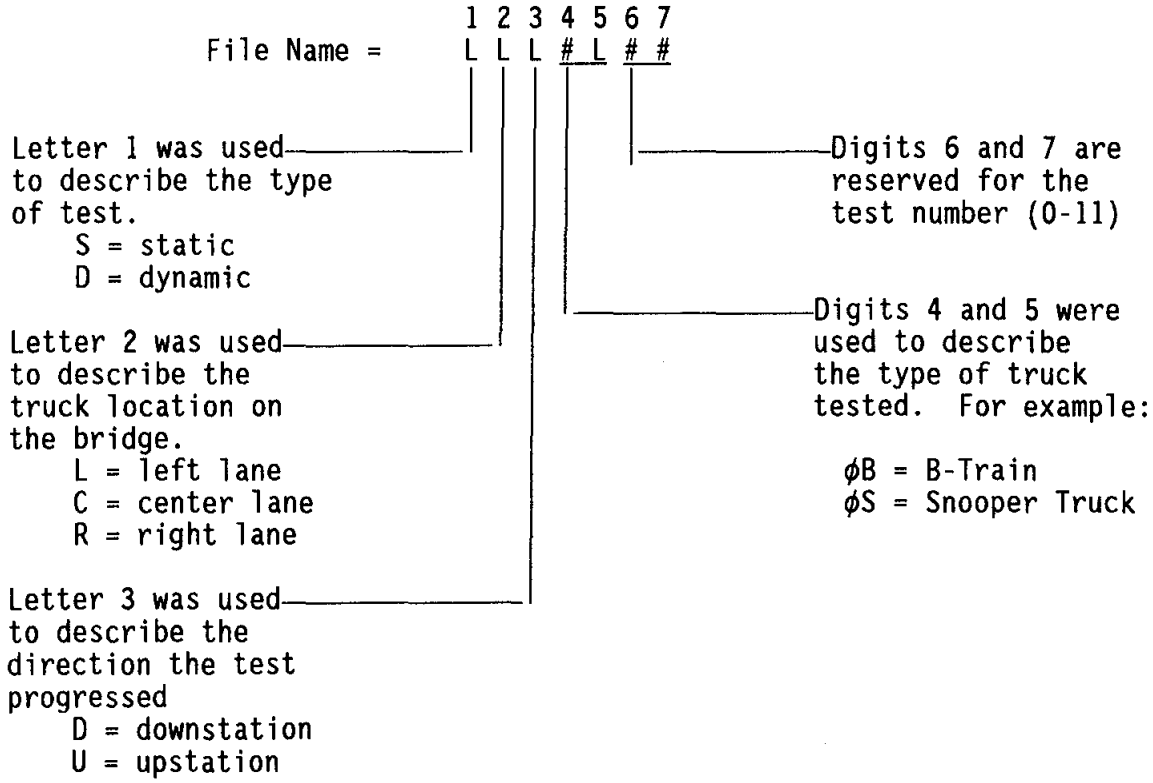
9) YSI Incorporated, Yellow Springs, OH, 45387, Telephone (513) 767-7241.

APPENDIX B

SNOOPER TRUCK FIELD DATA

This appendix contains raw data recorded in the field for the Snooper Truck tests. The file name corresponds to the test name used for documentation and organization of the data. The letters in the names imply the test situation.

Before testing began, the researchers prepared the following technique for documentation of each test series. All data were stored on a floppy disk under a file name. Thus a seven-letter file name was selected to describe the test conditions. The seven letters were formed as follows:



Based on this criteria, all static load tests for the Snooper truck were described by S??ϕS?? where the question marks are filled in for the particular test conditions.

Each file is divided into three groups of data. The three groups of information are described below.

Group #1 = This group contains the temperatures of the girder profile and instrument temperature at the beginning of the test.

Group #2 = This group contains the initial unstrained voltages for all the strain gages (zero readings) taken immediately preceding the tests. Air temperature and wind speed are also recorded at this time.

Group #3 = This group provides the strained voltages for all the strain gages the LVDT voltage and the horizontal solar radiation at the time of the test.

MOORE CREEK BRIDGE PROJECT

File name: SLD0S02 Date: 89/08/01
Date: 88/08/19
Time: 11:58:55 Group# 1 Record# 1

TEMPERATURE PROFILE OF GIRDER:
Thermistor# 1 12.4 Deg.C
Thermistor# 2 13.4 Deg.C
Thermistor# 3 13.4 Deg.C
Thermistor# 4 13.2 Deg.C
Thermistor# 5 12.9 Deg.C
Thermistor# 6 12.6 Deg.C
Thermistor# 7 12.7 Deg.C
Thermistor# 8 245.2 Deg.C
Instrument 1 Temp: 19.91 Deg.C
Instrument 2 Temp: 20.51 Deg.C

ZERO STRAIN VOLTAGES:
Time: 12:00:54 Group# 2 Record# 2
Power supply: 4.98020 Volts DC
Cable# 1 -.007016 Volts DC
Cable# 2 +.001657 Volts DC
Cable# 3 +.000915 Volts DC
Cable# 4 -.001463 Volts DC
Cable# 5 -.001010 Volts DC
Cable# 6 -.004044 Volts DC
Cable# 7 -.000914 Volts DC
Cable# 8 -.001971 Volts DC
Cable# 9 -.001316 Volts DC
Cable# 10 +.002780 Volts DC
Cable# 11 +.003539 Volts DC
Cable# 12 -.000032 Volts DC
Cable# 13 -.001342 Volts DC
Cable# 14 -.004179 Volts DC
Cable# 15 -.004330 Volts DC
Cable# 16 -.001438 Volts DC
Cable# 17 -.003084 Volts DC
Cable# 18 -.003376 Volts DC
Cable# 19 -.003338 Volts DC
Cable# 20 -.003326 Volts DC
Cable# 21 -.002121 Volts DC
Cable# 22 +.002850 Volts DC
Cable# 23 -.001956 Volts DC
Cable# 24 -.001630 Volts DC
Cable# 25 -.002614 Volts DC
LVDT: -0.063337 VDC
Hor. Rad.= 6.5E-3 VDC 428.8 W/M^2
Air Temp= 11.7 Deg.C
Wind Speed: 9.6 MPH

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #24 LT

Time: 12:02:12 Date: 88/08/19
Group# 3 Record# 3
File name: SLD0S02
Power supply: 4.9809 Volts DC

Cable# 1	-.007019 Volts DC	-.8 Micro-Strains
Cable# 2	+.001654 Volts DC	-1.3 Micro-Strains
Cable# 3	+.000914 Volts DC	-.5 Micro-Strains
Cable# 4	-.001463 Volts DC	+.1 Micro-Strains
Cable# 5	-.001011 Volts DC	-.3 Micro-Strains
Cable# 6	-.004049 Volts DC	-1.8 Micro-Strains
Cable# 7	-.000913 Volts DC	+.5 Micro-Strains
Cable# 8	-.001972 Volts DC	-.3 Micro-Strains
Cable# 9	-.001318 Volts DC	-.7 Micro-Strains
Cable# 10	+.002780 Volts DC	-.2 Micro-Strains
Cable# 11	+.003540 Volts DC	+.2 Micro-Strains
Cable# 12	-.000035 Volts DC	-1.2 Micro-Strains
Cable# 13	-.001346 Volts DC	-1.5 Micro-Strains
Cable# 14	-.004182 Volts DC	-1.0 Micro-Strains
Cable# 15	-.004329 Volts DC	+.6 Micro-Strains
Cable# 16	-.001441 Volts DC	-1.1 Micro-Strains
Cable# 17	-.003086 Volts DC	-.6 Micro-Strains
Cable# 18	-.003378 Volts DC	-.6 Micro-Strains
Cable# 19	-.003340 Volts DC	-.6 Micro-Strains
Cable# 20	-.003328 Volts DC	-.6 Micro-Strains
Cable# 21	-.002118 Volts DC	+1.3 Micro-Strains
Cable# 22	+.002850 Volts DC	-.2 Micro-Strains
Cable# 23	-.001956 Volts DC	+.1 Micro-Strains
Cable# 24	-.001629 Volts DC	+.5 Micro-Strains
Cable# 25	-.002623 Volts DC	-3.5 Micro-Strains

LVDT: -0.062892 VDC -0.000023 Inches

Hor. Rad.=.004849 VDC 319.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #23 LT

Time: 12:03:25 Date: 88/08/19
Group# 3 Record# 4
File name: SLD0S02
Power supply: 4.9811 Volts DC

Cable# 1	-.007022 Volts DC	-1.9	Micro-Strains
Cable# 2	+.001649 Volts DC	-3.4	Micro-Strains
Cable# 3	+.000911 Volts DC	-1.7	Micro-Strains
Cable# 4	-.001463 Volts DC	+.1	Micro-Strains
Cable# 5	-.001011 Volts DC	-.3	Micro-Strains
Cable# 6	-.004053 Volts DC	-3.4	Micro-Strains
Cable# 7	-.000915 Volts DC	-.3	Micro-Strains
Cable# 8	-.001977 Volts DC	-2.3	Micro-Strains
Cable# 9	-.001320 Volts DC	-1.5	Micro-Strains
Cable# 10	+.002777 Volts DC	-1.4	Micro-Strains
Cable# 11	+.003540 Volts DC	+.1	Micro-Strains
Cable# 12	-.000040 Volts DC	-3.2	Micro-Strains
Cable# 13	-.001346 Volts DC	-1.5	Micro-Strains
Cable# 14	-.004184 Volts DC	-1.7	Micro-Strains
Cable# 15	-.004331 Volts DC	-.1	Micro-Strains
Cable# 16	-.001441 Volts DC	-1.1	Micro-Strains
Cable# 17	-.003090 Volts DC	-2.2	Micro-Strains
Cable# 18	-.003381 Volts DC	-1.7	Micro-Strains
Cable# 19	-.003341 Volts DC	-1.0	Micro-Strains
Cable# 20	-.003331 Volts DC	-1.7	Micro-Strains
Cable# 21	-.002117 Volts DC	+1.7	Micro-Strains
Cable# 22	+.002850 Volts DC	-.2	Micro-Strains
Cable# 23	-.001956 Volts DC	+.1	Micro-Strains
Cable# 24	-.001629 Volts DC	+.5	Micro-Strains
Cable# 25	-.002639 Volts DC	-10.0	Micro-Strains

LVDT: -0.062918 VDC -0.000021 Inches

Hor. Rad.=.004926 VDC 324.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #22 LT

Time: 12:04:27 Date: 88/08/19
Group# 3 Record# 5
File name: SLD0S02
Power supply: 4.9812 Volts DC

Cable# 1	-.007024 Volts DC	-2.7	Micro-Strains
Cable# 2	+.001655 Volts DC	-.9	Micro-Strains
Cable# 3	+.000907 Volts DC	-3.3	Micro-Strains
Cable# 4	-.001477 Volts DC	-5.6	Micro-Strains
Cable# 5	-.001017 Volts DC	-2.8	Micro-Strains
Cable# 6	-.004059 Volts DC	-5.8	Micro-Strains
Cable# 7	-.000913 Volts DC	+.5	Micro-Strains
Cable# 8	-.001986 Volts DC	-5.9	Micro-Strains
Cable# 9	-.001326 Volts DC	-3.9	Micro-Strains
Cable# 10	+.002777 Volts DC	-1.4	Micro-Strains
Cable# 11	+.003541 Volts DC	+.5	Micro-Strains
Cable# 12	-.000050 Volts DC	-7.3	Micro-Strains
Cable# 13	-.001346 Volts DC	-1.5	Micro-Strains
Cable# 14	-.004187 Volts DC	-2.9	Micro-Strains
Cable# 15	-.004335 Volts DC	-1.7	Micro-Strains
Cable# 16	-.001445 Volts DC	-2.7	Micro-Strains
Cable# 17	-.003097 Volts DC	-4.9	Micro-Strains
Cable# 18	-.003386 Volts DC	-3.7	Micro-Strains
Cable# 19	-.003341 Volts DC	-.9	Micro-Strains
Cable# 20	-.003335 Volts DC	-3.3	Micro-Strains
Cable# 21	-.002118 Volts DC	+1.4	Micro-Strains
Cable# 22	+.002849 Volts DC	-.6	Micro-Strains
Cable# 23	-.001957 Volts DC	-.2	Micro-Strains
Cable# 24	-.001628 Volts DC	+.9	Micro-Strains
Cable# 25	-.002633 Volts DC	-7.5	Micro-Strains

LVDT: -0.062940 VDC -0.000020 Inches

Hor. Rad.=.004708 VDC 310.1 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #21 LT

Time: 12:05:33 Date: 88/08/19
Group# 3 Record# 6
File name: SLD0S02
Power supply: 4.9813 Volts DC

Cable# 1	-.007025 Volts DC	-3.0 Micro-Strains
Cable# 2	+.001693 Volts DC	+14.5 Micro-Strains
Cable# 3	+.000901 Volts DC	-5.8 Micro-Strains
Cable# 4	-.001530 Volts DC	-27.1 Micro-Strains
Cable# 5	-.001038 Volts DC	-11.3 Micro-Strains
Cable# 6	-.004062 Volts DC	-7.0 Micro-Strains
Cable# 7	-.000896 Volts DC	+7.4 Micro-Strains
Cable# 8	-.001996 Volts DC	-10.0 Micro-Strains
Cable# 9	-.001334 Volts DC	-7.1 Micro-Strains
Cable# 10	+.002784 Volts DC	+1.4 Micro-Strains
Cable# 11	+.003545 Volts DC	+2.1 Micro-Strains
Cable# 12	-.000064 Volts DC	-12.9 Micro-Strains
Cable# 13	-.001347 Volts DC	-1.9 Micro-Strains
Cable# 14	-.004188 Volts DC	-3.2 Micro-Strains
Cable# 15	-.004338 Volts DC	-2.8 Micro-Strains
Cable# 16	-.001447 Volts DC	-3.5 Micro-Strains
Cable# 17	-.003105 Volts DC	-8.1 Micro-Strains
Cable# 18	-.003389 Volts DC	-4.9 Micro-Strains
Cable# 19	-.003343 Volts DC	-1.7 Micro-Strains
Cable# 20	-.003339 Volts DC	-4.9 Micro-Strains
Cable# 21	-.002118 Volts DC	+1.4 Micro-Strains
Cable# 22	+.002850 Volts DC	-.3 Micro-Strains
Cable# 23	-.001958 Volts DC	-.6 Micro-Strains
Cable# 24	-.001631 Volts DC	-.3 Micro-Strains
Cable# 25	-.002622 Volts DC	-3.0 Micro-Strains

LVDT: -0.062585 VDC -0.000038 Inches

Hor. Rad.=.004667 VDC 307.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #20 LT

Time: 12:06:30 Date: 88/08/19
Group# 3 Record# 7
File name: SLD0S02
Power supply: 4.9814 Volts DC

Cable# 1	-.007022 Volts DC	-1.8	Micro-Strains
Cable# 2	+.001733 Volts DC	+30.8	Micro-Strains
Cable# 3	+.000895 Volts DC	-8.2	Micro-Strains
Cable# 4	-.001579 Volts DC	-47.0	Micro-Strains
Cable# 5	-.001059 Volts DC	-19.9	Micro-Strains
Cable# 6	-.004061 Volts DC	-6.5	Micro-Strains
Cable# 7	-.000878 Volts DC	+14.8	Micro-Strains
Cable# 8	-.002006 Volts DC	-14.0	Micro-Strains
Cable# 9	-.001345 Volts DC	-11.6	Micro-Strains
Cable# 10	+.002801 Volts DC	+8.2	Micro-Strains
Cable# 11	+.003553 Volts DC	+5.3	Micro-Strains
Cable# 12	-.000085 Volts DC	-21.4	Micro-Strains
Cable# 13	-.001345 Volts DC	-1.1	Micro-Strains
Cable# 14	-.004186 Volts DC	-2.4	Micro-Strains
Cable# 15	-.004341 Volts DC	-4.0	Micro-Strains
Cable# 16	-.001450 Volts DC	-4.7	Micro-Strains
Cable# 17	-.003113 Volts DC	-11.2	Micro-Strains
Cable# 18	-.003389 Volts DC	-4.8	Micro-Strains
Cable# 19	-.003346 Volts DC	-2.9	Micro-Strains
Cable# 20	-.003346 Volts DC	-7.6	Micro-Strains
Cable# 21	-.002116 Volts DC	+2.2	Micro-Strains
Cable# 22	+.002851 Volts DC	+.1	Micro-Strains
Cable# 23	-.001961 Volts DC	-1.8	Micro-Strains
Cable# 24	-.001636 Volts DC	-2.2	Micro-Strains
Cable# 25	-.002615 Volts DC	-.2	Micro-Strains

LVDT: -0.063115 VDC -0.000011 Inches

Hor. Rad.=.004762 VDC 313.7 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #19 LT

Time: 12:07:43 Date: 88/08/19
Group# 3 Record# 8
File name: SLD0S02
Power supply: 4.9815 Volts DC

Cable# 1	-.007021 Volts DC	-1.3 Micro-Strains
Cable# 2	+.001759 Volts DC	+41.3 Micro-Strains
Cable# 3	+.000890 Volts DC	-10.3 Micro-Strains
Cable# 4	-.001606 Volts DC	-58.0 Micro-Strains
Cable# 5	-.001072 Volts DC	-25.1 Micro-Strains
Cable# 6	-.004057 Volts DC	-4.9 Micro-Strains
Cable# 7	-.000866 Volts DC	+19.6 Micro-Strains
Cable# 8	-.002012 Volts DC	-16.5 Micro-Strains
Cable# 9	-.001359 Volts DC	-17.2 Micro-Strains
Cable# 10	+.002829 Volts DC	+19.5 Micro-Strains
Cable# 11	+.003564 Volts DC	+9.7 Micro-Strains
Cable# 12	-.000113 Volts DC	-32.7 Micro-Strains
Cable# 13	-.001345 Volts DC	-1.1 Micro-Strains
Cable# 14	-.004183 Volts DC	-1.2 Micro-Strains
Cable# 15	-.004346 Volts DC	-6.0 Micro-Strains
Cable# 16	-.001448 Volts DC	-3.9 Micro-Strains
Cable# 17	-.003118 Volts DC	-13.2 Micro-Strains
Cable# 18	-.003388 Volts DC	-4.4 Micro-Strains
Cable# 19	-.003347 Volts DC	-3.2 Micro-Strains
Cable# 20	-.003349 Volts DC	-8.8 Micro-Strains
Cable# 21	-.002115 Volts DC	+2.6 Micro-Strains
Cable# 22	+.002853 Volts DC	+.9 Micro-Strains
Cable# 23	-.001964 Volts DC	-3.0 Micro-Strains
Cable# 24	-.001641 Volts DC	-4.2 Micro-Strains
Cable# 25	-.002612 Volts DC	+1.1 Micro-Strains

LVDT: -0.062852 VDC -0.000025 Inches

Hor. Rad.=.004831 VDC 318.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #18 LT

Time: 12:10:06 Date: 88/08/19
Group# 3 Record# 9
File name: SLD0S02
Power supply: 4.9810 Volts DC

Cable# 1	-.007015 Volts DC	+.9	Micro-Strains
Cable# 2	+.001770 Volts DC	+45.9	Micro-Strains
Cable# 3	+.000884 Volts DC	-12.7	Micro-Strains
Cable# 4	-.001615 Volts DC	-61.7	Micro-Strains
Cable# 5	-.001077 Volts DC	-27.2	Micro-Strains
Cable# 6	-.004050 Volts DC	-2.2	Micro-Strains
Cable# 7	-.000862 Volts DC	+21.2	Micro-Strains
Cable# 8	-.002019 Volts DC	-19.4	Micro-Strains
Cable# 9	-.001375 Volts DC	-23.7	Micro-Strains
Cable# 10	+.002867 Volts DC	+35.0	Micro-Strains
Cable# 11	+.003577 Volts DC	+15.1	Micro-Strains
Cable# 12	-.000150 Volts DC	-47.6	Micro-Strains
Cable# 13	-.001342 Volts DC	+.1	Micro-Strains
Cable# 14	-.004180 Volts DC	-.1	Micro-Strains
Cable# 15	-.004347 Volts DC	-6.6	Micro-Strains
Cable# 16	-.001449 Volts DC	-4.3	Micro-Strains
Cable# 17	-.003122 Volts DC	-14.9	Micro-Strains
Cable# 18	-.003385 Volts DC	-3.4	Micro-Strains
Cable# 19	-.003348 Volts DC	-3.8	Micro-Strains
Cable# 20	-.003355 Volts DC	-11.3	Micro-Strains
Cable# 21	-.002111 Volts DC	+4.1	Micro-Strains
Cable# 22	+.002855 Volts DC	+1.8	Micro-Strains
Cable# 23	-.001969 Volts DC	-5.0	Micro-Strains
Cable# 24	-.001649 Volts DC	-7.4	Micro-Strains
Cable# 25	-.002609 Volts DC	+2.2	Micro-Strains

LVDT: -0.063264 VDC -0.000004 Inches

Hor. Rad.=.004239 VDC 279.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #17 LT

Time: 12:17:18 Date: 88/08/19
Group# 3 Record# 10
File name: SLD0S02
Power supply: 4.9783 Volts DC

Cable# 1	-.007001 Volts DC	+5.0	Micro-Strains
Cable# 2	+.001768 Volts DC	+45.5	Micro-Strains
Cable# 3	+.000876 Volts DC	-15.7	Micro-Strains
Cable# 4	-.001615 Volts DC	-62.1	Micro-Strains
Cable# 5	-.001076 Volts DC	-27.1	Micro-Strains
Cable# 6	-.004037 Volts DC	+2.2	Micro-Strains
Cable# 7	-.000864 Volts DC	+20.2	Micro-Strains
Cable# 8	-.002028 Volts DC	-23.5	Micro-Strains
Cable# 9	-.001389 Volts DC	-29.7	Micro-Strains
Cable# 10	+.002905 Volts DC	+50.9	Micro-Strains
Cable# 11	+.003586 Volts DC	+19.5	Micro-Strains
Cable# 12	-.000190 Volts DC	-63.8	Micro-Strains
Cable# 13	-.001336 Volts DC	+2.2	Micro-Strains
Cable# 14	-.004175 Volts DC	+1.0	Micro-Strains
Cable# 15	-.004351 Volts DC	-9.1	Micro-Strains
Cable# 16	-.001447 Volts DC	-3.8	Micro-Strains
Cable# 17	-.003124 Volts DC	-16.4	Micro-Strains
Cable# 18	-.003379 Volts DC	-1.7	Micro-Strains
Cable# 19	-.003349 Volts DC	-4.9	Micro-Strains
Cable# 20	-.003362 Volts DC	-14.8	Micro-Strains
Cable# 21	-.002097 Volts DC	+9.2	Micro-Strains
Cable# 22	+.002864 Volts DC	+6.0	Micro-Strains
Cable# 23	-.001979 Volts DC	-9.4	Micro-Strains
Cable# 24	-.001663 Volts DC	-13.4	Micro-Strains
Cable# 25	-.002603 Volts DC	+4.1	Micro-Strains

LVDT: -0.063285 VDC -0.000003 Inches

Hor. Rad.=.004414 VDC 290.8 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #16 LT

Time: 12:19:01 Date: 88/08/19
Group# 3 Record# 11
File name: SLD0S02
Power supply: 4.9776 Volts DC

Cable# 1	-.006998 Volts DC	+5.8	Micro-Strains
Cable# 2	+.001765 Volts DC	+44.3	Micro-Strains
Cable# 3	+.000876 Volts DC	-15.7	Micro-Strains
Cable# 4	-.001608 Volts DC	-59.3	Micro-Strains
Cable# 5	-.001073 Volts DC	-25.9	Micro-Strains
Cable# 6	-.004034 Volts DC	+3.2	Micro-Strains
Cable# 7	-.000865 Volts DC	+19.8	Micro-Strains
Cable# 8	-.002027 Volts DC	-23.2	Micro-Strains
Cable# 9	-.001396 Volts DC	-32.6	Micro-Strains
Cable# 10	+.002929 Volts DC	+60.8	Micro-Strains
Cable# 11	+.003591 Volts DC	+21.8	Micro-Strains
Cable# 12	-.000208 Volts DC	-71.1	Micro-Strains
Cable# 13	-.001339 Volts DC	+.9	Micro-Strains
Cable# 14	-.004179 Volts DC	-.9	Micro-Strains
Cable# 15	-.004348 Volts DC	-8.2	Micro-Strains
Cable# 16	-.001444 Volts DC	-2.7	Micro-Strains
Cable# 17	-.003119 Volts DC	-14.6	Micro-Strains
Cable# 18	-.003371 Volts DC	+1.3	Micro-Strains
Cable# 19	-.003351 Volts DC	-5.9	Micro-Strains
Cable# 20	-.003368 Volts DC	-17.4	Micro-Strains
Cable# 21	-.002100 Volts DC	+7.9	Micro-Strains
Cable# 22	+.002864 Volts DC	+6.2	Micro-Strains
Cable# 23	-.001982 Volts DC	-10.7	Micro-Strains
Cable# 24	-.001669 Volts DC	-15.8	Micro-Strains
Cable# 25	-.002602 Volts DC	+4.3	Micro-Strains

LVDT: -0.063558 VDC 0.000011 Inches

Hor. Rad.=.009334 VDC 614.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #15 LT

Time: 12:24:53 Date: 88/08/19
Group# 3 Record# 12
File name: SLD0S02
Power supply: 4.9758 Volts DC

Cable# 1	-.006997 Volts DC	+5.2	Micro-Strains
Cable# 2	+.001758 Volts DC	+41.8	Micro-Strains
Cable# 3	+.000878 Volts DC	-14.7	Micro-Strains
Cable# 4	-.001596 Volts DC	-54.7	Micro-Strains
Cable# 5	-.001068 Volts DC	-24.0	Micro-Strains
Cable# 6	-.004035 Volts DC	+2.2	Micro-Strains
Cable# 7	-.000868 Volts DC	+18.4	Micro-Strains
Cable# 8	-.002022 Volts DC	-21.5	Micro-Strains
Cable# 9	-.001384 Volts DC	-27.9	Micro-Strains
Cable# 10	+.002899 Volts DC	+49.1	Micro-Strains
Cable# 11	+.003582 Volts DC	+18.6	Micro-Strains
Cable# 12	-.000177 Volts DC	-58.6	Micro-Strains
Cable# 13	-.001345 Volts DC	-1.7	Micro-Strains
Cable# 14	-.004190 Volts DC	-5.9	Micro-Strains
Cable# 15	-.004343 Volts DC	-6.8	Micro-Strains
Cable# 16	-.001439 Volts DC	-.9	Micro-Strains
Cable# 17	-.003106 Volts DC	-9.8	Micro-Strains
Cable# 18	-.003362 Volts DC	+4.4	Micro-Strains
Cable# 19	-.003353 Volts DC	-7.1	Micro-Strains
Cable# 20	-.003375 Volts DC	-20.7	Micro-Strains
Cable# 21	-.002092 Volts DC	+10.8	Micro-Strains
Cable# 22	+.002870 Volts DC	+9.0	Micro-Strains
Cable# 23	-.001989 Volts DC	-13.8	Micro-Strains
Cable# 24	-.001680 Volts DC	-20.5	Micro-Strains
Cable# 25	-.002603 Volts DC	+3.5	Micro-Strains

LVDT: -0.063810 VDC 0.000024 Inches

Hor. Rad.=.004609 VDC 303.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #15 LT 2ND TIME

Time: 12:26:06 Date: 88/08/19
Group# 3 Record# 13
File name: SLD0S02
Power supply: 4.9763 Volts DC

Cable# 1	-.006996 Volts DC	+5.9 Micro-Strains
Cable# 2	+.001757 Volts DC	+41.3 Micro-Strains
Cable# 3	+.000878 Volts DC	-14.8 Micro-Strains
Cable# 4	-.001596 Volts DC	-54.6 Micro-Strains
Cable# 5	-.001069 Volts DC	-24.4 Micro-Strains
Cable# 6	-.004034 Volts DC	+2.8 Micro-Strains
Cable# 7	-.000868 Volts DC	+18.5 Micro-Strains
Cable# 8	-.002023 Volts DC	-21.8 Micro-Strains
Cable# 9	-.001384 Volts DC	-27.9 Micro-Strains
Cable# 10	+.002899 Volts DC	+49.0 Micro-Strains
Cable# 11	+.003582 Volts DC	+18.5 Micro-Strains
Cable# 12	-.000177 Volts DC	-58.6 Micro-Strains
Cable# 13	-.001345 Volts DC	-1.6 Micro-Strains
Cable# 14	-.004190 Volts DC	-5.7 Micro-Strains
Cable# 15	-.004343 Volts DC	-6.6 Micro-Strains
Cable# 16	-.001439 Volts DC	-.9 Micro-Strains
Cable# 17	-.003107 Volts DC	-10.1 Micro-Strains
Cable# 18	-.003362 Volts DC	+4.5 Micro-Strains
Cable# 19	-.003354 Volts DC	-7.4 Micro-Strains
Cable# 20	-.003374 Volts DC	-20.1 Micro-Strains
Cable# 21	-.002092 Volts DC	+10.9 Micro-Strains
Cable# 22	+.002870 Volts DC	+8.8 Micro-Strains
Cable# 23	-.001989 Volts DC	-13.7 Micro-Strains
Cable# 24	-.001680 Volts DC	-20.4 Micro-Strains
Cable# 25	-.002603 Volts DC	+3.6 Micro-Strains

LVDT: -0.063835 VDC 0.000025 Inches

Hor. Rad.=.004864 VDC 320.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #14 LT

Time: 12:28:06 Date: 88/08/19
Group# 3 Record# 14
File name: SLD0S02
Power supply: 4.9771 Volts DC

Cable# 1	-.006999 Volts DC	+5.1	Micro-Strains
Cable# 2	+.001747 Volts DC	+37.1	Micro-Strains
Cable# 3	+.000883 Volts DC	-12.8	Micro-Strains
Cable# 4	-.001581 Volts DC	-48.4	Micro-Strains
Cable# 5	-.001063 Volts DC	-21.9	Micro-Strains
Cable# 6	-.004040 Volts DC	+.6	Micro-Strains
Cable# 7	-.000874 Volts DC	+16.1	Micro-Strains
Cable# 8	-.002014 Volts DC	-18.0	Micro-Strains
Cable# 9	-.001366 Volts DC	-20.5	Micro-Strains
Cable# 10	+.002853 Volts DC	+30.2	Micro-Strains
Cable# 11	+.003568 Volts DC	+12.6	Micro-Strains
Cable# 12	-.000131 Volts DC	-40.0	Micro-Strains
Cable# 13	-.001352 Volts DC	-4.4	Micro-Strains
Cable# 14	-.004206 Volts DC	-11.9	Micro-Strains
Cable# 15	-.004338 Volts DC	-4.3	Micro-Strains
Cable# 16	-.001433 Volts DC	+1.7	Micro-Strains
Cable# 17	-.003089 Volts DC	-2.8	Micro-Strains
Cable# 18	-.003352 Volts DC	+8.7	Micro-Strains
Cable# 19	-.003359 Volts DC	-9.2	Micro-Strains
Cable# 20	-.003384 Volts DC	-23.9	Micro-Strains
Cable# 21	-.002091 Volts DC	+11.4	Micro-Strains
Cable# 22	+.002874 Volts DC	+10.2	Micro-Strains
Cable# 23	-.001993 Volts DC	-15.2	Micro-Strains
Cable# 24	-.001688 Volts DC	-23.5	Micro-Strains
Cable# 25	-.002604 Volts DC	+3.4	Micro-Strains

LVDT: -0.063738 VDC 0.000020 Inches

Hor. Rad.=.005459 VDC 359.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #13 LT

Time: 12:30:12 Date: 88/08/19
Group# 3 Record# 15
File name: SLD0S02
Power supply: 4.9780 Volts DC

Cable# 1	-.007006 Volts DC	+2.8	Micro-Strains
Cable# 2	+.001736 Volts DC	+32.5	Micro-Strains
Cable# 3	+.000892 Volts DC	-9.2	Micro-Strains
Cable# 4	-.001564 Volts DC	-41.4	Micro-Strains
Cable# 5	-.001054 Volts DC	-18.1	Micro-Strains
Cable# 6	-.004050 Volts DC	-3.2	Micro-Strains
Cable# 7	-.000880 Volts DC	+13.7	Micro-Strains
Cable# 8	-.002000 Volts DC	-12.2	Micro-Strains
Cable# 9	-.001351 Volts DC	-14.4	Micro-Strains
Cable# 10	+.002826 Volts DC	+19.1	Micro-Strains
Cable# 11	+.003557 Volts DC	+7.9	Micro-Strains
Cable# 12	-.000099 Volts DC	-27.1	Micro-Strains
Cable# 13	-.001361 Volts DC	-7.9	Micro-Strains
Cable# 14	-.004231 Volts DC	-21.7	Micro-Strains
Cable# 15	-.004328 Volts DC	+.0	Micro-Strains
Cable# 16	-.001427 Volts DC	+4.2	Micro-Strains
Cable# 17	-.003061 Volts DC	+8.6	Micro-Strains
Cable# 18	-.003337 Volts DC	+14.9	Micro-Strains
Cable# 19	-.003365 Volts DC	-11.3	Micro-Strains
Cable# 20	-.003397 Volts DC	-28.8	Micro-Strains
Cable# 21	-.002090 Volts DC	+12.0	Micro-Strains
Cable# 22	+.002879 Volts DC	+12.0	Micro-Strains
Cable# 23	-.001997 Volts DC	-16.6	Micro-Strains
Cable# 24	-.001698 Volts DC	-27.3	Micro-Strains
Cable# 25	-.002606 Volts DC	+2.8	Micro-Strains

LVDT: -0.063754 VDC 0.000021 Inches

Hor. Rad.=.005316 VDC 350.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #12 LT

Time: 12:31:21 Date: 88/08/19
Group# 3 Record# 16
File name: SLD0S02
Power supply: 4.9785 Volts DC

Cable# 1	-.007015 Volts DC	-.6	Micro-Strains
Cable# 2	+.001722 Volts DC	+26.7	Micro-Strains
Cable# 3	+.000906 Volts DC	-3.5	Micro-Strains
Cable# 4	-.001546 Volts DC	-34.0	Micro-Strains
Cable# 5	-.001044 Volts DC	-14.0	Micro-Strains
Cable# 6	-.004069 Volts DC	-10.7	Micro-Strains
Cable# 7	-.000887 Volts DC	+10.9	Micro-Strains
Cable# 8	-.001978 Volts DC	-3.1	Micro-Strains
Cable# 9	-.001336 Volts DC	-8.3	Micro-Strains
Cable# 10	+.002801 Volts DC	+8.9	Micro-Strains
Cable# 11	+.003545 Volts DC	+2.9	Micro-Strains
Cable# 12	-.000073 Volts DC	-16.6	Micro-Strains
Cable# 13	-.001372 Volts DC	-12.3	Micro-Strains
Cable# 14	-.004263 Volts DC	-34.4	Micro-Strains
Cable# 15	-.004319 Volts DC	+3.8	Micro-Strains
Cable# 16	-.001419 Volts DC	+7.5	Micro-Strains
Cable# 17	-.003030 Volts DC	+21.0	Micro-Strains
Cable# 18	-.003321 Volts DC	+21.4	Micro-Strains
Cable# 19	-.003372 Volts DC	-14.0	Micro-Strains
Cable# 20	-.003410 Volts DC	-33.8	Micro-Strains
Cable# 21	-.002090 Volts DC	+12.0	Micro-Strains
Cable# 22	+.002882 Volts DC	+13.1	Micro-Strains
Cable# 23	-.001999 Volts DC	-17.4	Micro-Strains
Cable# 24	-.001704 Volts DC	-29.6	Micro-Strains
Cable# 25	-.002608 Volts DC	+2.1	Micro-Strains

LVDT: -0.063696 VDC 0.000018 Inches

Hor. Rad.=.005247 VDC 345.7 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #11 LT

Time: 12:32:32 Date: 88/08/19
Group# 3 Record# 17
File name: SLD0S02
Power supply: 4.9786 Volts DC

Cable# 1	-.007029 Volts DC	-6.2	Micro-Strains
Cable# 2	+.001708 Volts DC	+21.0	Micro-Strains
Cable# 3	+.000923 Volts DC	+3.4	Micro-Strains
Cable# 4	-.001528 Volts DC	-26.6	Micro-Strains
Cable# 5	-.001035 Volts DC	-10.3	Micro-Strains
Cable# 6	-.004095 Volts DC	-21.3	Micro-Strains
Cable# 7	-.000895 Volts DC	+7.6	Micro-Strains
Cable# 8	-.001946 Volts DC	+9.9	Micro-Strains
Cable# 9	-.001324 Volts DC	-3.4	Micro-Strains
Cable# 10	+.002783 Volts DC	+1.6	Micro-Strains
Cable# 11	+.003536 Volts DC	-.8	Micro-Strains
Cable# 12	-.000051 Volts DC	-7.7	Micro-Strains
Cable# 13	-.001377 Volts DC	-14.2	Micro-Strains
Cable# 14	-.004283 Volts DC	-42.4	Micro-Strains
Cable# 15	-.004317 Volts DC	+4.7	Micro-Strains
Cable# 16	-.001408 Volts DC	+11.9	Micro-Strains
Cable# 17	-.003013 Volts DC	+27.8	Micro-Strains
Cable# 18	-.003300 Volts DC	+29.8	Micro-Strains
Cable# 19	-.003379 Volts DC	-16.7	Micro-Strains
Cable# 20	-.003426 Volts DC	-40.2	Micro-Strains
Cable# 21	-.002089 Volts DC	+12.4	Micro-Strains
Cable# 22	+.002887 Volts DC	+15.1	Micro-Strains
Cable# 23	-.002003 Volts DC	-18.9	Micro-Strains
Cable# 24	-.001713 Volts DC	-33.2	Micro-Strains
Cable# 25	-.002609 Volts DC	+1.7	Micro-Strains

LVDT: -0.063695 VDC 0.000018 Inches

Hor. Rad.=.005106 VDC 336.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #10 LT

Time: 12:36:21 Date: 88/08/19
Group# 3 Record# 18
File name: SLD0S02
Power supply: 4.9793 Volts DC

Cable# 1	-.007043 Volts DC	-11.5	Micro-Strains
Cable# 2	+.001698 Volts DC	+16.8	Micro-Strains
Cable# 3	+.000942 Volts DC	+11.1	Micro-Strains
Cable# 4	-.001516 Volts DC	-21.7	Micro-Strains
Cable# 5	-.001031 Volts DC	-8.6	Micro-Strains
Cable# 6	-.004130 Volts DC	-35.3	Micro-Strains
Cable# 7	-.000899 Volts DC	+6.0	Micro-Strains
Cable# 8	-.001908 Volts DC	+25.5	Micro-Strains
Cable# 9	-.001315 Volts DC	+.3	Micro-Strains
Cable# 10	+.002769 Volts DC	-4.2	Micro-Strains
Cable# 11	+.003530 Volts DC	-3.4	Micro-Strains
Cable# 12	-.000036 Volts DC	-1.6	Micro-Strains
Cable# 13	-.001368 Volts DC	-10.6	Micro-Strains
Cable# 14	-.004253 Volts DC	-30.1	Micro-Strains
Cable# 15	-.004319 Volts DC	+4.1	Micro-Strains
Cable# 16	-.001398 Volts DC	+16.0	Micro-Strains
Cable# 17	-.003037 Volts DC	+18.5	Micro-Strains
Cable# 18	-.003277 Volts DC	+39.1	Micro-Strains
Cable# 19	-.003389 Volts DC	-20.5	Micro-Strains
Cable# 20	-.003446 Volts DC	-47.9	Micro-Strains
Cable# 21	-.002084 Volts DC	+14.6	Micro-Strains
Cable# 22	+.002895 Volts DC	+18.1	Micro-Strains
Cable# 23	-.002006 Volts DC	-20.0	Micro-Strains
Cable# 24	-.001722 Volts DC	-36.7	Micro-Strains
Cable# 25	-.002611 Volts DC	+1.0	Micro-Strains

LVDT: -0.063483 VDC 0.000007 Inches

Hor. Rad.=.005183 VDC 341.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #9 LT

Time: 12:37:59 Date: 88/08/19
Group# 3 Record# 19
File name: SLD0S0Z
Power supply: 4.9796 Volts DC

Cable# 1	-.007060 Volts DC	-18.3	Micro-Strains
Cable# 2	+.001688 Volts DC	+12.7	Micro-Strains
Cable# 3	+.000963 Volts DC	+19.6	Micro-Strains
Cable# 4	-.001503 Volts DC	-16.3	Micro-Strains
Cable# 5	-.001022 Volts DC	-4.9	Micro-Strains
Cable# 6	-.004179 Volts DC	-55.2	Micro-Strains
Cable# 7	-.000906 Volts DC	+3.2	Micro-Strains
Cable# 8	-.001855 Volts DC	+47.1	Micro-Strains
Cable# 9	-.001309 Volts DC	+2.8	Micro-Strains
Cable# 10	+.002760 Volts DC	-7.9	Micro-Strains
Cable# 11	+.003525 Volts DC	-5.5	Micro-Strains
Cable# 12	-.000025 Volts DC	+2.8	Micro-Strains
Cable# 13	-.001352 Volts DC	-4.1	Micro-Strains
Cable# 14	-.004210 Volts DC	-12.7	Micro-Strains
Cable# 15	-.004330 Volts DC	-.2	Micro-Strains
Cable# 16	-.001389 Volts DC	+19.7	Micro-Strains
Cable# 17	-.003071 Volts DC	+5.0	Micro-Strains
Cable# 18	-.003257 Volts DC	+47.1	Micro-Strains
Cable# 19	-.003395 Volts DC	-22.8	Micro-Strains
Cable# 20	-.003463 Volts DC	-54.6	Micro-Strains
Cable# 21	-.002083 Volts DC	+15.0	Micro-Strains
Cable# 22	+.002900 Volts DC	+20.0	Micro-Strains
Cable# 23	-.002008 Volts DC	-20.8	Micro-Strains
Cable# 24	-.001728 Volts DC	-39.0	Micro-Strains
Cable# 25	-.002612 Volts DC	+.7	Micro-Strains

LVDT: -0.063564 VDC 0.000011 Inches

Hor. Rad.=.005038 VDC 331.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #8 LT

Time: 12:39:28 Date: 88/08/19
Group# 3 Record# 20
File name: SLD0S02
Power supply: 4.9798 Volts DC

Cable# 1	-.007076 Volts DC	-24.7	Micro-Strains
Cable# 2	+.001680 Volts DC	+9.4	Micro-Strains
Cable# 3	+.000986 Volts DC	+28.9	Micro-Strains
Cable# 4	-.001492 Volts DC	-11.8	Micro-Strains
Cable# 5	-.001018 Volts DC	-3.3	Micro-Strains
Cable# 6	-.004234 Volts DC	-77.5	Micro-Strains
Cable# 7	-.000908 Volts DC	+2.4	Micro-Strains
Cable# 8	-.001793 Volts DC	+72.4	Micro-Strains
Cable# 9	-.001305 Volts DC	+4.4	Micro-Strains
Cable# 10	+.002755 Volts DC	-10.0	Micro-Strains
Cable# 11	+.003522 Volts DC	-6.8	Micro-Strains
Cable# 12	-.000020 Volts DC	+4.8	Micro-Strains
Cable# 13	-.001344 Volts DC	-.8	Micro-Strains
Cable# 14	-.004186 Volts DC	-3.0	Micro-Strains
Cable# 15	-.004337 Volts DC	-3.0	Micro-Strains
Cable# 16	-.001382 Volts DC	+22.5	Micro-Strains
Cable# 17	-.003093 Volts DC	-3.7	Micro-Strains
Cable# 18	-.003238 Volts DC	+54.7	Micro-Strains
Cable# 19	-.003400 Volts DC	-24.7	Micro-Strains
Cable# 20	-.003477 Volts DC	-60.1	Micro-Strains
Cable# 21	-.002081 Volts DC	+15.8	Micro-Strains
Cable# 22	+.002905 Volts DC	+21.9	Micro-Strains
Cable# 23	-.002010 Volts DC	-21.5	Micro-Strains
Cable# 24	-.001733 Volts DC	-41.0	Micro-Strains
Cable# 25	-.002613 Volts DC	+.3	Micro-Strains

LVDT: -0.063226 VDC -0.000006 Inches

Hor. Rad.=.004711 VDC 310.3 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #7 LT

Time: 12:40:57 Date: 88/08/19
Group# 3 Record# 21
File name: SLD0S02
Power supply: 4.9799 Volts DC

Cable# 1	-.007080 Volts DC	-26.2	Micro-Strains
Cable# 2	+.001673 Volts DC	+6.6	Micro-Strains
Cable# 3	+.000995 Volts DC	+32.6	Micro-Strains
Cable# 4	-.001484 Volts DC	-8.6	Micro-Strains
Cable# 5	-.001016 Volts DC	-2.5	Micro-Strains
Cable# 6	-.004259 Volts DC	-87.7	Micro-Strains
Cable# 7	-.000913 Volts DC	+.4	Micro-Strains
Cable# 8	-.001766 Volts DC	+83.4	Micro-Strains
Cable# 9	-.001305 Volts DC	+4.4	Micro-Strains
Cable# 10	+.002754 Volts DC	-10.4	Micro-Strains
Cable# 11	+.003521 Volts DC	-7.2	Micro-Strains
Cable# 12	-.000019 Volts DC	+5.2	Micro-Strains
Cable# 13	-.001337 Volts DC	+2.0	Micro-Strains
Cable# 14	-.004171 Volts DC	+3.1	Micro-Strains
Cable# 15	-.004342 Volts DC	-4.9	Micro-Strains
Cable# 16	-.001379 Volts DC	+23.7	Micro-Strains
Cable# 17	-.003105 Volts DC	-8.4	Micro-Strains
Cable# 18	-.003227 Volts DC	+59.1	Micro-Strains
Cable# 19	-.003403 Volts DC	-25.9	Micro-Strains
Cable# 20	-.003485 Volts DC	-63.3	Micro-Strains
Cable# 21	-.002080 Volts DC	+16.2	Micro-Strains
Cable# 22	+.002908 Volts DC	+23.1	Micro-Strains
Cable# 23	-.002008 Volts DC	-20.7	Micro-Strains
Cable# 24	-.001735 Volts DC	-41.8	Micro-Strains
Cable# 25	-.002614 Volts DC	-.1	Micro-Strains

LVDT: -0.063270 VDC -0.000003 Inches

Hor. Rad.=.004669 VDC 307.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #6 LT

Time: 12:42:17 Date: 88/08/19
Group# 3 Record# 22
File name: SL00S02
Power supply: 4.9801 Volts DC

Cable# 1	-.007065 Volts DC	-20.0 Micro-Strains
Cable# 2	+.001667 Volts DC	+4.1 Micro-Strains
Cable# 3	+.000978 Volts DC	+25.6 Micro-Strains
Cable# 4	-.001478 Volts DC	-6.1 Micro-Strains
Cable# 5	-.001013 Volts DC	-1.2 Micro-Strains
Cable# 6	-.004207 Volts DC	-66.4 Micro-Strains
Cable# 7	-.000914 Volts DC	-.0 Micro-Strains
Cable# 8	-.001813 Volts DC	+64.3 Micro-Strains
Cable# 9	-.001306 Volts DC	+4.0 Micro-Strains
Cable# 10	+.002756 Volts DC	-9.7 Micro-Strains
Cable# 11	+.003522 Volts DC	-6.8 Micro-Strains
Cable# 12	-.000020 Volts DC	+4.8 Micro-Strains
Cable# 13	-.001332 Volts DC	+4.0 Micro-Strains
Cable# 14	-.004164 Volts DC	+6.0 Micro-Strains
Cable# 15	-.004343 Volts DC	-5.3 Micro-Strains
Cable# 16	-.001380 Volts DC	+23.3 Micro-Strains
Cable# 17	-.003110 Volts DC	-10.4 Micro-Strains
Cable# 18	-.003224 Volts DC	+60.4 Micro-Strains
Cable# 19	-.003401 Volts DC	-25.1 Micro-Strains
Cable# 20	-.003485 Volts DC	-63.2 Micro-Strains
Cable# 21	-.002079 Volts DC	+16.7 Micro-Strains
Cable# 22	+.002911 Volts DC	+24.3 Micro-Strains
Cable# 23	-.002005 Volts DC	-19.5 Micro-Strains
Cable# 24	-.001735 Volts DC	-41.7 Micro-Strains
Cable# 25	-.002615 Volts DC	-.4 Micro-Strains

LVDT: -0.063002 VDC -0.000017 Inches

Hor. Rad.=.004759 VDC 313.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #5 LT

Time: 12:43:41 Date: 88/08/19
Group# 3 Record# 23
File name: SLD0S02
Power supply: 4.9800 Volts DC

Cable# 1	-.007040 Volts DC	-9.9	Micro-Strains
Cable# 2	+.001662 Volts DC	+2.1	Micro-Strains
Cable# 3	+.000952 Volts DC	+15.1	Micro-Strains
Cable# 4	-.001472 Volts DC	-3.7	Micro-Strains
Cable# 5	-.001012 Volts DC	-.8	Micro-Strains
Cable# 6	-.004138 Volts DC	-38.3	Micro-Strains
Cable# 7	-.000915 Volts DC	-.4	Micro-Strains
Cable# 8	-.001879 Volts DC	+37.4	Micro-Strains
Cable# 9	-.001308 Volts DC	+3.2	Micro-Strains
Cable# 10	+.002759 Volts DC	-8.4	Micro-Strains
Cable# 11	+.003523 Volts DC	-6.4	Micro-Strains
Cable# 12	-.000023 Volts DC	+3.6	Micro-Strains
Cable# 13	-.001333 Volts DC	+3.6	Micro-Strains
Cable# 14	-.004163 Volts DC	+6.4	Micro-Strains
Cable# 15	-.004343 Volts DC	-5.3	Micro-Strains
Cable# 16	-.001384 Volts DC	+21.7	Micro-Strains
Cable# 17	-.003110 Volts DC	-10.4	Micro-Strains
Cable# 18	-.003235 Volts DC	+56.0	Micro-Strains
Cable# 19	-.003395 Volts DC	-22.7	Micro-Strains
Cable# 20	-.003472 Volts DC	-58.1	Micro-Strains
Cable# 21	-.002078 Volts DC	+17.1	Micro-Strains
Cable# 22	+.002911 Volts DC	+24.3	Micro-Strains
Cable# 23	-.002003 Volts DC	-18.7	Micro-Strains
Cable# 24	-.001731 Volts DC	-40.2	Micro-Strains
Cable# 25	-.002615 Volts DC	-.5	Micro-Strains

LVDT: -0.062942 VDC -0.000020 Inches

Hor. Rad.=.004933 VDC 325.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #4 LT

Time: 12:45:03 Date: 88/08/19
Group# 3 Record# 24
File name: SLD0S02
Power supply: 4.9802 Volts DC

Cable# 1	-.007022 Volts DC	-2.4 Micro-Strains
Cable# 2	+.001661 Volts DC	+1.6 Micro-Strains
Cable# 3	+.000932 Volts DC	+6.9 Micro-Strains
Cable# 4	-.001471 Volts DC	-3.3 Micro-Strains
Cable# 5	-.001013 Volts DC	-1.2 Micro-Strains
Cable# 6	-.004090 Volts DC	-18.7 Micro-Strains
Cable# 7	-.000915 Volts DC	-.4 Micro-Strains
Cable# 8	-.001923 Volts DC	+19.5 Micro-Strains
Cable# 9	-.001310 Volts DC	+2.4 Micro-Strains
Cable# 10	+.002763 Volts DC	-6.9 Micro-Strains
Cable# 11	+.003525 Volts DC	-5.7 Micro-Strains
Cable# 12	-.000027 Volts DC	+2.0 Micro-Strains
Cable# 13	-.001335 Volts DC	+2.8 Micro-Strains
Cable# 14	-.004165 Volts DC	+5.6 Micro-Strains
Cable# 15	-.004342 Volts DC	-4.8 Micro-Strains
Cable# 16	-.001398 Volts DC	+16.1 Micro-Strains
Cable# 17	-.003106 Volts DC	-8.7 Micro-Strains
Cable# 18	-.003264 Volts DC	+44.5 Micro-Strains
Cable# 19	-.003382 Volts DC	-17.5 Micro-Strains
Cable# 20	-.003443 Volts DC	-46.5 Micro-Strains
Cable# 21	-.002080 Volts DC	+16.3 Micro-Strains
Cable# 22	+.002910 Volts DC	+23.8 Micro-Strains
Cable# 23	-.001997 Volts DC	-16.3 Micro-Strains
Cable# 24	-.001724 Volts DC	-37.3 Micro-Strains
Cable# 25	-.002616 Volts DC	-.8 Micro-Strains

LVDT: -0.062925 VDC -0.000021 Inches

Hor. Rad.=.005180 VDC 341.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #3 LT

Time: 12:46:38 Date: 88/08/19
Group# 3 Record# 25
File name: SLD0S02
Power supply: 4.9804 Volts DC

Cable# 1	-.007010 Volts DC	+2.6	Micro-Strains
Cable# 2	+.001659 Volts DC	+.8	Micro-Strains
Cable# 3	+.000919 Volts DC	+1.6	Micro-Strains
Cable# 4	-.001470 Volts DC	-2.8	Micro-Strains
Cable# 5	-.001014 Volts DC	-1.6	Micro-Strains
Cable# 6	-.004058 Volts DC	-5.6	Micro-Strains
Cable# 7	-.000914 Volts DC	+.0	Micro-Strains
Cable# 8	-.001952 Volts DC	+7.8	Micro-Strains
Cable# 9	-.001313 Volts DC	+1.2	Micro-Strains
Cable# 10	+.002767 Volts DC	-5.3	Micro-Strains
Cable# 11	+.003527 Volts DC	-4.9	Micro-Strains
Cable# 12	-.000032 Volts DC	+.0	Micro-Strains
Cable# 13	-.001337 Volts DC	+2.0	Micro-Strains
Cable# 14	-.004170 Volts DC	+3.7	Micro-Strains
Cable# 15	-.004339 Volts DC	-3.6	Micro-Strains
Cable# 16	-.001415 Volts DC	+9.3	Micro-Strains
Cable# 17	-.003102 Volts DC	-7.1	Micro-Strains
Cable# 18	-.003308 Volts DC	+27.1	Micro-Strains
Cable# 19	-.003368 Volts DC	-11.9	Micro-Strains
Cable# 20	-.003400 Volts DC	-29.4	Micro-Strains
Cable# 21	-.002080 Volts DC	+16.3	Micro-Strains
Cable# 22	+.002908 Volts DC	+23.0	Micro-Strains
Cable# 23	-.001992 Volts DC	-14.3	Micro-Strains
Cable# 24	-.001716 Volts DC	-34.1	Micro-Strains
Cable# 25	-.002617 Volts DC	-1.2	Micro-Strains

LVDT: -0.062864 VDC -0.000024 Inches

Hor. Rad.=.004963 VDC 326.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #2 LT

Time: 12:52:08 Date: 88/08/19
Group# 3 Record# 26
File name: SLD0S02
Power supply: 4.9805 Volts DC

Cable# 1	-.007004 Volts DC	+5.1	Micro-Strains
Cable# 2	+.001660 Volts DC	+1.2	Micro-Strains
Cable# 3	+.000909 Volts DC	-2.5	Micro-Strains
Cable# 4	-.001470 Volts DC	-2.8	Micro-Strains
Cable# 5	-.001015 Volts DC	-2.0	Micro-Strains
Cable# 6	-.004039 Volts DC	+2.1	Micro-Strains
Cable# 7	-.000913 Volts DC	+.4	Micro-Strains
Cable# 8	-.001971 Volts DC	+.0	Micro-Strains
Cable# 9	-.001315 Volts DC	+.4	Micro-Strains
Cable# 10	+.002770 Volts DC	-4.1	Micro-Strains
Cable# 11	+.003529 Volts DC	-4.1	Micro-Strains
Cable# 12	-.000034 Volts DC	-.8	Micro-Strains
Cable# 13	-.001336 Volts DC	+2.4	Micro-Strains
Cable# 14	-.004172 Volts DC	+2.9	Micro-Strains
Cable# 15	-.004338 Volts DC	-3.1	Micro-Strains
Cable# 16	-.001430 Volts DC	+3.3	Micro-Strains
Cable# 17	-.003094 Volts DC	-3.9	Micro-Strains
Cable# 18	-.003363 Volts DC	+5.2	Micro-Strains
Cable# 19	-.003352 Volts DC	-5.5	Micro-Strains
Cable# 20	-.003352 Volts DC	-10.3	Micro-Strains
Cable# 21	-.007083 Volts DC	+15.1	Micro-Strains
Cable# 22	+.002905 Volts DC	+21.8	Micro-Strains
Cable# 23	-.001985 Volts DC	-11.5	Micro-Strains
Cable# 24	-.001698 Volts DC	-27.0	Micro-Strains
Cable# 25	-.002619 Volts DC	-2.0	Micro-Strains

LVDT: -0.062574 VDC -0.000039 Inches

Hor. Rad.=.004549 VDC 299.7 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #1 LT

Time: 12:53:17 Date: 88/08/19
Group# 3 Record# 27
File name: SLD0S0Z
Power supply: 4.9806 Volts DC

Cable# 1	-.007000 Volts DC	+6.7	Micro-Strains
Cable# 2	+.001658 Volts DC	+.4	Micro-Strains
Cable# 3	+.000905 Volts DC	-4.1	Micro-Strains
Cable# 4	-.001468 Volts DC	-2.0	Micro-Strains
Cable# 5	-.001014 Volts DC	-1.6	Micro-Strains
Cable# 6	-.004032 Volts DC	+5.0	Micro-Strains
Cable# 7	-.000914 Volts DC	+.0	Micro-Strains
Cable# 8	-.001978 Volts DC	-2.8	Micro-Strains
Cable# 9	-.001315 Volts DC	+.4	Micro-Strains
Cable# 10	+.002770 Volts DC	-4.1	Micro-Strains
Cable# 11	+.003530 Volts DC	-3.7	Micro-Strains
Cable# 12	-.000035 Volts DC	-1.2	Micro-Strains
Cable# 13	-.001338 Volts DC	+1.7	Micro-Strains
Cable# 14	-.004174 Volts DC	+2.1	Micro-Strains
Cable# 15	-.004336 Volts DC	-2.3	Micro-Strains
Cable# 16	-.001438 Volts DC	+.0	Micro-Strains
Cable# 17	-.003091 Volts DC	-2.7	Micro-Strains
Cable# 18	-.003382 Volts DC	-2.3	Micro-Strains
Cable# 19	-.003343 Volts DC	-1.9	Micro-Strains
Cable# 20	-.003332 Volts DC	-2.3	Micro-Strains
Cable# 21	-.002085 Volts DC	+14.4	Micro-Strains
Cable# 22	+.002897 Volts DC	+18.6	Micro-Strains
Cable# 23	-.001981 Volts DC	-9.9	Micro-Strains
Cable# 24	-.001679 Volts DC	-19.4	Micro-Strains
Cable# 25	-.002619 Volts DC	-2.0	Micro-Strains

LVDT: -0.061977 VDC -0.000069 Inches

Hor. Rad.=.004567 VDC 300.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #0 LT

Time: 12:54:20 Date: 88/08/19
Group# 3 Record# 28
File name: SLD0S02
Power supply: 4.9808 Volts DC

Cable# 1	-.007001 Volts DC	+6.4 Micro-Strains
Cable# 2	+.001661 Volts DC	+1.5 Micro-Strains
Cable# 3	+.000905 Volts DC	-4.1 Micro-Strains
Cable# 4	-.001471 Volts DC	-3.2 Micro-Strains
Cable# 5	-.001017 Volts DC	-2.8 Micro-Strains
Cable# 6	-.004031 Volts DC	+5.5 Micro-Strains
Cable# 7	-.000912 Volts DC	+.9 Micro-Strains
Cable# 8	-.001979 Volts DC	-3.2 Micro-Strains
Cable# 9	-.001317 Volts DC	-.3 Micro-Strains
Cable# 10	+.002771 Volts DC	-3.8 Micro-Strains
Cable# 11	+.003531 Volts DC	-3.4 Micro-Strains
Cable# 12	-.000036 Volts DC	-1.6 Micro-Strains
Cable# 13	-.001338 Volts DC	+1.7 Micro-Strains
Cable# 14	-.004174 Volts DC	+2.2 Micro-Strains
Cable# 15	-.004336 Volts DC	-2.2 Micro-Strains
Cable# 16	-.001441 Volts DC	-1.1 Micro-Strains
Cable# 17	-.003092 Volts DC	-3.0 Micro-Strains
Cable# 18	-.003382 Volts DC	-2.2 Micro-Strains
Cable# 19	-.003340 Volts DC	-.6 Micro-Strains
Cable# 20	-.003331 Volts DC	-1.8 Micro-Strains
Cable# 21	-.002087 Volts DC	+13.6 Micro-Strains
Cable# 22	+.002885 Volts DC	+13.8 Micro-Strains
Cable# 23	-.001974 Volts DC	-7.1 Micro-Strains
Cable# 24	-.001655 Volts DC	-9.9 Micro-Strains
Cable# 25	-.002619 Volts DC	-1.9 Micro-Strains

LVDT: -0.061980 VDC -0.000069 Inches

Hor. Rad.=.004557 VDC 300.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #OFF BRIDGE

Time: 12:56:27 Date: 88/08/19
Group# 3 Record# 29
File name: SLD0S02
Power supply: 4.9811 Volts DC

Cable# 1	-.007002 Volts DC	+6.2	Micro-Strains
Cable# 2	+.001660 Volts DC	+1.1	Micro-Strains
Cable# 3	+.000904 Volts DC	-4.5	Micro-Strains
Cable# 4	-.001470 Volts DC	-2.7	Micro-Strains
Cable# 5	-.001018 Volts DC	-2.4	Micro-Strains
Cable# 6	-.004034 Volts DC	+4.4	Micro-Strains
Cable# 7	-.000912 Volts DC	+.9	Micro-Strains
Cable# 8	-.001977 Volts DC	-2.3	Micro-Strains
Cable# 9	-.001316 Volts DC	+.1	Micro-Strains
Cable# 10	+.002771 Volts DC	-3.8	Micro-Strains
Cable# 11	+.003531 Volts DC	-3.5	Micro-Strains
Cable# 12	-.000036 Volts DC	-1.6	Micro-Strains
Cable# 13	-.001336 Volts DC	+2.5	Micro-Strains
Cable# 14	-.004173 Volts DC	+2.7	Micro-Strains
Cable# 15	-.004336 Volts DC	-2.1	Micro-Strains
Cable# 16	-.001441 Volts DC	-1.1	Micro-Strains
Cable# 17	-.003092 Volts DC	-3.0	Micro-Strains
Cable# 18	-.003382 Volts DC	-2.1	Micro-Strains
Cable# 19	-.003340 Volts DC	-.6	Micro-Strains
Cable# 20	-.003330 Volts DC	-1.4	Micro-Strains
Cable# 21	-.002088 Volts DC	+13.3	Micro-Strains
Cable# 22	+.002876 Volts DC	+10.1	Micro-Strains
Cable# 23	-.001969 Volts DC	-5.0	Micro-Strains
Cable# 24	-.001638 Volts DC	-3.1	Micro-Strains
Cable# 25	-.002619 Volts DC	-1.8	Micro-Strains

LVDT: -0.061606 VDC -0.000088 Inches

Hor. Rad.=.004436 VDC 292.2 W/M^2

MOORE CREEK BRIDGE PROJECT

File name: SRU0S03 Date: 89/08/01
Date: 88/08/19
Time: 13:10:12 Group# 1 Record# 1

TEMPERATURE PROFILE OF GIRDER:
Thermistor# 1 12.1 Deg.C
Thermistor# 2 13.4 Deg.C
Thermistor# 3 13.4 Deg.C
Thermistor# 4 13.3 Deg.C
Thermistor# 5 13.1 Deg.C
Thermistor# 6 12.7 Deg.C
Thermistor# 7 12.7 Deg.C
Thermistor# 8 245.2 Deg.C
Instrument 1 Temp: 17.96 Deg.C
Instrument 2 Temp: 18.94 Deg.C

ZERO STRAIN VOLTAGES:
Time: 13:15:44 Group# 2 Record# 2
Power supply: 4.98110 Volts DC
Cable# 1 -.007014 Volts DC
Cable# 2 +.001667 Volts DC
Cable# 3 +.000911 Volts DC
Cable# 4 -.001471 Volts DC
Cable# 5 -.001019 Volts DC
Cable# 6 -.004046 Volts DC
Cable# 7 -.000910 Volts DC
Cable# 8 -.001969 Volts DC
Cable# 9 -.001315 Volts DC
Cable# 10 +.002773 Volts DC
Cable# 11 +.003531 Volts DC
Cable# 12 -.000032 Volts DC
Cable# 13 -.001345 Volts DC
Cable# 14 -.004181 Volts DC
Cable# 15 -.004331 Volts DC
Cable# 16 -.001436 Volts DC
Cable# 17 -.003084 Volts DC
Cable# 18 -.003383 Volts DC
Cable# 19 -.003336 Volts DC
Cable# 20 -.003324 Volts DC
Cable# 21 -.002092 Volts DC
Cable# 22 +.002866 Volts DC
Cable# 23 -.001964 Volts DC
Cable# 24 -.001628 Volts DC
Cable# 25 -.002624 Volts DC
LVDT: -0.062518 VDC
Hor. Rad.= 1.2E-2 VDC 822.1 W/M^2
Air Temp= 14.0 Deg.C
Wind Speed: 9.4 MPH

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #0 RT

Time: 13:17:54 Date: 88/08/19
Group# 3 Record# 3
File name: SRU0S03
Power supply: 4.9813 Volts DC

Cable# 1	-.007025 Volts DC	-4.4	Micro-Strains
Cable# 2	+.001671 Volts DC	+1.6	Micro-Strains
Cable# 3	+.000914 Volts DC	+1.2	Micro-Strains
Cable# 4	-.001472 Volts DC	-.4	Micro-Strains
Cable# 5	-.001020 Volts DC	-.4	Micro-Strains
Cable# 6	-.004058 Volts DC	-4.8	Micro-Strains
Cable# 7	-.000909 Volts DC	+.4	Micro-Strains
Cable# 8	-.001962 Volts DC	+2.9	Micro-Strains
Cable# 9	-.001314 Volts DC	+.4	Micro-Strains
Cable# 10	+.002777 Volts DC	+1.6	Micro-Strains
Cable# 11	+.003534 Volts DC	+1.2	Micro-Strains
Cable# 12	-.000030 Volts DC	+.8	Micro-Strains
Cable# 13	-.001357 Volts DC	-4.8	Micro-Strains
Cable# 14	-.004192 Volts DC	-4.4	Micro-Strains
Cable# 15	-.004325 Volts DC	+2.5	Micro-Strains
Cable# 16	-.001433 Volts DC	+1.2	Micro-Strains
Cable# 17	-.003078 Volts DC	+2.4	Micro-Strains
Cable# 18	-.003385 Volts DC	-.7	Micro-Strains
Cable# 19	-.003336 Volts DC	+.1	Micro-Strains
Cable# 20	-.003322 Volts DC	+.8	Micro-Strains
Cable# 21	-.002092 Volts DC	+.0	Micro-Strains
Cable# 22	+.002856 Volts DC	-4.0	Micro-Strains
Cable# 23	-.001969 Volts DC	-2.0	Micro-Strains
Cable# 24	-.001626 Volts DC	+.8	Micro-Strains
Cable# 25	-.002626 Volts DC	-.8	Micro-Strains

LVDT: -0.060909 VDC -0.000081 Inches

Hor. Rad.=.009508 VDC 626.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #1 RT

Time: 13:19:44 Date: 88/08/19
Group# 3 Record# 4
File name: SRU0S03
Power supply: 4.9810 Volts DC

Cable# 1	-.007030 Volts DC	-6.6	Micro-Strains
Cable# 2	+.001672 Volts DC	+2.0	Micro-Strains
Cable# 3	+.000916 Volts DC	+2.0	Micro-Strains
Cable# 4	-.001471 Volts DC	-.0	Micro-Strains
Cable# 5	-.001019 Volts DC	-.0	Micro-Strains
Cable# 6	-.004064 Volts DC	-7.4	Micro-Strains
Cable# 7	-.000910 Volts DC	-.0	Micro-Strains
Cable# 8	-.001959 Volts DC	+4.1	Micro-Strains
Cable# 9	-.001314 Volts DC	+.4	Micro-Strains
Cable# 10	+.002779 Volts DC	+2.4	Micro-Strains
Cable# 11	+.003534 Volts DC	+1.2	Micro-Strains
Cable# 12	-.000029 Volts DC	+1.2	Micro-Strains
Cable# 13	-.001359 Volts DC	-5.6	Micro-Strains
Cable# 14	-.004195 Volts DC	-5.7	Micro-Strains
Cable# 15	-.004325 Volts DC	+2.4	Micro-Strains
Cable# 16	-.001434 Volts DC	+.8	Micro-Strains
Cable# 17	-.003077 Volts DC	+2.8	Micro-Strains
Cable# 18	-.003386 Volts DC	-1.2	Micro-Strains
Cable# 19	-.003338 Volts DC	-.8	Micro-Strains
Cable# 20	-.003323 Volts DC	+.4	Micro-Strains
Cable# 21	-.002087 Volts DC	+2.0	Micro-Strains
Cable# 22	+.002858 Volts DC	-3.2	Micro-Strains
Cable# 23	-.001984 Volts DC	-8.0	Micro-Strains
Cable# 24	-.001631 Volts DC	-1.2	Micro-Strains
Cable# 25	-.002627 Volts DC	-1.2	Micro-Strains

LVDT: -0.060218 VDC -0.000116 Inches

Hor. Rad.=.007229 VDC 476.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #2 RT

Time: 13:21:22 Date: 88/08/19
Group# 3 Record# 5
File name: SRU0S03
Power supply: 4.9812 Volts DC

Cable# 1	-.007039 Volts DC	-10.1 Micro-Strains
Cable# 2	+.001673 Volts DC	+2.4 Micro-Strains
Cable# 3	+.000925 Volts DC	+5.7 Micro-Strains
Cable# 4	-.001474 Volts DC	-1.2 Micro-Strains
Cable# 5	-.001022 Volts DC	-1.2 Micro-Strains
Cable# 6	-.004070 Volts DC	-9.7 Micro-Strains
Cable# 7	-.000909 Volts DC	+.4 Micro-Strains
Cable# 8	-.001954 Volts DC	+6.1 Micro-Strains
Cable# 9	-.001314 Volts DC	+.4 Micro-Strains
Cable# 10	+.002778 Volts DC	+2.0 Micro-Strains
Cable# 11	+.003533 Volts DC	+.8 Micro-Strains
Cable# 12	-.000029 Volts DC	+1.2 Micro-Strains
Cable# 13	-.001359 Volts DC	-5.6 Micro-Strains
Cable# 14	-.004194 Volts DC	-5.2 Micro-Strains
Cable# 15	-.004325 Volts DC	+2.4 Micro-Strains
Cable# 16	-.001416 Volts DC	+8.1 Micro-Strains
Cable# 17	-.003077 Volts DC	+2.8 Micro-Strains
Cable# 18	-.003379 Volts DC	+1.6 Micro-Strains
Cable# 19	-.003358 Volts DC	-8.7 Micro-Strains
Cable# 20	-.003333 Volts DC	-3.5 Micro-Strains
Cable# 21	-.002083 Volts DC	+3.6 Micro-Strains
Cable# 22	+.002860 Volts DC	-2.4 Micro-Strains
Cable# 23	-.001997 Volts DC	-13.1 Micro-Strains
Cable# 24	-.001637 Volts DC	-3.6 Micro-Strains
Cable# 25	-.002627 Volts DC	-1.2 Micro-Strains

LVDT: -0.059875 VDC -0.000134 Inches

Hor. Rad.=.008554 VDC 563.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #3 RT

Time: 13:23:01 Date: 88/08/19
Group# 3 Record# 6
File name: SRU0S03
Power supply: 4.9812 Volts DC

Cable# 1	-.007059 Volts DC	-18.3	Micro-Strains
Cable# 2	+.001672 Volts DC	+2.0	Micro-Strains
Cable# 3	+.000944 Volts DC	+13.4	Micro-Strains
Cable# 4	-.001472 Volts DC	-.4	Micro-Strains
Cable# 5	-.001022 Volts DC	-1.2	Micro-Strains
Cable# 6	-.004081 Volts DC	-14.2	Micro-Strains
Cable# 7	-.000909 Volts DC	+.4	Micro-Strains
Cable# 8	-.001943 Volts DC	+10.6	Micro-Strains
Cable# 9	-.001310 Volts DC	+2.0	Micro-Strains
Cable# 10	+.002775 Volts DC	+.8	Micro-Strains
Cable# 11	+.003530 Volts DC	-.4	Micro-Strains
Cable# 12	-.000028 Volts DC	+1.6	Micro-Strains
Cable# 13	-.001353 Volts DC	-3.2	Micro-Strains
Cable# 14	-.004193 Volts DC	-4.8	Micro-Strains
Cable# 15	-.004331 Volts DC	+.0	Micro-Strains
Cable# 16	-.001368 Volts DC	+27.4	Micro-Strains
Cable# 17	-.003079 Volts DC	+2.0	Micro-Strains
Cable# 18	-.003360 Volts DC	+9.2	Micro-Strains
Cable# 19	-.003402 Volts DC	-26.2	Micro-Strains
Cable# 20	-.003349 Volts DC	-9.9	Micro-Strains
Cable# 21	-.002080 Volts DC	+4.8	Micro-Strains
Cable# 22	+.002862 Volts DC	-1.6	Micro-Strains
Cable# 23	-.002009 Volts DC	-17.9	Micro-Strains
Cable# 24	-.001643 Volts DC	-5.9	Micro-Strains
Cable# 25	-.002627 Volts DC	-1.2	Micro-Strains

LVDT: -0.059774 VDC -0.000139 Inches

Hor. Rad.=.007748 VDC 510.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #4 RT

Time: 13:27:16 Date: 88/08/19
Group# 3 Record# 7
File name: SRU0S03
Power supply: 4.9813 Volts DC

Cable# 1	-.007089 Volts DC	-30.4	Micro-Strains
Cable# 2	+.001674 Volts DC	+2.8	Micro-Strains
Cable# 3	+.000976 Volts DC	+26.4	Micro-Strains
Cable# 4	-.001473 Volts DC	-.8	Micro-Strains
Cable# 5	-.001025 Volts DC	-2.4	Micro-Strains
Cable# 6	-.004097 Volts DC	-20.7	Micro-Strains
Cable# 7	-.000907 Volts DC	+1.2	Micro-Strains
Cable# 8	-.001927 Volts DC	+17.1	Micro-Strains
Cable# 9	-.001308 Volts DC	+2.8	Micro-Strains
Cable# 10	+.002774 Volts DC	+.4	Micro-Strains
Cable# 11	+.003527 Volts DC	-1.7	Micro-Strains
Cable# 12	-.000027 Volts DC	+2.0	Micro-Strains
Cable# 13	-.001352 Volts DC	-2.8	Micro-Strains
Cable# 14	-.004192 Volts DC	-4.4	Micro-Strains
Cable# 15	-.004335 Volts DC	-1.5	Micro-Strains
Cable# 16	-.001328 Volts DC	+43.5	Micro-Strains
Cable# 17	-.003080 Volts DC	+1.6	Micro-Strains
Cable# 18	-.003343 Volts DC	+16.0	Micro-Strains
Cable# 19	-.003441 Volts DC	-41.7	Micro-Strains
Cable# 20	-.003365 Volts DC	-16.2	Micro-Strains
Cable# 21	-.002077 Volts DC	+6.0	Micro-Strains
Cable# 22	+.002864 Volts DC	-.8	Micro-Strains
Cable# 23	-.002019 Volts DC	-21.8	Micro-Strains
Cable# 24	-.001649 Volts DC	-8.3	Micro-Strains
Cable# 25	-.002631 Volts DC	-2.8	Micro-Strains

LVDT: -0.059570 VDC -0.000149 Inches

Hor. Rad.=.005417 VDC 356.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #5 RT

Time: 13:28:51 Date: 88/08/19
Group# 3 Record# 8
File name: SRU0S03
Power supply: 4.9815 Volts DC

Cable# 1	-.007136 Volts DC	-49.4	Micro-Strains
Cable# 2	+.001673 Volts DC	+2.4	Micro-Strains
Cable# 3	+.001022 Volts DC	+45.1	Micro-Strains
Cable# 4	-.001475 Volts DC	-1.6	Micro-Strains
Cable# 5	-.001028 Volts DC	-3.6	Micro-Strains
Cable# 6	-.004118 Volts DC	-29.2	Micro-Strains
Cable# 7	-.000904 Volts DC	+2.5	Micro-Strains
Cable# 8	-.001908 Volts DC	+24.9	Micro-Strains
Cable# 9	-.001302 Volts DC	+5.3	Micro-Strains
Cable# 10	+.002771 Volts DC	-.9	Micro-Strains
Cable# 11	+.003523 Volts DC	-3.3	Micro-Strains
Cable# 12	-.000026 Volts DC	+2.4	Micro-Strains
Cable# 13	-.001348 Volts DC	-1.2	Micro-Strains
Cable# 14	-.004189 Volts DC	-3.1	Micro-Strains
Cable# 15	-.004339 Volts DC	-3.1	Micro-Strains
Cable# 16	-.001302 Volts DC	+54.0	Micro-Strains
Cable# 17	-.003081 Volts DC	+1.3	Micro-Strains
Cable# 18	-.003330 Volts DC	+21.2	Micro-Strains
Cable# 19	-.003469 Volts DC	-52.7	Micro-Strains
Cable# 20	-.003378 Volts DC	-21.4	Micro-Strains
Cable# 21	-.002074 Volts DC	+7.2	Micro-Strains
Cable# 22	+.002865 Volts DC	-.5	Micro-Strains
Cable# 23	-.002026 Volts DC	-24.6	Micro-Strains
Cable# 24	-.001653 Volts DC	-9.9	Micro-Strains
Cable# 25	-.002630 Volts DC	-2.4	Micro-Strains

LVDT: -0.059586 VDC -0.000148 Inches

Hor. Rad.=.007673 VDC 505.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #6 RT

Time: 13:30:26 Date: 88/08/19
Group# 3 Record# 9
File name: SRU0S03
Power supply: 4.9818 Volts DC

Cable# 1	-.007203 Volts DC	-76.5	Micro-Strains
Cable# 2	+.001675 Volts DC	+3.2	Micro-Strains
Cable# 3	+.001093 Volts DC	+74.0	Micro-Strains
Cable# 4	-.001476 Volts DC	-2.0	Micro-Strains
Cable# 5	-.001033 Volts DC	-5.6	Micro-Strains
Cable# 6	-.004145 Volts DC	-40.1	Micro-Strains
Cable# 7	-.000900 Volts DC	+4.1	Micro-Strains
Cable# 8	-.001882 Volts DC	+35.5	Micro-Strains
Cable# 9	-.001300 Volts DC	+6.1	Micro-Strains
Cable# 10	+.002769 Volts DC	-1.8	Micro-Strains
Cable# 11	+.003520 Volts DC	-4.6	Micro-Strains
Cable# 12	-.000025 Volts DC	+2.8	Micro-Strains
Cable# 13	-.001350 Volts DC	-1.9	Micro-Strains
Cable# 14	-.004191 Volts DC	-3.8	Micro-Strains
Cable# 15	-.004340 Volts DC	-3.4	Micro-Strains
Cable# 16	-.001292 Volts DC	+58.0	Micro-Strains
Cable# 17	-.003081 Volts DC	+1.4	Micro-Strains
Cable# 18	-.003326 Volts DC	+22.8	Micro-Strains
Cable# 19	-.003481 Volts DC	-57.4	Micro-Strains
Cable# 20	-.003385 Volts DC	-24.1	Micro-Strains
Cable# 21	-.002074 Volts DC	+7.3	Micro-Strains
Cable# 22	+.002863 Volts DC	-1.4	Micro-Strains
Cable# 23	-.002030 Volts DC	-26.1	Micro-Strains
Cable# 24	-.001654 Volts DC	-10.2	Micro-Strains
Cable# 25	-.002630 Volts DC	-2.3	Micro-Strains

LVDT: -0.059684 VDC -0.000143 Inches

Hor. Rad.=.006355 VDC 418.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #7 RT

Time: 13:35:28 Date: 88/08/19
Group# 3 Record# 10
File name: SRU0S03
Power supply: 4.9821 Volts DC

Cable# 1	-.007253 Volts DC	-96.7	Micro-Strains
Cable# 2	+.001676 Volts DC	+3.5	Micro-Strains
Cable# 3	+.001141 Volts DC	+93.5	Micro-Strains
Cable# 4	-.001480 Volts DC	-3.5	Micro-Strains
Cable# 5	-.001041 Volts DC	-8.9	Micro-Strains
Cable# 6	-.004164 Volts DC	-47.7	Micro-Strains
Cable# 7	-.000896 Volts DC	+5.8	Micro-Strains
Cable# 8	-.001867 Volts DC	+41.7	Micro-Strains
Cable# 9	-.001301 Volts DC	+5.8	Micro-Strains
Cable# 10	+.002768 Volts DC	-2.2	Micro-Strains
Cable# 11	+.003517 Volts DC	-5.9	Micro-Strains
Cable# 12	-.000027 Volts DC	+2.0	Micro-Strains
Cable# 13	-.001355 Volts DC	-3.9	Micro-Strains
Cable# 14	-.004193 Volts DC	-4.5	Micro-Strains
Cable# 15	-.004337 Volts DC	-2.1	Micro-Strains
Cable# 16	-.001297 Volts DC	+56.0	Micro-Strains
Cable# 17	-.003079 Volts DC	+2.2	Micro-Strains
Cable# 18	-.003329 Volts DC	+21.7	Micro-Strains
Cable# 19	-.003483 Volts DC	-58.1	Micro-Strains
Cable# 20	-.003387 Volts DC	-24.8	Micro-Strains
Cable# 21	-.002074 Volts DC	+7.3	Micro-Strains
Cable# 22	+.002861 Volts DC	-2.2	Micro-Strains
Cable# 23	-.002032 Volts DC	-26.9	Micro-Strains
Cable# 24	-.001652 Volts DC	-9.4	Micro-Strains
Cable# 25	-.002630 Volts DC	-2.2	Micro-Strains

LVDT: -0.060006 VDC -0.000127 Inches

Hor. Rad.=.005630 VDC 370.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #8 RT

Time: 13:37:19 Date: 88/08/19
Group# 3 Record# 11
File name: SRU0S03
Power supply: 4.9825 Volts DC

Cable# 1	-.007232 Volts DC	-87.9	Micro-Strains
Cable# 2	+.001678 Volts DC	+4.3	Micro-Strains
Cable# 3	+.001110 Volts DC	+80.9	Micro-Strains
Cable# 4	-.001482 Volts DC	-4.3	Micro-Strains
Cable# 5	-.001048 Volts DC	-11.7	Micro-Strains
Cable# 6	-.004160 Volts DC	-46.0	Micro-Strains
Cable# 7	-.000890 Volts DC	+8.3	Micro-Strains
Cable# 8	-.001876 Volts DC	+38.1	Micro-Strains
Cable# 9	-.001302 Volts DC	+5.4	Micro-Strains
Cable# 10	+.002768 Volts DC	-2.3	Micro-Strains
Cable# 11	+.003518 Volts DC	-5.7	Micro-Strains
Cable# 12	-.000029 Volts DC	+1.2	Micro-Strains
Cable# 13	-.001371 Volts DC	-10.3	Micro-Strains
Cable# 14	-.004201 Volts DC	-7.6	Micro-Strains
Cable# 15	-.004326 Volts DC	+2.5	Micro-Strains
Cable# 16	-.001307 Volts DC	+52.1	Micro-Strains
Cable# 17	-.003075 Volts DC	+3.9	Micro-Strains
Cable# 18	-.003336 Volts DC	+19.1	Micro-Strains
Cable# 19	-.003475 Volts DC	-54.8	Micro-Strains
Cable# 20	-.003383 Volts DC	-23.1	Micro-Strains
Cable# 21	-.002077 Volts DC	+6.2	Micro-Strains
Cable# 22	+.002854 Volts DC	-5.1	Micro-Strains
Cable# 23	-.002030 Volts DC	-26.0	Micro-Strains
Cable# 24	-.001647 Volts DC	-7.4	Micro-Strains
Cable# 25	-.002630 Volts DC	-2.1	Micro-Strains

LVDT: -0.060182 VDC -0.000118 Inches

Hor. Rad.=.005394 VDC 355.3 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #9 RT

Time: 13:42:26 Date: 88/08/19
Group# 3 Record# 12
File name: SRU0S03
Power supply: 4.9826 Volts DC

Cable# 1	-.007178 Volts DC	-65.9 Micro-Strains
Cable# 2	+.001682 Volts DC	+5.9 Micro-Strains
Cable# 3	+.001046 Volts DC	+54.8 Micro-Strains
Cable# 4	-.001487 Volts DC	-6.3 Micro-Strains
Cable# 5	-.001060 Volts DC	-16.6 Micro-Strains
Cable# 6	-.004142 Volts DC	-38.6 Micro-Strains
Cable# 7	-.000881 Volts DC	+11.9 Micro-Strains
Cable# 8	-.001898 Volts DC	+29.1 Micro-Strains
Cable# 9	-.001311 Volts DC	+1.8 Micro-Strains
Cable# 10	+.002773 Volts DC	-.3 Micro-Strains
Cable# 11	+.003523 Volts DC	-3.7 Micro-Strains
Cable# 12	-.000035 Volts DC	-1.2 Micro-Strains
Cable# 13	-.001397 Volts DC	-20.7 Micro-Strains
Cable# 14	-.004211 Volts DC	-11.6 Micro-Strains
Cable# 15	-.004303 Volts DC	+11.8 Micro-Strains
Cable# 16	-.001324 Volts DC	+45.2 Micro-Strains
Cable# 17	-.003064 Volts DC	+8.3 Micro-Strains
Cable# 18	-.003346 Volts DC	+15.1 Micro-Strains
Cable# 19	-.003463 Volts DC	-50.0 Micro-Strains
Cable# 20	-.003378 Volts DC	-21.1 Micro-Strains
Cable# 21	-.002079 Volts DC	+5.4 Micro-Strains
Cable# 22	+.002854 Volts DC	-5.1 Micro-Strains
Cable# 23	-.002028 Volts DC	-25.2 Micro-Strains
Cable# 24	-.001644 Volts DC	-6.2 Micro-Strains
Cable# 25	-.002630 Volts DC	-2.1 Micro-Strains

LVDT: -0.060661 VDC -0.000094 Inches

Hor. Rad.=.005251 VDC 345.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #10 RT

Time: 13:44:22 Date: 88/08/19
Group# 3 Record# 13
File name: SRU0S03
Power supply: 4.9825 Volts DC

Cable# 1	-.007130 Volts DC	-46.4	Micro-Strains
Cable# 2	+.001684 Volts DC	+6.7	Micro-Strains
Cable# 3	+.000991 Volts DC	+32.4	Micro-Strains
Cable# 4	-.001493 Volts DC	-8.8	Micro-Strains
Cable# 5	-.001072 Volts DC	-21.5	Micro-Strains
Cable# 6	-.004121 Volts DC	-30.1	Micro-Strains
Cable# 7	-.000872 Volts DC	+15.6	Micro-Strains
Cable# 8	-.001922 Volts DC	+19.3	Micro-Strains
Cable# 9	-.001322 Volts DC	-2.7	Micro-Strains
Cable# 10	+.002776 Volts DC	+.9	Micro-Strains
Cable# 11	+.003529 Volts DC	-1.2	Micro-Strains
Cable# 12	-.000043 Volts DC	-4.4	Micro-Strains
Cable# 13	-.001436 Volts DC	-36.4	Micro-Strains
Cable# 14	-.004222 Volts DC	-16.0	Micro-Strains
Cable# 15	-.004272 Volts DC	+24.2	Micro-Strains
Cable# 16	-.001345 Volts DC	+36.8	Micro-Strains
Cable# 17	-.003057 Volts DC	+11.1	Micro-Strains
Cable# 18	-.003357 Volts DC	+10.7	Micro-Strains
Cable# 19	-.003446 Volts DC	-43.3	Micro-Strains
Cable# 20	-.003370 Volts DC	-17.9	Micro-Strains
Cable# 21	-.002078 Volts DC	+5.8	Micro-Strains
Cable# 22	+.002855 Volts DC	-4.7	Micro-Strains
Cable# 23	-.002027 Volts DC	-24.8	Micro-Strains
Cable# 24	-.001644 Volts DC	-6.2	Micro-Strains
Cable# 25	-.002630 Volts DC	-2.1	Micro-Strains

LVDT: -0.060851 VDC -0.000084 Inches

Hor. Rad.=.004688 VDC 308.8 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #11 RT

Time: 13:46:14 Date: 88/08/19
Group# 3 Record# 14
File name: SRU0S03
Power supply: 4.9823 Volts DC

Cable# 1	-.007094 Volts DC	-31.9	Micro-Strains
Cable# 2	+.001690 Volts DC	+9.2	Micro-Strains
Cable# 3	+.000949 Volts DC	+15.4	Micro-Strains
Cable# 4	-.001502 Volts DC	-12.5	Micro-Strains
Cable# 5	-.001089 Volts DC	-28.4	Micro-Strains
Cable# 6	-.004102 Volts DC	-22.4	Micro-Strains
Cable# 7	-.000860 Volts DC	+20.5	Micro-Strains
Cable# 8	-.001942 Volts DC	+11.2	Micro-Strains
Cable# 9	-.001340 Volts DC	-10.0	Micro-Strains
Cable# 10	+.002783 Volts DC	+3.8	Micro-Strains
Cable# 11	+.003542 Volts DC	+4.1	Micro-Strains
Cable# 12	-.000052 Volts DC	-8.1	Micro-Strains
Cable# 13	-.001467 Volts DC	-48.9	Micro-Strains
Cable# 14	-.004230 Volts DC	-19.3	Micro-Strains
Cable# 15	-.004251 Volts DC	+32.6	Micro-Strains
Cable# 16	-.001366 Volts DC	+28.3	Micro-Strains
Cable# 17	-.003054 Volts DC	+12.2	Micro-Strains
Cable# 18	-.003368 Volts DC	+6.3	Micro-Strains
Cable# 19	-.003429 Volts DC	-36.6	Micro-Strains
Cable# 20	-.003361 Volts DC	-14.4	Micro-Strains
Cable# 21	-.002078 Volts DC	+5.8	Micro-Strains
Cable# 22	+.002854 Volts DC	-5.0	Micro-Strains
Cable# 23	-.002022 Volts DC	-22.8	Micro-Strains
Cable# 24	-.001640 Volts DC	-4.6	Micro-Strains
Cable# 25	-.002630 Volts DC	-2.2	Micro-Strains

LVDT: -0.060822 VDC -0.000086 Inches

Hor. Rad.=.005079 VDC 334.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #12 RT

Time: 13:47:29 Date: 88/08/19
Group# 3 Record# 15
File name: SRU0S03
Power supply: 4.9825 Volts DC

Cable# 1	-.007068 Volts DC	-21.2	Micro-Strains
Cable# 2	+.001696 Volts DC	+11.6	Micro-Strains
Cable# 3	+.000916 Volts DC	+1.9	Micro-Strains
Cable# 4	-.001509 Volts DC	-15.3	Micro-Strains
Cable# 5	-.001107 Volts DC	-35.7	Micro-Strains
Cable# 6	-.004089 Volts DC	-17.0	Micro-Strains
Cable# 7	-.000846 Volts DC	+26.2	Micro-Strains
Cable# 8	-.001958 Volts DC	+4.7	Micro-Strains
Cable# 9	-.001362 Volts DC	-18.8	Micro-Strains
Cable# 10	+.002792 Volts DC	+7.4	Micro-Strains
Cable# 11	+.003559 Volts DC	+10.9	Micro-Strains
Cable# 12	-.000062 Volts DC	-12.1	Micro-Strains
Cable# 13	-.001448 Volts DC	-41.2	Micro-Strains
Cable# 14	-.004224 Volts DC	-16.8	Micro-Strains
Cable# 15	-.004267 Volts DC	+26.2	Micro-Strains
Cable# 16	-.001386 Volts DC	+20.3	Micro-Strains
Cable# 17	-.003059 Volts DC	+10.3	Micro-Strains
Cable# 18	-.003378 Volts DC	+2.4	Micro-Strains
Cable# 19	-.003412 Volts DC	-29.8	Micro-Strains
Cable# 20	-.003354 Volts DC	-11.5	Micro-Strains
Cable# 21	-.002080 Volts DC	+5.0	Micro-Strains
Cable# 22	+.002853 Volts DC	-5.5	Micro-Strains
Cable# 23	-.002017 Volts DC	-20.8	Micro-Strains
Cable# 24	-.001637 Volts DC	-3.4	Micro-Strains
Cable# 25	-.002631 Volts DC	-2.6	Micro-Strains

LVDT: -0.060753 VDC -0.000089 Inches

Hor. Rad.=.005779 VDC 380.7 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #13 RT

Time: 13:49:00 Date: 88/08/19
Group# 3 Record# 16
File name: SRU0S03
Power supply: 4.9822 Volts DC

Cable# 1	-.007050 Volts DC	-14.0	Micro-Strains
Cable# 2	+.001703 Volts DC	+14.5	Micro-Strains
Cable# 3	+.000893 Volts DC	-7.4	Micro-Strains
Cable# 4	-.001519 Volts DC	-19.4	Micro-Strains
Cable# 5	-.001127 Volts DC	-43.9	Micro-Strains
Cable# 6	-.004077 Volts DC	-12.3	Micro-Strains
Cable# 7	-.000831 Volts DC	+32.3	Micro-Strains
Cable# 8	-.001970 Volts DC	-.2	Micro-Strains
Cable# 9	-.001391 Volts DC	-30.6	Micro-Strains
Cable# 10	+.002803 Volts DC	+11.9	Micro-Strains
Cable# 11	+.003581 Volts DC	+19.9	Micro-Strains
Cable# 12	-.000075 Volts DC	-17.4	Micro-Strains
Cable# 13	-.001416 Volts DC	-28.4	Micro-Strains
Cable# 14	-.004212 Volts DC	-12.1	Micro-Strains
Cable# 15	-.004298 Volts DC	+13.7	Micro-Strains
Cable# 16	-.001401 Volts DC	+14.2	Micro-Strains
Cable# 17	-.003069 Volts DC	+6.2	Micro-Strains
Cable# 18	-.003387 Volts DC	-1.3	Micro-Strains
Cable# 19	-.003400 Volts DC	-25.1	Micro-Strains
Cable# 20	-.003348 Volts DC	-9.2	Micro-Strains
Cable# 21	-.002080 Volts DC	+5.0	Micro-Strains
Cable# 22	+.002852 Volts DC	-5.8	Micro-Strains
Cable# 23	-.002012 Volts DC	-18.9	Micro-Strains
Cable# 24	-.001635 Volts DC	-2.6	Micro-Strains
Cable# 25	-.002630 Volts DC	-2.2	Micro-Strains

LVDT: -0.060534 VDC -0.000100 Inches

Hor. Rad.=.005707 VDC 376.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #14 RT

Time: 13:50:22 Date: 88/08/19
Group# 3 Record# 17
File name: SRU0S03
Power supply: 4.9822 Volts DC

Cable# 1	-.007037 Volts DC	-8.7	Micro-Strains
Cable# 2	+.001709 Volts DC	+16.9	Micro-Strains
Cable# 3	+.000876 Volts DC	-14.3	Micro-Strains
Cable# 4	-.001527 Volts DC	-22.7	Micro-Strains
Cable# 5	-.001145 Volts DC	-51.2	Micro-Strains
Cable# 6	-.004069 Volts DC	-9.0	Micro-Strains
Cable# 7	-.000816 Volts DC	+38.4	Micro-Strains
Cable# 8	-.001980 Volts DC	-4.3	Micro-Strains
Cable# 9	-.001427 Volts DC	-45.1	Micro-Strains
Cable# 10	+.002815 Volts DC	+16.7	Micro-Strains
Cable# 11	+.003609 Volts DC	+31.2	Micro-Strains
Cable# 12	-.000090 Volts DC	-23.4	Micro-Strains
Cable# 13	-.001388 Volts DC	-17.2	Micro-Strains
Cable# 14	-.004204 Volts DC	-8.9	Micro-Strains
Cable# 15	-.004327 Volts DC	+2.0	Micro-Strains
Cable# 16	-.001416 Volts DC	+8.2	Micro-Strains
Cable# 17	-.003080 Volts DC	+1.9	Micro-Strains
Cable# 18	-.003392 Volts DC	-3.3	Micro-Strains
Cable# 19	-.003389 Volts DC	-20.8	Micro-Strains
Cable# 20	-.003343 Volts DC	-7.3	Micro-Strains
Cable# 21	-.002081 Volts DC	+4.6	Micro-Strains
Cable# 22	+.002854 Volts DC	-5.0	Micro-Strains
Cable# 23	-.002007 Volts DC	-16.9	Micro-Strains
Cable# 24	-.001633 Volts DC	-1.8	Micro-Strains
Cable# 25	-.002630 Volts DC	-2.2	Micro-Strains

LVDT: -0.060492 VDC -0.000102 Inches

Hor. Rad.=.005720 VDC 376.8 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #15 RT

Time: 13:52:10 Date: 88/08/19
Group# 3 Record# 18
File name: SRU0S03
Power supply: 4.9823 Volts DC

Cable# 1	-.007029 Volts DC	-5.4	Micro-Strains
Cable# 2	+.001714 Volts DC	+19.0	Micro-Strains
Cable# 3	+.000866 Volts DC	-18.4	Micro-Strains
Cable# 4	-.001535 Volts DC	-25.9	Micro-Strains
Cable# 5	-.001162 Volts DC	-58.2	Micro-Strains
Cable# 6	-.004063 Volts DC	-6.5	Micro-Strains
Cable# 7	-.000804 Volts DC	+43.3	Micro-Strains
Cable# 8	-.001986 Volts DC	-6.7	Micro-Strains
Cable# 9	-.001478 Volts DC	-65.7	Micro-Strains
Cable# 10	+.002831 Volts DC	+23.2	Micro-Strains
Cable# 11	+.003649 Volts DC	+47.3	Micro-Strains
Cable# 12	-.000106 Volts DC	-29.9	Micro-Strains
Cable# 13	-.001372 Volts DC	-10.7	Micro-Strains
Cable# 14	-.004197 Volts DC	-6.0	Micro-Strains
Cable# 15	-.004345 Volts DC	-5.2	Micro-Strains
Cable# 16	-.001427 Volts DC	+3.8	Micro-Strains
Cable# 17	-.003089 Volts DC	-1.7	Micro-Strains
Cable# 18	-.003399 Volts DC	-6.0	Micro-Strains
Cable# 19	-.003381 Volts DC	-17.6	Micro-Strains
Cable# 20	-.003340 Volts DC	-6.0	Micro-Strains
Cable# 21	-.002082 Volts DC	+4.2	Micro-Strains
Cable# 22	+.002855 Volts DC	-4.6	Micro-Strains
Cable# 23	-.002001 Volts DC	-14.5	Micro-Strains
Cable# 24	-.001631 Volts DC	-1.0	Micro-Strains
Cable# 25	-.002630 Volts DC	-2.2	Micro-Strains

LVDT: -0.060424 VDC -0.000106 Inches

Hor. Rad.=.005639 VDC 371.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #16 RT

Time: 13:53:47 Date: 88/08/19
Group# 3 Record# 19
File name: SRU0S03
Power supply: 4.9822 Volts DC

Cable# 1	-.007027 Volts DC	-4.7 Micro-Strains
Cable# 2	+.001716 Volts DC	+19.8 Micro-Strains
Cable# 3	+.000862 Volts DC	-20.0 Micro-Strains
Cable# 4	-.001539 Volts DC	-27.5 Micro-Strains
Cable# 5	-.001174 Volts DC	-63.1 Micro-Strains
Cable# 6	-.004061 Volts DC	-5.7 Micro-Strains
Cable# 7	-.000797 Volts DC	+46.1 Micro-Strains
Cable# 8	-.001989 Volts DC	-8.0 Micro-Strains
Cable# 9	-.001511 Volts DC	-79.0 Micro-Strains
Cable# 10	+.002839 Volts DC	+26.4 Micro-Strains
Cable# 11	+.003675 Volts DC	+57.8 Micro-Strains
Cable# 12	-.000114 Volts DC	-33.1 Micro-Strains
Cable# 13	-.001363 Volts DC	-7.1 Micro-Strains
Cable# 14	-.004193 Volts DC	-4.5 Micro-Strains
Cable# 15	-.004355 Volts DC	-9.3 Micro-Strains
Cable# 16	-.001436 Volts DC	+.1 Micro-Strains
Cable# 17	-.003093 Volts DC	-3.3 Micro-Strains
Cable# 18	-.003402 Volts DC	-7.3 Micro-Strains
Cable# 19	-.003373 Volts DC	-14.4 Micro-Strains
Cable# 20	-.003336 Volts DC	-4.5 Micro-Strains
Cable# 21	-.002081 Volts DC	+4.6 Micro-Strains
Cable# 22	+.002855 Volts DC	-4.6 Micro-Strains
Cable# 23	-.001995 Volts DC	-12.1 Micro-Strains
Cable# 24	-.001627 Volts DC	+.5 Micro-Strains
Cable# 25	-.002630 Volts DC	-2.2 Micro-Strains

LVDT: -0.060334 VDC -0.000110 Inches

Hor. Rad.=.005938 VDC 391.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #17 RT

Time: 13:55:35 Date: 88/08/19
Group# 3 Record# 20
File name: SRU0S03
Power supply: 4.9824 Volts DC

Cable# 1	-.007028 Volts DC	-5.0	Micro-Strains
Cable# 2	+.001718 Volts DC	+20.6	Micro-Strains
Cable# 3	+.000862 Volts DC	-20.0	Micro-Strains
Cable# 4	-.001543 Volts DC	-29.1	Micro-Strains
Cable# 5	-.001181 Volts DC	-65.9	Micro-Strains
Cable# 6	-.004060 Volts DC	-5.3	Micro-Strains
Cable# 7	-.000792 Volts DC	+48.2	Micro-Strains
Cable# 8	-.001989 Volts DC	-7.9	Micro-Strains
Cable# 9	-.001491 Volts DC	-70.9	Micro-Strains
Cable# 10	+.002831 Volts DC	+23.1	Micro-Strains
Cable# 11	+.003652 Volts DC	+48.5	Micro-Strains
Cable# 12	-.000110 Volts DC	-31.5	Micro-Strains
Cable# 13	-.001359 Volts DC	-5.5	Micro-Strains
Cable# 14	-.004191 Volts DC	-3.6	Micro-Strains
Cable# 15	-.004360 Volts DC	-11.2	Micro-Strains
Cable# 16	-.001444 Volts DC	-3.1	Micro-Strains
Cable# 17	-.003096 Volts DC	-4.4	Micro-Strains
Cable# 18	-.003406 Volts DC	-8.8	Micro-Strains
Cable# 19	-.003367 Volts DC	-12.0	Micro-Strains
Cable# 20	-.003334 Volts DC	-3.6	Micro-Strains
Cable# 21	-.002082 Volts DC	+4.2	Micro-Strains
Cable# 22	+.002857 Volts DC	-3.9	Micro-Strains
Cable# 23	-.001988 Volts DC	-9.3	Micro-Strains
Cable# 24	-.001625 Volts DC	+1.4	Micro-Strains
Cable# 25	-.002631 Volts DC	-2.6	Micro-Strains

LVDT: -0.060042 VDC -0.000125 Inches

Hor. Rad.=.005405 VDC 356.1 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #18 RT

Time: 13:57:31 Date: 88/08/19
Group# 3 Record# 21
File name: SRU0S03
Power supply: 4.9825 Volts DC

Cable# 1	-.007031 Volts DC	-6.1	Micro-Strains
Cable# 2	+.001716 Volts DC	+19.8	Micro-Strains
Cable# 3	+.000865 Volts DC	-18.8	Micro-Strains
Cable# 4	-.001540 Volts DC	-27.9	Micro-Strains
Cable# 5	-.001181 Volts DC	-65.9	Micro-Strains
Cable# 6	-.004062 Volts DC	-6.1	Micro-Strains
Cable# 7	-.000796 Volts DC	+46.5	Micro-Strains
Cable# 8	-.001986 Volts DC	-6.7	Micro-Strains
Cable# 9	-.001449 Volts DC	-53.9	Micro-Strains
Cable# 10	+.002814 Volts DC	+16.2	Micro-Strains
Cable# 11	+.003612 Volts DC	+32.3	Micro-Strains
Cable# 12	-.000096 Volts DC	-25.8	Micro-Strains
Cable# 13	-.001359 Volts DC	-5.5	Micro-Strains
Cable# 14	-.004191 Volts DC	-3.5	Micro-Strains
Cable# 15	-.004361 Volts DC	-11.6	Micro-Strains
Cable# 16	-.001449 Volts DC	-5.1	Micro-Strains
Cable# 17	-.003096 Volts DC	-4.4	Micro-Strains
Cable# 18	-.003409 Volts DC	-10.0	Micro-Strains
Cable# 19	-.003362 Volts DC	-10.0	Micro-Strains
Cable# 20	-.003333 Volts DC	-3.2	Micro-Strains
Cable# 21	-.002084 Volts DC	+3.4	Micro-Strains
Cable# 22	+.002853 Volts DC	-5.5	Micro-Strains
Cable# 23	-.001981 Volts DC	-6.5	Micro-Strains
Cable# 24	-.001620 Volts DC	+3.4	Micro-Strains
Cable# 25	-.002632 Volts DC	-3.0	Micro-Strains

LVDT: -0.060031 VDC -0.000126 Inches

Hor. Rad.=.005084 VDC 334.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #19 RT

Time: 13:59:11 Date: 88/08/19
Group# 3 Record# 22
File name: SRU0S03
Power supply: 4.9826 Volts DC

Cable# 1	-.007034 Volts DC	-7.3	Micro-Strains
Cable# 2	+.001710 Volts DC	+17.3	Micro-Strains
Cable# 3	+.000869 Volts DC	-17.2	Micro-Strains
Cable# 4	-.001534 Volts DC	-25.4	Micro-Strains
Cable# 5	-.001173 Volts DC	-62.6	Micro-Strains
Cable# 6	-.004062 Volts DC	-6.0	Micro-Strains
Cable# 7	-.000805 Volts DC	+42.9	Micro-Strains
Cable# 8	-.001984 Volts DC	-5.9	Micro-Strains
Cable# 9	-.001412 Volts DC	-39.0	Micro-Strains
Cable# 10	+.002798 Volts DC	+9.8	Micro-Strains
Cable# 11	+.003576 Volts DC	+17.7	Micro-Strains
Cable# 12	-.000083 Volts DC	-20.6	Micro-Strains
Cable# 13	-.001359 Volts DC	-5.5	Micro-Strains
Cable# 14	-.004189 Volts DC	-2.7	Micro-Strains
Cable# 15	-.004361 Volts DC	-11.5	Micro-Strains
Cable# 16	-.001453 Volts DC	-6.7	Micro-Strains
Cable# 17	-.003095 Volts DC	-4.0	Micro-Strains
Cable# 18	-.003410 Volts DC	-10.3	Micro-Strains
Cable# 19	-.003355 Volts DC	-7.1	Micro-Strains
Cable# 20	-.003330 Volts DC	-2.0	Micro-Strains
Cable# 21	-.002085 Volts DC	+3.0	Micro-Strains
Cable# 22	+.002855 Volts DC	-4.7	Micro-Strains
Cable# 23	-.001975 Volts DC	-4.1	Micro-Strains
Cable# 24	-.001619 Volts DC	+3.8	Micro-Strains
Cable# 25	-.002633 Volts DC	-3.3	Micro-Strains

LVDT: -0.059922 VDC -0.000131 Inches

Hor. Rad.=.004903 VDC 323.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #20 RT

Time: 14:01:11 Date: 88/08/19
Group# 3 Record# 23
File name: SRU0S03
Power supply: 4.9829 Volts DC

Cable# 1	-.007038 Volts DC	-8.7	Micro-Strains
Cable# 2	+.001699 Volts DC	+12.8	Micro-Strains
Cable# 3	+.000876 Volts DC	-14.4	Micro-Strains
Cable# 4	-.001523 Volts DC	-20.9	Micro-Strains
Cable# 5	-.001148 Volts DC	-52.4	Micro-Strains
Cable# 6	-.004065 Volts DC	-7.1	Micro-Strains
Cable# 7	-.000832 Volts DC	+31.9	Micro-Strains
Cable# 8	-.001980 Volts DC	-4.2	Micro-Strains
Cable# 9	-.001381 Volts DC	-26.4	Micro-Strains
Cable# 10	+.002786 Volts DC	+4.8	Micro-Strains
Cable# 11	+.003549 Volts DC	+6.8	Micro-Strains
Cable# 12	-.000070 Volts DC	-15.3	Micro-Strains
Cable# 13	-.001361 Volts DC	-6.2	Micro-Strains
Cable# 14	-.004191 Volts DC	-3.4	Micro-Strains
Cable# 15	-.004356 Volts DC	-9.4	Micro-Strains
Cable# 16	-.001457 Volts DC	-8.2	Micro-Strains
Cable# 17	-.003093 Volts DC	-3.1	Micro-Strains
Cable# 18	-.003409 Volts DC	-9.8	Micro-Strains
Cable# 19	-.003352 Volts DC	-5.9	Micro-Strains
Cable# 20	-.003330 Volts DC	-1.9	Micro-Strains
Cable# 21	-.002086 Volts DC	+2.7	Micro-Strains
Cable# 22	+.002856 Volts DC	-4.4	Micro-Strains
Cable# 23	-.001970 Volts DC	-2.1	Micro-Strains
Cable# 24	-.001618 Volts DC	+4.2	Micro-Strains
Cable# 25	-.002634 Volts DC	-3.7	Micro-Strains

LVDT: -0.059878 VDC -0.000134 Inches

Hor. Rad.=.005244 VDC 345.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #21 RT

Time: 14:04:51 Date: 88/08/19
Group# 3 Record# 24
File name: SRU0S03
Power supply: 4.9827 Volts DC

Cable# 1	-.007041 Volts DC	-10.1 Micro-Strains
Cable# 2	+.001686 Volts DC	+7.5 Micro-Strains
Cable# 3	+.000887 Volts DC	-9.9 Micro-Strains
Cable# 4	-.001503 Volts DC	-12.8 Micro-Strains
Cable# 5	-.001095 Volts DC	-30.8 Micro-Strains
Cable# 6	-.004069 Volts DC	-8.8 Micro-Strains
Cable# 7	-.000879 Volts DC	+12.7 Micro-Strains
Cable# 8	-.001975 Volts DC	-2.2 Micro-Strains
Cable# 9	-.001359 Volts DC	-17.6 Micro-Strains
Cable# 10	+.002776 Volts DC	+.9 Micro-Strains
Cable# 11	+.003533 Volts DC	+.3 Micro-Strains
Cable# 12	-.000059 Volts DC	-10.9 Micro-Strains
Cable# 13	-.001363 Volts DC	-7.1 Micro-Strains
Cable# 14	-.004191 Volts DC	-3.5 Micro-Strains
Cable# 15	-.004350 Volts DC	-7.1 Micro-Strains
Cable# 16	-.001457 Volts DC	-8.3 Micro-Strains
Cable# 17	-.003088 Volts DC	-1.2 Micro-Strains
Cable# 18	-.003408 Volts DC	-9.5 Micro-Strains
Cable# 19	-.003346 Volts DC	-3.5 Micro-Strains
Cable# 20	-.003326 Volts DC	-.4 Micro-Strains
Cable# 21	-.002087 Volts DC	+2.3 Micro-Strains
Cable# 22	+.002856 Volts DC	-4.3 Micro-Strains
Cable# 23	-.001966 Volts DC	-.5 Micro-Strains
Cable# 24	-.001615 Volts DC	+5.4 Micro-Strains
Cable# 25	-.002636 Volts DC	-4.5 Micro-Strains

LVDT: -0.059853 VDC -0.000135 Inches

Hor. Rad.=.005274 VDC 347.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #22 RT

Time: 14:09:33 Date: 88/08/19
Group# 3 Record# 25
File name: SRU0S03
Power supply: 4.9823 Volts DC

Cable# 1	-.007043 Volts DC	-11.1	Micro-Strains
Cable# 2	+.001673 Volts DC	+2.3	Micro-Strains
Cable# 3	+.000897 Volts DC	-5.8	Micro-Strains
Cable# 4	-.001485 Volts DC	-5.6	Micro-Strains
Cable# 5	-.001040 Volts DC	-8.5	Micro-Strains
Cable# 6	-.004076 Volts DC	-11.8	Micro-Strains
Cable# 7	-.000925 Volts DC	-6.0	Micro-Strains
Cable# 8	-.001966 Volts DC	+1.4	Micro-Strains
Cable# 9	-.001344 Volts DC	-11.6	Micro-Strains
Cable# 10	+.002773 Volts DC	-.3	Micro-Strains
Cable# 11	+.003527 Volts DC	-2.0	Micro-Strains
Cable# 12	-.000053 Volts DC	-8.5	Micro-Strains
Cable# 13	-.001369 Volts DC	-9.5	Micro-Strains
Cable# 14	-.004199 Volts DC	-6.8	Micro-Strains
Cable# 15	-.004339 Volts DC	-2.8	Micro-Strains
Cable# 16	-.001455 Volts DC	-7.5	Micro-Strains
Cable# 17	-.003081 Volts DC	+1.5	Micro-Strains
Cable# 18	-.003406 Volts DC	-8.8	Micro-Strains
Cable# 19	-.003344 Volts DC	-2.9	Micro-Strains
Cable# 20	-.003326 Volts DC	-.5	Micro-Strains
Cable# 21	-.002087 Volts DC	+2.2	Micro-Strains
Cable# 22	+.002855 Volts DC	-4.6	Micro-Strains
Cable# 23	-.001960 Volts DC	+1.8	Micro-Strains
Cable# 24	-.001611 Volts DC	+6.9	Micro-Strains
Cable# 25	-.002638 Volts DC	-5.4	Micro-Strains

LVDT: -0.059993 VDC -0.000128 Inches

Hor. Rad.=.005668 VDC 373.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #23 RT

Time: 14:11:07 Date: 88/08/19
Group# 3 Record# 26
File name: SRU0S03
Power supply: 4.9825 Volts DC

Cable# 1	-.007039 Volts DC	-9.4	Micro-Strains
Cable# 2	+.001670 Volts DC	+1.0	Micro-Strains
Cable# 3	+.000909 Volts DC	-.9	Micro-Strains
Cable# 4	-.001482 Volts DC	-4.3	Micro-Strains
Cable# 5	-.001027 Volts DC	-3.1	Micro-Strains
Cable# 6	-.004076 Volts DC	-11.8	Micro-Strains
Cable# 7	-.000926 Volts DC	-6.4	Micro-Strains
Cable# 8	-.001960 Volts DC	+3.9	Micro-Strains
Cable# 9	-.001334 Volts DC	-7.5	Micro-Strains
Cable# 10	+.002772 Volts DC	-.7	Micro-Strains
Cable# 11	+.003528 Volts DC	-1.6	Micro-Strains
Cable# 12	-.000050 Volts DC	-7.3	Micro-Strains
Cable# 13	-.001367 Volts DC	-8.7	Micro-Strains
Cable# 14	-.004199 Volts DC	-6.8	Micro-Strains
Cable# 15	-.004331 Volts DC	+.5	Micro-Strains
Cable# 16	-.001453 Volts DC	-6.7	Micro-Strains
Cable# 17	-.003080 Volts DC	+1.9	Micro-Strains
Cable# 18	-.003404 Volts DC	-8.0	Micro-Strains
Cable# 19	-.003338 Volts DC	-.4	Micro-Strains
Cable# 20	-.003324 Volts DC	+.4	Micro-Strains
Cable# 21	-.002087 Volts DC	+2.2	Micro-Strains
Cable# 22	+.002856 Volts DC	-4.3	Micro-Strains
Cable# 23	-.001961 Volts DC	+1.4	Micro-Strains
Cable# 24	-.001611 Volts DC	+6.9	Micro-Strains
Cable# 25	-.002641 Volts DC	-6.6	Micro-Strains

LVDT: -0.059645 VDC -0.000145 Inches

Hor. Rad.=.005248 VDC 345.7 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #24 RT

Time: 14:14:22 Date: 88/08/19
Group# 3 Record# 27
File name: SRU0S03
Power supply: 4.9824 Volts DC

Cable# 1	-.007037 Volts DC	-8.6	Micro-Strains
Cable# 2	+.001670 Volts DC	+1.0	Micro-Strains
Cable# 3	+.000916 Volts DC	+1.9	Micro-Strains
Cable# 4	-.001480 Volts DC	-3.5	Micro-Strains
Cable# 5	-.001025 Volts DC	-2.3	Micro-Strains
Cable# 6	-.004076 Volts DC	-11.8	Micro-Strains
Cable# 7	-.000919 Volts DC	-3.6	Micro-Strains
Cable# 8	-.001955 Volts DC	+5.9	Micro-Strains
Cable# 9	-.001326 Volts DC	-4.3	Micro-Strains
Cable# 10	+.002772 Volts DC	-.7	Micro-Strains
Cable# 11	+.003529 Volts DC	-1.2	Micro-Strains
Cable# 12	-.000046 Volts DC	-5.6	Micro-Strains
Cable# 13	-.001362 Volts DC	-6.7	Micro-Strains
Cable# 14	-.004197 Volts DC	-6.0	Micro-Strains
Cable# 15	-.004327 Volts DC	+2.1	Micro-Strains
Cable# 16	-.001448 Volts DC	-4.7	Micro-Strains
Cable# 17	-.003073 Volts DC	+4.7	Micro-Strains
Cable# 18	-.003404 Volts DC	-8.0	Micro-Strains
Cable# 19	-.003332 Volts DC	+1.9	Micro-Strains
Cable# 20	-.003319 Volts DC	+2.3	Micro-Strains
Cable# 21	-.002089 Volts DC	+1.4	Micro-Strains
Cable# 22	+.002855 Volts DC	-4.7	Micro-Strains
Cable# 23	-.001958 Volts DC	+2.6	Micro-Strains
Cable# 24	-.001607 Volts DC	+8.5	Micro-Strains
Cable# 25	-.002637 Volts DC	-5.0	Micro-Strains

LVDT: -0.060172 VDC -0.000119 Inches

Hor. Rad.=.009607 VDC 632.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #OFF BRIDGE

Time: 14:17:34 Date: 88/08/19
Group# 3 Record# 28
File name: SRU0S03
Power supply: 4.9827 Volts DC

Cable# 1	-.007036 Volts DC	-8.0	Micro-Strains
Cable# 2	+.001670 Volts DC	+1.0	Micro-Strains
Cable# 3	+.000921 Volts DC	+3.9	Micro-Strains
Cable# 4	-.001481 Volts DC	-3.9	Micro-Strains
Cable# 5	-.001027 Volts DC	-3.1	Micro-Strains
Cable# 6	-.004078 Volts DC	-12.5	Micro-Strains
Cable# 7	-.000915 Volts DC	-1.9	Micro-Strains
Cable# 8	-.001952 Volts DC	+7.2	Micro-Strains
Cable# 9	-.001326 Volts DC	-4.3	Micro-Strains
Cable# 10	+.002773 Volts DC	-.4	Micro-Strains
Cable# 11	+.003531 Volts DC	-.5	Micro-Strains
Cable# 12	-.000046 Volts DC	-5.6	Micro-Strains
Cable# 13	-.001364 Volts DC	-7.5	Micro-Strains
Cable# 14	-.004198 Volts DC	-6.3	Micro-Strains
Cable# 15	-.004324 Volts DC	+3.4	Micro-Strains
Cable# 16	-.001448 Volts DC	-4.6	Micro-Strains
Cable# 17	-.003073 Volts DC	+4.8	Micro-Strains
Cable# 18	-.003403 Volts DC	-7.5	Micro-Strains
Cable# 19	-.003332 Volts DC	+2.0	Micro-Strains
Cable# 20	-.003319 Volts DC	+2.4	Micro-Strains
Cable# 21	-.002087 Volts DC	+2.3	Micro-Strains
Cable# 22	+.002857 Volts DC	-3.9	Micro-Strains
Cable# 23	-.001959 Volts DC	+2.2	Micro-Strains
Cable# 24	-.001608 Volts DC	+8.2	Micro-Strains
Cable# 25	-.002638 Volts DC	-5.4	Micro-Strains

LVDT: -0.059679 VDC -0.000144 Inches

Hor. Rad.=.004898 VDC 322.7 W/M^2

MOORE CREEK BRIDGE PROJECT

File name: SCD0S04 Date: 89/08/01
Date: 88/08/19
Time: 15:10:11 Group# 1 Record# 1

TEMPERATURE PROFILE OF GIRDER:
Thermistor# 1 12.7 Deg.C
Thermistor# 2 14.0 Deg.C
Thermistor# 3 13.8 Deg.C
Thermistor# 4 13.6 Deg.C
Thermistor# 5 13.3 Deg.C
Thermistor# 6 12.9 Deg.C
Thermistor# 7 13.0 Deg.C
Thermistor# 8 246.6 Deg.C
Instrument 1 Temp: 17.04 Deg.C
Instrument 2 Temp: 17.78 Deg.C

ZERO STRAIN VOLTAGES:
Time: 15:11:35 Group# 2 Record# 2
Power supply: 4.97880 Volts DC
Cable# 1 -.007009 Volts DC
Cable# 2 +.001662 Volts DC
Cable# 3 +.000913 Volts DC
Cable# 4 -.001482 Volts DC
Cable# 5 -.001025 Volts DC
Cable# 6 -.004049 Volts DC
Cable# 7 -.000913 Volts DC
Cable# 8 -.001967 Volts DC
Cable# 9 -.001321 Volts DC
Cable# 10 +.002758 Volts DC
Cable# 11 +.003527 Volts DC
Cable# 12 -.000048 Volts DC
Cable# 13 -.001347 Volts DC
Cable# 14 -.004181 Volts DC
Cable# 15 -.004324 Volts DC
Cable# 16 -.001442 Volts DC
Cable# 17 -.003083 Volts DC
Cable# 18 -.003389 Volts DC
Cable# 19 -.003328 Volts DC
Cable# 20 -.003323 Volts DC
Cable# 21 -.002066 Volts DC
Cable# 22 +.002873 Volts DC
Cable# 23 -.001968 Volts DC
Cable# 24 -.001629 Volts DC
Cable# 25 -.002636 Volts DC
LVDT: -0.059698 VDC
Hor. Rad.= 3.5E-3 VDC 232.4 W/M^2
Air Temp= 8.8 Deg.C
Wind Speed: 10.5 MPH

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #Z4 CL

Time: 15:14:04 Date: 88/08/19
Group# 3 Record# 3
File name: SCD0S04
Power supply: 4.9746 Volts DC

Cable# 1	-.007004 Volts DC	-.4 Micro-Strains
Cable# 2	+.001660 Volts DC	-.2 Micro-Strains
Cable# 3	+.000910 Volts DC	-.9 Micro-Strains
Cable# 4	-.001482 Volts DC	-.5 Micro-Strains
Cable# 5	-.001025 Volts DC	-.4 Micro-Strains
Cable# 6	-.004048 Volts DC	-1.0 Micro-Strains
Cable# 7	-.000914 Volts DC	-.7 Micro-Strains
Cable# 8	-.001967 Volts DC	-.7 Micro-Strains
Cable# 9	-.001320 Volts DC	-.0 Micro-Strains
Cable# 10	+.002755 Volts DC	-.3 Micro-Strains
Cable# 11	+.003521 Volts DC	-1.2 Micro-Strains
Cable# 12	-.000050 Volts DC	-.8 Micro-Strains
Cable# 13	-.001346 Volts DC	-.1 Micro-Strains
Cable# 14	-.004177 Volts DC	+.2 Micro-Strains
Cable# 15	-.004324 Volts DC	-1.5 Micro-Strains
Cable# 16	-.001442 Volts DC	-.5 Micro-Strains
Cable# 17	-.003081 Volts DC	-.2 Micro-Strains
Cable# 18	-.003388 Volts DC	-.7 Micro-Strains
Cable# 19	-.003326 Volts DC	-.3 Micro-Strains
Cable# 20	-.003320 Volts DC	+.1 Micro-Strains
Cable# 21	-.002065 Volts DC	-.3 Micro-Strains
Cable# 22	+.002870 Volts DC	-.2 Micro-Strains
Cable# 23	-.001968 Volts DC	-.7 Micro-Strains
Cable# 24	-.001628 Volts DC	-.1 Micro-Strains
Cable# 25	-.002639 Volts DC	-2.1 Micro-Strains

LVDT: -0.060918 VDC 0.000062 Inches

Hor. Rad.=.004070 VDC 268.1 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #23 CL

Time: 15:15:55 Date: 88/08/19
Group# 3 Record# 4
File name: SCD0S04
Power supply: 4.9735 Volts DC

Cable# 1	-.007005 Volts DC	-1.4 Micro-Strains
Cable# 2	+.001656 Volts DC	-1.7 Micro-Strains
Cable# 3	+.000905 Volts DC	-2.9 Micro-Strains
Cable# 4	-.001482 Volts DC	-.6 Micro-Strains
Cable# 5	-.001024 Volts DC	-.0 Micro-Strains
Cable# 6	-.004050 Volts DC	-2.2 Micro-Strains
Cable# 7	-.000920 Volts DC	-3.3 Micro-Strains
Cable# 8	-.001972 Volts DC	-2.9 Micro-Strains
Cable# 9	-.001324 Volts DC	-1.8 Micro-Strains
Cable# 10	+.002752 Volts DC	-1.2 Micro-Strains
Cable# 11	+.003519 Volts DC	-1.7 Micro-Strains
Cable# 12	-.000054 Volts DC	-2.4 Micro-Strains
Cable# 13	-.001346 Volts DC	-.2 Micro-Strains
Cable# 14	-.004178 Volts DC	-.6 Micro-Strains
Cable# 15	-.004328 Volts DC	-3.5 Micro-Strains
Cable# 16	-.001444 Volts DC	-1.4 Micro-Strains
Cable# 17	-.003084 Volts DC	-1.7 Micro-Strains
Cable# 18	-.003390 Volts DC	-1.8 Micro-Strains
Cable# 19	-.003326 Volts DC	-.6 Micro-Strains
Cable# 20	-.003322 Volts DC	-1.0 Micro-Strains
Cable# 21	-.002065 Volts DC	-.5 Micro-Strains
Cable# 22	+.002869 Volts DC	-.4 Micro-Strains
Cable# 23	-.001968 Volts DC	-.8 Micro-Strains
Cable# 24	-.001627 Volts DC	+.1 Micro-Strains
Cable# 25	-.002648 Volts DC	-6.0 Micro-Strains

LVDT: -0.060352 VDC 0.000033 Inches

Hor. Rad.=.003839 VDC 252.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #22 CL

Time: 15:17:38 Date: 88/08/19
Group# 3 Record# 5
File name: SCD0S04
Power supply: 4.9729 Volts DC

Cable# 1	-.007007 Volts DC	-2.6	Micro-Strains
Cable# 2	+.001664 Volts DC	+1.6	Micro-Strains
Cable# 3	+.000897 Volts DC	-6.1	Micro-Strains
Cable# 4	-.001490 Volts DC	-4.0	Micro-Strains
Cable# 5	-.001034 Volts DC	-4.2	Micro-Strains
Cable# 6	-.004051 Volts DC	-2.8	Micro-Strains
Cable# 7	-.000915 Volts DC	-1.3	Micro-Strains
Cable# 8	-.001977 Volts DC	-5.0	Micro-Strains
Cable# 9	-.001332 Volts DC	-5.1	Micro-Strains
Cable# 10	+.002752 Volts DC	-1.1	Micro-Strains
Cable# 11	+.003519 Volts DC	-1.5	Micro-Strains
Cable# 12	-.000060 Volts DC	-4.9	Micro-Strains
Cable# 13	-.001350 Volts DC	-1.9	Micro-Strains
Cable# 14	-.004179 Volts DC	-1.2	Micro-Strains
Cable# 15	-.004331 Volts DC	-4.9	Micro-Strains
Cable# 16	-.001447 Volts DC	-2.7	Micro-Strains
Cable# 17	-.003090 Volts DC	-4.2	Micro-Strains
Cable# 18	-.003390 Volts DC	-2.0	Micro-Strains
Cable# 19	-.003332 Volts DC	-3.2	Micro-Strains
Cable# 20	-.003326 Volts DC	-2.8	Micro-Strains
Cable# 21	-.002064 Volts DC	-.2	Micro-Strains
Cable# 22	+.002870 Volts DC	+.2	Micro-Strains
Cable# 23	-.001967 Volts DC	-.5	Micro-Strains
Cable# 24	-.001628 Volts DC	-.4	Micro-Strains
Cable# 25	-.002644 Volts DC	-4.5	Micro-Strains

LVDT: -0.060108 VDC 0.000021 Inches

Hor. Rad.=.004121 VDC 271.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #21 CL

Time: 15:19:25 Date: 88/08/19
Group# 3 Record# 6
File name: SCD0S04
Power supply: 4.9726 Volts DC

Cable# 1	-.007007 Volts DC	-2.7	Micro-Strains
Cable# 2	+.001687 Volts DC	+11.0	Micro-Strains
Cable# 3	+.000889 Volts DC	-9.3	Micro-Strains
Cable# 4	-.001524 Volts DC	-17.9	Micro-Strains
Cable# 5	-.001071 Volts DC	-19.3	Micro-Strains
Cable# 6	-.004052 Volts DC	-3.3	Micro-Strains
Cable# 7	-.000886 Volts DC	+10.5	Micro-Strains
Cable# 8	-.001985 Volts DC	-8.3	Micro-Strains
Cable# 9	-.001342 Volts DC	-9.2	Micro-Strains
Cable# 10	+.002758 Volts DC	+1.4	Micro-Strains
Cable# 11	+.003524 Volts DC	+.6	Micro-Strains
Cable# 12	-.000070 Volts DC	-8.9	Micro-Strains
Cable# 13	-.001348 Volts DC	-1.1	Micro-Strains
Cable# 14	-.004178 Volts DC	-.9	Micro-Strains
Cable# 15	-.004336 Volts DC	-7.0	Micro-Strains
Cable# 16	-.001447 Volts DC	-2.7	Micro-Strains
Cable# 17	-.003094 Volts DC	-5.9	Micro-Strains
Cable# 18	-.003394 Volts DC	-3.7	Micro-Strains
Cable# 19	-.003334 Volts DC	-4.0	Micro-Strains
Cable# 20	-.003327 Volts DC	-3.2	Micro-Strains
Cable# 21	-.002064 Volts DC	-.2	Micro-Strains
Cable# 22	+.002869 Volts DC	-.2	Micro-Strains
Cable# 23	-.001969 Volts DC	-1.4	Micro-Strains
Cable# 24	-.001630 Volts DC	-1.2	Micro-Strains
Cable# 25	-.002637 Volts DC	-1.7	Micro-Strains

LVDT: -0.060025 VDC 0.000017 Inches

Hor. Rad.=.004001 VDC 263.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #20 CL

Time: 15:21:26 Date: 88/08/19
Group# 3 Record# 7
File name: SCD0S04
Power supply: 4.9721 Volts DC

Cable# 1	-.007006 Volts DC	-2.6	Micro-Strains
Cable# 2	+.001714 Volts DC	+22.1	Micro-Strains
Cable# 3	+.000881 Volts DC	-12.5	Micro-Strains
Cable# 4	-.001560 Volts DC	-32.6	Micro-Strains
Cable# 5	-.001110 Volts DC	-35.2	Micro-Strains
Cable# 6	-.004049 Volts DC	-2.2	Micro-Strains
Cable# 7	-.000851 Volts DC	+24.8	Micro-Strains
Cable# 8	-.001993 Volts DC	-11.7	Micro-Strains
Cable# 9	-.001359 Volts DC	-16.1	Micro-Strains
Cable# 10	+.002769 Volts DC	+5.9	Micro-Strains
Cable# 11	+.003535 Volts DC	+5.2	Micro-Strains
Cable# 12	-.000085 Volts DC	-15.0	Micro-Strains
Cable# 13	-.001347 Volts DC	-.7	Micro-Strains
Cable# 14	-.004177 Volts DC	-.7	Micro-Strains
Cable# 15	-.004340 Volts DC	-8.8	Micro-Strains
Cable# 16	-.001449 Volts DC	-3.6	Micro-Strains
Cable# 17	-.003100 Volts DC	-8.4	Micro-Strains
Cable# 18	-.003394 Volts DC	-3.8	Micro-Strains
Cable# 19	-.003336 Volts DC	-5.0	Micro-Strains
Cable# 20	-.003331 Volts DC	-5.0	Micro-Strains
Cable# 21	-.002063 Volts DC	+.1	Micro-Strains
Cable# 22	+.002869 Volts DC	-.1	Micro-Strains
Cable# 23	-.001973 Volts DC	-3.0	Micro-Strains
Cable# 24	-.001632 Volts DC	-2.1	Micro-Strains
Cable# 25	-.002632 Volts DC	+.2	Micro-Strains

LVDT: -0.060286 VDC 0.000030 Inches

Hor. Rad.=.003651 VDC 240.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #19 CL

Time: 15:23:15 Date: 88/08/19
Group# 3 Record# 8
File name: SCD0S04
Power supply: 4.9719 Volts DC

Cable# 1	-.007001 Volts DC	-.7	Micro-Strains
Cable# 2	+.001732 Volts DC	+29.5	Micro-Strains
Cable# 3	+.000874 Volts DC	-15.4	Micro-Strains
Cable# 4	-.001579 Volts DC	-40.3	Micro-Strains
Cable# 5	-.001129 Volts DC	-43.0	Micro-Strains
Cable# 6	-.004045 Volts DC	-.7	Micro-Strains
Cable# 7	-.000833 Volts DC	+32.1	Micro-Strains
Cable# 8	-.002000 Volts DC	-14.6	Micro-Strains
Cable# 9	-.001382 Volts DC	-25.4	Micro-Strains
Cable# 10	+.002789 Volts DC	+14.1	Micro-Strains
Cable# 11	+.003554 Volts DC	+12.9	Micro-Strains
Cable# 12	-.000104 Volts DC	-22.7	Micro-Strains
Cable# 13	-.001344 Volts DC	+.5	Micro-Strains
Cable# 14	-.004173 Volts DC	+.9	Micro-Strains
Cable# 15	-.004347 Volts DC	-11.7	Micro-Strains
Cable# 16	-.001447 Volts DC	-2.8	Micro-Strains
Cable# 17	-.003104 Volts DC	-10.1	Micro-Strains
Cable# 18	-.003393 Volts DC	-3.5	Micro-Strains
Cable# 19	-.003340 Volts DC	-6.6	Micro-Strains
Cable# 20	-.003335 Volts DC	-6.6	Micro-Strains
Cable# 21	-.002062 Volts DC	+.5	Micro-Strains
Cable# 22	+.002870 Volts DC	+.4	Micro-Strains
Cable# 23	-.001977 Volts DC	-4.7	Micro-Strains
Cable# 24	-.001635 Volts DC	-3.3	Micro-Strains
Cable# 25	-.002629 Volts DC	+1.4	Micro-Strains

LVDT: -0.060154 VDC 0.000023 Inches

Hor. Rad.=.003633 VDC 239.3 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #18 CL

Time: 15:28:51 Date: 88/08/19
Group# 3 Record# 9
File name: SCD0S04
Power supply: 4.9717 Volts DC

Cable# 1	-.006994 Volts DC	+2.0 Micro-Strains
Cable# 2	+.001743 Volts DC	+34.0 Micro-Strains
Cable# 3	+.000867 Volts DC	-18.2 Micro-Strains
Cable# 4	-.001587 Volts DC	-43.6 Micro-Strains
Cable# 5	-.001135 Volts DC	-45.5 Micro-Strains
Cable# 6	-.004038 Volts DC	+2.1 Micro-Strains
Cable# 7	-.000826 Volts DC	+35.0 Micro-Strains
Cable# 8	-.002007 Volts DC	-17.4 Micro-Strains
Cable# 9	-.001405 Volts DC	-34.7 Micro-Strains
Cable# 10	+.002815 Volts DC	+24.6 Micro-Strains
Cable# 11	+.003577 Volts DC	+22.3 Micro-Strains
Cable# 12	-.000127 Volts DC	-32.0 Micro-Strains
Cable# 13	-.001339 Volts DC	+2.4 Micro-Strains
Cable# 14	-.004170 Volts DC	+2.0 Micro-Strains
Cable# 15	-.004349 Volts DC	-12.6 Micro-Strains
Cable# 16	-.001445 Volts DC	-2.0 Micro-Strains
Cable# 17	-.003108 Volts DC	-11.7 Micro-Strains
Cable# 18	-.003389 Volts DC	-1.9 Micro-Strains
Cable# 19	-.003343 Volts DC	-7.9 Micro-Strains
Cable# 20	-.003339 Volts DC	-8.3 Micro-Strains
Cable# 21	-.002060 Volts DC	+1.2 Micro-Strains
Cable# 22	+.002873 Volts DC	+1.6 Micro-Strains
Cable# 23	-.001984 Volts DC	-7.5 Micro-Strains
Cable# 24	-.001642 Volts DC	-6.1 Micro-Strains
Cable# 25	-.002626 Volts DC	+2.5 Micro-Strains

LVDT: -0.059548 VDC -0.000008 Inches

Hor. Rad.=.003789 VDC 249.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #17 CL

Time: 15:32:44 Date: 88/08/19
Group# 3 Record# 10
File name: SCD0S04
Power supply: 4.9718 Volts DC

Cable# 1	-.006987 Volts DC	+5.0	Micro-Strains
Cable# 2	+.001746 Volts DC	+35.2	Micro-Strains
Cable# 3	+.000863 Volts DC	-19.8	Micro-Strains
Cable# 4	-.001588 Volts DC	-44.0	Micro-Strains
Cable# 5	-.001135 Volts DC	-45.5	Micro-Strains
Cable# 6	-.004032 Volts DC	+4.6	Micro-Strains
Cable# 7	-.000823 Volts DC	+36.2	Micro-Strains
Cable# 8	-.002010 Volts DC	-18.6	Micro-Strains
Cable# 9	-.001434 Volts DC	-46.4	Micro-Strains
Cable# 10	+.002843 Volts DC	+35.9	Micro-Strains
Cable# 11	+.003603 Volts DC	+32.7	Micro-Strains
Cable# 12	-.000153 Volts DC	-42.5	Micro-Strains
Cable# 13	-.001338 Volts DC	+2.9	Micro-Strains
Cable# 14	-.004169 Volts DC	+2.5	Micro-Strains
Cable# 15	-.004350 Volts DC	-12.9	Micro-Strains
Cable# 16	-.001439 Volts DC	+.4	Micro-Strains
Cable# 17	-.003108 Volts DC	-11.7	Micro-Strains
Cable# 18	-.003384 Volts DC	+.1	Micro-Strains
Cable# 19	-.003348 Volts DC	-9.8	Micro-Strains
Cable# 20	-.003343 Volts DC	-9.8	Micro-Strains
Cable# 21	-.002058 Volts DC	+2.0	Micro-Strains
Cable# 22	+.002875 Volts DC	+2.4	Micro-Strains
Cable# 23	-.001990 Volts DC	-9.9	Micro-Strains
Cable# 24	-.001649 Volts DC	-8.9	Micro-Strains
Cable# 25	-.002625 Volts DC	+3.0	Micro-Strains

LVDT: -0.060149 VDC 0.000023 Inches

Hor. Rad.=.004044 VDC 266.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #16 CL

Time: 15:35:37 Date: 88/08/19
Group# 3 Record# 11
File name: SCD0S04
Power supply: 4.9722 Volts DC

Cable# 1	-.006986 Volts DC	+5.6	Micro-Strains
Cable# 2	+.001745 Volts DC	+34.7	Micro-Strains
Cable# 3	+.000862 Volts DC	-20.3	Micro-Strains
Cable# 4	-.001585 Volts DC	-42.8	Micro-Strains
Cable# 5	-.001133 Volts DC	-44.6	Micro-Strains
Cable# 6	-.004030 Volts DC	+5.6	Micro-Strains
Cable# 7	-.000823 Volts DC	+36.2	Micro-Strains
Cable# 8	-.002011 Volts DC	-19.0	Micro-Strains
Cable# 9	-.001447 Volts DC	-51.6	Micro-Strains
Cable# 10	+.002860 Volts DC	+42.7	Micro-Strains
Cable# 11	+.003617 Volts DC	+38.3	Micro-Strains
Cable# 12	-.000162 Volts DC	-46.1	Micro-Strains
Cable# 13	-.001343 Volts DC	+.9	Micro-Strains
Cable# 14	-.004171 Volts DC	+1.8	Micro-Strains
Cable# 15	-.004346 Volts DC	-11.2	Micro-Strains
Cable# 16	-.001433 Volts DC	+2.9	Micro-Strains
Cable# 17	-.003106 Volts DC	-10.8	Micro-Strains
Cable# 18	-.003377 Volts DC	+3.0	Micro-Strains
Cable# 19	-.003354 Volts DC	-12.1	Micro-Strains
Cable# 20	-.003349 Volts DC	-12.1	Micro-Strains
Cable# 21	-.002056 Volts DC	+2.9	Micro-Strains
Cable# 22	+.002876 Volts DC	+2.7	Micro-Strains
Cable# 23	-.001996 Volts DC	-12.2	Micro-Strains
Cable# 24	-.001655 Volts DC	-11.2	Micro-Strains
Cable# 25	-.002624 Volts DC	+3.5	Micro-Strains

LVDT: -0.060328 VDC 0.000032 Inches

Hor. Rad.=.004089 VDC 269.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #15 CL

Time: 15:37:09 Date: 88/08/19
Group# 3 Record# 12
File name: SCD0S04
Power supply: 4.9720 Volts DC

Cable# 1	-.006986 Volts DC	+5.5	Micro-Strains
Cable# 2	+.001740 Volts DC	+32.7	Micro-Strains
Cable# 3	+.000864 Volts DC	-19.5	Micro-Strains
Cable# 4	-.001577 Volts DC	-39.5	Micro-Strains
Cable# 5	-.001124 Volts DC	-41.0	Micro-Strains
Cable# 6	-.004030 Volts DC	+5.5	Micro-Strains
Cable# 7	-.000829 Volts DC	+33.8	Micro-Strains
Cable# 8	-.002009 Volts DC	-18.2	Micro-Strains
Cable# 9	-.001426 Volts DC	-43.2	Micro-Strains
Cable# 10	+.002840 Volts DC	+34.7	Micro-Strains
Cable# 11	+.003599 Volts DC	+31.1	Micro-Strains
Cable# 12	-.000143 Volts DC	-38.4	Micro-Strains
Cable# 13	-.001348 Volts DC	-1.1	Micro-Strains
Cable# 14	-.004177 Volts DC	-.7	Micro-Strains
Cable# 15	-.004340 Volts DC	-8.8	Micro-Strains
Cable# 16	-.001427 Volts DC	+5.3	Micro-Strains
Cable# 17	-.003099 Volts DC	-8.0	Micro-Strains
Cable# 18	-.003371 Volts DC	+5.3	Micro-Strains
Cable# 19	-.003358 Volts DC	-13.7	Micro-Strains
Cable# 20	-.003354 Volts DC	-14.1	Micro-Strains
Cable# 21	-.002056 Volts DC	+2.9	Micro-Strains
Cable# 22	+.002877 Volts DC	+3.2	Micro-Strains
Cable# 23	-.002001 Volts DC	-14.2	Micro-Strains
Cable# 24	-.001658 Volts DC	-12.4	Micro-Strains
Cable# 25	-.002625 Volts DC	+3.0	Micro-Strains

LVDT: -0.060641 VDC 0.000048 Inches

Hor. Rad.=.003945 VDC 259.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #14 CL

Time: 15:44:06 Date: 88/08/19
Group# 3 Record# 13
File name: SCD0S04
Power supply: 4.9730 Volts DC

Cable# 1	-.006987 Volts DC	+5.6	Micro-Strains
Cable# 2	+.001733 Volts DC	+29.7	Micro-Strains
Cable# 3	+.000865 Volts DC	-19.1	Micro-Strains
Cable# 4	-.001566 Volts DC	-34.9	Micro-Strains
Cable# 5	-.001108 Volts DC	-34.3	Micro-Strains
Cable# 6	-.004031 Volts DC	+5.4	Micro-Strains
Cable# 7	-.000843 Volts DC	+28.1	Micro-Strains
Cable# 8	-.002008 Volts DC	-17.6	Micro-Strains
Cable# 9	-.001392 Volts DC	-29.3	Micro-Strains
Cable# 10	+.002810 Volts DC	+22.3	Micro-Strains
Cable# 11	+.003569 Volts DC	+18.6	Micro-Strains
Cable# 12	-.000116 Volts DC	-27.5	Micro-Strains
Cable# 13	-.001357 Volts DC	-4.7	Micro-Strains
Cable# 14	-.004187 Volts DC	-4.4	Micro-Strains
Cable# 15	-.004333 Volts DC	-5.7	Micro-Strains
Cable# 16	-.001420 Volts DC	+8.2	Micro-Strains
Cable# 17	-.003092 Volts DC	-5.0	Micro-Strains
Cable# 18	-.003362 Volts DC	+9.2	Micro-Strains
Cable# 19	-.003367 Volts DC	-17.1	Micro-Strains
Cable# 20	-.003364 Volts DC	-17.9	Micro-Strains
Cable# 21	-.002051 Volts DC	+5.0	Micro-Strains
Cable# 22	+.002884 Volts DC	+5.7	Micro-Strains
Cable# 23	-.002010 Volts DC	-17.6	Micro-Strains
Cable# 24	-.001670 Volts DC	-17.1	Micro-Strains
Cable# 25	-.002623 Volts DC	+4.0	Micro-Strains

LVDT: -0.060379 VDC 0.000034 Inches

Hor. Rad.=.003895 VDC 256.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #13 CL

Time: 16:03:21 Date: 88/08/19
Group# 3 Record# 14
File name: SCD0S04
Power supply: 4.9742 Volts DC

Cable# 1	-.006979 Volts DC	+9.6	Micro-Strains
Cable# 2	+.001724 Volts DC	+25.9	Micro-Strains
Cable# 3	+.000867 Volts DC	-18.4	Micro-Strains
Cable# 4	-.001550 Volts DC	-28.2	Micro-Strains
Cable# 5	-.001094 Volts DC	-28.5	Micro-Strains
Cable# 6	-.004022 Volts DC	+9.5	Micro-Strains
Cable# 7	-.000850 Volts DC	+25.3	Micro-Strains
Cable# 8	-.002007 Volts DC	-17.0	Micro-Strains
Cable# 9	-.001361 Volts DC	-16.7	Micro-Strains
Cable# 10	+.002781 Volts DC	+10.3	Micro-Strains
Cable# 11	+.003548 Volts DC	+9.8	Micro-Strains
Cable# 12	-.000084 Volts DC	-14.6	Micro-Strains
Cable# 13	-.001363 Volts DC	-6.9	Micro-Strains
Cable# 14	-.004194 Volts DC	-6.8	Micro-Strains
Cable# 15	-.004323 Volts DC	-1.2	Micro-Strains
Cable# 16	-.001405 Volts DC	+14.4	Micro-Strains
Cable# 17	-.003082 Volts DC	-.7	Micro-Strains
Cable# 18	-.003345 Volts DC	+16.3	Micro-Strains
Cable# 19	-.003381 Volts DC	-22.3	Micro-Strains
Cable# 20	-.003377 Volts DC	-22.7	Micro-Strains
Cable# 21	-.002042 Volts DC	+8.8	Micro-Strains
Cable# 22	+.002893 Volts DC	+9.0	Micro-Strains
Cable# 23	-.002024 Volts DC	-23.0	Micro-Strains
Cable# 24	-.001685 Volts DC	-22.9	Micro-Strains
Cable# 25	-.002621 Volts DC	+5.1	Micro-Strains

LVDT: -0.060921 VDC 0.000062 Inches

Hor. Rad.=.004056 VDC 267.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #12 CL

Time: 16:06:49 Date: 88/08/19
Group# 3 Record# 15
File name: SCD0S04
Power supply: 4.9743 Volts DC

Cable# 1	-.006989 Volts DC	+5.6	Micro-Strains
Cable# 2	+.001715 Volts DC	+22.2	Micro-Strains
Cable# 3	+.000884 Volts DC	-11.5	Micro-Strains
Cable# 4	-.001535 Volts DC	-22.1	Micro-Strains
Cable# 5	-.001080 Volts DC	-22.8	Micro-Strains
Cable# 6	-.004033 Volts DC	+5.0	Micro-Strains
Cable# 7	-.000861 Volts DC	+20.9	Micro-Strains
Cable# 8	-.001992 Volts DC	-10.9	Micro-Strains
Cable# 9	-.001339 Volts DC	-7.8	Micro-Strains
Cable# 10	+.002763 Volts DC	+3.0	Micro-Strains
Cable# 11	+.003532 Volts DC	+3.3	Micro-Strains
Cable# 12	-.000064 Volts DC	-6.5	Micro-Strains
Cable# 13	-.001383 Volts DC	-15.0	Micro-Strains
Cable# 14	-.004212 Volts DC	-14.0	Micro-Strains
Cable# 15	-.004304 Volts DC	+6.5	Micro-Strains
Cable# 16	-.001391 Volts DC	+20.0	Micro-Strains
Cable# 17	-.003063 Volts DC	+6.8	Micro-Strains
Cable# 18	-.003332 Volts DC	+21.5	Micro-Strains
Cable# 19	-.003392 Volts DC	-26.6	Micro-Strains
Cable# 20	-.003387 Volts DC	-26.7	Micro-Strains
Cable# 21	-.002040 Volts DC	+9.6	Micro-Strains
Cable# 22	+.002892 Volts DC	+8.6	Micro-Strains
Cable# 23	-.002030 Volts DC	-25.4	Micro-Strains
Cable# 24	-.001691 Volts DC	-25.2	Micro-Strains
Cable# 25	-.002622 Volts DC	+4.7	Micro-Strains

LVDT: -0.061071 VDC 0.000069 Inches

Hor. Rad.=.002945 VDC 194.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #11 CL

Time: 16:08:09 Date: 88/08/19
Group# 3 Record# 16
File name: SCD0S04
Power supply: 4.9741 Volts DC

Cable# 1	-.007006 Volts DC	-1.5	Micro-Strains
Cable# 2	+.001704 Volts DC	+17.8	Micro-Strains
Cable# 3	+.000908 Volts DC	-1.7	Micro-Strains
Cable# 4	-.001522 Volts DC	-16.9	Micro-Strains
Cable# 5	-.001068 Volts DC	-17.9	Micro-Strains
Cable# 6	-.004051 Volts DC	-2.4	Micro-Strains
Cable# 7	-.000871 Volts DC	+16.8	Micro-Strains
Cable# 8	-.001969 Volts DC	-1.6	Micro-Strains
Cable# 9	-.001321 Volts DC	-.5	Micro-Strains
Cable# 10	+.002748 Volts DC	-3.0	Micro-Strains
Cable# 11	+.003518 Volts DC	-2.3	Micro-Strains
Cable# 12	-.000047 Volts DC	+.4	Micro-Strains
Cable# 13	-.001392 Volts DC	-18.6	Micro-Strains
Cable# 14	-.004224 Volts DC	-18.9	Micro-Strains
Cable# 15	-.004299 Volts DC	+8.4	Micro-Strains
Cable# 16	-.001376 Volts DC	+26.0	Micro-Strains
Cable# 17	-.003054 Volts DC	+10.4	Micro-Strains
Cable# 18	-.003315 Volts DC	+28.2	Micro-Strains
Cable# 19	-.003404 Volts DC	-31.5	Micro-Strains
Cable# 20	-.003400 Volts DC	-31.9	Micro-Strains
Cable# 21	-.002039 Volts DC	+10.0	Micro-Strains
Cable# 22	+.002895 Volts DC	+9.8	Micro-Strains
Cable# 23	-.002034 Volts DC	-27.0	Micro-Strains
Cable# 24	-.001697 Volts DC	-27.7	Micro-Strains
Cable# 25	-.002624 Volts DC	+3.9	Micro-Strains

LVDT: -0.060812 VDC 0.000056 Inches

Hor. Rad.=.002778 VDC 183.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #10 CL

Time: 16:09:21 Date: 88/08/19
Group# 3 Record# 17
File name: SCD0S04
Power supply: 4.9743 Volts DC

Cable# 1	-.007030 Volts DC	-11.1	Micro-Strains
Cable# 2	+.001697 Volts DC	+14.9	Micro-Strains
Cable# 3	+.000937 Volts DC	+10.1	Micro-Strains
Cable# 4	-.001511 Volts DC	-12.4	Micro-Strains
Cable# 5	-.001056 Volts DC	-13.0	Micro-Strains
Cable# 6	-.004073 Volts DC	-11.3	Micro-Strains
Cable# 7	-.000880 Volts DC	+13.1	Micro-Strains
Cable# 8	-.001942 Volts DC	+9.5	Micro-Strains
Cable# 9	-.001308 Volts DC	+4.8	Micro-Strains
Cable# 10	+.002738 Volts DC	-7.1	Micro-Strains
Cable# 11	+.003507 Volts DC	-6.8	Micro-Strains
Cable# 12	-.000034 Volts DC	+5.6	Micro-Strains
Cable# 13	-.001372 Volts DC	-10.6	Micro-Strains
Cable# 14	-.004203 Volts DC	-10.4	Micro-Strains
Cable# 15	-.004308 Volts DC	+4.9	Micro-Strains
Cable# 16	-.001360 Volts DC	+32.5	Micro-Strains
Cable# 17	-.003065 Volts DC	+6.1	Micro-Strains
Cable# 18	-.003300 Volts DC	+34.2	Micro-Strains
Cable# 19	-.003417 Volts DC	-36.6	Micro-Strains
Cable# 20	-.003411 Volts DC	-36.2	Micro-Strains
Cable# 21	-.002038 Volts DC	+10.4	Micro-Strains
Cable# 22	+.002896 Volts DC	+10.2	Micro-Strains
Cable# 23	-.002038 Volts DC	-28.5	Micro-Strains
Cable# 24	-.001701 Volts DC	-29.2	Micro-Strains
Cable# 25	-.002625 Volts DC	+3.5	Micro-Strains

LVDT: -0.060916 VDC 0.000062 Inches

Hor. Rad.=.004280 VDC 281.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #9 CL

Time: 16:11:34 Date: 88/08/19
Group# 3 Record# 18
File name: SCD0S04
Power supply: 4.9744 Volts DC

Cable# 1	-.007059 Volts DC	-22.9	Micro-Strains
Cable# 2	+.001691 Volts DC	+12.4	Micro-Strains
Cable# 3	+.000976 Volts DC	+26.0	Micro-Strains
Cable# 4	-.001502 Volts DC	-8.7	Micro-Strains
Cable# 5	-.001046 Volts DC	-8.9	Micro-Strains
Cable# 6	-.004105 Volts DC	-24.3	Micro-Strains
Cable# 7	-.000888 Volts DC	+9.9	Micro-Strains
Cable# 8	-.001904 Volts DC	+24.9	Micro-Strains
Cable# 9	-.001298 Volts DC	+8.8	Micro-Strains
Cable# 10	+.002731 Volts DC	-9.9	Micro-Strains
Cable# 11	+.003501 Volts DC	-9.2	Micro-Strains
Cable# 12	-.000025 Volts DC	+9.3	Micro-Strains
Cable# 13	-.001342 Volts DC	+1.5	Micro-Strains
Cable# 14	-.004174 Volts DC	+1.3	Micro-Strains
Cable# 15	-.004329 Volts DC	-3.6	Micro-Strains
Cable# 16	-.001344 Volts DC	+39.0	Micro-Strains
Cable# 17	-.003088 Volts DC	-3.1	Micro-Strains
Cable# 18	-.003283 Volts DC	+41.0	Micro-Strains
Cable# 19	-.003429 Volts DC	-41.3	Micro-Strains
Cable# 20	-.003424 Volts DC	-41.3	Micro-Strains
Cable# 21	-.002035 Volts DC	+11.6	Micro-Strains
Cable# 22	+.002903 Volts DC	+12.9	Micro-Strains
Cable# 23	-.002043 Volts DC	-30.5	Micro-Strains
Cable# 24	-.001707 Volts DC	-31.6	Micro-Strains
Cable# 25	-.002627 Volts DC	+2.7	Micro-Strains

LVDT: -0.060946 VDC 0.000063 Inches

Hor. Rad.=.002236 VDC 147.3 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #8 CL

Time: 16:31:11 Date: 88/08/19
Group# 3 Record# 19
File name: SCD0S04
Power supply: 4.9758 Volts DC

Cable# 1	-.007097 Volts DC	-37.6	Micro-Strains
Cable# 2	+.001695 Volts DC	+13.8	Micro-Strains
Cable# 3	+.001022 Volts DC	+44.6	Micro-Strains
Cable# 4	-.001496 Volts DC	-6.1	Micro-Strains
Cable# 5	-.001039 Volts DC	-6.0	Micro-Strains
Cable# 6	-.004145 Volts DC	-40.1	Micro-Strains
Cable# 7	-.000890 Volts DC	+9.1	Micro-Strains
Cable# 8	-.001860 Volts DC	+43.1	Micro-Strains
Cable# 9	-.001289 Volts DC	+12.6	Micro-Strains
Cable# 10	+.002732 Volts DC	-9.8	Micro-Strains
Cable# 11	+.003498 Volts DC	-10.9	Micro-Strains
Cable# 12	-.000012 Volts DC	+14.5	Micro-Strains
Cable# 13	-.001322 Volts DC	+9.7	Micro-Strains
Cable# 14	-.004161 Volts DC	+7.0	Micro-Strains
Cable# 15	-.004346 Volts DC	-9.9	Micro-Strains
Cable# 16	-.001322 Volts DC	+48.0	Micro-Strains
Cable# 17	-.003099 Volts DC	-7.1	Micro-Strains
Cable# 18	-.003265 Volts DC	+48.5	Micro-Strains
Cable# 19	-.003443 Volts DC	-46.5	Micro-Strains
Cable# 20	-.003434 Volts DC	-44.9	Micro-Strains
Cable# 21	-.002035 Volts DC	+11.8	Micro-Strains
Cable# 22	+.002901 Volts DC	+11.8	Micro-Strains
Cable# 23	-.002044 Volts DC	-30.7	Micro-Strains
Cable# 24	-.001706 Volts DC	-31.0	Micro-Strains
Cable# 25	-.002629 Volts DC	+2.2	Micro-Strains

LVDT: -0.059845 VDC 0.000007 Inches

Hor. Rad.=.003066 VDC 202.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #7 CL

Time: 16:32:25 Date: 88/08/19
Group# 3 Record# 20
File name: SCD0S04
Power supply: 4.9757 Volts DC

Cable# 1	-.007113 Volts DC	-44.1	Micro-Strains
Cable# 2	+.001691 Volts DC	+12.2	Micro-Strains
Cable# 3	+.001043 Volts DC	+53.1	Micro-Strains
Cable# 4	-.001489 Volts DC	-3.2	Micro-Strains
Cable# 5	-.001033 Volts DC	-3.5	Micro-Strains
Cable# 6	-.004160 Volts DC	-46.2	Micro-Strains
Cable# 7	-.000896 Volts DC	+6.7	Micro-Strains
Cable# 8	-.001841 Volts DC	+50.8	Micro-Strains
Cable# 9	-.001288 Volts DC	+13.0	Micro-Strains
Cable# 10	+.002731 Volts DC	-10.2	Micro-Strains
Cable# 11	+.003497 Volts DC	-11.2	Micro-Strains
Cable# 12	-.000009 Volts DC	+15.7	Micro-Strains
Cable# 13	-.001312 Volts DC	+13.7	Micro-Strains
Cable# 14	-.004152 Volts DC	+10.6	Micro-Strains
Cable# 15	-.004351 Volts DC	-12.0	Micro-Strains
Cable# 16	-.001314 Volts DC	+51.2	Micro-Strains
Cable# 17	-.003106 Volts DC	-9.9	Micro-Strains
Cable# 18	-.003258 Volts DC	+51.3	Micro-Strains
Cable# 19	-.003449 Volts DC	-48.9	Micro-Strains
Cable# 20	-.003439 Volts DC	-47.0	Micro-Strains
Cable# 21	-.002036 Volts DC	+11.4	Micro-Strains
Cable# 22	+.002902 Volts DC	+12.2	Micro-Strains
Cable# 23	-.002044 Volts DC	-30.7	Micro-Strains
Cable# 24	-.001706 Volts DC	-31.0	Micro-Strains
Cable# 25	-.002630 Volts DC	+1.8	Micro-Strains

LVDT: -0.059703 VDC 2.528662E-7 Inches

Hor. Rad.=.003197 VDC 210.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #6 CL

Time: 16:33:42 Date: 88/08/19
Group# 3 Record# 21
File name: SCD0S04
Power supply: 4.9757 Volts DC

Cable# 1	-.007080 Volts DC	-30.7	Micro-Strains
Cable# 2	+.001688 Volts DC	+11.0	Micro-Strains
Cable# 3	+.001010 Volts DC	+39.7	Micro-Strains
Cable# 4	-.001485 Volts DC	-1.6	Micro-Strains
Cable# 5	-.001029 Volts DC	-1.9	Micro-Strains
Cable# 6	-.004128 Volts DC	-33.2	Micro-Strains
Cable# 7	-.000900 Volts DC	+5.1	Micro-Strains
Cable# 8	-.001869 Volts DC	+39.4	Micro-Strains
Cable# 9	-.001289 Volts DC	+12.6	Micro-Strains
Cable# 10	+.002734 Volts DC	-9.0	Micro-Strains
Cable# 11	+.003499 Volts DC	-10.4	Micro-Strains
Cable# 12	-.000011 Volts DC	+14.9	Micro-Strains
Cable# 13	-.001307 Volts DC	+15.8	Micro-Strains
Cable# 14	-.004147 Volts DC	+12.6	Micro-Strains
Cable# 15	-.004354 Volts DC	-13.2	Micro-Strains
Cable# 16	-.001314 Volts DC	+51.2	Micro-Strains
Cable# 17	-.003107 Volts DC	-10.3	Micro-Strains
Cable# 18	-.003257 Volts DC	+51.7	Micro-Strains
Cable# 19	-.003448 Volts DC	-48.5	Micro-Strains
Cable# 20	-.003437 Volts DC	-46.2	Micro-Strains
Cable# 21	-.002035 Volts DC	+11.8	Micro-Strains
Cable# 22	+.002905 Volts DC	+13.4	Micro-Strains
Cable# 23	-.002042 Volts DC	-29.9	Micro-Strains
Cable# 24	-.001703 Volts DC	-29.8	Micro-Strains
Cable# 25	-.002632 Volts DC	+1.0	Micro-Strains

LVDT: -0.059762 VDC 0.000003 Inches

Hor. Rad.=.006193 VDC 408.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #5 CL

Time: 16:35:03 Date: 88/08/19
Group# 3 Record# 22
File name: SCD0S04
Power supply: 4.9756 Volts DC

Cable# 1	-.007036 Volts DC	-12.8	Micro-Strains
Cable# 2	+.001691 Volts DC	+12.2	Micro-Strains
Cable# 3	+.000963 Volts DC	+20.6	Micro-Strains
Cable# 4	-.001481 Volts DC	+.0	Micro-Strains
Cable# 5	-.001027 Volts DC	-1.1	Micro-Strains
Cable# 6	-.004082 Volts DC	-14.5	Micro-Strains
Cable# 7	-.000901 Volts DC	+4.7	Micro-Strains
Cable# 8	-.001910 Volts DC	+22.7	Micro-Strains
Cable# 9	-.001291 Volts DC	+11.8	Micro-Strains
Cable# 10	+.002739 Volts DC	-7.0	Micro-Strains
Cable# 11	+.003503 Volts DC	-8.8	Micro-Strains
Cable# 12	-.000010 Volts DC	+15.3	Micro-Strains
Cable# 13	-.001307 Volts DC	+15.7	Micro-Strains
Cable# 14	-.004148 Volts DC	+12.2	Micro-Strains
Cable# 15	-.004352 Volts DC	-12.4	Micro-Strains
Cable# 16	-.001320 Volts DC	+48.8	Micro-Strains
Cable# 17	-.003103 Volts DC	-8.7	Micro-Strains
Cable# 18	-.003267 Volts DC	+47.7	Micro-Strains
Cable# 19	-.003439 Volts DC	-45.0	Micro-Strains
Cable# 20	-.003424 Volts DC	-41.0	Micro-Strains
Cable# 21	-.002036 Volts DC	+11.4	Micro-Strains
Cable# 22	+.002905 Volts DC	+13.5	Micro-Strains
Cable# 23	-.002038 Volts DC	-28.3	Micro-Strains
Cable# 24	-.001695 Volts DC	-26.7	Micro-Strains
Cable# 25	-.002637 Volts DC	-1.1	Micro-Strains

LVDT: -0.059018 VDC -0.000034 Inches

Hor. Rad.=.007726 VDC 509.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #4 CL

Time: 16:50:05 Date: 88/08/19
Group# 3 Record# 23
File name: SCD0S04
Power supply: 4.9774 Volts DC

Cable# 1	-.007006 Volts DC	+.4	Micro-Strains
Cable# 2	+.001698 Volts DC	+14.8	Micro-Strains
Cable# 3	+.000933 Volts DC	+8.2	Micro-Strains
Cable# 4	-.001478 Volts DC	+1.5	Micro-Strains
Cable# 5	-.001024 Volts DC	+.3	Micro-Strains
Cable# 6	-.004053 Volts DC	-2.1	Micro-Strains
Cable# 7	-.000903 Volts DC	+4.0	Micro-Strains
Cable# 8	-.001930 Volts DC	+14.8	Micro-Strains
Cable# 9	-.001292 Volts DC	+11.6	Micro-Strains
Cable# 10	+.002750 Volts DC	-2.9	Micro-Strains
Cable# 11	+.003506 Volts DC	-8.1	Micro-Strains
Cable# 12	-.000012 Volts DC	+14.5	Micro-Strains
Cable# 13	-.001305 Volts DC	+16.7	Micro-Strains
Cable# 14	-.004149 Volts DC	+12.4	Micro-Strains
Cable# 15	-.004349 Volts DC	-10.5	Micro-Strains
Cable# 16	-.001340 Volts DC	+40.9	Micro-Strains
Cable# 17	-.003092 Volts DC	-3.9	Micro-Strains
Cable# 18	-.003293 Volts DC	+37.8	Micro-Strains
Cable# 19	-.003418 Volts DC	-36.1	Micro-Strains
Cable# 20	-.003398 Volts DC	-30.2	Micro-Strains
Cable# 21	-.002042 Volts DC	+9.3	Micro-Strains
Cable# 22	+.002910 Volts DC	+15.0	Micro-Strains
Cable# 23	-.002033 Volts DC	-26.1	Micro-Strains
Cable# 24	-.001674 Volts DC	-18.1	Micro-Strains
Cable# 25	-.002641 Volts DC	-2.3	Micro-Strains

LVDT: -0.058624 VDC -0.000054 Inches

Hor. Rad.=.002315 VDC 152.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #3 CL

Time: 16:51:57 Date: 88/08/19
Group# 3 Record# 24
File name: SCD0S04
Power supply: 4.9772 Volts DC

Cable# 1	-.006983 Volts DC	+9.7	Micro-Strains
Cable# 2	+.001696 Volts DC	+14.1	Micro-Strains
Cable# 3	+.000912 Volts DC	-.3	Micro-Strains
Cable# 4	-.001476 Volts DC	+2.2	Micro-Strains
Cable# 5	-.001023 Volts DC	+.7	Micro-Strains
Cable# 6	-.004030 Volts DC	+7.2	Micro-Strains
Cable# 7	-.000904 Volts DC	+3.5	Micro-Strains
Cable# 8	-.001951 Volts DC	+6.3	Micro-Strains
Cable# 9	-.001295 Volts DC	+10.3	Micro-Strains
Cable# 10	+.002753 Volts DC	-1.7	Micro-Strains
Cable# 11	+.003509 Volts DC	-6.8	Micro-Strains
Cable# 12	-.000016 Volts DC	+12.9	Micro-Strains
Cable# 13	-.001309 Volts DC	+15.1	Micro-Strains
Cable# 14	-.004151 Volts DC	+11.5	Micro-Strains
Cable# 15	-.004346 Volts DC	-9.4	Micro-Strains
Cable# 16	-.001370 Volts DC	+28.8	Micro-Strains
Cable# 17	-.003088 Volts DC	-2.4	Micro-Strains
Cable# 18	-.003325 Volts DC	+25.0	Micro-Strains
Cable# 19	-.003390 Volts DC	-25.1	Micro-Strains
Cable# 20	-.003368 Volts DC	-18.3	Micro-Strains
Cable# 21	-.002043 Volts DC	+8.9	Micro-Strains
Cable# 22	+.002907 Volts DC	+13.9	Micro-Strains
Cable# 23	-.002026 Volts DC	-23.3	Micro-Strains
Cable# 24	-.001668 Volts DC	-15.7	Micro-Strains
Cable# 25	-.002641 Volts DC	-2.4	Micro-Strains

LVDT: -0.058550 VDC -0.000058 Inches

Hor. Rad.=.001790 VDC 117.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #2 CL

Time: 16:53:36 Date: 88/08/19
Group# 3 Record# 25
File name: SCD0S04
Power supply: 4.9771 Volts DC

Cable# 1	-.006968 Volts DC	+15.7	Micro-Strains
Cable# 2	+.001695 Volts DC	+13.7	Micro-Strains
Cable# 3	+.000896 Volts DC	-6.8	Micro-Strains
Cable# 4	-.001476 Volts DC	+2.2	Micro-Strains
Cable# 5	-.001023 Volts DC	+.7	Micro-Strains
Cable# 6	-.004013 Volts DC	+14.1	Micro-Strains
Cable# 7	-.000905 Volts DC	+3.1	Micro-Strains
Cable# 8	-.001966 Volts DC	+.1	Micro-Strains
Cable# 9	-.001298 Volts DC	+9.1	Micro-Strains
Cable# 10	+.002756 Volts DC	-.4	Micro-Strains
Cable# 11	+.003510 Volts DC	-6.4	Micro-Strains
Cable# 12	-.000019 Volts DC	+11.7	Micro-Strains
Cable# 13	-.001311 Volts DC	+14.3	Micro-Strains
Cable# 14	-.004153 Volts DC	+10.7	Micro-Strains
Cable# 15	-.004344 Volts DC	-8.6	Micro-Strains
Cable# 16	-.001402 Volts DC	+15.9	Micro-Strains
Cable# 17	-.003086 Volts DC	-1.6	Micro-Strains
Cable# 18	-.003360 Volts DC	+11.1	Micro-Strains
Cable# 19	-.003363 Volts DC	-14.4	Micro-Strains
Cable# 20	-.003340 Volts DC	-7.2	Micro-Strains
Cable# 21	-.002045 Volts DC	+8.1	Micro-Strains
Cable# 22	+.002904 Volts DC	+12.7	Micro-Strains
Cable# 23	-.002017 Volts DC	-19.7	Micro-Strains
Cable# 24	-.001659 Volts DC	-12.1	Micro-Strains
Cable# 25	-.002640 Volts DC	-2.0	Micro-Strains

LVDT: -0.058687 VDC -0.000051 Inches

Hor. Rad.=.001898 VDC 125.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #1 CL

Time: 16:54:43 Date: 88/08/19
Group# 3 Record# 26
File name: SCD0S04
Power supply: 4.9770 Volts DC

Cable# 1	-.006961 Volts DC	+18.5	Micro-Strains
Cable# 2	+.001693 Volts DC	+12.9	Micro-Strains
Cable# 3	+.000889 Volts DC	-9.6	Micro-Strains
Cable# 4	-.001476 Volts DC	+2.2	Micro-Strains
Cable# 5	-.001022 Volts DC	+1.1	Micro-Strains
Cable# 6	-.004005 Volts DC	+17.3	Micro-Strains
Cable# 7	-.000906 Volts DC	+2.7	Micro-Strains
Cable# 8	-.001974 Volts DC	-3.1	Micro-Strains
Cable# 9	-.001299 Volts DC	+8.7	Micro-Strains
Cable# 10	+.002755 Volts DC	-.8	Micro-Strains
Cable# 11	+.003512 Volts DC	-5.5	Micro-Strains
Cable# 12	-.000021 Volts DC	+10.9	Micro-Strains
Cable# 13	-.001312 Volts DC	+13.9	Micro-Strains
Cable# 14	-.004154 Volts DC	+10.3	Micro-Strains
Cable# 15	-.004342 Volts DC	-7.9	Micro-Strains
Cable# 16	-.001416 Volts DC	+10.3	Micro-Strains
Cable# 17	-.003085 Volts DC	-1.2	Micro-Strains
Cable# 18	-.003373 Volts DC	+5.9	Micro-Strains
Cable# 19	-.003346 Volts DC	-7.6	Micro-Strains
Cable# 20	-.003323 Volts DC	-.5	Micro-Strains
Cable# 21	-.002048 Volts DC	+6.9	Micro-Strains
Cable# 22	+.002898 Volts DC	+10.4	Micro-Strains
Cable# 23	-.002007 Volts DC	-15.8	Micro-Strains
Cable# 24	-.001646 Volts DC	-7.0	Micro-Strains
Cable# 25	-.002641 Volts DC	-2.4	Micro-Strains

LVDT: -0.058634 VDC -0.000054 Inches

Hor. Rad.=.001747 VDC 115.1 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #0 CL

Time: 16:55:45 Date: 88/08/19
Group# 3 Record# 27
File name: SCD0S04
Power supply: 4.9768 Volts DC

Cable# 1	-.006958 Volts DC	+19.6	Micro-Strains
Cable# 2	+.001692 Volts DC	+12.5	Micro-Strains
Cable# 3	+.000889 Volts DC	-9.6	Micro-Strains
Cable# 4	-.001476 Volts DC	+2.2	Micro-Strains
Cable# 5	-.001022 Volts DC	+1.1	Micro-Strains
Cable# 6	-.004003 Volts DC	+18.1	Micro-Strains
Cable# 7	-.000906 Volts DC	+2.7	Micro-Strains
Cable# 8	-.001975 Volts DC	-3.6	Micro-Strains
Cable# 9	-.001300 Volts DC	+8.3	Micro-Strains
Cable# 10	+.002755 Volts DC	-.8	Micro-Strains
Cable# 11	+.003511 Volts DC	-5.9	Micro-Strains
Cable# 12	-.000022 Volts DC	+10.5	Micro-Strains
Cable# 13	-.001312 Volts DC	+13.9	Micro-Strains
Cable# 14	-.004154 Volts DC	+10.2	Micro-Strains
Cable# 15	-.004343 Volts DC	-8.3	Micro-Strains
Cable# 16	-.001416 Volts DC	+10.2	Micro-Strains
Cable# 17	-.003085 Volts DC	-1.3	Micro-Strains
Cable# 18	-.003372 Volts DC	+6.2	Micro-Strains
Cable# 19	-.003342 Volts DC	-6.1	Micro-Strains
Cable# 20	-.003321 Volts DC	+.3	Micro-Strains
Cable# 21	-.002050 Volts DC	+6.0	Micro-Strains
Cable# 22	+.002890 Volts DC	+7.2	Micro-Strains
Cable# 23	-.001997 Volts DC	-11.8	Micro-Strains
Cable# 24	-.001633 Volts DC	-1.8	Micro-Strains
Cable# 25	-.002640 Volts DC	-2.1	Micro-Strains

LVDT: -0.058740 VDC -0.000048 Inches

Hor. Rad.=.001582 VDC 104.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #OFF BRIDGE

Time: 16:59:25 Date: 88/08/19
Group# 3 Record# 28
File name: SCD0S04
Power supply: 4.9765 Volts DC

Cable# 1	-.006959 Volts DC	+19.0	Micro-Strains
Cable# 2	+.001691 Volts DC	+12.1	Micro-Strains
Cable# 3	+.000891 Volts DC	-8.8	Micro-Strains
Cable# 4	-.001476 Volts DC	+2.2	Micro-Strains
Cable# 5	-.001022 Volts DC	+1.0	Micro-Strains
Cable# 6	-.004004 Volts DC	+17.6	Micro-Strains
Cable# 7	-.000906 Volts DC	+2.7	Micro-Strains
Cable# 8	-.001974 Volts DC	-3.2	Micro-Strains
Cable# 9	-.001299 Volts DC	+8.6	Micro-Strains
Cable# 10	+.002754 Volts DC	-1.1	Micro-Strains
Cable# 11	+.003511 Volts DC	-5.8	Micro-Strains
Cable# 12	-.000022 Volts DC	+10.5	Micro-Strains
Cable# 13	-.001311 Volts DC	+14.2	Micro-Strains
Cable# 14	-.004153 Volts DC	+10.5	Micro-Strains
Cable# 15	-.004343 Volts DC	-8.5	Micro-Strains
Cable# 16	-.001416 Volts DC	+10.2	Micro-Strains
Cable# 17	-.003085 Volts DC	-1.4	Micro-Strains
Cable# 18	-.003372 Volts DC	+6.1	Micro-Strains
Cable# 19	-.003343 Volts DC	-6.6	Micro-Strains
Cable# 20	-.003323 Volts DC	-.6	Micro-Strains
Cable# 21	-.002054 Volts DC	+4.4	Micro-Strains
Cable# 22	+.002884 Volts DC	+4.9	Micro-Strains
Cable# 23	-.001990 Volts DC	-9.1	Micro-Strains
Cable# 24	-.001623 Volts DC	+2.1	Micro-Strains
Cable# 25	-.002640 Volts DC	-2.1	Micro-Strains

LVDT: -0.058284 VDC -0.000072 Inches

Hor. Rad.=.001673 VDC 110.2 W/M^2

MOORE CREEK BRIDGE PROJECT

File name: SCD0S05 Date: 89/08/01
Date: 88/08/19
Time: 18:18:59 Group# 1 Record# 1

TEMPERATURE PROFILE OF GIRDER:
Thermistor# 1 10.3 Deg.C
Thermistor# 2 11.1 Deg.C
Thermistor# 3 11.0 Deg.C
Thermistor# 4 10.9 Deg.C
Thermistor# 5 10.7 Deg.C
Thermistor# 6 10.5 Deg.C
Thermistor# 7 10.7 Deg.C
Thermistor# 8 246.6 Deg.C
Instrument 1 Temp: 16.88 Deg.C
Instrument 2 Temp: 17.94 Deg.C

ZERO STRAIN VOLTAGES:
Time: 18:20:30 Group# 2 Record# 2
Power supply: 4.98690 Volts DC
Cable# 1 -.006958 Volts DC
Cable# 2 +.001671 Volts DC
Cable# 3 +.000886 Volts DC
Cable# 4 -.001477 Volts DC
Cable# 5 -.001016 Volts DC
Cable# 6 -.003994 Volts DC
Cable# 7 -.000919 Volts DC
Cable# 8 -.002005 Volts DC
Cable# 9 -.001304 Volts DC
Cable# 10 +.002745 Volts DC
Cable# 11 +.003519 Volts DC
Cable# 12 -.000029 Volts DC
Cable# 13 -.001305 Volts DC
Cable# 14 -.004153 Volts DC
Cable# 15 -.004363 Volts DC
Cable# 16 -.001416 Volts DC
Cable# 17 -.003113 Volts DC
Cable# 18 -.003362 Volts DC
Cable# 19 -.003350 Volts DC
Cable# 20 -.003341 Volts DC
Cable# 21 -.002057 Volts DC
Cable# 22 +.002886 Volts DC
Cable# 23 -.002000 Volts DC
Cable# 24 -.001653 Volts DC
Cable# 25 -.002633 Volts DC
LVDT: -0.060292 VDC
Hor. Rad.= 1.0E-3 VDC 68.8 W/M^2
Air Temp= 10.2 Deg.C
Wind Speed: 5.3 MPH

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #4 RT

Time: 18:35:02 Date: 88/08/19
Group# 3 Record# 3
File name: SCD0S05
Power supply: 4.9845 Volts DC

Cable# 1	-.007002 Volts DC	-19.3	Micro-Strains
Cable# 2	+.001671 Volts DC	+.3	Micro-Strains
Cable# 3	+.000938 Volts DC	+21.3	Micro-Strains
Cable# 4	-.001475 Volts DC	+.5	Micro-Strains
Cable# 5	-.001016 Volts DC	-.2	Micro-Strains
Cable# 6	-.004014 Volts DC	-8.9	Micro-Strains
Cable# 7	-.000916 Volts DC	+1.0	Micro-Strains
Cable# 8	-.001979 Volts DC	+10.2	Micro-Strains
Cable# 9	-.001292 Volts DC	+4.6	Micro-Strains
Cable# 10	+.002737 Volts DC	-2.7	Micro-Strains
Cable# 11	+.003510 Volts DC	-2.9	Micro-Strains
Cable# 12	-.000019 Volts DC	+4.0	Micro-Strains
Cable# 13	-.001289 Volts DC	+6.2	Micro-Strains
Cable# 14	-.004142 Volts DC	+3.6	Micro-Strains
Cable# 15	-.004374 Volts DC	-5.3	Micro-Strains
Cable# 16	-.001303 Volts DC	+45.2	Micro-Strains
Cable# 17	-.003119 Volts DC	-3.0	Micro-Strains
Cable# 18	-.003307 Volts DC	+21.2	Micro-Strains
Cable# 19	-.003459 Volts DC	-43.9	Micro-Strains
Cable# 20	-.003388 Volts DC	-19.3	Micro-Strains
Cable# 21	-.002038 Volts DC	+7.1	Micro-Strains
Cable# 22	+.002899 Volts DC	+5.7	Micro-Strains
Cable# 23	-.002064 Volts DC	-25.8	Micro-Strains
Cable# 24	-.001689 Volts DC	-14.6	Micro-Strains
Cable# 25	-.002629 Volts DC	+1.1	Micro-Strains

LVDT: -0.059774 VDC -0.000026 Inches

Hor. Rad.=.001268 VDC 83.5 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #9 RT

Time: 18:51:05 Date: 88/08/19
Group# 3 Record# 4
File name: SCD0S05
Power supply: 4.9848 Volts DC

Cable# 1	-.007086 Volts DC	-53.2	Micro-Strains
Cable# 2	+.001677 Volts DC	+2.7	Micro-Strains
Cable# 3	+.001002 Volts DC	+47.3	Micro-Strains
Cable# 4	-.001483 Volts DC	-2.7	Micro-Strains
Cable# 5	-.001048 Volts DC	-13.2	Micro-Strains
Cable# 6	-.004053 Volts DC	-24.7	Micro-Strains
Cable# 7	-.000892 Volts DC	+10.8	Micro-Strains
Cable# 8	-.001959 Volts DC	+18.4	Micro-Strains
Cable# 9	-.001293 Volts DC	+4.2	Micro-Strains
Cable# 10	+.002735 Volts DC	-3.6	Micro-Strains
Cable# 11	+.003505 Volts DC	-5.0	Micro-Strains
Cable# 12	-.000019 Volts DC	+4.0	Micro-Strains
Cable# 13	-.001333 Volts DC	-11.5	Micro-Strains
Cable# 14	-.004162 Volts DC	-4.3	Micro-Strains
Cable# 15	-.004347 Volts DC	+5.7	Micro-Strains
Cable# 16	-.001296 Volts DC	+48.0	Micro-Strains
Cable# 17	-.003110 Volts DC	+.7	Micro-Strains
Cable# 18	-.003301 Volts DC	+23.7	Micro-Strains
Cable# 19	-.003483 Volts DC	-53.3	Micro-Strains
Cable# 20	-.003405 Volts DC	-26.0	Micro-Strains
Cable# 21	-.002041 Volts DC	+6.0	Micro-Strains
Cable# 22	+.002890 Volts DC	+2.1	Micro-Strains
Cable# 23	-.002074 Volts DC	-29.7	Micro-Strains
Cable# 24	-.001693 Volts DC	-16.2	Micro-Strains
Cable# 25	-.002621 Volts DC	+4.4	Micro-Strains

LVDT: -0.062000 VDC 0.000086 Inches

Hor. Rad.=.001031 VDC 67.9 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #14 RT

Time: 19:04:37 Date: 88/08/19
Group# 3 Record# 5
File name: SCD0S05
Power supply: 4.9847 Volts DC

Cable# 1	-.006955 Volts DC	-.0	Micro-Strains
Cable# 2	+.001705 Volts DC	+14.1	Micro-Strains
Cable# 3	+.000831 Volts DC	-22.2	Micro-Strains
Cable# 4	-.001522 Volts DC	-18.6	Micro-Strains
Cable# 5	-.001130 Volts DC	-46.6	Micro-Strains
Cable# 6	-.003986 Volts DC	+2.5	Micro-Strains
Cable# 7	-.000829 Volts DC	+36.5	Micro-Strains
Cable# 8	-.002041 Volts DC	-15.0	Micro-Strains
Cable# 9	-.001411 Volts DC	-43.4	Micro-Strains
Cable# 10	+.002783 Volts DC	+15.8	Micro-Strains
Cable# 11	+.003593 Volts DC	+30.5	Micro-Strains
Cable# 12	-.000072 Volts DC	-17.3	Micro-Strains
Cable# 13	-.001330 Volts DC	-10.3	Micro-Strains
Cable# 14	-.004158 Volts DC	-2.7	Micro-Strains
Cable# 15	-.004370 Volts DC	-3.6	Micro-Strains
Cable# 16	-.001384 Volts DC	+12.6	Micro-Strains
Cable# 17	-.003126 Volts DC	-5.7	Micro-Strains
Cable# 18	-.003346 Volts DC	+5.8	Micro-Strains
Cable# 19	-.003414 Volts DC	-26.0	Micro-Strains
Cable# 20	-.003371 Volts DC	-12.5	Micro-Strains
Cable# 21	-.002052 Volts DC	+1.6	Micro-Strains
Cable# 22	+.002878 Volts DC	-2.7	Micro-Strains
Cable# 23	-.002047 Volts DC	-19.0	Micro-Strains
Cable# 24	-.001675 Volts DC	-9.0	Micro-Strains
Cable# 25	-.002613 Volts DC	+7.7	Micro-Strains

LVDT: -0.061929 VDC 0.000083 Inches

Hor. Rad.=.000927 VDC 61.1 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #14 LT

Time: 19:11:38 Date: 88/08/19
Group# 3 Record# 6
File name: SCD0S05
Power supply: 4.9848 Volts DC

Cable# 1	-.006950 Volts DC	+2.1	Micro-Strains
Cable# 2	+.001760 Volts DC	+36.5	Micro-Strains
Cable# 3	+.000853 Volts DC	-13.3	Micro-Strains
Cable# 4	-.001589 Volts DC	-45.8	Micro-Strains
Cable# 5	-.001059 Volts DC	-17.7	Micro-Strains
Cable# 6	-.003988 Volts DC	+1.8	Micro-Strains
Cable# 7	-.000884 Volts DC	+14.1	Micro-Strains
Cable# 8	-.002060 Volts DC	-22.7	Micro-Strains
Cable# 9	-.001353 Volts DC	-20.0	Micro-Strains
Cable# 10	+.002825 Volts DC	+32.7	Micro-Strains
Cable# 11	+.003555 Volts DC	+15.1	Micro-Strains
Cable# 12	-.000122 Volts DC	-37.5	Micro-Strains
Cable# 13	-.001311 Volts DC	-2.6	Micro-Strains
Cable# 14	-.004177 Volts DC	-10.3	Micro-Strains
Cable# 15	-.004373 Volts DC	-4.8	Micro-Strains
Cable# 16	-.001407 Volts DC	+3.4	Micro-Strains
Cable# 17	-.003121 Volts DC	-3.7	Micro-Strains
Cable# 18	-.003322 Volts DC	+15.3	Micro-Strains
Cable# 19	-.003376 Volts DC	-10.9	Micro-Strains
Cable# 20	-.003409 Volts DC	-27.6	Micro-Strains
Cable# 21	-.002063 Volts DC	-2.7	Micro-Strains
Cable# 22	+.002883 Volts DC	-.7	Micro-Strains
Cable# 23	-.002022 Volts DC	-9.1	Micro-Strains
Cable# 24	-.001708 Volts DC	-22.1	Micro-Strains
Cable# 25	-.002607 Volts DC	+10.1	Micro-Strains

LVDT: -0.062505 VDC 0.000112 Inches

Hor. Rad.=.000935 VDC 61.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #9 LT

Time: 19:27:05 Date: 88/08/19
Group# 3 Record# 7
File name: SCD0S05
Power supply: 4.9852 Volts DC

Cable# 1	-.007009 Volts DC	-21.7	Micro-Strains
Cable# 2	+.001695 Volts DC	+10.0	Micro-Strains
Cable# 3	+.000934 Volts DC	+19.6	Micro-Strains
Cable# 4	-.001505 Volts DC	-11.6	Micro-Strains
Cable# 5	-.001017 Volts DC	-.5	Micro-Strains
Cable# 6	-.004128 Volts DC	-55.1	Micro-Strains
Cable# 7	-.000917 Volts DC	+.7	Micro-Strains
Cable# 8	-.001898 Volts DC	+43.2	Micro-Strains
Cable# 9	-.001298 Volts DC	+2.2	Micro-Strains
Cable# 10	+.002729 Volts DC	-6.1	Micro-Strains
Cable# 11	+.003514 Volts DC	-1.5	Micro-Strains
Cable# 12	-.000014 Volts DC	+6.0	Micro-Strains
Cable# 13	-.001310 Volts DC	-2.2	Micro-Strains
Cable# 14	-.004179 Volts DC	-11.0	Micro-Strains
Cable# 15	-.004364 Volts DC	-1.0	Micro-Strains
Cable# 16	-.001364 Volts DC	+20.7	Micro-Strains
Cable# 17	-.003101 Volts DC	+4.3	Micro-Strains
Cable# 18	-.003223 Volts DC	+54.7	Micro-Strains
Cable# 19	-.003408 Volts DC	-23.5	Micro-Strains
Cable# 20	-.003485 Volts DC	-57.6	Micro-Strains
Cable# 21	-.002060 Volts DC	-1.5	Micro-Strains
Cable# 22	+.002903 Volts DC	+7.1	Micro-Strains
Cable# 23	-.002034 Volts DC	-13.8	Micro-Strains
Cable# 24	-.001749 Volts DC	-38.3	Micro-Strains
Cable# 25	-.002613 Volts DC	+7.8	Micro-Strains

LVDT: -0.062386 VDC 0.000106 Inches

Hor. Rad.=.000609 VDC 40.1 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #4 LT

Time: 19:46:40 Date: 88/08/19
Group# 3 Record# 8
File name: SCD0S05
Power supply: 4.9860 Volts DC

Cable# 1	-.006971 Volts DC	-5.8	Micro-Strains
Cable# 2	+.001663 Volts DC	-3.1	Micro-Strains
Cable# 3	+.000899 Volts DC	+5.3	Micro-Strains
Cable# 4	-.001468 Volts DC	+3.5	Micro-Strains
Cable# 5	-.001004 Volts DC	+4.8	Micro-Strains
Cable# 6	-.004032 Volts DC	-15.7	Micro-Strains
Cable# 7	-.000933 Volts DC	-5.8	Micro-Strains
Cable# 8	-.001971 Volts DC	+13.7	Micro-Strains
Cable# 9	-.001302 Volts DC	+.7	Micro-Strains
Cable# 10	+.002734 Volts DC	-4.2	Micro-Strains
Cable# 11	+.003516 Volts DC	-1.0	Micro-Strains
Cable# 12	-.000015 Volts DC	+5.6	Micro-Strains
Cable# 13	-.001288 Volts DC	+6.7	Micro-Strains
Cable# 14	-.004131 Volts DC	+8.5	Micro-Strains
Cable# 15	-.004381 Volts DC	-7.5	Micro-Strains
Cable# 16	-.001371 Volts DC	+18.0	Micro-Strains
Cable# 17	-.003139 Volts DC	-10.5	Micro-Strains
Cable# 18	-.003228 Volts DC	+53.0	Micro-Strains
Cable# 19	-.003401 Volts DC	-20.5	Micro-Strains
Cable# 20	-.003469 Volts DC	-51.0	Micro-Strains
Cable# 21	-.002056 Volts DC	+.2	Micro-Strains
Cable# 22	+.002912 Volts DC	+10.5	Micro-Strains
Cable# 23	-.002029 Volts DC	-11.6	Micro-Strains
Cable# 24	-.001752 Volts DC	-39.4	Micro-Strains
Cable# 25	-.002612 Volts DC	+8.3	Micro-Strains

LVDT: -0.062357 VDC 0.000104 Inches

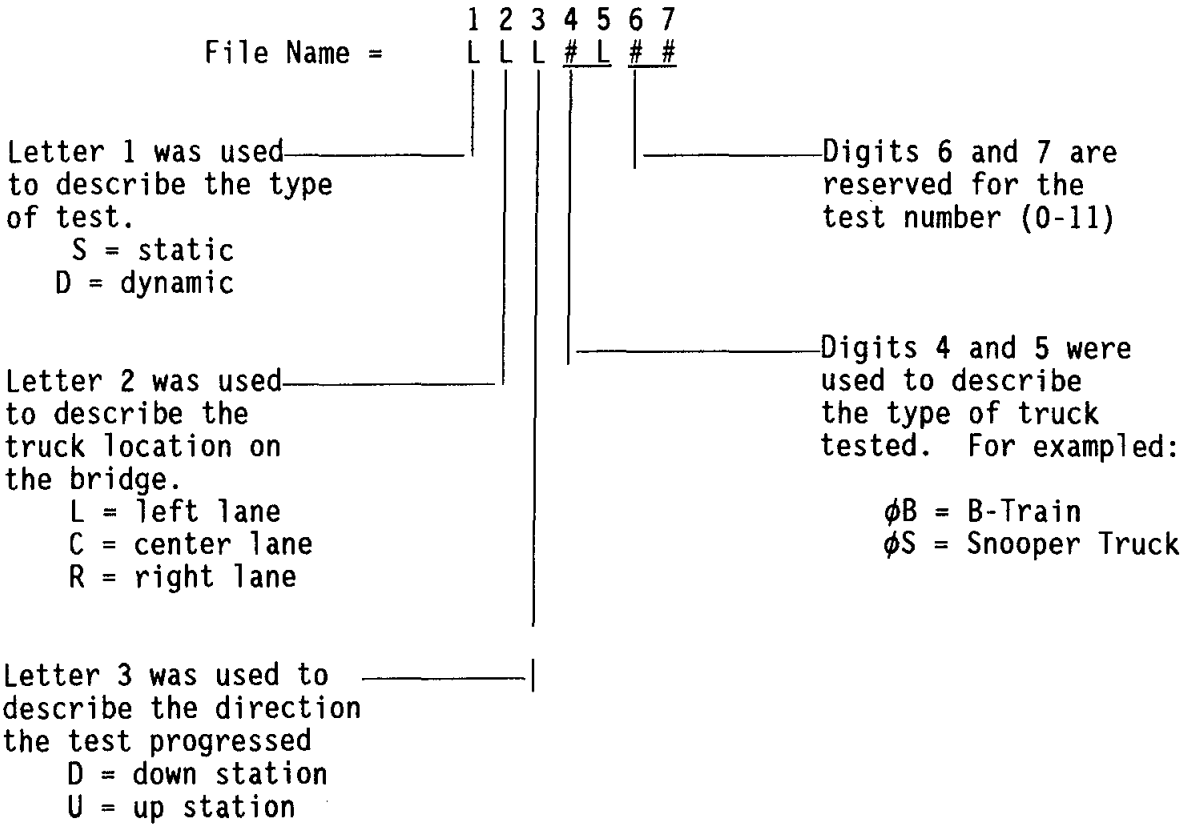
Hor. Rad.=.000362 VDC 23.8 W/M^2

APPENDIX C

B-TRAIN FIELD DATA

This appendix provides the raw data recorded in the field for the B-Train (ore trucks) tests. The file name corresponds to the test name used for documentation and organization of the data. The letters in the names imply the test situation.

Before testing began, the researchers prepared the following technique for documentation of each test series. All data was stored on a floppy disk under a file name. Thus a seven-letter file name was selected to describe the test conditions. The seven letters were formed as follows.



Based on this criteria, all static load tests for the B-Train were described by S??ϕB?? where the question marks are filled in for the particular test conditions.

Each file is divided into three groups of data. The three groups of information are described below.

Group #1 = This group contains the temperatures of the girder profile and instrument temperature at the beginning of the test.

Group #2 = This group contains the initial unstrained voltages for all the strain gages (zero readings) taken immediately preceding the tests. Air temperature and wind speed are also recorded at this time.

Group #3 = This group provides the strained voltages for all the strain gages the LVDT voltage and the horizontal solar radiation at the time of the test.

MOORE CREEK BRIDGE PROJECT

File name: SLD0B06 Date: 89/07/31
Date: 88/08/19
Time: 19:56:33 Group# 1 Record# 1

TEMPERATURE PROFILE OF GIRDER:
Thermistor# 1 8.9 Deg.C
Thermistor# 2 9.4 Deg.C
Thermistor# 3 9.4 Deg.C
Thermistor# 4 9.3 Deg.C
Thermistor# 5 9.2 Deg.C
Thermistor# 6 9.1 Deg.C
Thermistor# 7 9.3 Deg.C
Thermistor# 8 246.6 Deg.C
Instrument 1 Temp: 15.33 Deg.C
Instrument 2 Temp: 15.47 Deg.C

ZERO STRAIN VOLTAGES:
Time: 19:58:27 Group# 2 Record# 2
Power supply: 4.98670 Volts DC
Cable# 1 -.006939 Volts DC
Cable# 2 +.001657 Volts DC
Cable# 3 +.000869 Volts DC
Cable# 4 -.001461 Volts DC
Cable# 5 -.001003 Volts DC
Cable# 6 -.003964 Volts DC
Cable# 7 -.000934 Volts DC
Cable# 8 -.002028 Volts DC
Cable# 9 -.001307 Volts DC
Cable# 10 +.002743 Volts DC
Cable# 11 +.003520 Volts DC
Cable# 12 -.000021 Volts DC
Cable# 13 -.001288 Volts DC
Cable# 14 -.004136 Volts DC
Cable# 15 -.004379 Volts DC
Cable# 16 -.001412 Volts DC
Cable# 17 -.003129 Volts DC
Cable# 18 -.003346 Volts DC
Cable# 19 -.003360 Volts DC
Cable# 20 -.003354 Volts DC
Cable# 21 -.002061 Volts DC
Cable# 22 +.002874 Volts DC
Cable# 23 -.002008 Volts DC
Cable# 24 -.001670 Volts DC
Cable# 25 -.002611 Volts DC
LVDT: -0.061760 VDC
Hor. Rad.= 3.0E-4 VDC 19.5 W/M^2
Air Temp= 11.2 Deg.C
Wind Speed: 5.9 MPH

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #14 LT

Time: 20:04:22 Date: 88/08/19
Group# 3 Record# 3
File name: SLD0B06
Power supply: 4.9908 Volts DC

Cable# 1	-.006963 Volts DC	-7.4	Micro-Strains
Cable# 2	+.002043 Volts DC	+156.3	Micro-Strains
Cable# 3	+.000731 Volts DC	-56.3	Micro-Strains
Cable# 4	-.001980 Volts DC	-210.2	Micro-Strains
Cable# 5	-.001280 Volts DC	-112.3	Micro-Strains
Cable# 6	-.004007 Volts DC	-16.1	Micro-Strains
Cable# 7	-.000726 Volts DC	+84.9	Micro-Strains
Cable# 8	-.002231 Volts DC	-81.7	Micro-Strains
Cable# 9	-.001589 Volts DC	-113.1	Micro-Strains
Cable# 10	+.003119 Volts DC	+150.6	Micro-Strains
Cable# 11	+.003712 Volts DC	+76.2	Micro-Strains
Cable# 12	-.000490 Volts DC	-188.9	Micro-Strains
Cable# 13	-.001319 Volts DC	-12.0	Micro-Strains
Cable# 14	-.004197 Volts DC	-23.1	Micro-Strains
Cable# 15	-.004442 Volts DC	-23.8	Micro-Strains
Cable# 16	-.001423 Volts DC	-4.0	Micro-Strains
Cable# 17	-.003227 Volts DC	-37.8	Micro-Strains
Cable# 18	-.003328 Volts DC	+8.2	Micro-Strains
Cable# 19	-.003445 Volts DC	-32.6	Micro-Strains
Cable# 20	-.003526 Volts DC	-67.1	Micro-Strains
Cable# 21	-.002073 Volts DC	-4.1	Micro-Strains
Cable# 22	+.002880 Volts DC	+1.4	Micro-Strains
Cable# 23	-.002064 Volts DC	-21.5	Micro-Strains
Cable# 24	-.001775 Volts DC	-41.1	Micro-Strains
Cable# 25	-.002549 Volts DC	+26.1	Micro-Strains

LVDT: -0.066079 VDC 0.000218 Inches

Hor. Rad.=.000197 VDC 13.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #9 LT

Time: 20:06:15 Date: 88/08/19
Group# 3 Record# 4
File name: SLD0B06
Power supply: 4.9908 Volts DC

Cable# 1	-.007098 Volts DC	-62.3	Micro-Strains
Cable# 2	+.001884 Volts DC	+91.7	Micro-Strains
Cable# 3	+.000929 Volts DC	+24.1	Micro-Strains
Cable# 4	-.001746 Volts DC	-115.2	Micro-Strains
Cable# 5	-.001147 Volts DC	-58.2	Micro-Strains
Cable# 6	-.004242 Volts DC	-111.6	Micro-Strains
Cable# 7	-.000818 Volts DC	+47.5	Micro-Strains
Cable# 8	-.001925 Volts DC	+42.5	Micro-Strains
Cable# 9	-.001401 Volts DC	-37.4	Micro-Strains
Cable# 10	+.002846 Volts DC	+40.6	Micro-Strains
Cable# 11	+.003580 Volts DC	+23.0	Micro-Strains
Cable# 12	-.000168 Volts DC	-59.2	Micro-Strains
Cable# 13	-.001402 Volts DC	-45.3	Micro-Strains
Cable# 14	-.004370 Volts DC	-92.6	Micro-Strains
Cable# 15	-.004342 Volts DC	+16.3	Micro-Strains
Cable# 16	-.001279 Volts DC	+53.9	Micro-Strains
Cable# 17	-.003006 Volts DC	+49.8	Micro-Strains
Cable# 18	-.003062 Volts DC	+113.7	Micro-Strains
Cable# 19	-.003554 Volts DC	-75.8	Micro-Strains
Cable# 20	-.003732 Volts DC	-148.8	Micro-Strains
Cable# 21	-.002059 Volts DC	+1.5	Micro-Strains
Cable# 22	+.002937 Volts DC	+24.0	Micro-Strains
Cable# 23	-.002133 Volts DC	-48.9	Micro-Strains
Cable# 24	-.001925 Volts DC	-100.5	Micro-Strains
Cable# 25	-.002564 Volts DC	+20.0	Micro-Strains

LVDT: -0.068221 VDC 0.000327 Inches

Hor. Rad.=.000173 VDC 11.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #4 LT

Time: 20:07:40 Date: 88/08/19
Group# 3 Record# 5
File name: SLD0B06
Power supply: 4.9907 Volts DC

Cable# 1	-.007222 Volts DC	-112.7	Micro-Strains
Cable# 2	+.001717 Volts DC	+23.8	Micro-Strains
Cable# 3	+.001141 Volts DC	+110.2	Micro-Strains
Cable# 4	-.001530 Volts DC	-27.5	Micro-Strains
Cable# 5	-.001025 Volts DC	-8.6	Micro-Strains
Cable# 6	-.004503 Volts DC	-217.7	Micro-Strains
Cable# 7	-.000914 Volts DC	+8.4	Micro-Strains
Cable# 8	-.001563 Volts DC	+189.5	Micro-Strains
Cable# 9	-.001276 Volts DC	+12.9	Micro-Strains
Cable# 10	+.002692 Volts DC	-21.4	Micro-Strains
Cable# 11	+.003493 Volts DC	-12.0	Micro-Strains
Cable# 12	+.000021 Volts DC	+16.9	Micro-Strains
Cable# 13	-.001298 Volts DC	-3.6	Micro-Strains
Cable# 14	-.004161 Volts DC	-8.7	Micro-Strains
Cable# 15	-.004391 Volts DC	-3.4	Micro-Strains
Cable# 16	-.001161 Volts DC	+101.2	Micro-Strains
Cable# 17	-.003143 Volts DC	-4.6	Micro-Strains
Cable# 18	-.002839 Volts DC	+202.2	Micro-Strains
Cable# 19	-.003628 Volts DC	-105.2	Micro-Strains
Cable# 20	-.003876 Volts DC	-205.9	Micro-Strains
Cable# 21	-.002036 Volts DC	+10.6	Micro-Strains
Cable# 22	+.003004 Volts DC	+50.6	Micro-Strains
Cable# 23	-.002150 Volts DC	-55.7	Micro-Strains
Cable# 24	-.002005 Volts DC	-132.3	Micro-Strains
Cable# 25	-.002593 Volts DC	+8.2	Micro-Strains

LVDT: -0.066497 VDC 0.000240 Inches

Hor. Rad.=.000167 VDC 11.0 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #OFF BRIDGE

Time: 20:10:09 Date: 88/08/19
Group# 3 Record# 6
File name: SLD0B06
Power supply: 4.9905 Volts DC

Cable# 1	-.006941 Volts DC	+1.3	Micro-Strains
Cable# 2	+.001656 Volts DC	-.9	Micro-Strains
Cable# 3	+.000867 Volts DC	-1.1	Micro-Strains
Cable# 4	-.001460 Volts DC	+.9	Micro-Strains
Cable# 5	-.001001 Volts DC	+1.1	Micro-Strains
Cable# 6	-.003966 Volts DC	+.4	Micro-Strains
Cable# 7	-.000938 Volts DC	-1.3	Micro-Strains
Cable# 8	-.002034 Volts DC	-1.8	Micro-Strains
Cable# 9	-.001307 Volts DC	+.4	Micro-Strains
Cable# 10	+.002745 Volts DC	-.0	Micro-Strains
Cable# 11	+.003523 Volts DC	+.1	Micro-Strains
Cable# 12	-.000020 Volts DC	+.4	Micro-Strains
Cable# 13	-.001287 Volts DC	+.8	Micro-Strains
Cable# 14	-.004138 Volts DC	+.5	Micro-Strains
Cable# 15	-.004385 Volts DC	-1.1	Micro-Strains
Cable# 16	-.001413 Volts DC	+.0	Micro-Strains
Cable# 17	-.003135 Volts DC	-1.4	Micro-Strains
Cable# 18	-.003347 Volts DC	+.6	Micro-Strains
Cable# 19	-.003364 Volts DC	-.6	Micro-Strains
Cable# 20	-.003358 Volts DC	-.6	Micro-Strains
Cable# 21	-.002064 Volts DC	-.6	Micro-Strains
Cable# 22	+.002874 Volts DC	-.9	Micro-Strains
Cable# 23	-.002010 Volts DC	-.2	Micro-Strains
Cable# 24	-.001674 Volts DC	-1.1	Micro-Strains
Cable# 25	-.002609 Volts DC	+1.6	Micro-Strains

LVDT: -0.063100 VDC 0.000068 Inches

Hor. Rad.=.000143 VDC 9.4 W/M^2

MOORE CREEK BRIDGE PROJECT

File name: SLD0B08 Date: 89/07/31
Date: 88/08/20
Time: 10:05:37 Group# 1 Record# 1

TEMPERATURE PROFILE OF GIRDER:
Thermistor# 1 8.5 Deg.C
Thermistor# 2 9.1 Deg.C
Thermistor# 3 9.2 Deg.C
Thermistor# 4 9.2 Deg.C
Thermistor# 5 9.1 Deg.C
Thermistor# 6 8.9 Deg.C
Thermistor# 7 8.9 Deg.C
Thermistor# 8 247.3 Deg.C
Instrument 1 Temp: 22.54 Deg.C
Instrument 2 Temp: 22.69 Deg.C

ZERO STRAIN VOLTAGES:
Time: 10:07:22 Group# 2 Record# 2
Power supply: 4.97170 Volts DC
Cable# 1 -.006939 Volts DC
Cable# 2 +.001639 Volts DC
Cable# 3 +.000897 Volts DC
Cable# 4 -.001427 Volts DC
Cable# 5 -.000978 Volts DC
Cable# 6 -.003970 Volts DC
Cable# 7 -.000943 Volts DC
Cable# 8 -.001998 Volts DC
Cable# 9 -.001314 Volts DC
Cable# 10 +.002765 Volts DC
Cable# 11 +.003535 Volts DC
Cable# 12 -.000021 Volts DC
Cable# 13 -.001297 Volts DC
Cable# 14 -.004133 Volts DC
Cable# 15 -.004358 Volts DC
Cable# 16 -.001414 Volts DC
Cable# 17 -.003089 Volts DC
Cable# 18 -.003336 Volts DC
Cable# 19 -.003352 Volts DC
Cable# 20 -.003323 Volts DC
Cable# 21 -.002068 Volts DC
Cable# 22 +.002844 Volts DC
Cable# 23 -.001994 Volts DC
Cable# 24 -.001663 Volts DC
Cable# 25 -.002576 Volts DC
LVDT: -0.062771 VDC
Hor. Rad.= 1.0E-3 VDC 65.8 W/M^2
Air Temp= 10.0 Deg.C
Wind Speed: 6.6 MPH

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #14 LT

Time: 10:16:06 Date: 88/08/20
Group# 3 Record# 3
File name: SLD0B08
Power supply: 4.9722 Volts DC

Cable# 1	-.006957 Volts DC	-7.1	Micro-Strains
Cable# 2	+.002025 Volts DC	+157.3	Micro-Strains
Cable# 3	+.000756 Volts DC	-57.5	Micro-Strains
Cable# 4	-.001945 Volts DC	-210.9	Micro-Strains
Cable# 5	-.001262 Volts DC	-115.8	Micro-Strains
Cable# 6	-.004010 Volts DC	-16.1	Micro-Strains
Cable# 7	-.000729 Volts DC	+87.3	Micro-Strains
Cable# 8	-.002197 Volts DC	-81.0	Micro-Strains
Cable# 9	-.001597 Volts DC	-114.3	Micro-Strains
Cable# 10	+.003136 Volts DC	+150.0	Micro-Strains
Cable# 11	+.003726 Volts DC	+77.1	Micro-Strains
Cable# 12	-.000489 Volts DC	-189.1	Micro-Strains
Cable# 13	-.001327 Volts DC	-12.0	Micro-Strains
Cable# 14	-.004190 Volts DC	-22.8	Micro-Strains
Cable# 15	-.004418 Volts DC	-24.0	Micro-Strains
Cable# 16	-.001425 Volts DC	-4.4	Micro-Strains
Cable# 17	-.003186 Volts DC	-38.5	Micro-Strains
Cable# 18	-.003319 Volts DC	+6.9	Micro-Strains
Cable# 19	-.003435 Volts DC	-32.9	Micro-Strains
Cable# 20	-.003490 Volts DC	-66.3	Micro-Strains
Cable# 21	-.002077 Volts DC	-3.5	Micro-Strains
Cable# 22	+.002848 Volts DC	+1.5	Micro-Strains
Cable# 23	-.002048 Volts DC	-21.4	Micro-Strains
Cable# 24	-.001764 Volts DC	-40.1	Micro-Strains
Cable# 25	-.002515 Volts DC	+25.0	Micro-Strains

LVDT: -0.067084 VDC 0.000218 Inches

Hor. Rad.=.001355 VDC 89.3 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #9 LT

Time: 10:29:51 Date: 88/08/20
Group# 3 Record# 4
File name: SLD0B08
Power supply: 4.9727 Volts DC

Cable# 1	-.007089 Volts DC	-60.6	Micro-Strains
Cable# 2	+.001869 Volts DC	+93.6	Micro-Strains
Cable# 3	+.000955 Volts DC	+23.6	Micro-Strains
Cable# 4	-.001713 Volts DC	-116.4	Micro-Strains
Cable# 5	-.001125 Volts DC	-59.9	Micro-Strains
Cable# 6	-.004244 Volts DC	-111.4	Micro-Strains
Cable# 7	-.000821 Volts DC	+49.8	Micro-Strains
Cable# 8	-.001896 Volts DC	+41.7	Micro-Strains
Cable# 9	-.001410 Volts DC	-38.7	Micro-Strains
Cable# 10	+.002868 Volts DC	+41.4	Micro-Strains
Cable# 11	+.003595 Volts DC	+24.0	Micro-Strains
Cable# 12	-.000170 Volts DC	-60.2	Micro-Strains
Cable# 13	-.001412 Volts DC	-46.2	Micro-Strains
Cable# 14	-.004367 Volts DC	-93.9	Micro-Strains
Cable# 15	-.004316 Volts DC	+17.3	Micro-Strains
Cable# 16	-.001280 Volts DC	+54.1	Micro-Strains
Cable# 17	-.002962 Volts DC	+50.8	Micro-Strains
Cable# 18	-.003055 Volts DC	+112.1	Micro-Strains
Cable# 19	-.003545 Volts DC	-76.5	Micro-Strains
Cable# 20	-.003696 Volts DC	-148.2	Micro-Strains
Cable# 21	-.002063 Volts DC	+2.2	Micro-Strains
Cable# 22	+.002906 Volts DC	+24.4	Micro-Strains
Cable# 23	-.002120 Volts DC	-50.0	Micro-Strains
Cable# 24	-.001915 Volts DC	-100.1	Micro-Strains
Cable# 25	-.002531 Volts DC	+18.6	Micro-Strains

LVDT: -0.069459 VDC 0.000338 Inches

Hor. Rad.=.001741 VDC 114.7 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #4 LT

Time: 10:40:57 Date: 88/08/20
Group# 3 Record# 5
File name: SLD0B08
Power supply: 4.9719 Volts DC

Cable# 1	-.007217 Volts DC	-113.2	Micro-Strains
Cable# 2	+.001701 Volts DC	+25.3	Micro-Strains
Cable# 3	+.001174 Volts DC	+112.9	Micro-Strains
Cable# 4	-.001496 Volts DC	-28.1	Micro-Strains
Cable# 5	-.001000 Volts DC	-9.0	Micro-Strains
Cable# 6	-.004519 Volts DC	-223.8	Micro-Strains
Cable# 7	-.000919 Volts DC	+9.8	Micro-Strains
Cable# 8	-.001518 Volts DC	+195.6	Micro-Strains
Cable# 9	-.001280 Volts DC	+13.8	Micro-Strains
Cable# 10	+.002711 Volts DC	-21.9	Micro-Strains
Cable# 11	+.003505 Volts DC	-12.2	Micro-Strains
Cable# 12	+.000022 Volts DC	+17.4	Micro-Strains
Cable# 13	-.001310 Volts DC	-5.2	Micro-Strains
Cable# 14	-.004158 Volts DC	-10.0	Micro-Strains
Cable# 15	-.004363 Volts DC	-1.9	Micro-Strains
Cable# 16	-.001163 Volts DC	+101.2	Micro-Strains
Cable# 17	-.003097 Volts DC	-3.1	Micro-Strains
Cable# 18	-.002823 Volts DC	+204.3	Micro-Strains
Cable# 19	-.003615 Volts DC	-104.6	Micro-Strains
Cable# 20	-.003847 Volts DC	-208.5	Micro-Strains
Cable# 21	-.002038 Volts DC	+12.0	Micro-Strains
Cable# 22	+.002979 Volts DC	+53.7	Micro-Strains
Cable# 23	-.002138 Volts DC	-57.3	Micro-Strains
Cable# 24	-.001999 Volts DC	-133.6	Micro-Strains
Cable# 25	-.002562 Volts DC	+5.8	Micro-Strains

LVDT: -0.067700 VDC 0.000249 Inches

Hor. Rad.=.002040 VDC 134.4 W/M^2

MOORE CREEK BRIDGE PROJECT

File name: SCD0B10 Date: 89/07/31
Date: 88/08/20
Time: 11:19:52 Group# 1 Record# 1

TEMPERATURE PROFILE OF GIRDER:
Thermistor# 1 7.9 Deg.C
Thermistor# 2 8.7 Deg.C
Thermistor# 3 8.9 Deg.C
Thermistor# 4 8.9 Deg.C
Thermistor# 5 8.7 Deg.C
Thermistor# 6 8.5 Deg.C
Thermistor# 7 8.6 Deg.C
Thermistor# 8 246.6 Deg.C
Instrument 1 Temp: 17.85 Deg.C
Instrument 2 Temp: 17.66 Deg.C

ZERO STRAIN VOLTAGES:
Time: 11:24:00 Group# 2 Record# 2
Power supply: 4.98040 Volts DC
Cable# 1 -.006952 Volts DC
Cable# 2 +.001632 Volts DC
Cable# 3 +.000896 Volts DC
Cable# 4 -.001425 Volts DC
Cable# 5 -.000977 Volts DC
Cable# 6 -.003978 Volts DC
Cable# 7 -.000955 Volts DC
Cable# 8 -.002006 Volts DC
Cable# 9 -.001319 Volts DC
Cable# 10 +.002763 Volts DC
Cable# 11 +.003537 Volts DC
Cable# 12 -.000025 Volts DC
Cable# 13 -.001298 Volts DC
Cable# 14 -.004137 Volts DC
Cable# 15 -.004374 Volts DC
Cable# 16 -.001421 Volts DC
Cable# 17 -.003103 Volts DC
Cable# 18 -.003347 Volts DC
Cable# 19 -.003356 Volts DC
Cable# 20 -.003328 Volts DC
Cable# 21 -.002067 Volts DC
Cable# 22 +.002850 Volts DC
Cable# 23 -.002003 Volts DC
Cable# 24 -.001672 Volts DC
Cable# 25 -.002580 Volts DC
LVDT: -0.063785 VDC
Hor. Rad.= 1.4E-3 VDC 95.4 W/M^2
Air Temp= 8.5 Deg.C
Wind Speed: 4.1 MPH

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #14 CTR

Time: 11:34:51 Date: 88/08/20
Group# 3 Record# 3
File name: SCD0B10
Power supply: 4.9793 Volts DC

Cable# 1	-.006978 Volts DC	-11.2	Micro-Strains
Cable# 2	+.001918 Volts DC	+116.6	Micro-Strains
Cable# 3	+.000713 Volts DC	-74.3	Micro-Strains
Cable# 4	-.001814 Volts DC	-158.3	Micro-Strains
Cable# 5	-.001398 Volts DC	-171.5	Micro-Strains
Cable# 6	-.004008 Volts DC	-12.6	Micro-Strains
Cable# 7	-.000643 Volts DC	+127.0	Micro-Strains
Cable# 8	-.002170 Volts DC	-66.9	Micro-Strains
Cable# 9	-.001729 Volts DC	-165.6	Micro-Strains
Cable# 10	+.003049 Volts DC	+115.7	Micro-Strains
Cable# 11	+.003811 Volts DC	+111.0	Micro-Strains
Cable# 12	-.000382 Volts DC	-144.1	Micro-Strains
Cable# 13	-.001341 Volts DC	-17.4	Micro-Strains
Cable# 14	-.004181 Volts DC	-18.1	Micro-Strains
Cable# 15	-.004450 Volts DC	-31.0	Micro-Strains
Cable# 16	-.001415 Volts DC	+2.3	Micro-Strains
Cable# 17	-.003180 Volts DC	-30.9	Micro-Strains
Cable# 18	-.003343 Volts DC	+1.3	Micro-Strains
Cable# 19	-.003480 Volts DC	-49.6	Micro-Strains
Cable# 20	-.003454 Volts DC	-50.4	Micro-Strains
Cable# 21	-.002065 Volts DC	+.6	Micro-Strains
Cable# 22	+.002848 Volts DC	-.5	Micro-Strains
Cable# 23	-.002079 Volts DC	-30.4	Micro-Strains
Cable# 24	-.001742 Volts DC	-28.0	Micro-Strains
Cable# 25	-.002526 Volts DC	+21.8	Micro-Strains

LVDT: -0.066764 VDC 0.000151 Inches

Hor. Rad.=.001166 VDC 76.8 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #9 CTR

Time: 11:47:05 Date: 88/08/20
Group# 3 Record# 4
File name: SCD0B10
Power supply: 4.9783 Volts DC

Cable# 1	-.007152 Volts DC	-82.6	Micro-Strains
Cable# 2	+.001798 Volts DC	+67.9	Micro-Strains
Cable# 3	+.000977 Volts DC	+33.1	Micro-Strains
Cable# 4	-.001638 Volts DC	-86.9	Micro-Strains
Cable# 5	-.001199 Volts DC	-90.6	Micro-Strains
Cable# 6	-.004187 Volts DC	-85.8	Micro-Strains
Cable# 7	-.000778 Volts DC	+71.9	Micro-Strains
Cable# 8	-.001934 Volts DC	+28.9	Micro-Strains
Cable# 9	-.001451 Volts DC	-53.5	Micro-Strains
Cable# 10	+.002846 Volts DC	+34.0	Micro-Strains
Cable# 11	+.003616 Volts DC	+32.5	Micro-Strains
Cable# 12	-.000144 Volts DC	-48.0	Micro-Strains
Cable# 13	-.001477 Volts DC	-72.2	Micro-Strains
Cable# 14	-.004307 Volts DC	-69.1	Micro-Strains
Cable# 15	-.004289 Volts DC	+33.5	Micro-Strains
Cable# 16	-.001213 Volts DC	+83.5	Micro-Strains
Cable# 17	-.003017 Volts DC	+33.7	Micro-Strains
Cable# 18	-.003139 Volts DC	+82.1	Micro-Strains
Cable# 19	-.003637 Volts DC	-112.2	Micro-Strains
Cable# 20	-.003608 Volts DC	-111.8	Micro-Strains
Cable# 21	-.002040 Volts DC	+10.4	Micro-Strains
Cable# 22	+.002891 Volts DC	+16.8	Micro-Strains
Cable# 23	-.002177 Volts DC	-69.5	Micro-Strains
Cable# 24	-.001854 Volts DC	-72.6	Micro-Strains
Cable# 25	-.002536 Volts DC	+17.5	Micro-Strains

LVDT: -0.068623 VDC 0.000245 Inches

Hor. Rad.=.001314 VDC 86.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #4 CTR

Time: 11:56:52 Date: 88/08/20
Group# 3 Record# 5
File name: SCD0B10
Power supply: 4.9777 Volts DC

Cable# 1	-.007352 Volts DC	-164.3	Micro-Strains
Cable# 2	+.001670 Volts DC	+15.8	Micro-Strains
Cable# 3	+.001296 Volts DC	+163.0	Micro-Strains
Cable# 4	-.001470 Volts DC	-18.6	Micro-Strains
Cable# 5	-.001020 Volts DC	-17.7	Micro-Strains
Cable# 6	-.004391 Volts DC	-169.0	Micro-Strains
Cable# 7	-.000918 Volts DC	+14.9	Micro-Strains
Cable# 8	-.001647 Volts DC	+145.6	Micro-Strains
Cable# 9	-.001280 Volts DC	+15.5	Micro-Strains
Cable# 10	+.002719 Volts DC	-17.2	Micro-Strains
Cable# 11	+.003497 Volts DC	-15.4	Micro-Strains
Cable# 12	+.000009 Volts DC	+13.7	Micro-Strains
Cable# 13	-.001311 Volts DC	-5.5	Micro-Strains
Cable# 14	-.004155 Volts DC	-8.1	Micro-Strains
Cable# 15	-.004380 Volts DC	-3.4	Micro-Strains
Cable# 16	-.001042 Volts DC	+152.2	Micro-Strains
Cable# 17	-.003108 Volts DC	-2.7	Micro-Strains
Cable# 18	-.002959 Volts DC	+153.6	Micro-Strains
Cable# 19	-.003752 Volts DC	-158.1	Micro-Strains
Cable# 20	-.003722 Volts DC	-157.3	Micro-Strains
Cable# 21	-.002013 Volts DC	+21.0	Micro-Strains
Cable# 22	+.002948 Volts DC	+39.6	Micro-Strains
Cable# 23	-.002208 Volts DC	-81.9	Micro-Strains
Cable# 24	-.001920 Volts DC	-98.9	Micro-Strains
Cable# 25	-.002560 Volts DC	+7.6	Micro-Strains

LVDT: -0.067189 VDC 0.000172 Inches

Hor. Rad.=.001323 VDC 87.2 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #OFF BRIDGE

Time: 12:03:24 Date: 88/08/20
Group# 3 Record# 6
File name: SCD0B10
Power supply: 4.9776 Volts DC

Cable# 1	-.006947 Volts DC	+.4	Micro-Strains
Cable# 2	+.001627 Volts DC	-1.7	Micro-Strains
Cable# 3	+.000891 Volts DC	-1.8	Micro-Strains
Cable# 4	-.001421 Volts DC	+1.3	Micro-Strains
Cable# 5	-.000974 Volts DC	+1.0	Micro-Strains
Cable# 6	-.003974 Volts DC	+.7	Micro-Strains
Cable# 7	-.000961 Volts DC	-2.7	Micro-Strains
Cable# 8	-.002010 Volts DC	-2.1	Micro-Strains
Cable# 9	-.001322 Volts DC	-1.5	Micro-Strains
Cable# 10	+.002762 Volts DC	+.2	Micro-Strains
Cable# 11	+.003535 Volts DC	-.0	Micro-Strains
Cable# 12	-.000027 Volts DC	-.8	Micro-Strains
Cable# 13	-.001296 Volts DC	+.5	Micro-Strains
Cable# 14	-.004136 Volts DC	-.5	Micro-Strains
Cable# 15	-.004376 Volts DC	-1.8	Micro-Strains
Cable# 16	-.001421 Volts DC	-.3	Micro-Strains
Cable# 17	-.003103 Volts DC	-.7	Micro-Strains
Cable# 18	-.003345 Volts DC	+.0	Micro-Strains
Cable# 19	-.003358 Volts DC	-1.5	Micro-Strains
Cable# 20	-.003330 Volts DC	-1.5	Micro-Strains
Cable# 21	-.002064 Volts DC	+.7	Micro-Strains
Cable# 22	+.002849 Volts DC	+.2	Micro-Strains
Cable# 23	-.002002 Volts DC	-.1	Micro-Strains
Cable# 24	-.001674 Volts DC	-1.2	Micro-Strains
Cable# 25	-.002572 Volts DC	+2.7	Micro-Strains

LVDT: -0.064538 VDC 0.000038 Inches

Hor. Rad.=.001373 VDC 90.4 W/M^2

MOORE CREEK BRIDGE PROJECT

File name: SRD0B11 Date: 89/07/31
Date: 88/08/20
Time: 12:18:35 Group# 1 Record# 1

TEMPERATURE PROFILE OF GIRDER:
Thermistor# 1 7.5 Deg.C
Thermistor# 2 8.0 Deg.C
Thermistor# 3 8.0 Deg.C
Thermistor# 4 8.1 Deg.C
Thermistor# 5 7.9 Deg.C
Thermistor# 6 7.9 Deg.C
Thermistor# 7 8.0 Deg.C
Thermistor# 8 246.6 Deg.C
Instrument 1 Temp: 15.75 Deg.C
Instrument 2 Temp: 15.8 Deg.C

ZERO STRAIN VOLTAGES:
Time: 12:20:20 Group# 2 Record# 2
Power supply: 4.97840 Volts DC
Cable# 1 -.006947 Volts DC
Cable# 2 +.001627 Volts DC
Cable# 3 +.000892 Volts DC
Cable# 4 -.001421 Volts DC
Cable# 5 -.000974 Volts DC
Cable# 6 -.003973 Volts DC
Cable# 7 -.000961 Volts DC
Cable# 8 -.002010 Volts DC
Cable# 9 -.001324 Volts DC
Cable# 10 +.002764 Volts DC
Cable# 11 +.003538 Volts DC
Cable# 12 -.000027 Volts DC
Cable# 13 -.001295 Volts DC
Cable# 14 -.004136 Volts DC
Cable# 15 -.004377 Volts DC
Cable# 16 -.001420 Volts DC
Cable# 17 -.003103 Volts DC
Cable# 18 -.003345 Volts DC
Cable# 19 -.003358 Volts DC
Cable# 20 -.003329 Volts DC
Cable# 21 -.002066 Volts DC
Cable# 22 +.002848 Volts DC
Cable# 23 -.002001 Volts DC
Cable# 24 -.001674 Volts DC
Cable# 25 -.002571 Volts DC
LVDT: -0.064590 VDC
Hor. Rad.= 1.8E-3 VDC 117.9 W/M^2
Air Temp= 7.9 Deg.C
Wind Speed: 8.1 MPH

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #14 RT

Time: 12:25:01 Date: 88/08/20
Group# 3 Record# 3
File name: SRD0B11
Power supply: 4.9783 Volts DC

Cable# 1	-.006981 Volts DC	-13.9	Micro-Strains
Cable# 2	+.001836 Volts DC	+85.1	Micro-Strains
Cable# 3	+.000682 Volts DC	-85.4	Micro-Strains
Cable# 4	-.001704 Volts DC	-115.1	Micro-Strains
Cable# 5	-.001503 Volts DC	-215.4	Micro-Strains
Cable# 6	-.004000 Volts DC	-11.0	Micro-Strains
Cable# 7	-.000569 Volts DC	+159.7	Micro-Strains
Cable# 8	-.002142 Volts DC	-53.7	Micro-Strains
Cable# 9	-.001830 Volts DC	-204.2	Micro-Strains
Cable# 10	+.002979 Volts DC	+86.9	Micro-Strains
Cable# 11	+.003879 Volts DC	+137.8	Micro-Strains
Cable# 12	-.000291 Volts DC	-106.5	Micro-Strains
Cable# 13	-.001351 Volts DC	-22.5	Micro-Strains
Cable# 14	-.004169 Volts DC	-13.3	Micro-Strains
Cable# 15	-.004463 Volts DC	-34.6	Micro-Strains
Cable# 16	-.001399 Volts DC	+8.4	Micro-Strains
Cable# 17	-.003165 Volts DC	-24.7	Micro-Strains
Cable# 18	-.003356 Volts DC	-4.4	Micro-Strains
Cable# 19	-.003515 Volts DC	-62.4	Micro-Strains
Cable# 20	-.003418 Volts DC	-35.4	Micro-Strains
Cable# 21	-.002059 Volts DC	+2.8	Micro-Strains
Cable# 22	+.002837 Volts DC	-4.3	Micro-Strains
Cable# 23	-.002099 Volts DC	-39.0	Micro-Strains
Cable# 24	-.001714 Volts DC	-15.9	Micro-Strains
Cable# 25	-.002529 Volts DC	+17.1	Micro-Strains

LVDT: -0.067273 VDC 0.000136 Inches

Hor. Rad.=.001888 VDC 124.4 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #9 RT

Time: 12:27:57 Date: 88/08/20
Group# 3 Record# 4
File name: SRD0B11
Power supply: 4.9782 Volts DC

Cable# 1	-.007198 Volts DC	-102.3	Micro-Strains
Cable# 2	+.001751 Volts DC	+50.5	Micro-Strains
Cable# 3	+.001001 Volts DC	+44.4	Micro-Strains
Cable# 4	-.001577 Volts DC	-63.5	Micro-Strains
Cable# 5	-.001255 Volts DC	-114.5	Micro-Strains
Cable# 6	-.004142 Volts DC	-68.9	Micro-Strains
Cable# 7	-.000734 Volts DC	+92.4	Micro-Strains
Cable# 8	-.001954 Volts DC	+22.7	Micro-Strains
Cable# 9	-.001481 Volts DC	-63.4	Micro-Strains
Cable# 10	+.002832 Volts DC	+27.5	Micro-Strains
Cable# 11	+.003638 Volts DC	+40.4	Micro-Strains
Cable# 12	-.000119 Volts DC	-37.1	Micro-Strains
Cable# 13	-.001527 Volts DC	-93.3	Micro-Strains
Cable# 14	-.004258 Volts DC	-49.2	Micro-Strains
Cable# 15	-.004259 Volts DC	+47.4	Micro-Strains
Cable# 16	-.001156 Volts DC	+106.2	Micro-Strains
Cable# 17	-.003051 Volts DC	+20.6	Micro-Strains
Cable# 18	-.003200 Volts DC	+57.6	Micro-Strains
Cable# 19	-.003708 Volts DC	-139.1	Micro-Strains
Cable# 20	-.003535 Volts DC	-81.9	Micro-Strains
Cable# 21	-.002026 Volts DC	+15.9	Micro-Strains
Cable# 22	+.002870 Volts DC	+8.8	Micro-Strains
Cable# 23	-.002218 Volts DC	-86.2	Micro-Strains
Cable# 24	-.001799 Volts DC	-49.7	Micro-Strains
Cable# 25	-.002540 Volts DC	+12.6	Micro-Strains

LVDT: -0.067936 VDC 0.000169 Inches

Hor. Rad.=.001709 VDC 112.6 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #4 RT

Time: 12:30:12 Date: 88/08/20
Group# 3 Record# 5
File name: SRD0B11
Power supply: 4.9780 Volts DC

Cable# 1	-.007456 Volts DC	-207.4	Micro-Strains
Cable# 2	+.001654 Volts DC	+11.0	Micro-Strains
Cable# 3	+.001396 Volts DC	+205.1	Micro-Strains
Cable# 4	-.001449 Volts DC	-11.4	Micro-Strains
Cable# 5	-.001033 Volts DC	-24.1	Micro-Strains
Cable# 6	-.004288 Volts DC	-128.4	Micro-Strains
Cable# 7	-.000907 Volts DC	+22.0	Micro-Strains
Cable# 8	-.001738 Volts DC	+110.6	Micro-Strains
Cable# 9	-.001275 Volts DC	+19.7	Micro-Strains
Cable# 10	+.002730 Volts DC	-13.6	Micro-Strains
Cable# 11	+.003492 Volts DC	-18.5	Micro-Strains
Cable# 12	+.000003 Volts DC	+12.1	Micro-Strains
Cable# 13	-.001316 Volts DC	-8.5	Micro-Strains
Cable# 14	-.004155 Volts DC	-7.8	Micro-Strains
Cable# 15	-.004382 Volts DC	-2.2	Micro-Strains
Cable# 16	-.000944 Volts DC	+191.5	Micro-Strains
Cable# 17	-.003103 Volts DC	-.1	Micro-Strains
Cable# 18	-.003066 Volts DC	+110.8	Micro-Strains
Cable# 19	-.003855 Volts DC	-197.6	Micro-Strains
Cable# 20	-.003615 Volts DC	-113.8	Micro-Strains
Cable# 21	-.002000 Volts DC	+26.2	Micro-Strains
Cable# 22	+.002913 Volts DC	+25.9	Micro-Strains
Cable# 23	-.002260 Volts DC	-103.0	Micro-Strains
Cable# 24	-.001847 Volts DC	-68.8	Micro-Strains
Cable# 25	-.002559 Volts DC	+4.8	Micro-Strains

LVDT: -0.066692 VDC 0.000106 Inches

Hor. Rad.=.001505 VDC 99.1 W/M^2

STRAIN GAUGE READINGS IN VOLTS & MICROSTRAIN

Position #OFF BRIDGE

Time: 12:33:29 Date: 88/08/20
Group# 3 Record# 6
File name: SRD0B11
Power supply: 4.9783 Volts DC

Cable# 1	-.006951 Volts DC	-1.7	Micro-Strains
Cable# 2	+.001628 Volts DC	+.4	Micro-Strains
Cable# 3	+.000892 Volts DC	+.0	Micro-Strains
Cable# 4	-.001420 Volts DC	+.4	Micro-Strains
Cable# 5	-.000971 Volts DC	+1.2	Micro-Strains
Cable# 6	-.003976 Volts DC	-1.3	Micro-Strains
Cable# 7	-.000964 Volts DC	-1.2	Micro-Strains
Cable# 8	-.002009 Volts DC	+.4	Micro-Strains
Cable# 9	-.001324 Volts DC	-.0	Micro-Strains
Cable# 10	+.002764 Volts DC	+.0	Micro-Strains
Cable# 11	+.003538 Volts DC	+.0	Micro-Strains
Cable# 12	-.000027 Volts DC	-.0	Micro-Strains
Cable# 13	-.001299 Volts DC	-1.6	Micro-Strains
Cable# 14	-.004138 Volts DC	-.8	Micro-Strains
Cable# 15	-.004376 Volts DC	+.4	Micro-Strains
Cable# 16	-.001424 Volts DC	-1.6	Micro-Strains
Cable# 17	-.003102 Volts DC	+.4	Micro-Strains
Cable# 18	-.003346 Volts DC	-.4	Micro-Strains
Cable# 19	-.003360 Volts DC	-.8	Micro-Strains
Cable# 20	-.003330 Volts DC	-.4	Micro-Strains
Cable# 21	-.002067 Volts DC	-.4	Micro-Strains
Cable# 22	+.002847 Volts DC	-.4	Micro-Strains
Cable# 23	-.002001 Volts DC	-.0	Micro-Strains
Cable# 24	-.001673 Volts DC	+.4	Micro-Strains
Cable# 25	-.002569 Volts DC	+.8	Micro-Strains

LVDT: -0.064799 VDC 0.000011 Inches

Hor. Rad.=.001584 VDC 104.3 W/M^2