CABLE SIDEWALL BEARING PRESSURE TESTS

Conducted by
TENNESSEE VALLEY AUTHORITY
DIVISION OF OPERATIONS SUPPORT
CENTRAL LABORATORIES SERVICES BRANCH

PROJECT COORDINATOR: James W. Hartley
TEST ENGINEER: Harold B. Cummings III
MEASUREMENTS ENGINEER: Gerald A. Erickson
TEST FACILITY ENGINEER: Jay L. Smith
QA/SAFETY ENGINEER: John B. Ragsdale Jr.

ONSITE OBSERVER: S. G. Ramanathan Date: 5.30.86.
S. G. RAMANATHAN
STONE & WEBSTER ENGINEERING CORP.

SUBMITTED BY: James W. Hartley Date: 5/30/86
JAMES W. HARTLEY
SENIOR STAFF ENGINEER, CLSB

APPROVED BY: Hillary A. Taff Date: 5/30/86
HILLARY A. TAFF
CHIEF, CLSB

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PDR ADOCK 05000390
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TABLE OF CONTENTS

Title Page

Table of Contents

Abstract

- Project Objectives
- Project Description
- Project Results

Technical Report

Appendices

A. Test Instruction, Revision 3
B. Test Instruction, Revisions 0, 1, and 2
C. Test Instrumentation
D. Photographs
E. Sidewall Bearing Pressure Calculations

   5-Cable Calculations
   3-Cable Calculations

F. Reference Documents

G. Support Information

   Weight and Length Calculations
   Radius Calculations and Data
   Coax Test Methods

H. Miscellaneous Test Cable Data

I. Sidewall Bearing Pressure Data Summary

   Composite Results
   Summary Data Sheets

J. Sidewall Bearing Pressure Data Sheets

SIDEWALL BEARING PRESSURE CABLE TEST

Objective

The intent of this project was to determine the effects of excessive sidewall bearing pressure (SWBP) on electrical cables by applying various pulling tensions to the cables in a conduit test setup. TVA's construction specification G-38, Revision 8, limits the cable SWBP to 300 lbs/ft on control and power cables and 100 lbs/ft on signal and instrumentation cables. These SWBP limitations on cable are also recommended by the various cable manufacturers. However, in a few cases, some manufacturers have allowed SWBP limits to be raised. Our objective was to determine the maximum SWBP possible on cable pulls without cable degradation.

Description

Representative samples of power, control, signal and instrument, and coaxial cables from TVA's nuclear power plants were pulled through a conduit test setup containing four horizontal 90 degree bends. The applied tension was controlled and measured during each cable sample pull to achieve maximum SWBP. With the exception of the larger power cables, size No. 2 and larger, each cable was tensioned to near its ultimate breaking strength. The maximum SWBP values achieved are summarized in the following tables.

Cable Types	Maximum SWBP (lbs/ft)
Power Cables:	
The cable with the lowest tensile strength	1398
The cable with the highest tensile strength	3104
Control Cables:	
The cable with the lowest tensile strength	602
The cable with the highest tensile strength	1831
Signal and Instrument Cables:	
The cable with the lowest tensile strength	447
The cable with the highest tensile strength	1496
Coaxial Cables:	
The cable with the lowest tensile strength	373
The cable with the highest tensile strength	1242

After pulling, the cables were inspected, dimensioned, outer jackets were removed from multiconductor cables, and individual conductors were subjected to a dielectric breakdown test. AC dielectric breakdown values of the tensioned cables were compared to those values of the virgin cable samples to determine the effect of the higher SWBP.

Results

All cables met the established test criteria.

INTRODUCTION

The Electrical Engineering Branch, Division of Nuclear Engineering, requested that the Central Laboratories Services Branch (CLSB) perform cable sidewall bearing pressure (SWBP) tests as described in the Test Instruction (Appendix A).

The purpose of this report is to provide technical data for evaluating the effects of excessive SWBP's on cables subjected to the test described in Appendix A, Test Instruction. The tests were conducted April 23 to May 30, 1986.

A cross section of representative cables was supplied for this test to include control, communication, instrumentation, and power cables from TVA nuclear plants. These cables were pulled through a test fixture containing four horizontal 90 degree bends. The applied tension was controlled and measured during each pull of a cable sample and the SWBP calculated. After being pulled, the cables were inspected, dimensioned, carefully stripped to individual conductors (for multiconductor cables), and subjected to a dielectric breakdown test.

AC dielectric breakdown tests provide the primary criteria for evaluation of tensioned cables. Results of the dielectric breakdown tests on cable samples subjected to excessive SWBP's were compared to those of the virgin cable samples. The comparative results were not to differ more than 20 percent.

TEST PROCEDURE

All tests were performed in accordance with the Test Instructions contained in Appendices A and B, referenced National Standards, or standard laboratory practices. All tests were conducted in accordance with sound quality assurance practices and within the scope of the Central Laboratories Services Branch Quality Assurance Program, that complies with the requirements of 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants."

LABORATORY TESTS

Cable Tensioning Fixture

Appendix A (Test Instruction, Revision 3, Attachment A), illustrates the configuration used to pull most of the cable. A hand winch was used to control the desired tension of the loop which included the cable under test. Polywater J, a cable lubricant, was liberally applied to the cable specimen at the entry of the conduit. A capstan tugger supplied the force to overcome system losses and move the cable at approximately 15 feet per minute.

Cable Pull

The cable under test was preloaded through the conduit and fastened to a swivel by either a basket grip or a pulling eye. The trailing end of the cable under test was similarly fastened. This method was used to avoid pulling the steel cable and connection through the conduit at the test tension, thus providing a more constant tension throughout the test pull. Deviations from this method were utilized where test sample lengths exceeded 100 feet (reference Appendix A, Test Instruction, Revision 3, Attachment A2), or where more than 4000 pounds of tension were required (reference Appendix A, Test Instruction, Revision 3, Attachment A1). Specimens were pulled, under tension, past all four 90 degree bends in the conduit. Multiconductor cables were pulled individually, and single conductor cables were pulled in groups of either three or five. Each test sample for the dielectric test was 15 feet long with an additional 5 feet on each end to serve as a test lead, making the total test specimen 25 feet in length. In some cases, two samples were pulled simultaneously in tandem. The portion of the test cable in the conduit at the start and finish of the pull was discarded.

Instrumentation

Principal instrumentation used during the test included a load cell, load cell indicator, and chart recorder. The load cell was located near the leading end of the cable sample being pulled through the test fixture as shown in Appendix A (Test Instruction Revision 3, Attachments A, A1, and A2). The load cell measured the total tension applied to the test

specimen. The loss in the pulley arrangement was tested using a second load cell and found to drop the tension no more than three pounds. As the cable was pulled through the four horizontal 90 degree bends, the load cell digital indicator was observed and the tension was recorded graphically on a chart recorder. The charts are included in Appendix J along with their respective data sheets. Verification of the test system accuracy was performed frequently and all instrumentation was calibrated in accordance with the requirements of the Central Laboratories Services Branch Quality Assurance Program.

The dielectric breakdown test system was comprised of two high potential test sets (one for voltages up to 50-kV and another for higher voltages) and a 16-foot metal trough filled with water. A 500-volt rms per second rate of rise was used for all tests. The voltage was measured on a peak holding digital multimeter, using a high voltage probe on the 50-kV set and a metering tap on the other set.

A listing of all instrumentation used during these tests may be found in Appendix C.

Dimensional Tests

The outer jacket of the cable sample was dimensioned with a micrometer for all multiconductor cables. The outer jacket was then removed and each insulated conductor and bare wire were dimensioned on both multiconductor and single conductor cables.

Insulation Resistance Test

An insulation resistance test was performed on the individual conductors using a 500-volt dc motor-driven insulation megger. Continuity was also verified on tensioned cables. These tests were initiated to provide additional verification of the cable integrity.

Weight Per Foot Calculations

The cable weight in pounds per foot, necessary for calculating SWBP, was computed from a specimen of each sample that was approximately three (3) feet long (reference Appendix G).

SIDEWALL BEARING PRESSURE CALCULATIONS

For single and five cable pulls, SWBP was calculated using formula:

$$SWBP = X(T/R)$$

Where:

T = Tension of cable pull (lbs/ft). (See Appendix J.)

R = Actual inner inside radius of conduit bend (ft). (See Appendix G.)

X = A factor that is determined from the relative diameters of the cable and conduit and the cable weight. (See Appendix E.)

For single cable pulls, the "X" factor is equal to one (1.0). A computer program, described in Appendix E, was developed to calculate the "X" factor for the case when five cables were pulled simultaneously in conduit around a 90-degree horizontal bend. The computer program was verified by longhand calculations to meet quality assurance requirements.

On three cable pulls, a conservative, worst case cradled cable configuration was assumed. The same formula listed above was used to compute SWBP, but the "X" factor is calculated as:

$$X = \frac{[3C-2]}{[\ 3\ ]}$$

Where:

C = Weight correction factor (see Appendix E). All three cable pulls were in 4-inch conduit which had an inner diameter equal to 4.03 inches.

MEDIUM VOLTAGE CABLES

Power cables (CLSB control numbers 27 and 28), rated 8-kV, could not be adequately tested to dielectric breakdown because of excessive insulation discharge and sparking above 100-kV. Therefore, the cables were limited in the test to 100-kV dielectric stress. Where possible, each cable specimen was held at 100-kV for 30 seconds. The shield was used as the ground electrode and voltage gradient rings were used at the point where the shield was pulled away from the primary insulation. More adequate equipment and materials were not available for better termination. The dielectric breakdown voltages of the tensioned specimens were averaged.

If the tensioned specimen did not break down, then 100-kV was used for the breakdown voltage. The virgin specimens were averaged in a similar manner and compared with the tensioned specimens.

COAXIAL CABLE

Two coaxial cables (CLSB control numbers 29 and 30) were added to the test and are documented in Appendix A (Test Instruction, Revision 3, Attachment C). The coaxial cables were subjected to capacitance, characteristic impedance, insulation resistance, continuity, and ac dielectric breakdown testing. Coaxial cable samples 100 feet in length were pulled using the test setup illustrated in Appendix A (Test Instruction, Revision 3, Attachment A2). The dielectric stress was applied between the cable center conductor and shield. The shield rather than water was used for the ground electrode. A time domain reflectometer was used to determine the characteristic impedance and to search for discontinuities. No significant differences could be detected between the virgin and tensioned specimens for any of these tests.

RESULTS AND CONCLUSIONS

In many cases, the tension applied to the cable pull was very close to the ultimate breaking strength, and some specimens actually broke. Fresh samples were then pulled at slightly less tension until a successful pull was completed.

During the early stages of testing, CLSB control numbers 6 through 13, 16, and 24 were tested at tensions lower than their breaking strength. Later, the decision was made to achieve tensions near cable-breaking strength and additional samples of these control numbers were pulled at higher tensions. No significant difference in dielectric breakdown voltage could be detected between the low tension and high tension pulls.

All cables met the established test criteria. The test results are tabulated in Attachment I.

APPENDICES

A. Test Instruction, Revision 3

B. Test Instruction, Revisions 0, 1, and 2

C. Test Instrumentation

D. Photographs

E. Sidewall Bearing Pressure Calculations

   5-Cable Calculations
   3-Cable Calculations

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G. Support Information

   Weight and Length Calculations
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TENNESSEE VALLEY AUTHORITY
OFFICE OF POWER

MAINTENANCE COORDINATION STAFF QUALITY PROGRAM

Procedure No: CL-TESPC

Applies To: Central Laboratories Services Branch

Title: Test Requirements for Cable Sidewall Bearing Pressure Project

Revision 0		Rev. 1	Rev. 2	Rev. 3			
Date:	4/23/86	05/07/86	05/20/86	05/22/86			
Prepared	J. B. Ragsdale	JBR	JBR	JBR			
Title	QA/QC Supervisor						
Concurred	J. W. Hartley	JWH	JWH	JWH			
Title	Staff Engineer						
Concurred	S. G. Ramanathan	SR	SR	SR			
Title	Electrical Engr						
Concurred	F. B. Rosenzweig	FBR	FBR	FBR			
Title	Senior Elec. Engr Div of Engineering						
Concurred							
Title							
Concurred							
Title							
Concurred							
Title							
Concurred							
Title							
Approved	H. A. Taff for	for HAT	HAT	HAT			
Title	Chief, CLSB						

TVA Tennessee Valley Authority

MAINTENANCE COORDINATION STAFF

QUALITY PROGRAM REVISION LOG

REVISION DATE	PAGES AFFECTED	DESCRIPTION OF CHANGE
Revision 0 04/23/86	All	Initial Issue
Revision 1 05/07/86	1	1.0 Scope--Editorial changes made to the first paragraph. Deleted reference to Attachment C and clarified that tensions will be adjusted to achieve the desired sidewall bearing pressure for each cable sample.
	2	4.1, 4.4, 5.2--Revised or deleted reference to specific attachments to the procedure, since some of the attachments have been revised, combined for clarification purposes, or deleted.
	3	5.5--Deleted requirements for measuring both ends of the conductors for virgin cables. 5.7.5--Changed Attachment B to read Attachment A. 5.9--Increased the number of tensioned cables to undergo AC dielectric breakdown testing from three to five.
	4	5.12--Increased the number of cables to undergo tension from three to five. 5.20--Added reference to Attachment G. 6.0--Revised to clarify acceptance criteria. Originally, the average dielectric breakdown voltage of the virgin cables was compared to the dielectric breakdown voltage of each tensioned conductor. In order to be in compliance with the ASTM D149, this was changed to make the comparison of the virgin cable average with the tensioned cable average.
	5	8.0--Editorial changes 11.0--Schedule was deleted from the procedure.

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QUALITY PROGRAM REVISION LOG

REVISION DATE	PAGES AFFECTED	DESCRIPTION OF CHANGE
Revision 1 05/07/86 (cont'd)	Attachment A	Previously was Attachment B. This figure was redrawn to accurately depict the test setup.
	Attachment B	Previously Attachment G.
	Attachment C	Attachments A and C (Rev. 0) were combined for clarification purposes.
	Attachment F	Data form revised to delete redundant information and simplify its use.
	Attachment G	Deleted--Replaced with data summary sheet.
	Attachment H	Deleted.
Revision 2 05/20/86	1	1.0 SCOPE--Added a third paragraph to describe the testing of coaxial cables.
	2	2.13--Added.
		2.14--Added.
		2.15--Added
		4.1--Added Attachments A1 and A2.
	3	5.7.5--Added Attachments A1 and A2.
	4	5.15--Added additional test requirements for coaxial cable.
	5	6.2--Added acceptance criteria for coaxial cables.
	Attachment A	Note 1--Deleted 4-inch conduit size.
	Attachment A1	Added.
	Attachment A2	Added.
	Attachment C	Corrected Mark No. of CLSB Control No. 20 to WDG. Added information for CLSB Control No. 29 and 30.

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QUALITY PROGRAM REVISION LOG

REVISION DATE	PAGES AFFECTED	DESCRIPTION OF CHANGE
Revision 3 05/22/86	4	5.9--Editorial changes for clarification purposes.
		5.12--Editorial changes for clarification purposes
	5	5.19--Revised to clarify that correction factors will be calculated and not obtained from General Construction Specification G-38.
		6.1--Clarified acceptance criteria
		6.2--Added reference to Attachment F1..
	Attachment A	Editorial change to Note 5.
	Attachment C	Added CLSB Control No. 31 and 32 data
	Attachment F1	Added

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES BRANCH
QUALITY ASSURANCE TESTING INSTRUCTION
CL-TESPC

Revision 3 - May 22, 1986

TEST REQUIREMENTS FOR CABLE SIDEWALL BEARING PRESSURE PROJECT

1.0 SCOPE

Test selected cable samples to determine the effects of sidewall bearing pressure (SWBP). The cable samples will be shipped to Central Laboratories at Chickamauga Dam in Chattanooga from various TVA nuclear plants and warehouses.

Three-foot samples of cable for each cable mark number are to be weighed and weight per foot calculated. Virgin and tensioned cable outside jacket, insulated conductor, and copper diameter are to be measured and values recorded on the test form. Five virgin cable samples each 25 feet in length of which 15 feet are to undergo an AC dielectric breakdown test. Five test pulls of these cable samples, approximately 100 feet in length, are to be pulled under tension through a galvanized rigid steel conduit setup one at a time. Tensions will be adjusted to produce the desired SWBP of the test sample. Fifteen feet of the twenty-five foot sample cut from the tensioned cable will then be subjected to an AC dielectric breakdown test and the results recorded and compared to the virgin cable test results.

Coax cables will undergo the same testing described above, except that sample lengths to be tested shall be approximately 100 feet in length. In addition, coax cables will also be subjected to capacitance, insulation resistance, and characteristic impedance testing.

2.0 APPARATUS/INSTRUMENTATION

2.1 Load measuring device.

2.2 AC dielectric test set described in ASTM D149.

2.3 Electronic balance, accurate to 0.5g.

2.4 Micrometer, readable to 0.001 inch.

2.5 Steel scale or tape, whose least division is not greater than 1/16 inch.

2.6 Precision cutting blade for detail cable cutting.

2.0 APPARATUS/INSTRUMENTATION (Continued)

2.7 Steel pulling rope.

2.8 Air tugger or equivalent device for smooth cable pulling.

2.9 Basket grips--size as needed.

2.10 Pulling lubricant--Polywater J or equivalent.

2.11 Conduit setup.

2.12 Cable samples

2.13 Capacitance bridge

2.14 Time Domain Reflectometer

2.15 Megger Test Set

3.0 CALIBRATION

3.1 All equipment shall be calibrated by Central Laboratories Services Branch (CLSB) and traceable to NBS in accordance with the Quality Assurance requirements in Part IV, Section 4 of the Nuclear Quality Assurance Manual. Technical requirements, i.e., accuracies, ranges calibrated, and calibration interval, shall be in accordance with those listed in the Measurement and Test Equipment Specification Manual.

3.2 The accuracy and integrity of the load measuring instrument, dynanometer or load cell, shall be determined periodically during the test. The method shall be a comparison with a second load measuring instrument of the same or better accuracy. Comparisons shall be made at or near the test load value.

4.0 TEST SETUP

4.1 Sketch of test setup, Attachments A, A1, and A2

4.2 Conduit in horizontal position on ground.

4.3 Anchor conduit securely.

4.4 Rigid steel conduit setups to include: 3/4", 1", 2", and 4" conduit sizes.

4.5 Cable samples for cable pulling should be approximately 100 feet in length.

4.0 TEST SETUP (Continued)

4.6 Load measuring device secured between steel pull rope and the cable grip.

4.7 Document in final test report actual test setups and all devices used.

5.0 PROCEDURE

5.1 Attachment D provides instructions for shipping cables from sites. Receive cable samples, keep Bill of Shipment (Attachment E) forms and other records as necessary, document cables shipped.

5.2 Store cable inside and in accordance with Attachment B.

5.3 Record sample weight for each mark number as described in Section 1.0.

5.4 Outside jacket diameter--with micrometer measure to the nearest 0.001 inch the major and minor diameters of the cable at points one (1) foot from one end and near the midpoint. Record the maximum and minimum diameter measurements to the nearest 0.001 inch.

5.5 Outside diameter of individual conductor insulation--strip the outside jacket from around the individual insulated conductors of the cable by splitting with a sharp blade, being careful not to cut the insulation on the individual conductors. Separate the individual insulated conductors and measure the outside insulation diameter of those conductors to be tested for the AC dielectric breakdown. At each location, rotate the micrometer 90 degrees and take a second measurement. Record the two separate diameter measurements for each conductor to the nearest 0.001 inch. Make measurements of the bare copper conductor approximately 1 inch from one end of the conductor for virgin cable and each end for tensioned cable and record the measurements of each conductor to the nearest .001 inch.

5.6 Prepare conduits and associated equipment.

5.7 Cable preparation.

5.7.1 Attach cables using pulling grip.

5.7.2 Do not attach individual conductors to grip except for single conductor cables.

5.7.3 A pulling swivel between grip and steel pulling rope must be used.

5.7.4 Rope and cable must be lubricated liberally and continuously during the pull.

5.7.5 Load measuring device attached inline--see test setup Attachments A, A1, or A2.

5.8 Load shall be adjusted to achieve various tensions. Test tensions may be reduced at test engineers direction.

5.9 An AC dielectric breakdown test on a quantity of five virgin and five tensioned samples shall be performed for each sample number. For multiconductor cables all conductors of the cable are to be tested for AC dielectric breakdown. AC dielectric breakdown test to be in accordance with ASTM D149. Rate of voltage rise to be 500V per second in water. R3

5.10 Multiconductor cable--outer jacket is to be stripped off carefully. Carefully inspect conductor insulation for damage after the jacket is removed. Note any anamolies on Attachment F.

5.11 Dielectric test set to be used shall be documented and the same test set shall be used for virgin and tension cable of the same test sample.

5.12 For each cable type, five successful cable pulls for recording tension are to be performed. Once pulled, a sample shall not be repulled. The tensioned cable to be dielectrically tested, approximately fifteen (15) feet or in the case of coax cable approximately 100 feet, should be pulled through the entire conduit setup. R

5.13 Determine conduit inner radius for the last elbow in each conduit setup. The method for this determination shall be documented by the CLSB.

5.14 Tested samples are to be kept for at least 90 days after the completion of all testing for possible inspection by third parties, reference, etc.

5.15 Each tensioned cable is to undergo an AC dielectric breakdown test as described in ASTM D149 and Section 5.9 listed above.For the multiconductor cables the individual conductors are to be tested. In addition to these tests,all tensioned coax cables will undergo capacitance, insulation resistance, and characteristic impedance testing.

5.16 Any deviations from test procedures are to be documented in the final report.

5.0 PROCEDURE (Continued)

5.17 The conduit size for the cable samples to be pulled shall be those listed on Attachment C.

5.18 Provide photographs of test setups and major test equipments.

5.19 On the five cable pull, the sidewall bearing pressure for the worst case cable shall be determined by multiplying the T/R by the calculated correction factor. R3

5.20 Data is to be recorded on form similar to Attachment F and summarized on Attachment G.

6.0 ACCEPTANCE CRITERIA

6.1 The dielectric breakdown voltage of all conductors for the five virgin cable samples tested are to be averaged for each cable sample number. If the averaged tensioned conductor dielectric breakdown voltage is within 20 percent of the virgin average then that conductor has passed the test. ASTM D149 makes reference to a range of acceptance from 1 percent to 20 percent. R3

6.2 All additional tests performed on coax cables shall also be within 20% of the virgin cable average versus the tensioned cable average for each particular test; i.e., insulation resistance, capacitance, and characteristic impedance. Data for coax cables will be recorded on a form similar to Attachment F1. R3

7.0 REFERENCES

7.1 ASTM D149, "Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies."

7.2 The Okonite Company Book, "Installation Practices for Cable Raceway Systems."

7.3 National Electric Code, ANSI/NFPA70.

7.4 TVA General Construction Specification No. G-38.

7.5 Maintenance Coordination Staff Quality Program - Central Laboratories Services Branch.

8.0 REPORT

Final Report shall include:

8.1 Procedures

8.2 Anomalies

8.3 Data

8.4 Summary/Conclusions

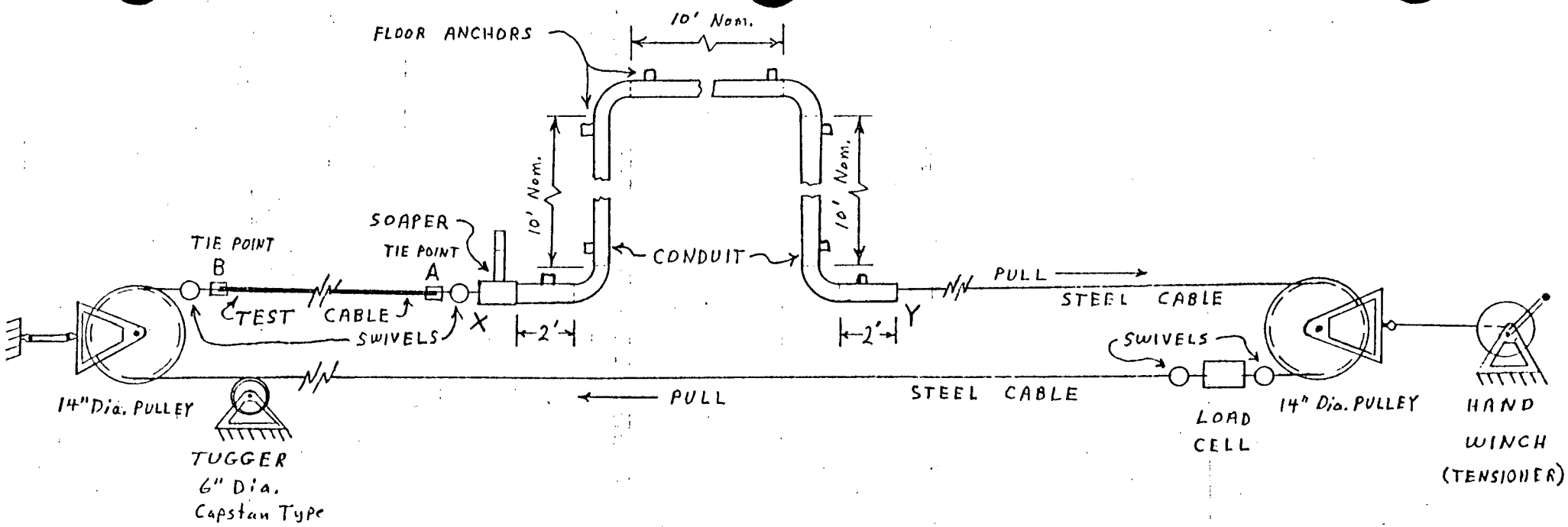
9.0 QUALITY ASSURANCE

The test shall be conducted in accordance with a TVA approved quality assurance program manual that meets the applicable requirements of ANSI N45.2 and Part IV, Section 4, of the Nuclear Quality Assurance Manual (NQAM).

10.0 SAFETY

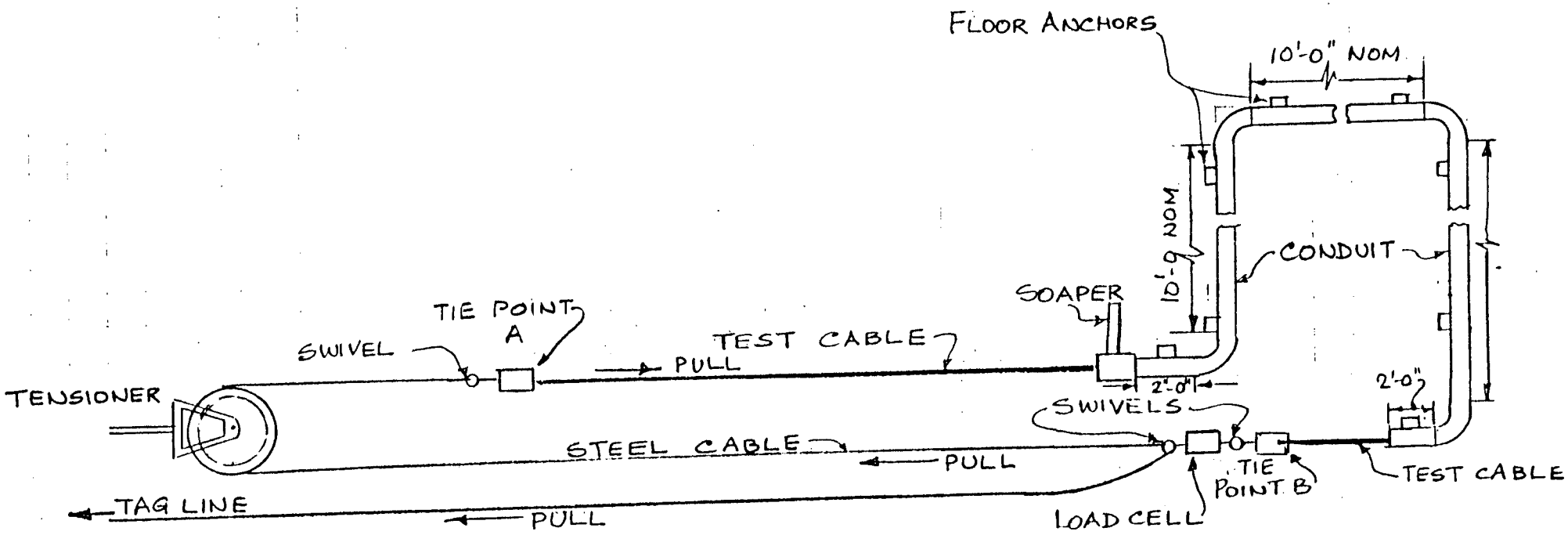
10.1 Clear all unnecessary persons from test area when pulling cable.

10.2 Adherance to general safety precautions to be observed with high voltage testing.



NOTES:

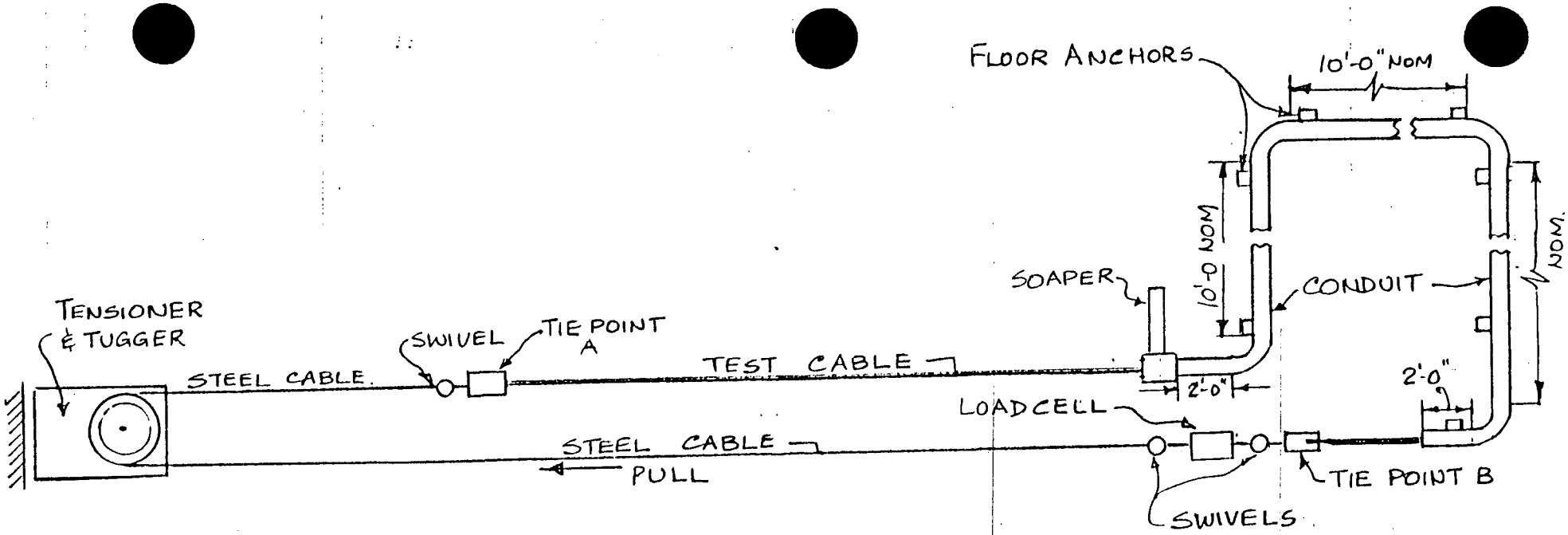
1. The conduit setup includes 3/4", 1", and 2" conduit sizes.
2. The setup is shown in the START position, before pulling.
3. Tie point "A" is positioned at point "Y" (rather than point "X") for some pulls so that the connection does not have to pass through the conduit.
4. The length of test cable varies with the cable type. The distance pulled also varies, providing sometimes one and sometimes two samples per pull. All samples are 15 feet long with five additional feet on each end to serve as a test lead. The test cable is always long enough so that all portions of each 15-foot sample are pulled, under tension, through all four conduit bends.
5. For some tests, the load cell is placed at point "Y" to start the pull. The difference in tension, between point "Y" and the location shown, has been measured and noted to be less than three pounds.
6. Cable tension is manually maintained at the proper value with the hand winch.



NOTES:

1. This conduit setup is for 4-inch conduit.

2. The setup is shown in the START position, before pulling.



NOTES:

1. This conduit setup is for coaxial cable pulled through 3/4" conduit.

2. The setup is shown in the START position, before pulling.

ATTACHMENT B

Revision 1

STORAGE REQUIREMENTS FOR ELECTRICAL CABLE ON REELS

1. Cables shall be stored indoors on a clean, level area relatively free of traffic. Cables shall be stored in an orderly manner so that the cable mark numbers are readily readable.

2. Reels with electrical cable shall be stored with their flanges in a vertical posture, checked and blocked securely.

3. Both ends of the cable on a reel shall be readily available for inspection.

4. End seals shall withstand normal storage and handling without decay, loosening, cracking or the ability to prevent entry of moisture. A waterproof tape applied in two layers over the end and extending approximately 3 inches back from the end shall form the end seal.

ATTACHMENT C

Revision 3

SAMPLE LIST

CABLE SIDEWALL PRESSURE PROJECT

CLSB Control No.	Sample	Plant	Manufacturer	Contract	Mark No.	Description	Conduit Size	No. Cables Pulled at Once	
14	1003	B	ESSEX	827249	WCA-1	NO. 14 1/C 600V PXJ BLACK	3/4"	5	
17	150	W	A.I.W	827749	WDE-1	NO. 6 1/C 600V PXJ	2"	5	
16	632	H	ANACONDA	829245-1	WDE-2	NO. 6 1/C 600V PXJ LOCA	2"	5	
18	740	B	P.W.C.	86150-2	WDG	NO. 2 1/C 600V CPJ	2"	5	
19	58	W	A.I.W.	822173-2	WDG-1	NO. 2 1/C 600V PXJ	2"	5	
20	1114	S	GE	824443-2	WDG	NO. 2 1/C 600V PXJ	2"	5	
5	45	W	A.I.W.	825342-2	WHG-1	NO. 14 7/C 600V PXMJ	1"	1	
4	685	H	OKONITE	827928	WHG-1	NO. 14 7/C 600V PXMJ	1"	1	
2	593	H	ANACONDA	825722-2	WHG-2	NO. 14 7/C 600V PXMJ LOCA	1"	1	
3	228	W	CYPRUS W&C	86150-1	WHH	NO. 14 9/C 600V PJJ	1"	1	
15	577	H	CAROLINA	829074	WJG-1	NO. 14 AWG 1/C 600V 150 DEG	3/4"	5	
1	335	W	P.W.C.	85069-2	WLG	NO. 12 7/C 600V CPJJ	1	1	
6	794	B	EATON	825772	WVB	NO. 16 3/C TW 300V XLPE CSPE	1"	1	
7	259	W	ANACONDA	827380	WVB	NO. 16 3/C TW 300V XLPE CSPE	1"	1	
8	1168	S	I.T.T.	84211	WVD	NO. 16 5/C SHIELD LOCA	1"	1	
9	323	W	OKONITE	74910	WVG	NO. 16 12/C SHIELD LOCA	1"	1	
10	40	W	TIMES	85947	WVK	NO. 16 2/C LOCA	1"	1	
11	131	W	TELEDYNE	835489	WWN-4	NO. 16 3 SHDPR 600V 1/C	1"	1	
21	1046	F	OKONITE	825342-1	WDE-1	NO. 6 1/C 600V PXJ	2"	5	
12	1067	F	BRAND-REX	828072	WVG	NO. 16 12/C SHIELD LOCA	1"	1	
13	1173	S	ROCKBESTOS	826961	WVA	NO. 16 2/C TW SH XLPE	1"	1	
22	1108	S	ROME	54762-1	WDF	NO. 4 1/C 600V CPJ	2"	5	
25	440	H	ROME	54762	WCA	NO. 14 1/C 600V PN BLACK	3/4"	5	
23	502	H	ANACONDA	825997	WRG	NO. 12 7/C 600V SROJJ LOCA	1"	1	
24	26	W	ANACONDA	825997	WPA	NO. 14 1/C 600V SROAJ LOCA	1"	5	
26	5	W	ANACONDA	85861	WPF	NO. 6 1/C 600V SROAJ LOCA	2"	5	
27	103	W	TRIANGLE	85069-2	WNB	NO. 2/0 1/C 8KV CPSJ	4"	3	
28	197	W	ANACONDA	825471	WNB-1	NO. 2/0 1/C 8KV EPSJ	4"	3	
29	5000	W	RAYCHEM	821043	WTK	NO. 22 COAX RG59B/U	3/4"	1	
30	5001	W	TELEDYNE	825280	WWK	TP 22 W/SH, TP 20 2/C, 22 2-COAX	3/4"	1	
31	5002	F	CONTINENTAL	85527-1	-	NO. 14 7/C 600V PJJ	1"	1	R3
32	5003	F	TAMAQUA	75328-2	WGG	NO. 12 7/C 600V PNJ	1"	1	R3

NOTE: (1) Each sample to have five (5) pulls.
(2) Class of all samples is 1E.

ATTACHMENT D

FIELD INSTRUCTIONS FOR SAMPLE

Instructions for Securing Field Cable Samples for Cable Sidewall Pressure Project

1. Secure samples that are a minimum of 2000 feet in length from spools, reels, or coils of wire.

2. Tags on each sample must bear the following information: cable mark number, cable manufacturer, contract number, and reel number.

3. Samples with data that are not legible (type written or printing) and incomplete data such as samples without a complete contract number, manufacturer name, and mark number are not to be shipped.

4. All sample data must be verified and responsible person sign that this information is correct.

5. Bill of Shipment form attached must accompany all shipments.

6. Copy of Bill of Shipment to be sent to K. D. Wallace at W8 C146 C-K same day samples shipped.

7. Copy of Bill of Shipment to accompany each shipment of cable samples to Central Laboratories.

8. Cable samples to be shipped to:

   Power Stores
   North Bank Chickamauga

ATTACHMENT E

Bill of Shipment

Ship to:

Ship From:

Prepared by: _____ Date _____

Verified by: _____ Date _____

Item No.	Reel No.	MK	Contract No.	MFR

Person to contact regarding discrepancies of cable shipments, data, etc.

Name: Telephone No.:

Direct questions and copy of Bill of Shipment to:

Attention: Division of Nuclear Engineering
K. D. Wallace, W8 C146 C-K, Extension 3635

036091.02

ATTACHMENT F
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. _____
Sample No. . . . . = _____
Description _____

Standards Used: _____

Conduit Size in Test. . . . = _____
No. Cables in Pull. . . . . = _____

Virgin _____ 1-Conductor _____
Tensioned _____ Multi-Conductor _____

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = _____Max _____Min

SWBP Data

Tension (T) = _____ lbs (Max.)
Radius (R) = _____ ft
T/R = _____ lbs/ft
Correction Factor (X) = _____
SWBP = X(T/R) = _____ lbs/ft

Anomalies: _____

Tested By/Date _____ Tension _____ Micrometer _____ Dielectric _____ Resistance

Verified By/Date _____ QA Approval/Date _____
Test Observers _____

0148E-4

ATTACHMENT F1
Revision 3
SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

TB Control No. _____
mple No. . . . . = _____
Description _____ Standards Used: _____

Conduit Size in Test. . . . = _____
No. Cables in Pull. . . . . = _____

Virgin _____ 1-Conductor _____
Tensioned _____ Multi-Conductor _____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
1.											
2.											
3.											
4.											
5.											
6.											
8.											
9.											
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = _____Max _____Min

SWBP Data

Tension (T) = _____ lbs (Max.)
Radius (R) = _____ ft
T/R = _____ lbs/ft
Correction Factor (X) = _____
SWBP = X(T/R) = _____ lbs/ft

Anomalies: _____

Tested By/Date _____ _____ _____ _____
Tension Micrometer Dielectric Resistance

rified By/Date _____ QA Approval/Date _____
Test Observers _____ _____ _____

0148E-6

ATTACHMENT G
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. _____, Sample No. _____

Description: _____
Insulation Type: _____

Max SWBP _____

No. Cables in a Pull. . . . . : _____
No. Pulls . . . . . : _____
No. Conductors in Cable . . : _____
No. Ind Conductors Tensioned: _____

No. Virgin Cables. . . . . : _____
No. Virgin Ind Conductors: _____

Virgin Dielectric Breakdown Avg . : _____
Tensioned Dielectric Breakdown Avg: _____
Percent Difference in Averages. . : _____

Coefficient of Variation: _____
Coefficient of Variation: _____

Anomalies: _____

Prepared By: _____ Date: _____

Verified By: _____ Date: _____

0148E-3

TVA 64 (OS-9-65) (OP-WP-5-85)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : James W. Hartley, Staff Engineer (Metrology), Central Laboratories Services Branch, LA PSC 1-C

FROM : S. G. Ramanathan, Electrical Engineer, LA PSC 1-C

DATE : April 23, 1986

SUBJECT: AUTHORIZATION FOR SIDEWALL BEARING PRESSURE TESTING (SWBP)

This memo confirms the telephone conversation between S. G. Ramanathan and F. B. Rosenzweig authorizing James W. Hartley to proceed with the Sidewall Bearing Pressure (SWBP) cable testing. This authorization was made by telephone in order to meet the required schedule for cable testing with Revision 0 of the test procedure.

JBR:EC

cc: RIMS, MR 4N 72A-C
J. B. Ragsdale, LA PSC 1-C
S. G. Ramanathan, LA PSC 1-C
F. B. Rosenzweig, W8 D182 C-K
H. A. Taff, LA PSC 1-C
K. D. Wallace, W8 C146 C-K

0139B

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES BRANCH
QUALITY ASSURANCE TESTING INSTRUCTION
CL-TESPC
Revision 0 - April 23, 1986

TEST REQUIREMENTS FOR CABLE SIDEWALL BEARING PRESSURE PROJECT

1.0 SCOPE

Test specific cable types which are identified by sample number, mark number, manufacturer, description, and TVA contract number listed on Attachment A. The cable samples will be shipped to Central Laboratories at Chickamauga Dam in Chattanooga from various TVA nuclear plants and warehouses.

Three-foot samples of cable for each cable mark number are to be weighed and weight per foot calculated. Virgin and tensioned cable outside jacket, insulated conductor, and copper diameter are to be measured and values recorded on the test form. Five virgin cable samples each 25 feet in length of which 15 feet are to undergo an AC dielectric breakdown test. Three test pulls of these cable samples, approximately 100 feet in length, are to be pulled under tension through a galvanized rigid steel conduit setup one at a time. Cable is to be pulled in accordance with the requirements of Attachment C. Different tensions will be applied to the various pulls. Fifteen feet of the twenty-five foot sample cut from the tensioned cable will then be subjected to an AC dielectric breakdown test and the results recorded and compared to the virgin cable test results.

2.0 APPARATUS/INSTRUMENTATION

2.1 Load measuring device.

2.2 AC dielectric test set described in ASTM D149.

2.3 Electronic balance, accurate to 0.5g.

2.4 Micrometer, readable to 0.001 inch.

2.5 Steel scale or tape, whose least division is not greater than 1/16 inch.

2.6 Precision cutting blade for detail cable cutting.

2.7 Steel pulling rope.

2.8 Air tugger or equivalent device for smooth cable pulling.

2.9 Basket grips--size as needed.

2.10 Pulling lubricant--Polywater J or equivalent.

2.11 Conduit setup.

2.12 Cable samples

3.0 CALIBRATION

3.1 All equipment shall be calibrated by Central Laboratory Services Branch (CLSB) and traceable to NBS in accordance with the Quality Assurance requirements in Part IV, Section 4 of the Nuclear Quality Assurance Manual. Technical requirements, i.e., accuracies, ranges calibrated, and calibration interval, shall be in accordance with those listed in the Measurement and Test Equipment Specification Manual.

3.2 The accuracy and integrity of the load measuring instrument, dynanometer or load cell, shall be determined periodically during the test. The method shall be a comparison with a second load measuring instrument of the same or better accuracy. Comparisons shall be made at or near the test load value.

4.0 TEST SETUP

4.1 Sketch of test setup, Attachment B.

4.2 Conduit in horizontal position on ground.

4.3 Anchor conduit securely.

4.4 Rigid steel conduit setups to include: 3/4", 1", 2", and 4" conduit sizes, Attachment C.

4.5 Cable samples for cable pulling should be approximately 100 feet in length.

4.6 Load measuring device secured between steel pull rope and the cable grip.

4.7 Document in final test report actual test setups and all devices used.

5.0 PROCEDURE

5.1 Attachment D provides instructions for shipping cables from sites. Receive cable samples, keep Bill of Shipment (Attachment E) forms and other records as necessary, document cables shipped.

5.2 Store cable inside and in accordance with Attachment G.

5.3 Record sample weight for each mark number as described in Section 1.0.

5.4 Outside jacket diameter--with micrometer measure to the nearest 0.001 inch the major and minor diameters of the cable at points one (1) foot from either end and near the midpoint. Record the maximum and minimum diameter measurements to the nearest 0.001 inch.

5.5 Outside diameter of individual conductor insulation--strip the outside jacket from around the individual insulated conductors of the cable by splitting with a sharp blade, being careful not to cut the insulation on the individual conductors. Separate the individual insulated conductors and measure the outside insulation diameter of those conductors to be tested with the AC dielectric breakdown test using the same micrometer as above. At each location, rotate the micrometer 90 degrees and take a second measurement. Repeat at the opposite end of the conductors. Record the maximum and minimum of the four separate diameter measurements for each conductor to the nearest 0.001 inch. Make measurements of the bare copper conductor approximately 1 inch from each end of the conductor, as described above, and record the maximum and minimum of all four measurements of each conductor to the nearest .001 inch.

5.6 Prepare conduits and associated equipment.

5.7 Cable preparation.

5.7.1 Attach cables using pulling grip.

5.7.2 Do not attach individual conductors to grip except for single conductor cables.

5.7.3 A pulling swivel between grip and steel pulling rope must be used.

5.7.4 Rope and cable must be lubricated liberally and continuously during the pull.

5.7.5 Load measuring device attached inline--see test setup Attachment B.

5.8 Load shall be adjusted to achieve various tensions. Test tensions may be reduced at test engineers direction.

5.9 An AC dielectric breakdown test on a quantity of five virgin and three tensioned samples shall be performed for each mark number.For multiconductor cables all conductors per cable are to be tested with the AC dielectric breakdown test. AC dielectric breakdown test to be in accordance with ASTM D149. Rate of voltage rise to be 500V per second in water.

5.10 Multiconductor cable--outer jacket is to be stripped off carefully. Carefully inspect conductor insulation for damage after the jacket is removed. Note any anamolies on Attachment F.

5.0 PROCEDURE (Continued)

5.11 Dielectric test set to be used shall be documented and the same test set shall be used for virgin and tension cable of the same test sample.

5.12 For each cable type, three successful cable pulls for recording tension are to be performed. One pull only for one cable sample. The tensioned cable to be dielectrically tested, approximately fifteen (15) feet, should be pulled through the entire conduit setup.

5.13 Determine conduit inner radius for the last elbow in each conduit setup. The method for this determination shall be documented by the CLSB.

5.14 Tested samples are to be kept for at least 90 days after the completion of all testing for possible inspection by third parties, reference, etc.

5.15 Each tensioned cable is to undergo an AC dielectric breakdown test as described in ASTM D149 and Section 5.9 listed above. For the multiconductor cables the individual conductors are to be tested.

5.16 Any deviations from test procedures are to be documented in the final report.

5.17 Cable samples to be pulled in conduit sized as listed on Attachment C.

5.18 Provide photographs of test setups and major test equipments.

5.19 On the five cable pull, the sidewall bearing pressure for the worst case cable shall be determined by multiplying the T/R by the correction factor obtained from TVA General Construction Specification No. G-38, Rev. 8 (p3-16), for installing insulated cables up to 15,000 volts.

5.20 Data is to be recorded on form similar to Attachment F.

6.0 ACCEPTANCE CRITERIA

The dielectric breakdown voltage for the virgin cable samples tested are to be averaged for each cable Mark No. If the tensioned cables dielectric breakdown voltage is within 20 percent of the virgin average then that cable has passed the test. ASTM D149 makes reference to a range of acceptance from 1 percent to 20 percent.

7.0 REFERENCES

7.1 ASTM D149, "Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies."

7.0 REFERENCES (Continued)

7.2 The Okonite Company Book, "Installation Practices for Cable Raceway Systems."

7.3 National Electric Code, ANSI/NFPA70.

7.4 TVA General Construction Specification No. G-38.

7.5 Maintenance Coordination Staff Quality Program - Central Laboratories Services Branch.

8.0 REPORT

Final Report to be in four sections.

8.1 Procedures

8.2 Anomalies

8.3 Data

8.4 Summary/Conclusions

9.0 QUALITY ASSURANCE

The test shall be conducted in accordance with a TVA approved quality assurance program manual that meets the applicable requirements of ANSI N45.2 and Part IV, Section 4, of the Nuclear Quality Assurance Manual (NQAM).

10.0 SAFETY

10.1 Clear all unnecessary persons from test area when pulling cable.

10.2 Adherance to general safety precautions to be observed with high voltage testing.

11.0 SCHEDULE

11.1 Sample receiving at CLSB--April 7-April 18, 1986.

11.2 Final testing instruction submitted April 23, 1986.

11.3 Perform testing--April 23-May 23, 1986.

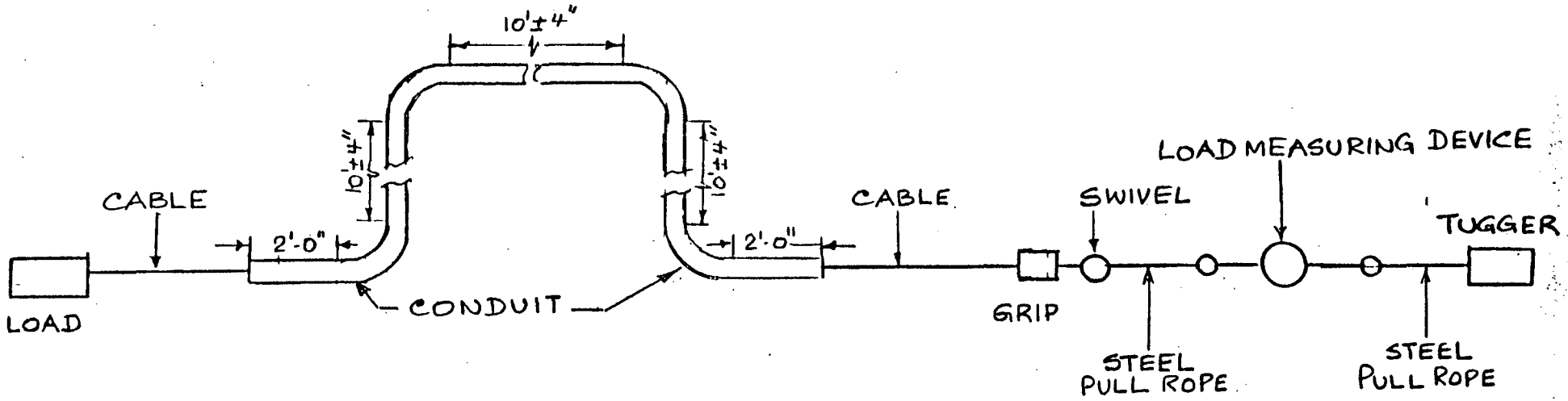
11.4 CLSB Report due--May 23, 1986.

ATTACHMENT A

SAMPLE LIST

CABLE SIDEWALL PRESSURE PROJECT

Sample	Plant	Manufacturer	Contract	Mark No.	Class	Description
1003	B	ESSEX	827249	WCA-1	1E	NO. 14 1/C 600V PXJ BLACK
150	W	A.I.W	827749	WDE-1	1E	NO. 6 1/C 600V PXJ
632	H	ANACONDA	829245-1	WDE-2	1E	NO. 6 1/C 600V PXJ LOCA
740	B	P.W.C.	86150-2	WDG	1E	NO. 2 1/C 600V CPJ
58	W	A.I.W.	822173-2	WDG-1	1E	NO. 2 1/C 600V PXJ
1114	S	GE	824443-2	WDG-1	1E	NO. 2 1/C 600V PXJ
45	W	A.I.W.	825342-2	WHG-1	1E	NO. 14 7/C 600V PXMJ
685	H	OKONITE	827928	WHG-1	1E	NO. 14 7/C 600V PXMJ
593	H	ANACONDA	825722-2	WHG-2	1E	NO. 14 7/C 600V PXMJ LOCA
228	W	CYPRUS W&C	86150-1	WHH	1E	NO. 14 9/C 600V PJJ
577	H	CAROLINA	829074	WJG-1	1E	NO. 14 AWG 1/C 600V 150 DEG
335	W	P.W.C.	85069-2	WLG	1E	NO. 12 7/C 600V CPJJ
794	B	EATON	825772	WVB	1E	NO. 16 3/C TW 300V, XLPE, CSPE
259	W	ANACONDA	827380	WVB	1E	NO. 16 3/C TW 300V, XLPE, CSPE
1168	S	I.T.T.	84211	WVD	1E	NO. 16 5/C SHIELD LOCA
323	W	OKONITE	74910	WVG	1E	NO. 16 12/C SHIELD LOCA
40	W	TIMES	85947	WVK	1E	NO. 16 2/C LOCA
131	W	TELEDYNE	835489	WWN-4	1E	NO. 16 3 SHDPR 600V 1/C
1046	F	OKONITE	825342-1	WDE-1	1E	NO. 6 1/C 600V PXJ
1067	F	BRAND-REX	828072	WVG	1E	NO. 16 12/C SHIELD LOCA
1173	S	ROCKBESTOS	826961	WVA	1E	NO. 16 2/C TW SH XLPE



TEST SET-UP.

NOTE: CONDUIT SETUP SHALL INCLUDE 3/4", 1" AND 2" CONDUIT SIZES.

ATTACHMENT B

ATTACHMENT C

CABLE PULLS FOR CONDUIT SETUPS

Conduit Size	No. Cables Pulled at Once	No. Pulls	Sample No.	Mark No.	Manufacturer	Size	No. Conductors
3/4"	5	3	1003	WCA-1	ESSEX	NO. 14	1/C
3/4"	5	3	577	WJG-1	CAROLINA	NO. 14	1/C
1"	1	3	593	WHG-2	ANACONDA	NO. 14	7/C
1"	1	3	228	WHH	CYPRUS W&C	NO. 14	9/C
1"	1	3	685	WHG-1	OKONITE	NO. 14	7/C
1"	1	3	45	WHG-1	A.I.W.	NO. 14	7/C
1"	1	3	335	WLG	P.W.C.	NO. 12	7/C
1"	1	3	794	WVB	EATON	NO. 16	3/C
1"	1	3	259	WVB	ANACONDA	NO. 16	3/C
1"	1	3	1168	WVD	I.T.T.	NO. 16	5/C
1"	1	3	323	WVG	OKONITE	NO. 16	12/C
1"	1	3	40	WVK	TIMES	NO. 16	2/C
1"	1	3	131	WWN-4	TELEDYNE	NO. 16	3 PR
1"	1	3	1067	WVG	BRAND-REX	NO. 16	12/C
1"	1	3	1173	WVA	ROCKBESTOS	NO. 16	2/C
2"	5	3	632	WDE-2	ANACONDA	NO. 6	1/C
2"	5	3	150	WDE-1	A.I.W.	NO. 6	1/C
2"	5	3	740	WDG	P.W.C.	NO. 2	1/C
2"	5	3	58	WDG-1	A.I.W.	NO. 2	1/C
2"	5	3	1114	WDG-1	GE	NO. 2	1/C
2"	5	3	1046	WDE-1	OKONITE	NO. 6	1/C
2"	5	3	1108	WDF	ROME	NO. 4	1/C

ATTACHMENT D

FIELD INSTRUCTIONS FOR SAMPLE

Instructions for Securing Field Cable Samples for Cable Sidewall Pressure Project

1. Secure samples that are a minimum of 2000 feet in length from spools, reels, or coils of wire.

2. Tags on each sample must bear the following information: cable mark number, cable manufacturer, contract number, and reel number.

3. Samples with data that are not legible (type written or printing) and incomplete data such as samples without a complete contract number, manufacturer name, and mark number are not to be shipped.

4. All sample data must be verified and responsible person sign that this information is correct.

5. Bill of Shipment form attached must accompany all shipments.

6. Copy of Bill of Shipment to be sent to K. D. Wallace at W8 C146 C-K same day samples shipped.

7. Copy of Bill of Shipment to accompany each shipment of cable samples to Central Laboratories.

8. Cable samples to be shipped to:

   Power Stores
   North Bank Chickamauga

ATTACHMENT E

Bill of Shipment

Ship to:

Ship From:

Prepared by: _____ Date _____

Verified by: _____ Date _____

Item No.	Reel No.	MK	Contract No.	MFR

Person to contact regarding discrepancies of cable shipments, data, etc.

Name: Telephone No.:

Direct questions and copy of Bill of Shipment to:

Attention: Division of Nuclear Engineering
K. D. Wallace, W8 C146 C-K, Extension 3635

036091.02

ATTACHMENT F

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin _____ 1-Conductor _____
Irradiated _____ Multi-Conductor _____

Sample No. . . . . = _____
Plant. . . . . = _____
Manufacturer . . . . . = _____
Contract No. . . . . = _____
Mark No. . . . . = _____
Description. . . . . = _____
Insulation . . . . . = _____
Filler Material. . . . = _____

Standards Used = _____
_____
_____

Conduit Size in Test. . . . = _____
No. Cables in Pull. . . . . = _____
Wt/Ft (lb). . . . . = _____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = _____Max _____Min
Overall Virgin Dielectric Breakdown Average _____
Dielectric Test Length = _____Ft.
Tension (T) = _____ lbs (Max.)
Radius (R) = _____ ft
T/R = _____ lbs/ft
Correction Factor (X) = _____
SWBP = X(T/R) = _____

Tested By/Date _____ _____ _____
Tension Micrometer Dielectric
Verified By/Date _____ QA Approval/Date _____
Test Observers _____ _____ _____
Visual Cable Report: _____
Anomalies: _____
_____
_____

ATTACHMENT G

STORAGE REQUIREMENTS FOR ELECTRICAL CABLE ON REELS

1. Cables shall be stored indoors on a clean, level area relatively free of traffic. Cables shall be stored in an orderly manner so that the cable mark numbers are readily readable.

2. Reels with electrical cable shall be stored with their flanges in a vertical posture, checked and blocked securely.

3. Both ends of the cable on a reel shall be readily available for inspection.

4. End seals shall withstand normal storage and handling without decay, loosening, cracking or the ability to prevent entry of moisture. A waterproof tape applied in two layers over the end and extending approximately 3 inches back from the end shall form the end seal.

ATTACHMENT H

PROCEDURE FOR STRIPPING OUTER JACKETS FROM MULTICONDUCTOR CABLE

End Preparation

With a sharp knife blade cut through the jacket material in a circumferential manner approximately 6 inches from the end. Take care not to knick the conductor insulation or inner jacket material. Remove the 6-inch jacket tube from cable core.

If jacket adheres to cable core make two longitudinal slits approximately 1/2 inch apart taking care not to knick the insulation or inner jacket material. With a pair of common pliers seize the jacket between the slits and while applying tension peel back the jacket by completing the depths of the slits. Repeat as necessary. (FIG 1 & 2)

Striping of Outer Jacket

Secure the prepared end to a structure so that it will be convenient to slit the remaining outer jacket without damaging insulation (or inner jackets) and to apply tension to this slit and the outer jacket while removing the jacket from the core. (FIG. 3 & 4)

If the jacket adheres use the double slit technique with pliers as explained in removal end piece of jacket.

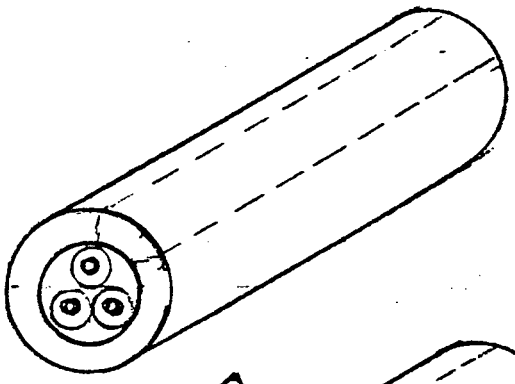


FIG. 1.

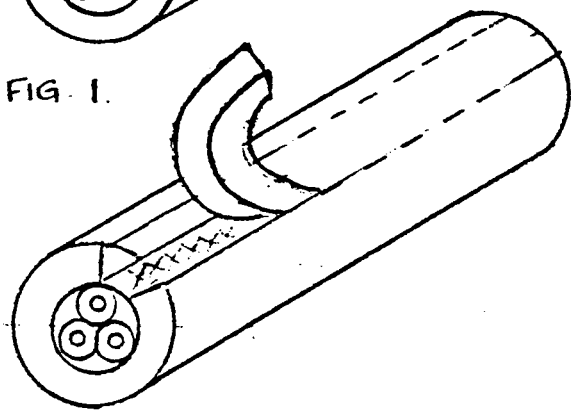


FIG. 2.

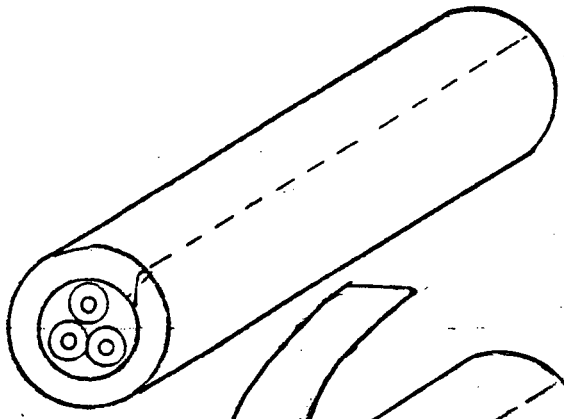


FIG. 3.

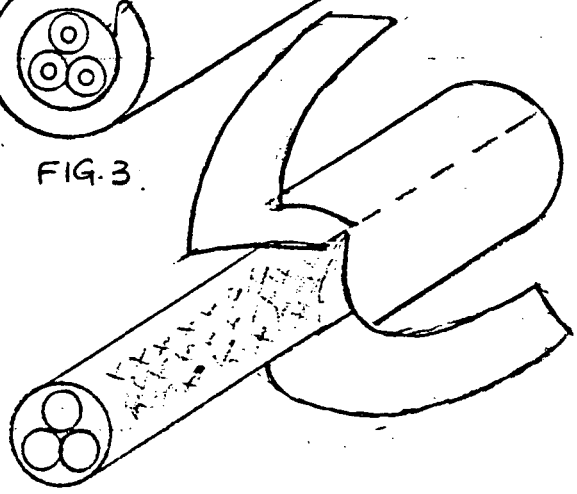


FIG. 4

TENNESSEE VALLEY AUTHORITY
OFFICE OF POWER

MAINTENANCE COORDINATION STAFF
QUALITY PROGRAM

Procedure No: CL-TESPC

Applies To: Central Laboratories Services Branch

Title: Test Requirements for Cable Sidewall Bearing Pressure Project

Revision 0		Rev. 1					
Date:	4/23/86	05/07/86					
Prepared	J. B. Ragsdale	JBR					
Title	QA/QC Supervisor						
Concurred	J. W. Hartley	JWH					
Title	Staff Engineer						
Concurred	S. G. Ramanathan	SGR					
Title	Electrical Engr						
Concurred	F. B. Rosenzweig	FBR					
Title	Senior Elec. Engr Div of Engineering						
Concurred							
Title							
Concurred							
Title							
Concurred							
Title							
Concurred							
Title							
Approved	H. A. Taff for	for HAT					
Title	Chief, CLSB						

TVA Tennessee Valley Authority

MAINTENANCE COORDINATION STAFF

QUALITY PROGRAM REVISION LOG

REVISION DATE	PAGES AFFECTED	DESCRIPTION OF CHANGE
Revision 0 04/23/86	All	Initial Issue
Revision 1 05/07/86	1	1.0 Scope--Editorial changes made to the first paragraph. Deleted reference to Attachment C and clarified that tensions will be adjusted to achieve the desired sidewall bearing pressure for each cable sample.
	2	4.1, 4.4, 5.2--Revised or deleted reference to specific attachments to the procedure, since some of the attachments have been revised, combined for clarification purposes, or deleted.
	3	5.5--Deleted requirements for measuring both ends of the conductors for virgin cables. 5.7.5--Changed Attachment B to read Attachment A. 5.9--Increased the number of tensioned cables to undergo AC dielectric breakdown testing from three to five.
	4	5.12--Increased the number of cables to undergo tension from three to five. 5.20--Added reference to Attachment G. 6.0--Revised to clarify acceptance criteria. Originally, the average dielectric breakdown voltage of the virgin cables was compared to the dielectric breakdown voltage of each tensioned conductor. In order to be in compliance with the ASTM D149, this was changed to make the comparison of the virgin cable average with the tensioned cable average.
	5	8.0--Editorial changes 11.0--Schedule was deleted from the procedure.

TVA Tennessee Valley Authority

MAINTENANCE COORDINATION STAFF

QUALITY PROGRAM REVISION LOG

REVISION DATE	PAGES AFFECTED	DESCRIPTION OF CHANGE
Revision 1 05/07/86 (cont'd)	Attachment A	Previously was Attachment B. This figure was redrawn to accurately depict the test setup.
	Attachment B	Previously Attachment G.
	Attachment C	Attachments A and C (Rev. 0) were combined for clarification purposes.
	Attachment F	Data form revised to delete redundant information and simplify its use.
	Attachment G	Deleted--Replaced with data summary sheet.
	Attachment H	Deleted.

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES BRANCH
QUALITY ASSURANCE TESTING INSTRUCTION
CL-TESPC

Revision 1 - May 7, 1986

TEST REQUIREMENTS FOR CABLE SIDEWALL BEARING PRESSURE PROJECT

1.0 SCOPE

Test selected cable samples to determine the effects of sidewall bearing pressure (SWBP). The cable samples will be shipped to Central Laboratories at Chickamauga Dam in Chattanooga from various TVA nuclear plants and warehouses. R1

Three-foot samples of cable for each cable mark number are to be weighed and weight per foot calculated. Virgin and tensioned cable outside jacket, insulated conductor, and copper diameter are to be measured and values recorded on the test form. Five virgin cable samples each 25 feet in length of which 15 feet are to undergo an AC dielectric breakdown test. Five test pulls of these cable samples, approximately 100 feet in length, are to be pulled under tension through a galvanized rigid steel conduit setup one at a time. Tensions will be adjusted to produce the desired SWBP of the test sample. Fifteen feet of the twenty-five foot sample cut from the tensioned cable will then be subjected to an AC dielectric breakdown test and the results recorded and compared to the virgin cable test results. R1

2.0 APPARATUS/INSTRUMENTATION

2.1 Load measuring device.

2.2 AC dielectric test set described in ASTM D149.

2.3 Electronic balance, accurate to 0.5g.

2.4 Micrometer, readable to 0.001 inch.

2.5 Steel scale or tape, whose least division is not greater than 1/16 inch.

2.6 Precision cutting blade for detail cable cutting.

2.7 Steel pulling rope.

2.8 Air tugger or equivalent device for smooth cable pulling.

2.9 Basket grips--size as needed.

2.10 Pulling lubricant--Polywater J or equivalent.

2.11 Conduit setup.

2.12 Cable samples

3.0 CALIBRATION

3.1 All equipment shall be calibrated by Central Laboratory Services Branch (CLSB) and traceable to NBS in accordance with the Quality Assurance requirements in Part IV, Section 4 of the Nuclear Quality Assurance Manual. Technical requirements, i.e., accuracies, ranges calibrated, and calibration interval, shall be in accordance with those listed in the Measurement and Test Equipment Specification Manual.

3.2 The accuracy and integrity of the load measuring instrument, dynanometer or load cell, shall be determined periodically during the test. The method shall be a comparison with a second load measuring instrument of the same or better accuracy. Comparisons shall be made at or near the test load value.

4.0 TEST SETUP

4.1 Sketch of test setup, Attachment A. R1

4.2 Conduit in horizontal position on ground.

4.3 Anchor conduit securely.

4.4 Rigid steel conduit setups to include: 3/4", 1", 2", and 4" conduit sizes. R1

4.5 Cable samples for cable pulling should be approximately 100 feet in length.

4.6 Load measuring device secured between steel pull rope and the cable grip.

4.7 Document in final test report actual test setups and all devices used.

5.0 PROCEDURE

5.1 Attachment D provides instructions for shipping cables from sites. Receive cable samples, keep Bill of Shipment (Attachment E) forms and other records as necessary, document cables shipped.

5.2 Store cable inside and in accordance with Attachment B. R1

5.3 Record sample weight for each mark number as described in Section 1.0.

5.4 Outside jacket diameter--with micrometer measure to the nearest 0.001 inch the major and minor diameters of the cable at points one (1) foot from one end and near the midpoint. Record the maximum and minimum diameter measurements to the nearest 0.001 inch.

5.0 PROCEDURE (Continued)

5.5 Outside diameter of individual conductor insulation--strip the outside jacket from around the individual insulated conductors of the cable by splitting with a sharp blade, being careful not to cut the insulation on the individual conductors. Separate the individual insulated conductors and measure the outside insulation diameter of those conductors to be tested for the AC dielectric breakdown. At each location, rotate the micrometer 90 degrees and take a second measurement. Record the two separate diameter measurements for each conductor to the nearest 0.001 inch. Make measurements of the bare copper conductor approximately 1 inch from one end of the conductor for virgin cable and each end for tensioned cable and record the measurements of each conductor to the nearest .001 inch. R1

5.6 Prepare conduits and associated equipment.

5.7 Cable preparation.

5.7.1 Attach cables using pulling grip.

5.7.2 Do not attach individual conductors to grip except for single conductor cables.

5.7.3 A pulling swivel between grip and steel pulling rope must be used.

5.7.4 Rope and cable must be lubricated liberally and continuously during the pull.

5.7.5 Load measuring device attached inline--see test setup Attachment A. R1

5.8 Load shall be adjusted to achieve various tensions. Test tensions may be reduced at test engineers direction.

5.9 An AC dielectric breakdown test on a quantity of five virgin and five tensioned samples shall be performed for each mark number. For multiconductor cables all conductors per cable are to be tested with the AC dielectric breakdown test. AC dielectric breakdown test to be in accordance with ASTM D149. Rate of voltage rise to be 500V per second in water. R1

5.10 Multiconductor cable--outer jacket is to be stripped off carefully. Carefully inspect conductor insulation for damage after the jacket is removed. Note any anamolies on Attachment F.

5.11 Dielectric test set to be used shall be documented and the same test set shall be used for virgin and tension cable of the same test sample.

5.0 PROCEDURE (Continued)

5.12 For each cable type, five successful cable pulls for recording tension are to be performed. One pull only for one cable sample. The tensioned cable to be dielectrically tested, approximately fifteen (15) feet, should be pulled through the entire conduit setup. R1

5.13 Determine conduit inner radius for the last elbow in each conduit setup. The method for this determination shall be documented by the CLSB.

5.14 Tested samples are to be kept for at least 90 days after the completion of all testing for possible inspection by third parties, reference, etc.

5.15 Each tensioned cable is to undergo an AC dielectric breakdown test as described in ASTM D149 and Section 5.9 listed above.For the multiconductor cables the individual conductors are to be tested.

5.16 Any deviations from test procedures are to be documented in the final report.

5.17 The conduit size for the cable samples to be pulled shall be those listed on Attachment C.

5.18 Provide photographs of test setups and major test equipments.

5.19 On the five cable pull, the sidewall bearing pressure for the worst case cable shall be determined by multiplying the T/R by the correction factor obtained from TVA General Construction Specification No. G-38, Rev. 8 (p3-16), for installing insulated cables up to 15,000 volts.

5.20 Data is to be recorded on form similar to Attachment F and summarized on Attachment G. R1

6.0 ACCEPTANCE CRITERIA

The average dielectric breakdown voltage of each conductor for the virgin cable samples tested are to be averaged for each cable Mark No. If the averaged tensioned conductor dielectric breakdown voltage is within 20 percent of the virgin average then that conductor has passed the test. ASTM D149 makes reference to a range of acceptance from 1 percent to 20 percent. R1

7.0 REFERENCES

7.1 ASTM D149, "Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies."

7.0 REFERENCES (Continued)

7.2 The Okonite Company Book, "Installation Practices for Cable Raceway Systems."

7.3 National Electric Code, ANSI/NFPA70.

7.4 TVA General Construction Specification No. G-38.

7.5 Maintenance Coordination Staff Quality Program - Central Laboratories Services Branch.

8.0 REPORT

Final Report shall include: R1

8.1 Procedures

8.2 Anomalies

8.3 Data

8.4 Summary/Conclusions

9.0 QUALITY ASSURANCE

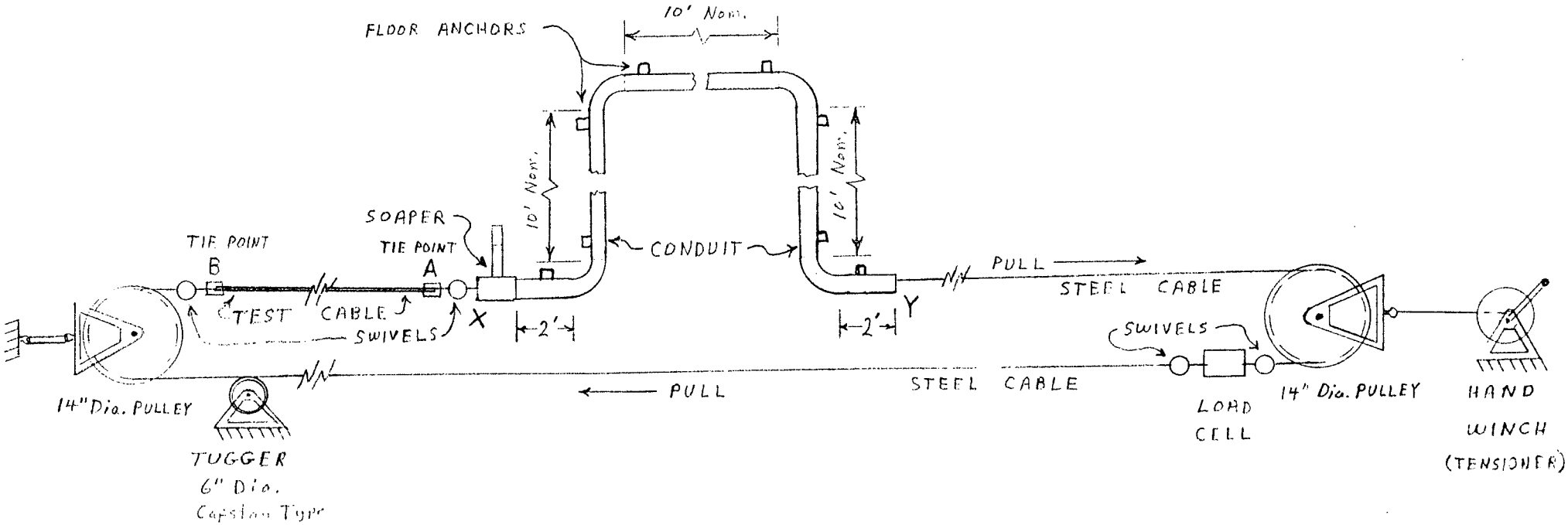
The test shall be conducted in accordance with a TVA approved quality assurance program manual that meets the applicable requirements of ANSI N45.2 and Part IV, Section 4, of the Nuclear Quality Assurance Manual (NQAM).

10.0 SAFETY

10.1 Clear all unnecessary persons from test area when pulling cable.

10.2 Adherance to general safety precautions to be observed with high voltage testing.

R1



NOTES:

1. The conduit setup includes 3/4", 1", 2", and 4" conduit sizes.
2. The setup is shown in the START position, before pulling.
3. Tie point "A" is positioned at point "Y" (rather than point "X") for some pulls so that the connection does not have to pass through the conduit.
4. The length of test cable varies with the cable type. The distance pulled also varies, providing sometimes one and sometimes two samples per pull. All samples are 15 feet long with five additional feet on each end to serve as a test lead. The test cable is always long enough so that all portions of each 15-foot sample are pulled, under tension, through all four conduit bends.
5. For some tests, the load cell is placed at point "Y" to start the pull. The difference in tension, between point "Y" and the location shown, has been measured to be less than three pounds.
6. Cable tension is manually maintained at the proper value with the hand winch.

Attachment A
Rev. 1

ATTACHMENT B

Revision 1

STORAGE REQUIREMENTS FOR ELECTRICAL CABLE ON REELS

1. Cables shall be stored indoors on a clean, level area relatively free of traffic. Cables shall be stored in an orderly manner so that the cable mark numbers are readily readable.

2. Reels with electrical cable shall be stored with their flanges in a vertical posture, checked and blocked securely.

3. Both ends of the cable on a reel shall be readily available for inspection.

4. End seals shall withstand normal storage and handling without decay, loosening, cracking or the ability to prevent entry of moisture. A waterproof tape applied in two layers over the end and extending approximately 3 inches back from the end shall form the end seal.

ATTACHMENT C

Revision 1

SAMPLE LIST

CABLE SIDEWALL PRESSURE PROJECT

CLSB Control No.	Sample	Plant	Manufacturer	Contract	Mark No.	Description	Conduit Size	No. Cables Pulled at Once
14	1003	B	ESSEX	827249	WCA-1	NO. 14 1/C 600V PXJ BLACK	3/4"	5
17	150	W	A.I.W	827749	WDE-1	NO. 6 1/C 600V PXJ	2"	5
16	632	H	ANACONDA	829245-1	WDE-2	NO. 6 1/C 600V PXJ LOCA	2"	5
18	740	B	P.W.C.	86150-2	WDG	NO. 2 1/C 600V CPJ	2"	5
19	58	W	A.I.W.	822173-2	WDG-1	NO. 2 1/C 600V PXJ	2"	5
20	1114	S	GE	824443-2	WDG-1	NO. 2 1/C 600V PXJ	2"	5
5	45	W	A.I.W.	825342-2	WHG-1	NO. 14 7/C 600V PXMJ	1"	1
4	685	H	OKONITE	827928	WHG-1	NO. 14 7/C 600V PXMJ	1"	1
2	593	H	ANACONDA	825722-2	WHG-2	NO. 14 7/C 600V PXMJ LOCA	1"	1
3	228	W	CYPRUS W&C	86150-1	WHH	NO. 14 9/C 600V PJJ	1"	1
15	577	H	CAROLINA	829074	WJG-1	NO. 14 AWG 1/C 600V 150 DEG	3/4"	5
1	335	W	P.W.C.	85069-2	WLG	NO. 12 7/C 600V CPJJ	1	1
6	794	B	EATON	825772	WVB	NO. 16 3/C TW 300V XLPE CSPE	1"	1
7	259	W	ANACONDA	827380	WVB	NO. 16 3/C TW 300V XLPE CSPE	1"	1
8	1168	S	I.T.T.	84211	WVD	NO. 16 5/C SHIELD LOCA	1"	1
9	323	W	OKONITE	74910	WVG	NO. 16 12/C SHIELD LOCA	1"	1
10	40	W	TIMES	85947	WVK	NO. 16 2/C LOCA	1"	1
11	131	W	TELEDYNE	835489	WWN-4	NO. 16 3 SHDPR 600V 1/C	1"	1
21	1046	F	OKONITE	825342-1	WDE-1	NO. 6 1/C 600V PXJ	2"	5
12	1067	F	BRAND-REX	828072	WVG	NO. 16 12/C SHIELD LOCA	1"	1
13	1173	S	ROCKBESTOS	826961	WVA	NO. 16 2/C TW SH XLPE	1"	1
22	1108	S	ROME	54762-1	WDF	NO. 4 1/C 600V CPJ	2"	5
25	440	H	ROME	54762	WCA	NO. 14 1/C 600V PN BLACK	3/4"	5
23	502	H	ANACONDA	825997	WRG	NO. 12 7/C 600V SROJJ LOCA	1"	1
24	26	W	ANACONDA	825997	WPA	NO. 14 1/C 600V SROAJ LOCA	1"	5
26	5	W	ANACONDA	85861	WPF	NO. 6 1/C 600V SROAJ LOCA	2"	5
27	103	W	TRIANGLE	85069-2	WNB	NO. 2/0 1/C 8KV CPSJ	4"	3
28	197	W	ANACONDA	825471	WNB-1	NO. 2/0 1/C 8KV EPSJ	4"	3

NOTE: (1) Each sample to have five (5) pulls.
(2) Class of all samples is 1E.

ATTACHMENT D

FIELD INSTRUCTIONS FOR SAMPLE

Instructions for Securing Field Cable Samples for Cable Sidewall Pressure Project

1. Secure samples that are a minimum of 2000 feet in length from spools, reels, or coils of wire.

2. Tags on each sample must bear the following information: cable mark number, cable manufacturer, contract number, and reel number.

3. Samples with data that are not legible (type written or printing) and incomplete data such as samples without a complete contract number, manufacturer name, and mark number are not to be shipped.

4. All sample data must be verified and responsible person sign that this information is correct.

5. Bill of Shipment form attached must accompany all shipments.

6. Copy of Bill of Shipment to be sent to K. D. Wallace at W8 C146 C-K same day samples shipped.

7. Copy of Bill of Shipment to accompany each shipment of cable samples to Central Laboratories.

8. Cable samples to be shipped to:

   Power Stores
   North Bank Chickamauga

ATTACHMENT E

Bill of Shipment

Ship to:

Ship From:

Prepared by: _____ Date _____

Verified by: _____ Date _____

Item No.	Reel No.	MK	Contract No.	MFR

Person to contact regarding discrepancies of cable shipments, data, etc.

Name: Telephone No.:

Direct questions and copy of Bill of Shipment to:

Attention: Division of Nuclear Engineering
K. D. Wallace, W8 C146 C-K, Extension 3635

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ATTACHMENT F
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA

SB Control No. _____
mple No. . . . . = _____
Description _____

Standards Used: _____

Conduit Size in Test. . . . = _____
No. Cables in Pull. . . . . = _____

Virgin _____
Tensioned _____

1-Conductor _____
Multi-Conductor _____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = _____Max _____Min

SWBP Data

Tension (T) = _____ lbs (Max.)
Radius (R) = _____ ft
T/R = _____ lbs/ft
Correction Factor (X) = _____
SWBP = X(T/R) = _____ lbs/ft

Anomalies: _____

Tested By/Date _____ Tension _____ Micrometer _____ Dielectric _____ Resistance

Verified By/Date _____ QA Approval/Date _____
Test Observers _____

0148E-4

ATTACHMENT G
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. _____, Sample No. _____

Description: _____
Insulation Type: _____

Max SWBP _____

No. Cables in a Pull. . . . . : _____
No. Pulls . . . . . : _____
No. Conductors in Cable . . : _____
No. Ind Conductors Tensioned: _____

No. Virgin Cables. . . . . : _____
No. Virgin Ind Conductors: _____

Virgin Dielectric Breakdown Avg . : _____
Tensioned Dielectric Breakdown Avg: _____
Percent Difference in Averages. . : _____

Coefficient of Variation: _____
Coefficient of Variation: _____

Anomalies: _____
_____
_____
_____

Prepared By: _____ Date: _____

Verified By: _____ Date: _____

0148E-3

TENNESSEE VALLEY AUTHORITY
OFFICE OF POWER

MAINTENANCE COORDINATION STAFF
QUALITY PROGRAM

Procedure No: CL-TESPC

Applies To: Central Laboratories Services Branch

Title: Test Requirements for Cable Sidewall Bearing Pressure Project

Revision 0		Rev. 1	Rev. 2				
Date:	4/23/86	05/07/86	05/20/86				
Prepared	J. B. Ragsdale	JBR	JBR				
Title	QA/QC Supervisor						
Concurred	J. W. Hartley	JWH	JWH				
Title	Staff Engineer						
Concurred	S. G. Ramanathan	SR	SR				
Title	Electrical Engr						
Concurred	F. B. Rosenzweig	FBR	FBR				
Title	Senior Elec. Engr Div of Engineering						
Concurred							
Title							
Concurred							
Title							
Concurred							
Title							
Concurred							
Title							
Approved	H. A. Taff	for HAT	HATaff				
Title	Chief, CLSB						

MAINTENANCE COORDINATION STAFF

QUALITY PROGRAM REVISION LOG

REVISION DATE	PAGES AFFECTED	DESCRIPTION OF CHANGE
Revision 0 04/23/86	All	Initial Issue
Revision 1 05/07/86	1	1.0 Scope--Editorial changes made to the first paragraph. Deleted reference to Attachment C and clarified that tensions will be adjusted to achieve the desired sidewall bearing pressure for each cable sample.
	2	4.1, 4.4, 5.2--Revised or deleted reference to specific attachments to the procedure, since some of the attachments have been revised, combined for clarification purposes, or deleted.
	3	5.5--Deleted requirements for measuring both ends of the conductors for virgin cables. 5.7.5--Changed Attachment B to read Attachment A. 5.9--Increased the number of tensioned cables to undergo AC dielectric breakdown testing from three to five.
	4	5.12--Increased the number of cables to undergo tension from three to five. 5.20--Added reference to Attachment G. 6.0--Revised to clarify acceptance criteria. Originally, the average dielectric breakdown voltage of the virgin cables was compared to the dielectric breakdown voltage of each tensioned conductor. In order to be in compliance with the ASTM D149, this was changed to make the comparison of the virgin cable average with the tensioned cable average.
	5	8.0--Editorial changes 11.0--Schedule was deleted from the procedure.

TVA Tennessee Valley Authority

MAINTENANCE COORDINATION STAFF

QUALITY PROGRAM REVISION LOG

REVISION DATE	PAGES AFFECTED	DESCRIPTION OF CHANGE
Revision 1 05/07/86 (cont'd)	Attachment A	Previously was Attachment B. This figure was redrawn to accurately depict the test setup.
	Attachment B	Previously Attachment G.
	Attachment C	Attachments A and C (Rev. 0) were combined for clarification purposes.
	Attachment F	Data form revised to delete redundant information and simplify its use.
	Attachment G	Deleted--Replaced with data summary sheet.
	Attachment H	Deleted.
Revision 2 05/20/86	1	1.0 SCOPE--Added a third paragraph to describe the testing of coaxial cables.
	2	2.13--Added.
		2.14--Added.
		2.15--Added
		4.1--Added Attachments A1 and A2.
	3	5.7.5--Added Attachments A1 and A2.
	4	5.15--Added additional test requirements for coaxial cable.
	5	6.2--Added acceptance criteria for coaxial cables.
	Attachment A	Note 1--Deleted 4-inch conduit size.
	Attachment A1	Added.
	Attachment A2	Added.
	Attachment C	Corrected Mark No. of CLSB Control No. 20 to WDG. Added information for CLSB Control No. 29 and 30.

TENNESSEE VALLEY AUTHORITY
CENTRAL LABORATORIES SERVICES BRANCH
QUALITY ASSURANCE TESTING INSTRUCTION
CL-TESPC

Revision 2 - May 20, 1986

TEST REQUIREMENTS FOR CABLE SIDEWALL BEARING PRESSURE PROJECT

1.0 SCOPE

Test selected cable samples to determine the effects of sidewall bearing pressure (SWBP). The cable samples will be shipped to Central Laboratories at Chickamauga Dam in Chattanooga from various TVA nuclear plants and warehouses.

Three-foot samples of cable for each cable mark number are to be weighed and weight per foot calculated. Virgin and tensioned cable outside jacket, insulated conductor, and copper diameter are to be measured and values recorded on the test form. Five virgin cable samples each 25 feet in length of which 15 feet are to undergo an AC dielectric breakdown test. Five test pulls of these cable samples, approximately 100 feet in length, are to be pulled under tension through a galvanized rigid steel conduit setup one at a time. Tensions will be adjusted to produce the desired SWBP of the test sample. Fifteen feet of the twenty-five foot sample cut from the tensioned cable will then be subjected to an AC dielectric breakdown test and the results recorded and compared to the virgin cable test results.

Coax cables will undergo the same testing described above, except that sample lengths to be tested shall be approximately 100 feet in length. In addition, coax cables will also be subjected to capacitance, insulation resistance, and characteristic impedance testing. R2

2.0 APPARATUS/INSTRUMENTATION

2.1 Load measuring device.

2.2 AC dielectric test set described in ASTM D149.

2.3 Electronic balance, accurate to 0.5g.

2.4 Micrometer, readable to 0.001 inch.

2.5 Steel scale or tape, whose least division is not greater than 1/16 inch.

2.6 Precision cutting blade for detail cable cutting.

2.7 Steel pulling rope.

2.8 Air tugger or equivalent device for smooth cable pulling.

2.9 Basket grips--size as needed.

2.0 APPARATUS/INSTRUMENTATION (Continued)

2.10 Pulling lubricant--Polywater J or equivalent.

2.11 Conduit setup.

2.12 Cable samples

2.13 Capacitance bridge

2.14 Time Domain Reflectometer R2

2.15 Megger Test Set

3.0 CALIBRATION

3.1 All equipment shall be calibrated by Central Laboratories Services Branch (CLSB) and traceable to NBS in accordance with the Quality Assurance requirements in Part IV, Section 4 of the Nuclear Quality Assurance Manual. Technical requirements, i.e., accuracies, ranges calibrated, and calibration interval, shall be in accordance with those listed in the Measurement and Test Equipment Specification Manual.

3.2 The accuracy and integrity of the load measuring instrument, dynanometer or load cell, shall be determined periodically during the test. The method shall be a comparison with a second load measuring instrument of the same or better accuracy. Comparisons shall be made at or near the test load value.

4.0 TEST SETUP

4.1 Sketch of test setup, Attachments A, A1, and A2 R2

4.2 Conduit in horizontal position on ground.

4.3 Anchor conduit securely.

4.4 Rigid steel conduit setups to include: 3/4", 1", 2", and 4" conduit sizes.

4.5 Cable samples for cable pulling should be approximately 100 feet in length.

4.6 Load measuring device secured between steel pull rope and the cable grip.

4.7 Document in final test report actual test setups and all devices used.

5.0 PROCEDURE

5.1 Attachment D provides instructions for shipping cables from sites. Receive cable samples, keep Bill of Shipment (Attachment E) forms and other records as necessary, document cables shipped.

5.2 Store cable inside and in accordance with Attachment B.

5.3 Record sample weight for each mark number as described in Section 1.0.

5.4 Outside jacket diameter--with micrometer measure to the nearest 0.001 inch the major and minor diameters of the cable at points one (1) foot from one end and near the midpoint. Record the maximum and minimum diameter measurements to the nearest 0.001 inch.

5.5 Outside diameter of individual conductor insulation--strip the outside jacket from around the individual insulated conductors of the cable by splitting with a sharp blade, being careful not to cut the insulation on the individual conductors. Separate the individual insulated conductors and measure the outside insulation diameter of those conductors to be tested for the AC dielectric breakdown. At each location, rotate the micrometer 90 degrees and take a second measurement. Record the two separate diameter measurements for each conductor to the nearest 0.001 inch. Make measurements of the bare copper conductor approximately 1 inch from one end of the conductor for virgin cable and each end for tensioned cable and record the measurements of each conductor to the nearest .001 inch.

5.6 Prepare conduits and associated equipment.

5.7 Cable preparation.

5.7.1 Attach cables using pulling grip.

5.7.2 Do not attach individual conductors to grip except for single conductor cables.

5.7.3 A pulling swivel between grip and steel pulling rope must be used.

5.7.4 Rope and cable must be lubricated liberally and continuously during the pull.

5.7.5 Load measuring device attached inline--see test setup Attachments A, A1, or A2. R2

5.8 Load shall be adjusted to achieve various tensions. Test tensions may be reduced at test engineers direction.

5.9 An AC dielectric breakdown test on a quantity of five virgin and five tensioned samples shall be performed for each mark number. For multiconductor cables all conductors per cable are to be tested with the AC dielectric breakdown test. AC dielectric breakdown test to be in accordance with ASTM D149. Rate of voltage rise to be 500V per second in water.

5.10 Multiconductor cable--outer jacket is to be stripped off carefully. Carefully inspect conductor insulation for damage after the jacket is removed. Note any anamolies on Attachment F.

5.11 Dielectric test set to be used shall be documented and the same test set shall be used for virgin and tension cable of the same test sample.

5.12 For each cable type, five successful cable pulls for recording tension are to be performed. One pull only for one cable sample. The tensioned cable to be dielectrically tested, approximately fifteen (15) feet or in the case of coax cable approximately 100 feet, should be pulled through the entire conduit setup. R2

5.13 Determine conduit inner radius for the last elbow in each conduit setup. The method for this determination shall be documented by the CLSB.

5.14 Tested samples are to be kept for at least 90 days after the completion of all testing for possible inspection by third parties, reference, etc.

5.15 Each tensioned cable is to undergo an AC dielectric breakdown test as described in ASTM D149 and Section 5.9 listed above.For the multiconductor cables the individual conductors are to be tested. In addition to these tests, all tensioned coax cables will undergo capacitance, insulation resistance, and characteristic impedance testing. R2

5.16 Any deviations from test procedures are to be documented in the final report.

5.17 The conduit size for the cable samples to be pulled shall be those listed on Attachment C.

5.18 Provide photographs of test setups and major test equipments.

5.19 On the five cable pull, the sidewall bearing pressure for the worst case cable shall be determined by multiplying the T/R by the correction factor obtained from TVA General Construction Specification No. G-38, Rev. 8 (p3-16), for installing insulated cables up to 15,000 volts.

5.20 Data is to be recorded on form similar to Attachment F and summarized on Attachment G.

6.0 ACCEPTANCE CRITERIA

6.1 The average dielectric breakdown voltage of each conductor for the virgin cable samples tested are to be averaged for each cable Mark No. If the averaged tensioned conductor dielectric breakdown voltage is within 20 percent of the virgin average then that conductor has passed the test. ASTM D149 makes reference to a range of acceptance from 1 percent to 20 percent.

6.2 All additional tests performed on coax cables shall also be within 20% of the virgin cable average versus the tensioned cable average for each particular test; i.e., insulation resistance, capacitance, and characteristic impedance. R2

7.0 REFERENCES

7.1 ASTM D149, "Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies."

7.2 The Okonite Company Book, "Installation Practices for Cable Raceway Systems."

7.3 National Electric Code, ANSI/NFPA70.

7.4 TVA General Construction Specification No. G-38.

7.5 Maintenance Coordination Staff Quality Program - Central Laboratories Services Branch.

8.0 REPORT

Final Report shall include:

8.1 Procedures

8.2 Anomalies

8.3 Data

8.4 Summary/Conclusions

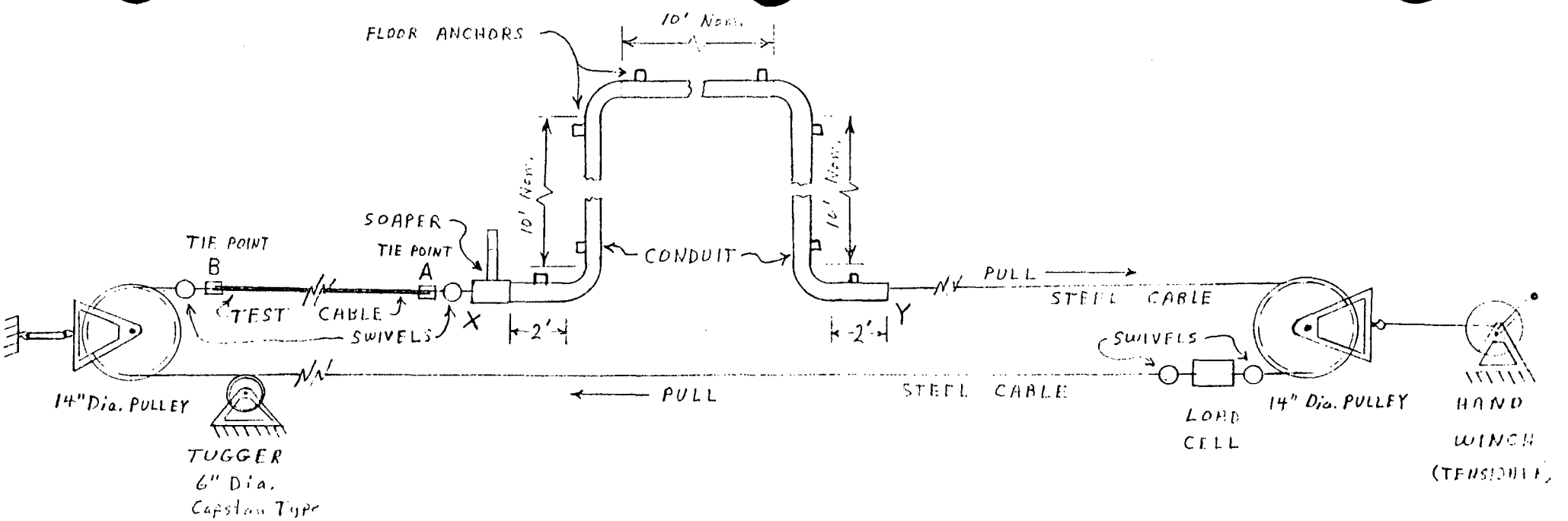
9.0 QUALITY ASSURANCE

The test shall be conducted in accordance with a TVA approved quality assurance program manual that meets the applicable requirements of ANSI N45.2 and Part IV, Section 4, of the Nuclear Quality Assurance Manual (NQAM).

10.0 SAFETY

10.1 Clear all unnecessary persons from test area when pulling cable.

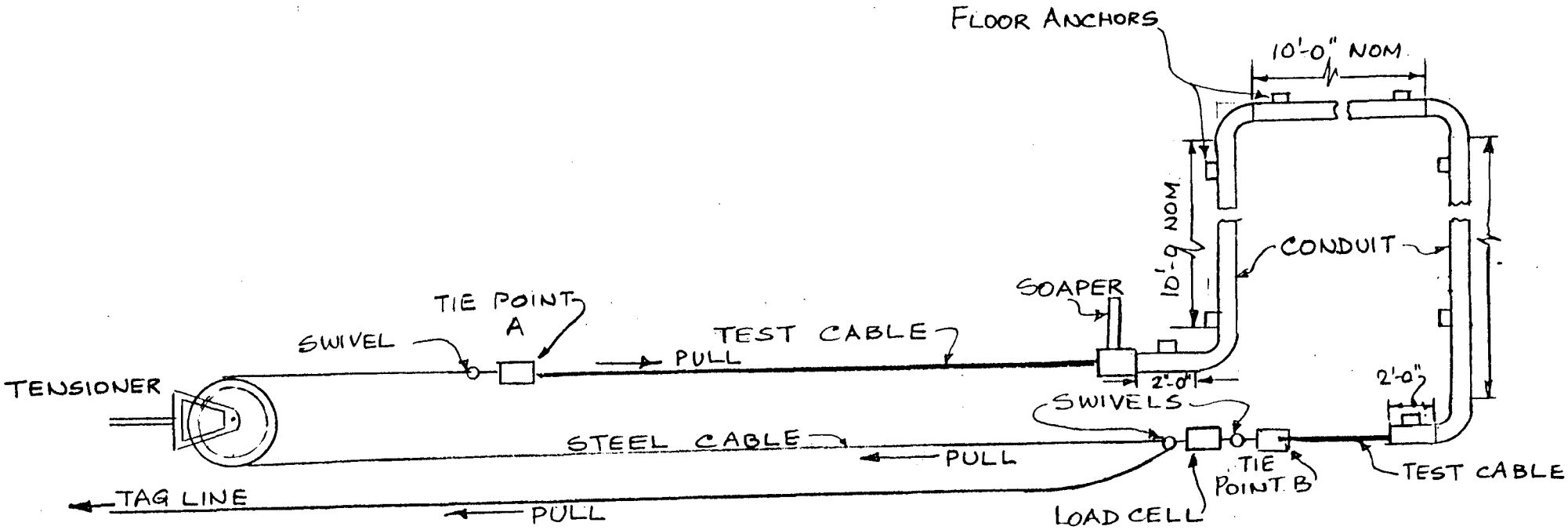
10.2 Adherance to general safety precautions to be observed with high voltage testing.



NOTES:

1. The conduit setup includes 3/4", 1", and 2" conduit sizes.
2. The setup is shown in the START position, before pulling.
3. Tie point "A" is positioned at point "Y" (rather than point "X") for some pulls so that the connection does not have to pass through the conduit.
4. The length of test cable varies with the cable type. The distance pulled also varies, providing sometimes one and sometimes two samples per pull. All samples are 15 feet long with five additional feet on each end to serve as a test lead. The test cable is always long enough so that all portions of each 15-foot sample are pulled, under tension, through all four conduit bends.
5. For some tests, the load cell is placed at point "Y" to start the pull. The difference in tension, between point "Y" and the location shown, has been measured to be less than three pounds.
6. Cable tension is manually maintained at the proper value with the hand winch.

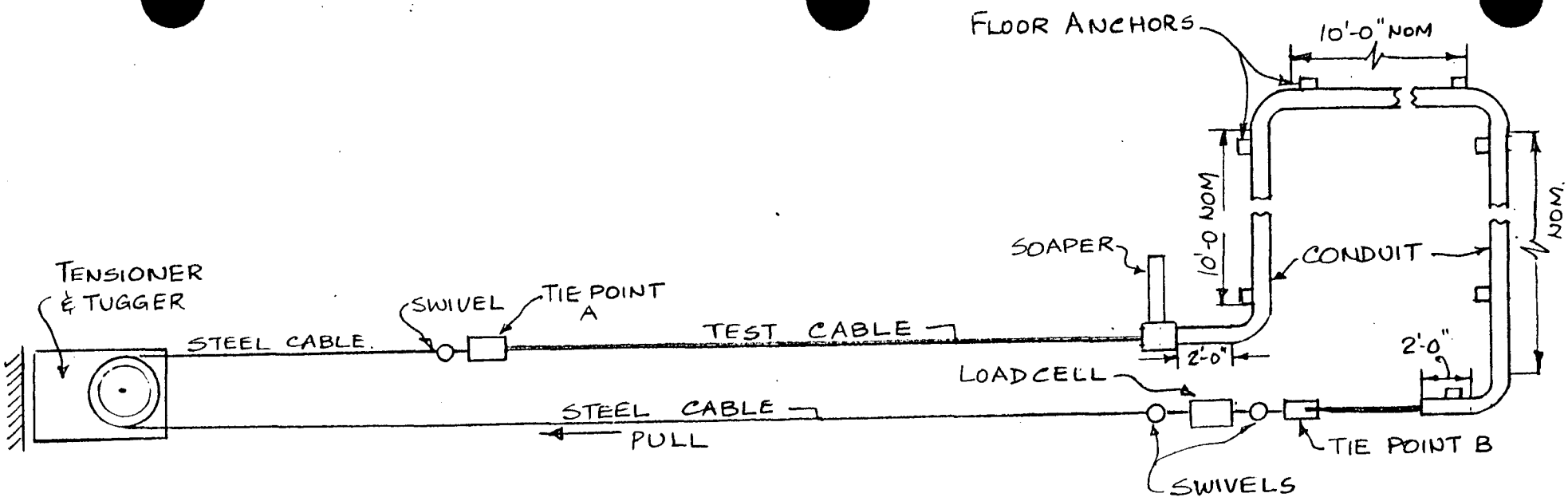
Attachment A
Rev. 2



NOTES:

1. This conduit setup is for 4-inch conduit.

2. The setup is shown in the START position, before pulling.



NOTES:

1. This conduit setup is for coaxial cable pulled through 3/4" conduit.

2. The setup is shown in the START position, before pulling.

ATTACHMENT A2

Rev. 2

ATTACHMENT B

Revision 1

STORAGE REQUIREMENTS FOR ELECTRICAL CABLE ON REELS

1. Cables shall be stored indoors on a clean, level area relatively free of traffic. Cables shall be stored in an orderly manner so that the cable mark numbers are readily readable.

2. Reels with electrical cable shall be stored with their flanges in a vertical posture, checked and blocked securely.

3. Both ends of the cable on a reel shall be readily available for inspection.

4. End seals shall withstand normal storage and handling without decay, loosening, cracking or the ability to prevent entry of moisture. A waterproof tape applied in two layers over the end and extending approximately 3 inches back from the end shall form the end seal.

A[illegible]MENT C

Revision 2

SAMPLE LIST

CABLE SIDEWALL PRESSURE PROJECT

CLSB Control No.	Sample	Plant	Manufacturer	Contract	Mark No.	Description	Conduit Size	No. Cables Pulled at Once	
14	1003	B	ESSEX	827249	WCA-1	NO. 14 1/C 600V PXJ BLACK	3/4"	5	
17	150	W	A.I.W	827749	WDE-1	NO. 6 1/C 600V PXJ	2"	5	
16	632	H	ANACONDA	829245-1	WDE-2	NO. 6 1/C 600V PXJ LOCA	2"	5	
18	740	B	P.W.C.	86150-2	WDG	NO. 2 1/C 600V CPJ	2"	5	
19	58	W	A.I.W.	822173-2	WDG-1	NO. 2 1/C 600V PXJ	2"	5	
20	1114	S	GE	824443-2	WDG	NO. 2 1/C 600V PXJ	2"	5	R2
5	45	W	A.I.W.	825342-2	WHG-1	NO. 14 7/C 600V PXMJ	1"	1	
4	685	H	OKONITE	827928	WHG-1	NO. 14 7/C 600V PXMJ	1"	1	
2	593	H	ANACONDA	825722-2	WHG-2	NO. 14 7/C 600V PXMJ LOCA	1"	1	
3	228	W	CYPRUS W&C	86150-1	WHH	NO. 14 9/C 600V PJJ	1"	1	
15	577	H	CAROLINA	829074	WJG-1	NO. 14 AWG 1/C 600V 150 DEG	3/4"	5	
1	335	W	P.W.C.	85069-2	WLG	NO. 12 7/C 600V CPJJ	1	1	
6	794	B	EATON	825772	WVB	NO. 16 3/C TW 300V XLPE CSPE	1"	1	
7	259	W	ANACONDA	827380	WVB	NO. 16 3/C TW 300V XLPE CSPE	1"	1	
8	1168	S	I.T.T.	84211	WVD	NO. 16 5/C SHIELD LOCA	1"	1	
9	323	W	OKONITE	74910	WVG	NO. 16 12/C SHIELD LOCA	1"	1	
10	40	W	TIMES	85947	WVK	NO. 16 2/C LOCA	1"	1	
11	131	W	TELEDYNE	835489	WWN-4	NO. 16 3 SHDPR 600V 1/C	1"	1	
21	1046	F	OKONITE	825342-1	WDE-1	NO. 6 1/C 600V PXJ	2"	5	
12	1067	F	BRAND-REX	828072	WVG	NO. 16 12/C SHIELD LOCA	1"	1	
13	1173	S	ROCKBESTOS	826961	WVA	NO. 16 2/C TW SH XLPE	1"	1	
22	1108	S	ROME	54762-1	WDF	NO. 4 1/C 600V CPJ	2"	5	
25	440	H	ROME	54762	WCA	NO. 14 1/C 600V PN BLACK	3/4"	5	
23	502	H	ANACONDA	825997	WRG	NO. 12 7/C 600V SROJJ LOCA	1"	1	
24	26	W	ANACONDA	825997	WPA	NO. 14 1/C 600V SROAJ LOCA	1"	5	
26	5	W	ANACONDA	85861	WPF	NO. 6 1/C 600V SROAJ LOCA	2"	5	
27	103	W	TRIANGLE	85069-2	WNB	NO. 2/0 1/C 8KV CPSJ	4"	3	
28	197	W	ANACONDA	825471	WNB-1	NO. 2/0 1/C 8KV EPSJ	4"	3	
29	5000	W	RAYCHEM	821043	WTK	NO. 22 COAX RG59B/U	3/4"	1	R2
30	5001	W	TELEDYNE	825280	WWK	TP 22 W/SH, TP 20 2/C, 22 2-COAX	3/4"	1	

NOTE: (1) Each sample to have five (5) pulls.
(2) Class of all samples is 1E.

ATTACHMENT D

FIELD INSTRUCTIONS FOR SAMPLE

Instructions for Securing Field Cable Samples for Cable Sidewall Pressure Project

1. Secure samples that are a minimum of 2000 feet in length from spools, reels, or coils of wire.

2. Tags on each sample must bear the following information: cable mark number, cable manufacturer, contract number, and reel number.

3. Samples with data that are not legible (type written or printing) and incomplete data such as samples without a complete contract number, manufacturer name, and mark number are not to be shipped.

4. All sample data must be verified and responsible person sign that this information is correct.

5. Bill of Shipment form attached must accompany all shipments.

6. Copy of Bill of Shipment to be sent to K. D. Wallace at W8 C146 C-K same day samples shipped.

7. Copy of Bill of Shipment to accompany each shipment of cable samples to Central Laboratories.

8. Cable samples to be shipped to:

   Power Stores
   North Bank Chickamauga

ATTACHMENT E

Bill of Shipment

Ship to:

Ship From:

Prepared by: _____ Date _____

Verified by: _____ Date _____

Item No.	Reel No.	MK	Contract No.	MFR

Person to contact regarding discrepancies of cable shipments, data, etc.

Name: Telephone No.:

Direct questions and copy of Bill of Shipment to:

Attention: Division of Nuclear Engineering
K. D. Wallace, W8 C146 C-K, Extension 3635

036091.02

ATTACHMENT F
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. _____
Sample No. . . . . = _____
Description _____

Standards Used: _____

Conduit Size in Test. . . . = _____
No. Cables in Pull. . . . . = _____

Virgin _____ 1-Conductor _____
Tensioned _____ Multi-Conductor _____

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = _____Max _____Min

SWBP Data

Tension (T) = _____ lbs (Max.)
Radius (R) = _____ ft
T/R = _____ lbs/ft
Correction Factor (X) = _____
SWBP = X(T/R) = _____ lbs/ft

Anomalies: _____

Tested By/Date _____ Tension _____ Micrometer _____ Dielectric _____ Resistance

Verified By/Date _____ QA Approval/Date _____
Test Observers _____ _____ _____

0148E-4

ATTACHMENT G
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. _____, Sample No. _____

Description: _____
Insulation Type: _____

Max SWBP _____

No. Cables in a Pull. . . . . : _____
No. Pulls . . . . . : _____
No. Conductors in Cable . . : _____
No. Ind Conductors Tensioned: _____

No. Virgin Cables. . . . . : _____
No. Virgin Ind Conductors: _____

Virgin Dielectric Breakdown Avg . : _____ Coefficient of Variation: _____
Tensioned Dielectric Breakdown Avg: _____ Coefficient of Variation: _____
Percent Difference in Averages. . : _____

Anomalies: _____

_____

_____

_____

Prepared By: _____ Date: _____

Verified By: _____ Date: _____

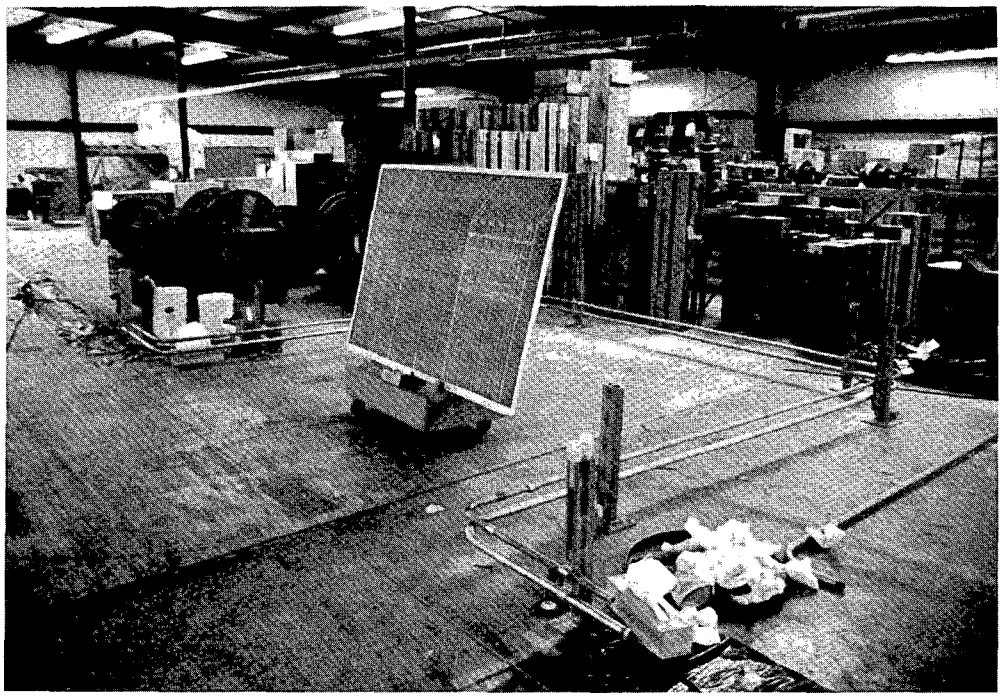
Test Instrumentation

Cable Sidewall Bearing Pressure Tests

Manufacturer/Model No.	USTVA Identification No.
Wantanabe Model 3101, Chart Recorder	522035
Sony Model M2030, Digital Micrometer	543211
Sony Model M2030, Digital Micrometer	543240
Fluke Model 80K-40, High Voltage Probe	902038
Fluke Model 8024, Digital Multimeter	543202
Fluke Model 8050, Digital Multimeter	502445
Biddle Series 1, Motorized Megger Test Set	212506
BLH Electronics Model T3P1, Load Cell	506326
BLH Electronics Model T3P1, Load Cell	506325
BLH Electronics Model C3P1, Load Cell	506656
Mettler Model P11N, Electronic Balance	387139
Brown and Sharpe Model 599-311-4804, 48" Ruler	900972
ESI Model 250DE, Impedance Bridge	305896
Tektronix Model 1503, Time Domain Reflectometer	512778
Fluke Model 8810, Digital Multimeter	516811
General Electric High Potential Transformer	902203

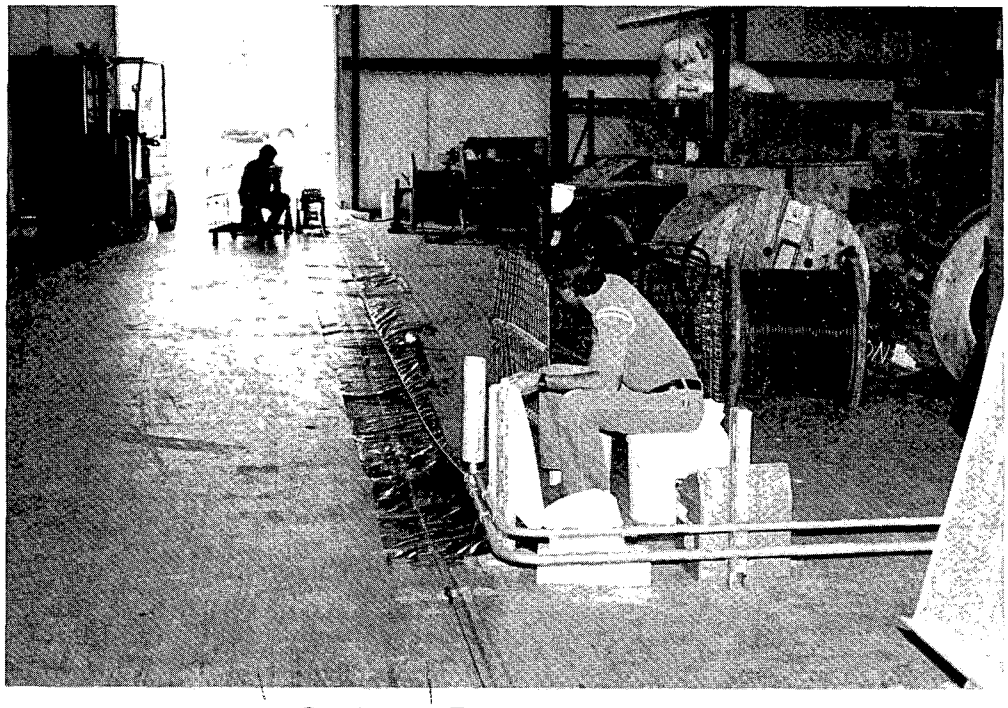
The instruments listed above were calibrated by the Central Laboratories Services Branch using primary or working standards whose calibration is directly traceable to the National Bureau of Standards.

Figure 1



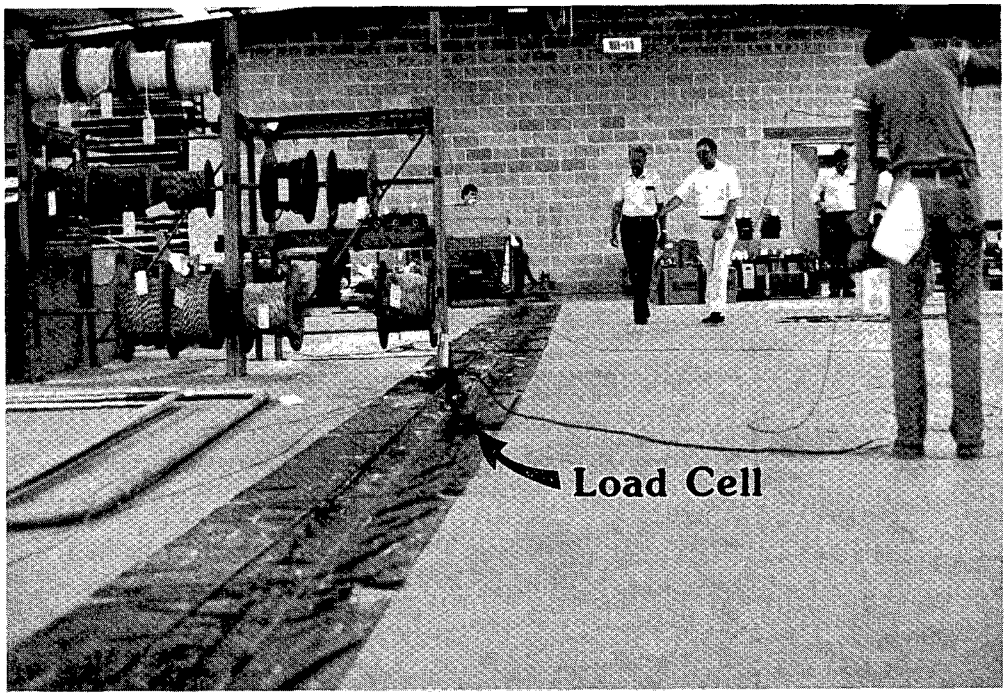
CONDUIT CONFIGURATION

Figure 2



CABLE PULL, TUGGER

Figure 3

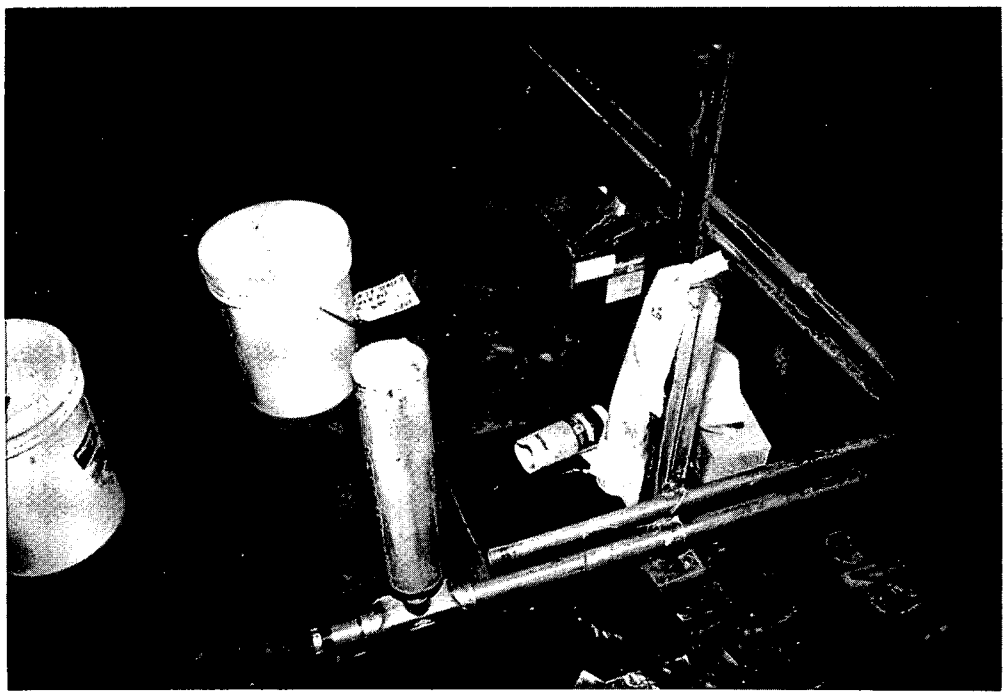


CABLE PULL, LOAD CELL

Figure 4

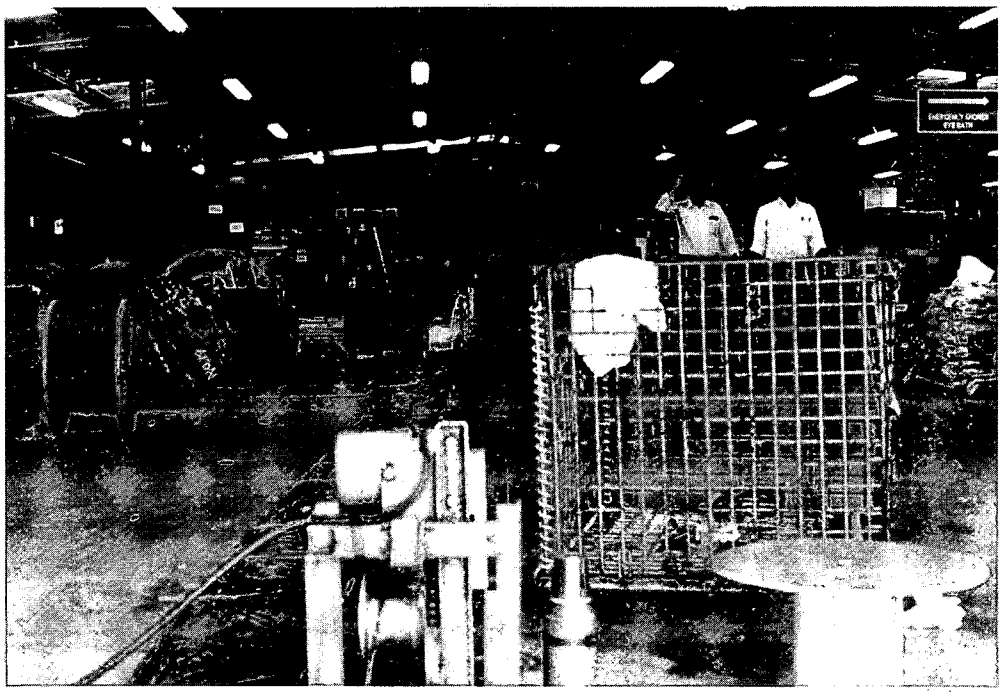
GRAPHIC RECORDING OF TENSION

Figure 5



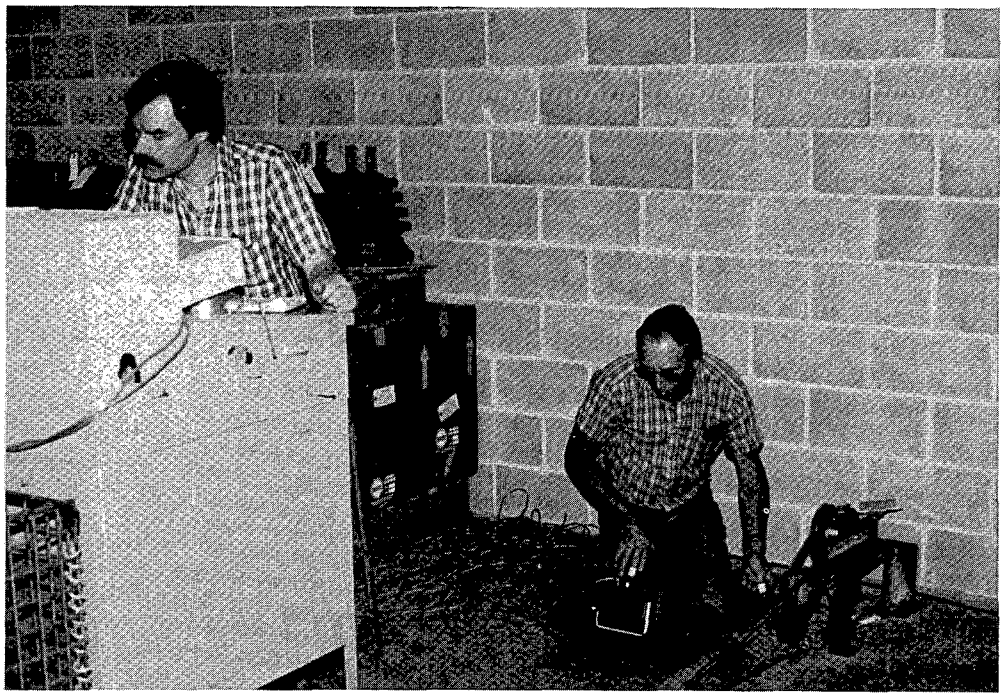
CABLE LUBRICANT APPLICATOR

Figure 6



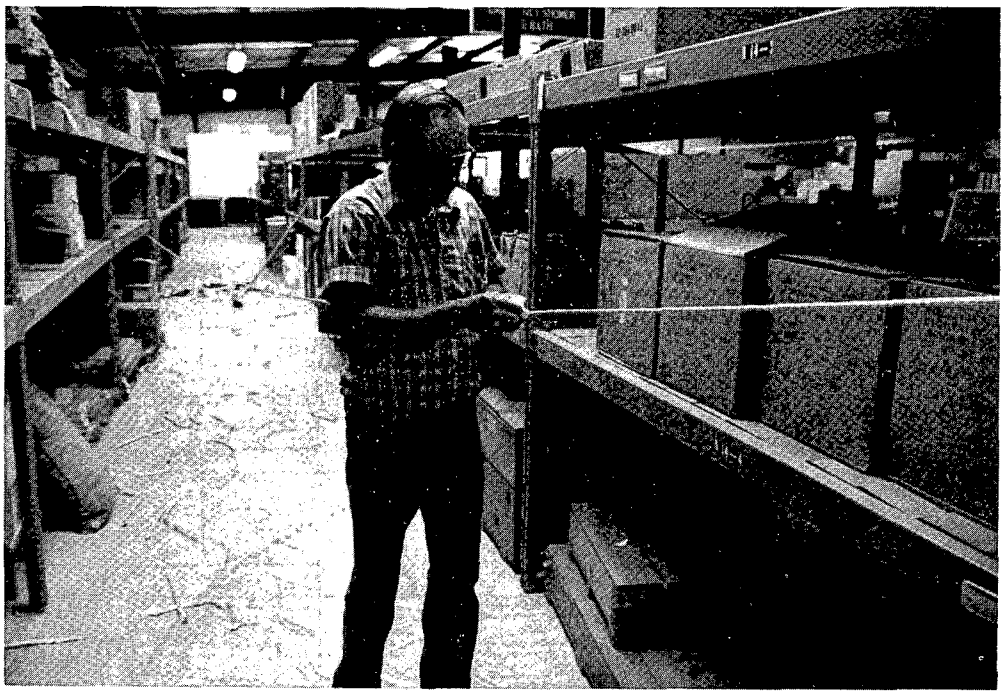
CABLE TUGGER

Figure 7



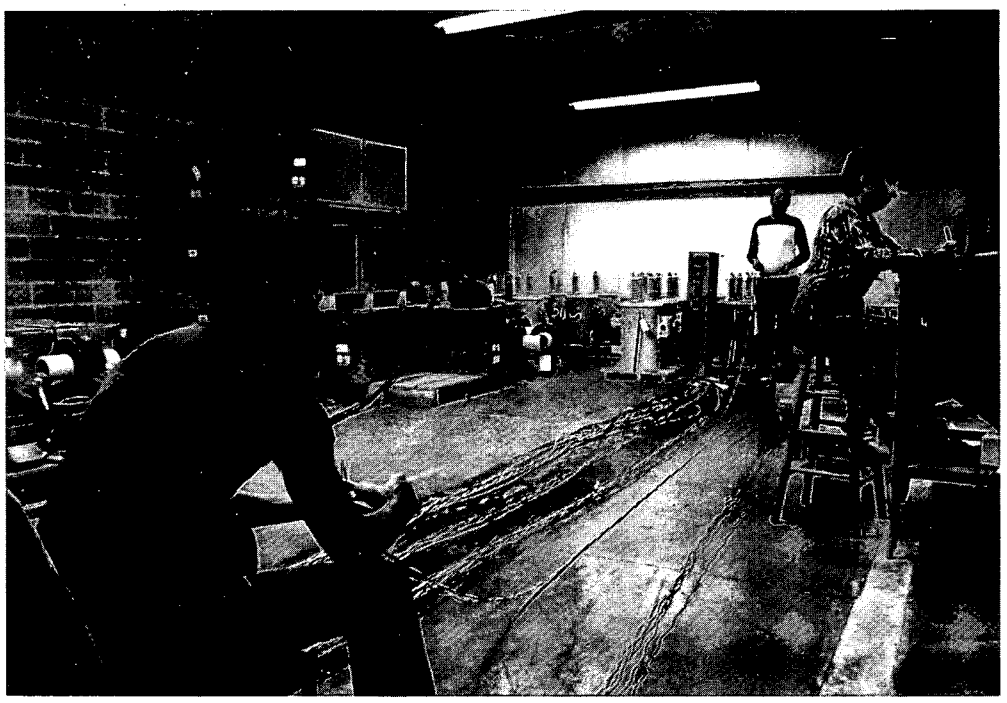
TENSIONER AND INSTRUMENTATION

Figure 8



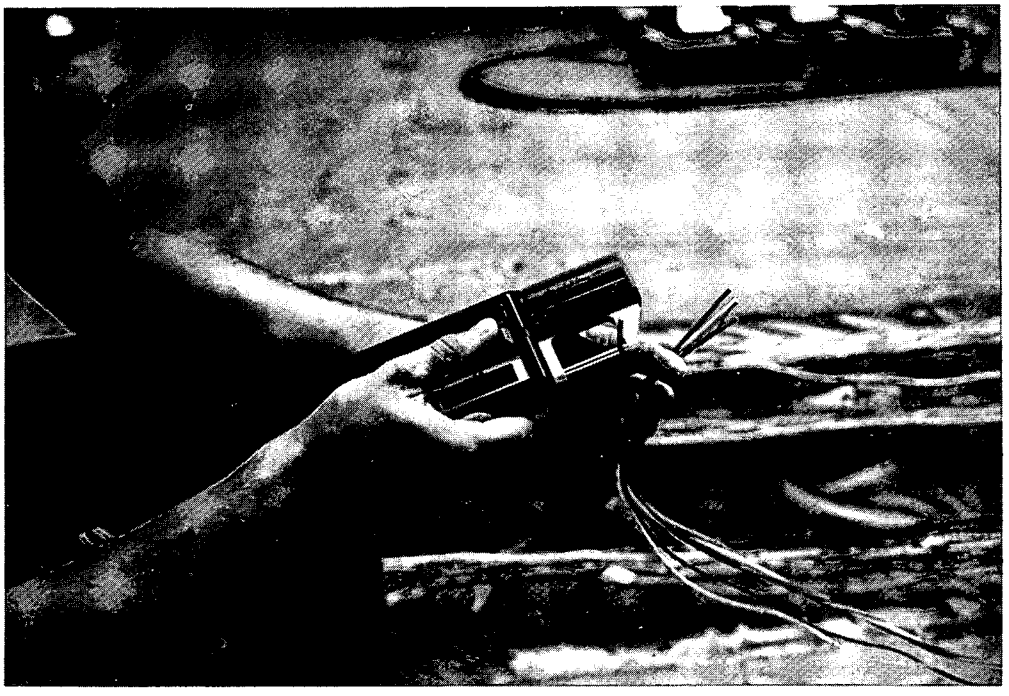
INSULATION JACKET STRIPPING

Figure 9



DIMENSIONING

Figure 10

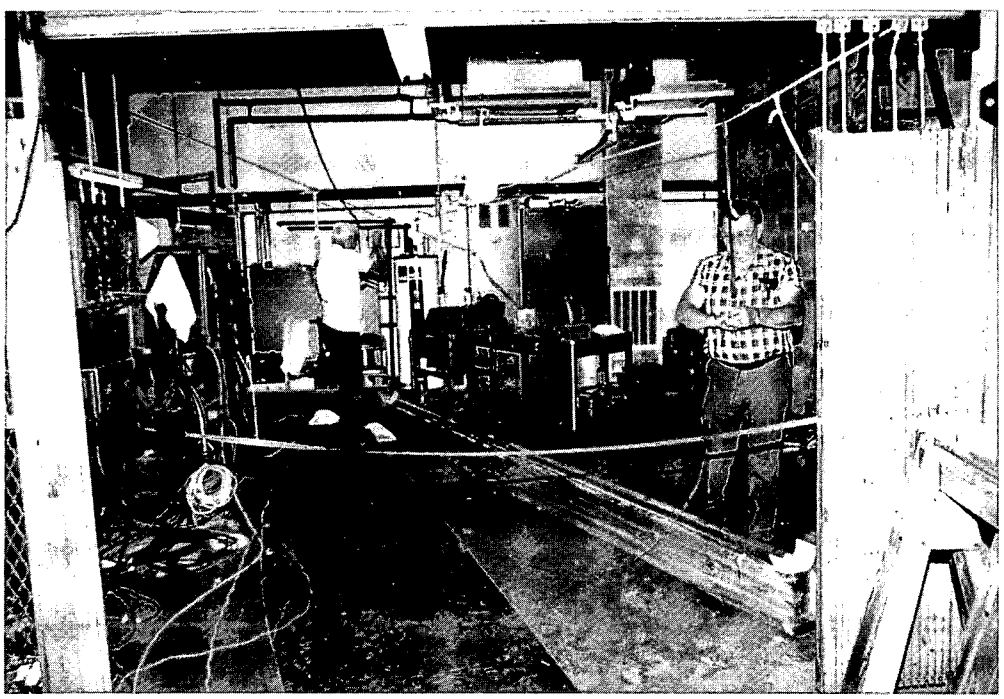


DIMENSIONING, DIGITAL MICROMETER

Figure 11

INSULATION RESISTANCE TEST

Figure 12



DIELECTRIC BREAKDOWN TEST

TECHNICAL REPORT

REPORT NO:
SHEET NO:
1 of 1 sheets
DATE OF WORK : 5/29/86
DATE OF REPORT: 5/29/86

LOCATION: Central Laboratories - PSC - Chattanooga
SUBJECT: FIVE CABLE SIDEWALL BEARING PRESSURE CALCULATION

COPIES SENT TO: RIMS, K. T. WANG, K. D. WALLACE, J. B. RAGSDALE, J. W. HARTLEY, AND H. B. CUMMINGS

PREPARED BY: K .T. WANG CHECKED BY: K. D. WALLACE APPROVED BY: J. B. RAGSDALE J. W. HARTLEY

Statement of Problem: Confirm that the computer program SWBP 5 is generating correct and accurate answers for the data supplied in calculating the "X" factor in the equation: $SWBP = X*\frac{T}{R}$.

ABSTRACT: Perform longhand calculations to confirm that computer generated values are correct when using identical input data to solve for "X" factor.

1.0 PURPOSE

The purpose of this document is to produce longhand calculations to verify the accuracy and correctness of the computer program "SWBP 5" when using the same input data.

This program calculates the weight correction factor (C) which is the ratio of the sum of normal forces between the cables and the conduit wall to the sum of the cable weights. From the weight correction factor, the multiplying factor (X) for the worst case cable is determined.

The longhand calculation should duplicate the computer generated values when the same input data is used.

2.0 REFERENCES

2.1 IEEE Paper - June 1980 on "Electrical Cable Installations in Raceways," by T. A. Kommers of the Okonite Company.

2.2 R. C. Rifenburg, "Pipeline Design for Pipe-Type Feeders," AIEE, pp. 1275-1288, December 1953.

2.3 Maintenance Coordination Staff, Central Laboratories Services Branch Quality Program, applicable portion of Section 4.0, "Job Control."

3.0 CALCULATIONS

3.1 Input Data

CLSB No.	Sample No.	Cable O.D. Inches	Conduit I.D. Inches
14	1003	0.206	0.82

3.2 Verification by Longhand

See Attachment A.

3.3 Computer Program

See Attachment B.

4.0 CONCLUSION

The computer generated X = 0.548
The longhand calculated X = 0.54816

Thus, the computer generated values do duplicate the longhand calculations. Therefore, it can be concluded that the computer program "SWBP5" is correct and accurate.

Verification of the Computer Program in calculating The Correction Factors of Cable Testing

Test CSLB NO. 14, Sample 1003

Cable radius = 0.103" = r

Pipe radius = 0.41" = R

Let us first determine the positions of the cables:

Cable #5 $(0, 0.307)$

Cable #3 $(-l \sin\psi, l\cos\psi) = (-.194, 0.238)$ $\quad l = R - r$

Cable #4 $(l \sin\psi, l\cos\psi) = (.194, 0.238)$ $\quad \psi = 2\sin^{-1}\frac{r}{R-r}$

$= 0.684$

$$\xi = \frac{\pi - \psi}{2} - \frac{\pi}{3} = 0.181$$

Cable #2 $(-2r\sin\xi, l - 2r\cos\xi) = (-0.037, 0.27)$

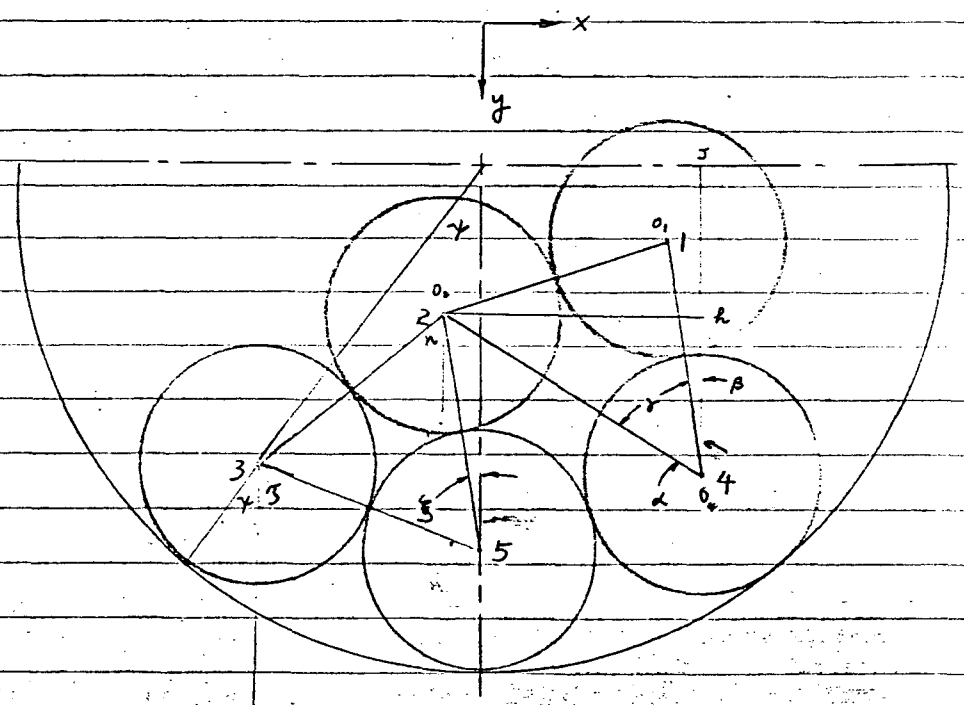


Fig. 1

Let us connect origins of circle 1, 2 & 4

Let line $\overline{O_4 J}$ be vertical, line $\overline{O_2 h}$ be horizontal

Now the lengths of

$$\overline{O_2 h} = l \sin\psi + 2r \sin\xi = 0.231$$

$$\overline{O_4 h} = l \cos\psi - l + 2r \cos\xi = 0.134$$

$$\overline{O_2 O_4} = \left(\overline{O_2 h}^2 + \overline{O_4 h}^2\right)^{1/2} = 0.267 \; 0.26416$$

$$\cos\gamma = \frac{\frac{\overline{O_2 O_4}}{2}}{2r} = 0.648$$

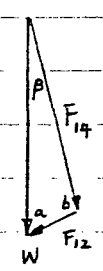
$$\gamma = 0.866$$

Let assume the weight per unit length of each cable be 1

From Cable #1

Angle β from Fig 1

$a + b + \beta = \pi$



We also know

$b = 2\gamma = 1.73147981$ Fig. 2

$$\beta = \alpha - \gamma$$

$$= \tan^{-1} \frac{\overline{O_2 h}}{\overline{O_4 h}} - \gamma = 1.047 - 0.866 = 0.181$$

So $F_{12} = w \dfrac{\sin\beta}{\sin b} = 0.183$ Force from #1 to #2

$F_{14} = w \dfrac{\sin a}{\sin b} = 0.954$ Force from #1 to #4

$a = 1.228655197$

Let us combine force F_{12} & W, ie the resultant force of cable #2, F_2

From Fig 2 & 3

Angle $\angle d = \pi - \angle a$

The Sine law

$$\frac{W}{\sin c} = \frac{F_2}{\sin d} = \frac{F_{12}}{\sin(a-c)}$$

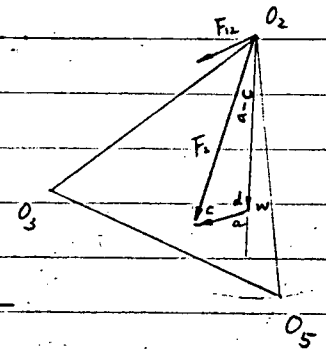


Fig 3

$$\sin c = \frac{W}{F_{12}}\left[\sin a \cos c - \sin c \cos a\right]$$

$$\left(\frac{F_{12}}{W} + \cos a\right)\sin c = \sin a \cos c$$

$$\therefore \frac{\sin c}{\cos c} = \frac{\sin a}{\frac{F_{12}}{W} + \cos a} = \frac{\sin a}{0.183 + \cos a}$$

$$= 1.817$$

$$\therefore c = 1.067788301$$

$$F_2 = \frac{\sin(\pi - a)}{\sin c} = 1.075218872$$

Now Let us calculate F_2 splits into F_{25} & F_{23}

From Fig 1, 3 and 4

$$\angle \sigma = a - c + \xi = 0.3423245421$$

$$\Omega + \sigma = \frac{\pi}{3}$$

$$\Omega = 0.7048730091$$

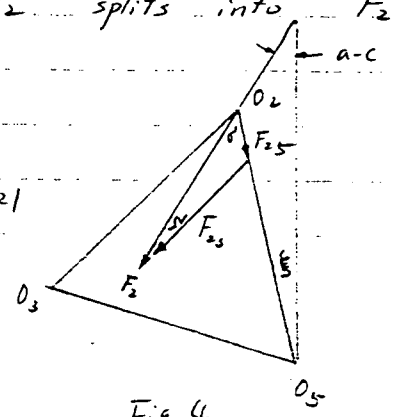


Fig 4

$$\frac{F_{23}}{\sin\sigma} = \frac{F_2}{\sin\left(\frac{2\pi}{3}\right)} = \frac{F_{25}}{\sin\Omega}$$

$$\therefore\ F_{23} = F_2\,\frac{\sin\sigma}{\sin\frac{2\pi}{3}} = 0.4167625516$$

$$F_{25} = F_2\,\frac{\sin\Omega}{\sin\frac{2\pi}{3}} = 0.8044500798$$

Now for cable #4

Resultant force F_4

Fig 5

$$\angle_3 = \pi - \beta$$

$$\angle_1 + \angle_2 = \beta$$

$$\frac{F_4}{\sin\angle_3} = \frac{W}{\sin\angle_2} = \frac{F_{14}}{\sin\angle_1}$$

$$\frac{W}{F_{14}} = \frac{\sin(\beta-\angle_1)}{\sin\angle_1}$$

$$\frac{\sin\angle_1}{\cos\angle_1} = \frac{\sin\beta}{\frac{W}{F_{14}} + \cos\beta}$$

$$\angle_1 = \tan^{-1}\left(\frac{\sin\beta}{\frac{W}{F_{14}} + \cos\beta}\right) = 0.0886$$

$$F_4 = F_{14}\,\frac{\sin(\pi-\beta)}{\sin\angle_1} = 1.946298175$$

$\angle_k = \psi - \angle_1$ From Fig 1

$$\angle_J = \pi - \psi - \frac{\pi-\psi}{2} = 1.228655197$$

$$\angle_m = J + \angle_1 = 1.317258075$$

$$\frac{F_{4W}}{\sin m} = \frac{F_k}{\sin\left(\frac{\pi-\psi}{2}\right)} = \frac{F_{45}}{\sin(\psi-\angle_1)}$$

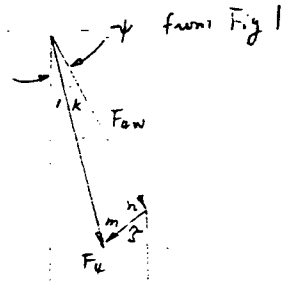


Fig 6

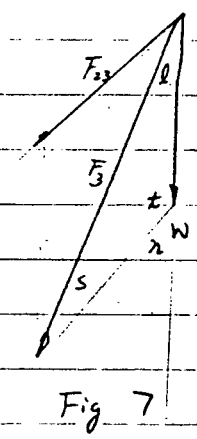
So

$F_{4W} = 2$

$F_{45} = 1.159201027$

Now cable #3

$$\frac{F_3}{\sin t} = \frac{W}{\sin(\pi - t - l)} = \frac{F_{23}}{\sin l}$$



again

$$l = \tan^{-1}\left(\frac{\sin t}{\frac{W}{F_{23}} - \cos t}\right)$$

Fig 7

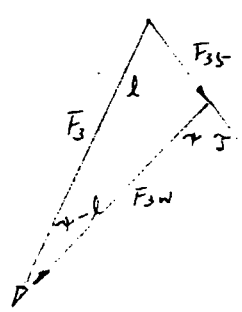
and $t = \pi - r = \pi - \left(\frac{\pi}{3} - \xi\right)$ From Fig 1

$$= \frac{2\pi}{3} + \xi = 2.275852748$$

$$l = 0.244884054$$

$$F_3 = F_{23}\,\frac{\sin t}{\sin l} = 1.309152132$$

$$\frac{F_3}{\sin\left(\frac{\pi - \psi}{2}\right)} = \frac{F_{35}}{\sin(\psi - l)} = \frac{F_{3W}}{\sin(l + \zeta)}$$



$$\therefore F_{3W} = F_3\,\frac{\sin(l + \zeta)}{\sin\left(\frac{\pi - \psi}{2}\right)}$$

$$= 1.38313399$$

Fig 8

$\therefore F_{5W} + (F_{4W} + F_{3W}) \cos\psi$

$= 5W$

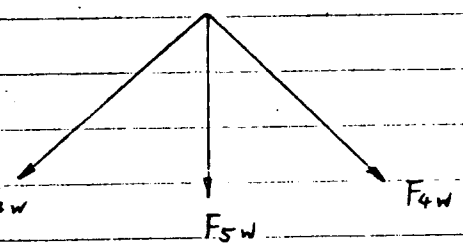


Fig 9

$\therefore F_{5W} = 5 - (F_{4W} + F_{3W}) \cos\psi$

$= 2.378501008$

$\Sigma F = F_{3W} + F_{4W} + F_{5W} = 5.761634998$

$\Sigma W = 5$

$\therefore C = \frac{\Sigma F}{\Sigma W} = 1.152327$

$W_C = \frac{F_{5W}}{\Sigma W} = 0.4757$

$x = C \times W_C = 0.54816$

```
  10 DIM PIPE(3),CABLE(11),P$1,C$2 ,W$10,K$1,CO%(11),C1%(11)
  20 FOR I%=1% TO 3%:READ PIPE(I%):NEXT I%
  30 FOR I%=1% TO 11%:READ CABLE(I%):NEXT I%
  31 FOR I%=1% TO 11%:READ CO%(I%):NEXT I%
  36 FOR I%=1% TO 11%:READ C1%(I%):NEXT I%
  40 DATA .82,1.05,2.07
  50 DATA .206,.105,.172,.24,.328,.354,.468,.467,.422,.37,.395
  55 DATA 1003,577,440,26,632,150,740,58,1114,1046,1108
  60 DATA 14,15,25,24,16,17,18,19,20,21,22
  90 SELECT CRT:K$="1"
 100 ACCEPT
 345 AT(19,2),"1 CRT   2 PRINTER   3 END ----> ",AT(19,35),K$,
 380 " "
 381 IF K$="3" THEN END
 382 IF K$<>"2" THEN 388
 387 SELECT PRINTER:GOTO 390
 388 SELECT CRT
 390 W=1
 391 GOSUB 9000
 400 FOR G%=1% TO 11%:R1=CABLE(G%)/2%
 410 ON G% GOTO 420,420,420,430,440,440,440,440,440,440,440
 420 G1%=1%:GOTO 450
 430 G1%=2%:GOTO 450
 440 G1%=3%
 450 R2=PIPE(G1%)/2%
4000 AP=R2-R1
4050          G1=(R1/AP)
4060          PSI=2*ARCSIN(G1)
4100   ZI=(PI-PSI)/2-PI/3
4105 O2H=AP*SIN(PSI)+2*R1*SIN(ZI):O4H=AP*COS(PSI)-AP+2*R1*COS(ZI)
4115 APHA=ARCTAN(O2H/O4H):O2O4=SQR(O2H↑2+O4H↑2)
4120 GAMA=ARCCOS(O2O4/4/R1):BETA=APHA-GAMA
4145 A=PI-2*GAMA-BETA
4150 F12=W*SIN(BETA)/SIN(2*GAMA):   F14=W*SIN(A)/SIN(2*GAMA)
4200   I1=W/F12:     C1=ARCTAN(I1*SIN(A)/(1+I1*COS(A)))
4250   F2=W*SIN(PI-A)/SIN(C1): DTA=A-C1+ZI:OMG=PI/3-DTA
4300  F23=F2*SIN(DTA)/SIN(PI-DTA-OMG):F25=F23*SIN(OMG)/SIN(DTA)
4350   A1=ARCTAN(SIN(BETA)/(W/F14+COS(BETA)))
4400  F4=F14*SIN(PI-BETA)/SIN(A1):TAU=(PI-PSI)/2
4450  F4W=F4*SIN(TAU+A1)/SIN(PI-PSI-TAU)
4500   F45=F4*SIN(PSI-A1)/SIN(PI-PSI-TAU)
4550  N1=2*PI/3+ZI: L1=ARCTAN(SIN(N1)/(W/F23-COS(N1)))
4555 F3=SIN(N1)*F23/SIN(L1)
4600  F35=F3*SIN(PSI-L1)/SIN(2*PI/3-PSI-ZI)
4610  F3W=F35*SIN(L1+PI/3+ZI)/SIN(PSI-L1)
4650 F5W=5*W-COS(PSI)*(F4W+F3W)
4906 C= (F3W+F4W+F5W)/5/W
4907 A=F3W:IF F4W<A THEN 4909
4908 A=F4W
4909 IF F5W<A THEN 4911
4910 A=F5W
4911 WC=A/5/W:X=C*WC:
4915 PRINT TAB(12); C1%(G%) ;:PRINT TAB(19);CO%(G%);TAB(32);
```

```
4920 PRINT USING 4950,2*R1;:PRINT TAB(42);
4921 PRINT USING 4950, 2*R2;:PRINT TAB(52);
4922 PRINT USING 4950,C;:PRINT TAB(61);
4925 PRINT USING 4950,WC;:PRINT TAB(72);
4927 PRINT USING 4950,X
4930 NEXT G%:GOSUB 8000:IF K$="1" THEN 4940
4931 L%=50%:GOSUB 4960:END
4940 INPUT P: END
4950 FMT PIC(#.###)
4960 FOR J%=1% TO L%:PRINT:NEXT J%:RETURN
8000 PRINT:PRINT:PRINT:PRINT TAB(10);"WHERE":PRINT:PRINT TAB(10);
8010 PRINT "C  = RATIO OF THE SUM OF NORMAL FORCES TO THE SUM OF CABLE!
8020  WEIGHTS":PRINT:PRINT TAB(10);
8030 PRINT "WC = RATIO OF THE MAX NORMAL FORCE TO THE SUM OF CABLE WEI!
8040 GHTS":PRINT:PRINT TAB(10);
8050 PRINT "X  = PRODUCT OF C AND WC":L%=5%:GOSUB 4960
8060 PRINT TAB(10);"HOWEVER, IF WE FORCE THE HORIZONTAL FORCES TO BE ";
8070 PRINT"BALANCED,":PRINT
8075 PRINT TAB(10);"THE VALUES OF X WILL INCREASE .2%";
8080 PRINT" & 4% FOR CSLB 15 & 14 RESPECTIVELY.":RETURN
9000 L%=5%:GOSUB 4960
9001 PRINT TAB(12);"CSLB   SAMPLE    ";
9010 PRINT "CABLE O.D.  PIPE I.D.    C        WC          X"
9050 PRINT TAB(13);"NO.     NO.         INCH     INCH":PRINT  :RETURN
```

CSLB NO.	SAMPLE NO.	CABLE O.D. INCH	PIPE I.D. INCH	C	WC	X
14	1003	.206	.820	1.152	.475	.548
15	577	.105	.820	1.032	.400	.412
25	440	.172	.820	1.099	.400	.439
24	26	.240	1.050	1.121	.429	.481
16	632	.328	2.070	1.052	.400	.420
17	150	.354	2.070	1.061	.400	.424
18	740	.468	2.070	1.118	.424	.474
19	58	.467	2.070	1.117	.423	.473
20	1114	.422	2.070	1.092	.400	.437
21	1046	.370	2.070	1.068	.400	.427
22	1108	.395	2.070	1.079	.400	.431

WHERE

C = RATIO OF THE SUM OF NORMAL FORCES TO THE SUM OF CABLE WEIGHTS

WC = RATIO OF THE MAX NORMAL FORCE TO THE SUM OF CABLE WEIGHTS

X = PRODUCT OF C AND WC

TECHNICAL REPORT

REPORT NO.:	
SHEET NO.: 1 of 4 Sheets	
LOCATION: CENTRAL LABORATORIES - PSC - CHATTANOOGA	DATE OF WORK: 5-12-86
SUBJECT: CALCULATION OF WEIGHT CORRECTION FACTOR & SIDEWALL BEARING PRESSURE IN TERMS OF T/R FOR 3-SINGLE CONDUCTOR CABLE PULLED THROUGH A 4" CONDUIT.	DATE OF REPORT:
COPIES SENT TO:	
PREPARED BY: S.G. RAMANATHAN. CHECKED BY: K.D. Wallace	APPROVED BY: Jim Hartley

OBJECTIVE :- TO DETERMINE THE WEIGHT CORRECTION FACTOR AND SIDEWALL BEARING PRESSURE IN TERMS OF T/R FOR 3 SINGLE CONDUCTOR CABLES PULLED THROUGH A 4" CONDUIT. [NOTE:- T IS PULLING TENSION & R IS INNER RADIUS OF THE 90° BEND.]

METHOD :- BY FORMULA FROM REFERENCE 1.

i) $$c = 1 + \frac{4}{3}\left[\frac{d}{D-d}\right]^2$$

FOR CRADLED CONFIGURATION.

ii) $$c = \frac{1}{\sqrt{1 - \left[\frac{d}{D-d}\right]^2}}$$

FOR TRIANGULAR CONFIGURATION.

WHERE c = WEIGHT CORRECTION FACTOR

d = OUTSIDE DIAMETER OF SINGLE CONDUCTOR CABLE

D = INSIDE DIAMETER OF CONDUIT.

[CONTD. ON PAGE 2]

TECHNICAL REPORT

REPORT NO.:	
SHEET NO.:	2 of 4 Sheets
DATE OF WORK:	5-12-86
DATE OF REPORT:	

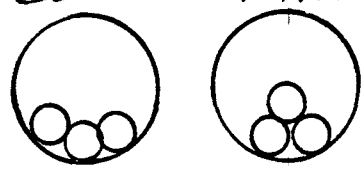
LOCATION:

SUBJECT:

COPIES SENT TO:

PREPARED BY: S. G. RAMANATHAN CHECKED BY: K.D. Wallace APPROVED BY: [signature]

ASSUMPTION :- A CRADLED CONFIGURATION IS ASSUMED AS THIS ARRANGEMENT GIVES CONSERVATIVE RESULT.



CRADLED. TRIANGULAR.

INPUTS :- OUTSIDE DIAMETER OF SINGLE CONDUCTOR CABLE $d = 1.02''$ [BY MEASUREMENT]

INSIDE DIAMETER OF CONDUIT $D = 4.03''$ [REFERENCE 4]

CALCULATION :-

$$C = 1 + \frac{4}{3}\left[\frac{1.02}{4.03 - 1.02}\right]^2$$

$$= 1 + \frac{4}{3}\left[\frac{1.02}{3.01}\right]^2$$

$$= 1.1531$$

[CONTD. ON PAGE 3]

TECHNICAL REPORT

REPORT NO.:	
SHEET NO.:	3 of 4 Sheets
LOCATION:	DATE OF WORK: 5-12-86
SUBJECT:	DATE OF REPORT:
COPIES SENT TO:	
PREPARED BY: S. G. RAMANATHAN	CHECKED BY: K.D. Wallace / APPROVED BY: [signature]

SIDEWALL BEARING PRESSURE (SWP) $= \frac{3C-2}{3} \frac{T}{R}$

$$= \frac{3 * 1.1531 - 2}{3} \cdot \frac{T}{R}$$

$$= 0.4864 \frac{T}{R}.$$

$$\approx 0.49 \frac{T}{R}.$$

CONCLUSION:-

WEIGHT CORRECTION FACTOR (C) FOR THE SINGLE CONDUCTOR CABLE WITH $d = 1.02''$ AND CONDUIT INSIDE DIAMETER $D = 4.03''$ IS 1.1531.

SIDEWALL BEARING PRESSURE IN TERMS OF T/R FOR THE SINGLE CONDUCTOR CABLE $d = 1.02''$ AND CONDUIT INSIDE DIAMETER $D = 4.03''$ IS $0.49 \frac{T}{R}$.

[CONT ON PAGE 4]

TECHNICAL REPORT

REPORT NO.:	
SHEET NO.:	4 of 4 Sheets
DATE OF WORK:	5-12-86
DATE OF REPORT:	

LOCATION:

SUBJECT:

COPIES SENT TO:

PREPARED BY: S.G RAMANATHAN.	CHECKED BY: K.D. Wallace	APPROVED BY: [signature]

REFERENCES :-

1. "INSTALLATION PRACTICES FOR CABLE RACEWAY SYSTEMS". THE OKONITE COMPANY, RAMSEY, N.J. 07446. PART II.

2. TEST DATA FOR SINGLE CONDUCTOR CABLE.

3. TVA ELECTRICAL DESIGN STANDARD DS-E13.1.7 REV NO. 1

APPENDIX F

REFERENCES

1. ASTM D149, "Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies."

2. "Electrical Cable Installations in Raceways," 1980 IEEE Paper by Thomas A. Kommers.

3. The Okonite Company Book, "Installation Practices for Cable Raceway Systems."

4. Tennessee Valley Authority, Maintenance Coordination Staff Quality Program, Central Laboratories Services Branch.

5. Tennessee Valley Authority Electrical Design Standard DS-E13.1.7, Revision No. 1.

6. Tennessee Valley Authority General Construction Specification No. G-38 for Installing Insulated Cables Rated up to 15,000 volts, Revision No. 8.

TECHNICAL REPORT

REPORT NO.: 86-L11-7448

SHEET NO.: 1 of 1 Sheets

LOCATION: Central Laboratory Services - PSC - Chattanooga

DATE OF WORK: 5/6-29/86

SUBJECT: Test requirements for cable sidewall bearing project

DATE OF REPORT: 5-29-86

Standards Used: US TVA 900972 and 387139

COPIES SENT TO:

PREPARED BY: Darla Hester/Morris Stout CHECKED BY: [illegible] APPROVED BY: [illegible]

NOTE: Three foot virgin sample weight per foot measurement - This test is referenced in paragraph 1.0 of the Sidewall Bearing Procedure.

PROCEDURE: Samples were measured against a 4 foot standard steel rule (US TVA 900972) that has 1/64 inch graduations. This rule was calibrated 9-10-85 utilizing gage blocks that have traceability to NBS. Samples were weighed utilizing a Mettler P11N Balance (US TVA 387139) accurate to within 0.05 grams and last calibrated 10-10-85 with traceable class S weights. Both length and weight standards were operationally verified for accuracy prior to use. Measurements were read by Darla Hester and then verified by Morris Stout to assure repeatability of results. Mathematical conversions were also verified.

Length Inches	Weight Grams	lb/ft	Wire I.D. #
35.688	417.0	.3091	WLG 335 - 1W
35.188	259.25	.1949	WHG 593 2W
35.438	330.5	.2467	WHH 228 3W
35.531	294.25	.2191	WHG-1 685 4W
35.281	293.3	.2199	WHG-1 45 5W
35.625	113.9	.0846	WVB 794 6W
35.531	96.6	.0719	WVB 259 7W
35.531	140.1	.1043	WVB 1168 8W
35.563	349.55	.2600	WVG 323 9W
35.563	76.2	.0567	WVK 40 10W
35.438	198.65	.1483	WWV-4 131 11W
35.813	314.1	.2321	WVG 1067 12W
35.563	122.55	.0912	WVA 1173 13W
35.500	43.7	.0326	WCA-1 1003 14W
35.563	21.3	.0158	WJA-1 577 15W
35.531	155.7	.1159	WDE-2 632 16W
35.344	175.55	.1314	WDE-1 150 17W
35.656	348.7	.2587	WDG 740 18W
35.469	364.8	.2721	WDG-1 58 19W
35.312	327.8	.2456	WDG 1114 20W
35.219	179.1	.1345	WDG 1046 21W
34.750	228.05	.1736	WDF 1108 22W
35.656	373.4	.2770	WRG 502 23W
35.344	41.65	.0312	WPA 26 24W
35.438	27.8	.0208	WCA 440 25W
Deleted from test			26W
36.188	1073.7	.7849	WBN 103 27W
35.406	1154.8	.8628	WBN-1 197 28W
35.500	48.8	.0364	WTK 5000 29W
35.562	149.75	.1114	WWK 5001 30W
35.188	252.3	.1897	PNJ 5002 31W1
35.219	360.85	.2711	PNJ 5003 32W

TVA 6474A (PO-2-73)

TECHNICAL REPORT

REPORT NO.:	86-L11-7448
SHEET NO.:	1 of 1 Sheets
LOCATION:	Central Laboratories - PSC - Chattanooga
DATE OF WORK:	5/22/86
SUBJECT:	TEST REQUIREMENTS FOR CABLE SIDEWALL BEARING PROJECT INNER RADIUS FOR LAST ELBOW IN EACH CONDUIT SETUP
DATE OF REPORT:	5/22/86

COPIES SENT TO: J. W. Hartley, H. B. Cummings, S. G. Ramanathan, Lab Files

PREPARED BY:	CHECKED BY:	APPROVED BY:
G. Erickson	H. B. Cummings	J. W. Hartley

INTRODUCTION

This test is referenced in paragraph 5.13 of the Sidewall Bearing Procedure and was performed on a .75-inch, 1-inch, 2-inch, and 4-inch conduit. The test was performed at the outlet end of each conduit arrangement.

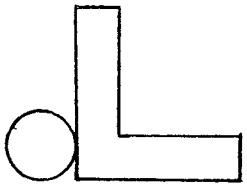
RESULTS

Conduit	Factory Nominal Bend	Actual Bend	Deviation
.75 inch	.3310 ft.	.3542 ft.	.0232 ft.
1 inch	.4242 ft.	.4479 ft.	.0237 ft.
2 inch	.6925 ft.	.6671 ft.	.0254 ft.
2 inch*	.6925 ft.	.7183 ft.	.0258 ft.
4 inch	1.1458 ft.	1.0260 ft.	.1198 ft.

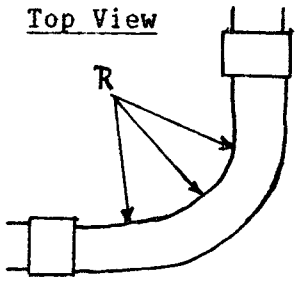
PROCEDURE

The inner radius of the outside wall of the various conduits was transcribed to chart paper by utilizing a square and followed the bend from coupling to coupling.

Side View



Top View



Since the bend does not follow a perfect arc, three methods were utilized to determine radius; the best fit situation was reported. The three methods were:

1. A tangent line was drawn from the two sides before and after the bend; their of intersection was then used to determine the center of the bend and one of the radius lines.

2. Utilizing a compass, five perpendicular lines were drawn from equal parts of the bend; their points of intersection, along with step 1 above helped determine the origin of the radius.

3. A compass was then used to draw an arc that best aligned with the curve of the bend. The compass point was considered the origin of the radius.

*This conduit bend was inserted into the test setup on May 22, 1986, and was used to test CLSB control numbers 16 and 17 only.

TECHNICAL REPORT

REPORT NO.:	86-L11-7448
SHEET NO.:	1 of 1 Sheets
LOCATION:	Central Laboratories - PSC - Chattanooga
DATE OF WORK:	4/16/86
SUBJECT:	TEST REQUIREMENTS FOR CABLE SIDEWALL BEARING PROJECT INNER RADIUS FOR LAST ELBOW IN EACH CONDUIT SETUP
DATE OF REPORT:	4/16/86
COPIES SENT TO:	J. W. Hartley, H. B. Cummings, S. G. Ramanathan, Lab Files
PREPARED BY:	G. Erickson
CHECKED BY:	H. B. Cummings
APPROVED BY:	J.W. Hartley

INTRODUCTION

This test is referenced in paragraph 5.13 of the Sidewall Bearing Procedure and was performed on a .75-inch, 1-inch, 2-inch, and 4-inch conduit. The test was performed at the outlet end of each conduit arrangement.

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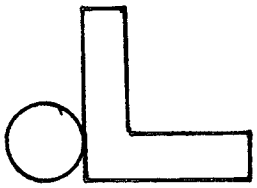
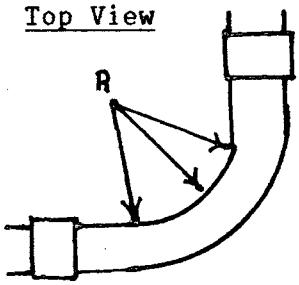
The inner radius of the outside wall of the various conduits was transcribed to chart paper by utilizing a square and followed the bend from coupling to coupling.

Side View



Top View



Since the bend does not follow a perfect arc, three methods were utilized to determine radius; the best fit situation was reported. The three methods were:

1. A tangent line was drawn from the two sides before and after the bend; their intersection was then used to determine the center of the bend and one of the radius lines.

2. Utilizing a compass, five perpendicular lines were drawn from equal parts of the bend; their points of intersection, along with step 1 above helped determine the origin of the radius.

3. A compass was then used to draw an arc that best aligned with the curve of the bend. The compass point was considered the origin of the radius.

0119B

TECHNICAL REPORT

REPORT NO: JMH-052686
SHEET NO: 1 of 1 sheets
DATE OF WORK : 5/22/86
DATE OF REPORT: 5/27/86

LOCATION: Central Laboratories - PSC - Chattanooga
SUBJECT: Coax Impedance Tests

COPIES SENT TO: RIMS, J. M. Harvey, H. B. Cummings, J. W. Hartley

PREPARED BY: J. M. Harvey JMH CHECKED BY: H. B. Cummings HBC APPROVED BY: J. W. Hartley

COAX IMPEDANCE TESTS

Coaxial impedance measurements were made using a time domain reflectometer (TDR) and known resistive loads. The procedure for testing a cable was to connect the cable under test directly to the TDR, then by trial and error, connect different known resistances to the far end of the cable until a "match" was found.

The TDR uses a scope trace to display impedance change versus length. As the scope trace sweeps from left to right, representing the length of the cable, any change in the cable's impedance will be represented by the trace being deflected up or down as the impedance of the cable increases or decreases along its length. Thus, a cable terminated into a resistive load exactly equal to its own characteristic impedance will produce no vertical deflection of the scope trace. When the "matched" condition was observed, the value of the known resistance terminated to the end of the cable was recorded as being the impedance of the cable.

The next part of the test was to examine the entire length of the trace searching for any major variances in the impedance of the cable. None were found in the 30 test samples that were submitted for analysis.

0118E-2

Miscellaneous Cable Data

CLSB Control No.	Sample No.	Length (Inches)	Weight (Grams)	lb/ft	Type Filler	Drainwire Composition	Drainwire Diameter	Drainwire Placement
1	335	35.688	417.0	.3091	cotton	N	N	N
2	593	35.188	259.25	.1949	N	N	N	N
3	228	35.438	330.5	.2467	N	N	N	N
4	685	35.531	294.25	.2191	N	N	N	N
5	45	35.281	293.3	.2199	rubber	N	N	N
6	794	35.625	113.9	.0846	N	coated Cu	.0488	under shield
7	259	35.531	96.6	.0719	N	coated Cu	.0454	under shield
8	1168	35.531	140.1	.1043	poly-propolene	bare Cu	.0447	under shield
9	323	35.563	349.55	.2600	N	coated Cu	.0464	under shield
10	40	35.563	76.2	.0567	N	N	N	N
11	131	35.483	198.65	.1483	N	N	N	N
12	1067	35.813	314.1	.2321	N	coated Cu	.0471	under shield
13	1173	35.563	122.55	.0912	poly-propolene	coated Cu	.0494	under shield
14	1003	35.500	43.7	.0326	N	N	N	N
15	577	35.563	21.3	.0158	N	N	N	N
16	632	35.531	155.7	.1159	N	N	N	N
17	150	35.344	175.55	.1314	N	N	N	N
18	740	35.656	348.7	.2587	N	N	N	N
19	58	35.469	364.8	.2721	N	N	N	N
20	1114	35.312	327.8	.2456	N	N	N	N
21	1046	35.219	179.1	.1345	N	N	N	N
22	1108	34.750	228.05	.1736	N	N	N	N
23	502	35.656	373.4	.2770	N	N	N	N
24	26	35.344	41.65	.0312	N	N	N	N
25	440	35.438	27.8	.0208	N	N	N	N
26	5	*	*	*	*	*	*	*
27	103	36.188	1073.7	.7849	N	N	N	N
28	197	35.406	1154.8	.8628	N	N	N	N
29	5000	35.500	48.8	.0364	N	N	N	N
30	5001	35.562	149.75	.1114	N	N	N	N
31	5002	35.188	252.3	.1897	N	N	N	N
32	5003	35.219	360.85	.2711	N	N	N	N

NOTES:
1. *CLSB Control No. 26, Sample 5, was deleted from the test.
2. The letter "N" indicates none.
3. Standards used to obtain length and weight were USTVA 900972 and USTVA 387139.

Attachment I

CABLE BEARING PRESSURE TESTS COMPOSITE RESULTS

Control No.	Sample No.	Mark No.	Manufacturer	Description	Dielectric Breakdown Average, kV RMS Virgin	Tensioned	%Difference	Max Tension Pounds	Max. SWBP lbs/ft
1	335	WLG	P.W.C.	No. 12 7/C	31.07	31.71	2.06	680 to 700	1563
2	593	WHG-2	Anaconda	No. 14 7/C	21.23	19.13	-9.88	680 to 690	1541
3	228	WHH	Cyprus W&C	No. 14 9/C	35.55	32.17	-9.52	670 to 690	1541
4	685	WHG-1	Okonite	No. 14 7/C	23.67	19.95	-15.68	675 to 700	1563
5	45	WHG-1	A.I.W.	No. 14 7/C	23.76	23.18	-2.44	490 to 610	1362
6	794	WVB	Eaton	No. 16 3/C	22.90	21.77	-4.92	255 to 288	643
7	259	WVB	Anaconda	No. 16 3/C	17.45	17.53	0.42	275 to 300	670
8	1168	WVD	I.T.T.	No. 16 5/C	20.15	19.71	-2.18	360 to 420	937
9	323	WVG	Okonite	No. 16 12/C	25.59	26.93	5.23	520 to 550	1228
10	40	WVK	Times	No. 16 2/C	13.81	12.48	-9.63	184 to 200	447
11	131	WWN-4	Teledyne	No. 16 3PR	22.39	20.21	-9.75	460 to 505	1127
12	1067	WVG	Brand-Rex	No. 16 12/C	19.17	19.91	3.88	540 to 670	1496
13	1173	WVA	Rockbestos	No. 16 2/C	24.58	25.77	4.84	320 to 345	770
14	1003	WCA-1	Essex	No. 14 1/C	35.46	33.19	-6.40	430 to 550	839
15	577	WJG-1	Carolina	No. 14 1/C	33.96	31.77	-6.45	495 to 520	602
16	637	WDE-2	Anaconda	No. 6 1/C	35.90	38.19	6.38	2550 to 3220	2027
17	150	WDE-1	A.I.W.	No. 6 1/C	35.86	35.82	-0.12	2010 to 2200	1398
18	740	WDG	P.W.C.	No. 2 1/C	45.72	44.27	-3.18	2590 to 2620	1862
19	58	WDG-1	A.I.W.	No. 2 1/C	45.82	39.21	-14.43	2650 to 2760	1957
20	1114	WDG	GE	No. 2 1/C	34.36	33.89	-1.36	2600 to 2700	1769
21	1046	WDE-1	Okonite	No. 6 1/C	36.02	39.24	8.94	2100 to 2200	1408
22	1108	WDF	Rome	No. 4 1/C	50.98	49.64	-2.63	2560 to 2780	1796
23	502	WRG	Anaconda	No. 12 7/C	22.77	22.65	-0.55	690 to 710	1585
24	26	WPA	Anaconda	No. 14 1/C	21.66	30.11	39.00	750 to 805	864
25	440	WCA	Rome	No. 14 1/C	41.24	37.50	-9.07	500 to 510	619
26	5	WPF	Anaconda	No. 6 1/C	Not Tested		--	--	--
27	103	WNB	Triangle	No. 2/0 1/C	93.40*	100.00*	7.07*	5400 to 6500	3104
28	197	WNB-1	Anaconda	No. 2/0 1/C	100.00*	90.47*	-9.53*	5600 to 6050	2889
29	5000	WTK	Raychem	Coax RG59B/U	52.00	53.20	2.31	105 to 132	373
30	5001	WWK	Teledyne	2 Coax W/TPs	24.59	23.60	-4.05	420 to 440	1242
31	5002	--	Continental	No. 14 7/C	28.68	26.35	-8.11	720 to 760	1697
32	5003	WGG	Tamaqua	No. 12 7/C	28.63	32.61	13.11	750 to 820	1831

*"Minimum averages" of maximum voltages, whether or not breakdown occurred.

(0168E-1)

Attachment I
CABLE BEARING PRESSURE TESTS COMPOSITE RESULTS
(Continued)

ORIGINAL (LOW TENSION) PULLS

Control No.	Sample No.	Mark No.	Manufacturer	Description	Max Tension Pounds	Dielectric Breakdown Average, kV RMS Virgin	Tensioned	%Difference	Max. SWBP lbs/ft
6	794	WVB	Eaton	No. 16 3/C	140 to 155	22.90	22.04	-3.76	*
7	259	WVB	Anaconda	No. 16 3/C	145 to 155	17.45	17.36	-0.53	*
8	1168	WVD	I.T.T.	No. 16 5/C	138 to 145	20.15	19.18	-4.82	*
9	323	WVG	Okonite	No. 16 12/C	142 to 160	25.59	26.02	1.67	*
10	40	WVK	Times	No. 16 2/C	130 to 145	13.81	13.41	-2.90	*
11	131	WWN-4	Teledyne	No. 16 3PR	138 to 140	22.39	Not Tested		
12	1067	WVG	Brand-Rex	No. 16 12/C	148 to 178	19.17	19.67	2.63	*
13	1173	WVA	Rockbestos	No. 16 2/C	140 to 145	24.58	26.29	6.96	*
16	632	WDE-2	Anaconda	No. 6 1/C	1440 to 1980	35.90	33.59	-6.43	*
24	26	WPA	Anaconda	No. 14 1/C	500 to 630	21.66	26.92	24.27	*

*Not calculated. Higher values achieved on later pulls listed on previous page.

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 1, Sample No. 355

Description: No. 12 7/C
Insulation Type: CPJJ

Max SWBP 1563 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 7
No. Ind Conductors Tensioned: 35

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 7

Virgin Dielectric Breakdown Avg . : 31.1kV
Tensioned Dielectric Breakdown Avg: 31.7kV
Percent Difference in Averages. . : 2.06

Coefficient of Variation: 6.25%
Coefficient of Variation: 9.70%

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SGR Date: 5.29.86

71E-1

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 355
Control No. 1 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	1V1	1V2	1V3	1V4	1V5
BLA	29.2	29.3	30.4	29.9	31.4
RED	32.0	33.4	32.1	31.7	26.5
ORG	34.4	33.8	33.2	30.6	33.8
BLU	31.4	33.2	31.5	31.0	32.4
GRN	31.4	29.2	28.3	31.5	31.4
WHT	29.5	25.4	32.0	29.6	31.7
WHT/BLA	31.6	32.2	31.4	29.6	31.4

Dielectric Breakdown Average = 31.06857
Standard Deviation = 1.941008
Coefficient of Variation = 6.247497 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 355
Control No. 1 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	1T1	1T2	1T3	1T4	1T5
BLA	25.4	31.6	27.9	30.2	25.7
RED	33.4	32.7	33.4	31.8	31.6
ORG	34.0	30.9	32.2	34.2	32.9
BLU	31.2	32.0	36.2	37.5	36.0
GRN	32.3	35.1	31.3	36.8	32.8
WHT	33.1	25.6	32.6	29.6	29.1
WHT/BLA	33.2	30.1	27.8	32.8	26.8

Max. tension = 680 to 700 lbs.

Dielectric Breakdown Average = 31.70857
Standard Deviation = 3.074886
Coefficient of Variation = 9.697335 %

DIFFERENCE IN AVERAGES = 2.059958 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 2, Sample No. 593

Description: No. 14 7/C 600v
Insulation Type: PXMJ

Max SWBP 1541 lb/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 7
No. Ind Conductors Tensioned: 35

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 35

Virgin Dielectric Breakdown Avg . : 21.23 kV Coefficient of Variation: 17.17%
Tensioned Dielectric Breakdown Avg: 19.13 kV Coefficient of Variation: 12.50%
Percent Difference in Averages. . : -9.88

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SLR Date: 5-29-86

171E-2

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 593
Control No. 2 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	2V1	2V2	2V3	2V4	2V5
BLA	20.1	16.8	18.4	17.4	20.5
RED	23.0	20.2	18.6	21.1	23.0
ORG	18.7	18.2	15.7	18.2	17.3
BLU	18.5	17.6	17.5	17.7	16.9
GRN	21.3	23.9	22.2	23.1	28.9
WHT	24.5	24.0	24.9	23.6	25.4
WHT/BLA	31.5	21.8	24.5	23.6	24.3

Dielectric Breakdown Average = 21.22571
Standard Deviation = 3.644847
Coefficient of Variation = 17.17185 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 593
Control No. 2 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	2T1	2T2	2T3	2T4	2T5
BLA	18.1	17.7	19.0	16.6	17.9
RED	20.4	21.2	17.6	19.0	20.7
ORG	16.8	16.0	16.4	18.2	16.8
BLU	17.9	16.9	15.6	15.6	16.8
GRN	18.3	19.0	20.1	16.5	21.5
WHT	21.2	23.2	23.2	23.0	22.8
WHT/BLA	19.8	19.6	21.6	22.8	21.7

Max. tension = 680 to 690 lbs.

Dielectric Breakdown Average = 19.12857
Standard Deviation = 2.391477
Coefficient of Variation = 12.50212 %

DIFFERENCE IN AVERAGES = -9.880176 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 3, Sample No. 228

Description: No. 14 9/C
Insulation Type: PJJ

Max SWBP 1541 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 9
No. Ind Conductors Tensioned: 45

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 45

Virgin Dielectric Breakdown Avg . : 35.55 kV Coefficient of Variation: 17.33
Tensioned Dielectric Breakdown Avg: 32.17 kV Coefficient of Variation: 16.67
Percent Difference in Averages. . : -9.52

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SLR Date: 5.29.86

71E-3

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 228
Control No. 3 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	3V1	3V2	3V3	3V4	3V5
BLA	44.3	49.8	40.8	41.9	56.5
RED	39.7	35.8	32.5	37.8	42.2
ORG	37.9	29.5	33.1	28.4	34.6
GRN	37.4	28.3	32.2	30.9	28.2
BLU	34.7	43.4	43.7	44.0	37.9
WHT	34.4	30.3	29.3	38.5	30.6
RED/BLA	36.6	36.6	31.8	33.8	28.2
GRN/BLA	32.7	26.9	31.9	28.9	35.2
WHT/BLA	34.2	30.6	37.7	33.6	32.6

Dielectric Breakdown Average = 35.55333
Standard Deviation = 6.1599
Coefficient of Variation = 17.3258 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 228
Control No. 3 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	3T1	3T2	3T3	3T4	3T5
BLA	42.6	33.7	33.9	52.3	34.9
RED	29.4	24.8	31.7	28.9	30.5
ORG	32.6	33.9	33.6	26.7	32.7
GRN	23.7	29.6	29.2	32.3	27.2
BLU	30.5	38.3	44.7	31.9	25.5
WHT	33.7	36.2	34.6	34.6	28.7
RED/BLA	35.9	22.6	31.9	31.6	33.7
GRN/BLA	29.9	25.6	29.9	32.5	29.8
WHT/BLA	27.3	33.5	28.8	35.9	35.8

Max. tension = 670 to 690 lbs.

Dielectric Breakdown Average = 32.16889
Standard Deviation = 5.362997
Coefficient of Variation = 16.67138 %

DIFFERENCE IN AVERAGES = -9.519338 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 4, Sample No. 685

Description: No. 14, 7/C, 600V
Insulation Type: PXMJ

Max SWBP 1563 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 7
No. Ind Conductors Tensioned: 35

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 35

Virgin Dielectric Breakdown Avg . : 23.67 kV Coefficient of Variation: 13.84%
Tensioned Dielectric Breakdown Avg: 19.95 kV Coefficient of Variation: 18.74%
Percent Difference in Averages. . : -15.69%

Anomalies/Remarks: Of the 35 tensioned conductors tested, one conductor (red) in pull 4T2 failed at 1.5 kV. The failed spot in cable was isolated and remainder of conductor tested. The dielectric breakdown occurred at 20 kV. The failure was probably due to defect in cable and not due to excess SWBP, as all other conductors and remainder of failed conductor passed.

Prepared By: SWR Date: 5.29.86
Verified By: KDW Date: 5-29-86

0171E-4

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 685
Control No. 4 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	4V1	4V2	4V3	4V4	4V5
BLA	23.4	25.8	23.3	23.2	25.3
RED	27.0	28.9	21.9	20.0	23.9
GRN	21.0	27.9	24.1	24.2	11.6
YEL	27.2	23.7	23.4	24.1	22.8
BLU	27.8	22.6	20.0	25.0	23.7
WHT/BLA	25.7	23.9	22.6	19.2	22.9
WHT/BLA STR	28.2	28.6	22.5	20.4	22.5

Dielectric Breakdown Average = 23.66572
Standard Deviation = 3.276291
Coefficient of Variation = 13.84404 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 685
Control No. 4 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	4T1	4T2	4T3	4T4	4T5
BLA	19.0	18.9	20.1	18.1	20.5
RED	21.4	1.5	26.7	21.8	21.5
GRN	19.6	20.8	18.7	18.7	16.1
YEL	20.9	18.5	21.8	19.1	18.7
BLU	18.7	20.6	22.6	21.0	20.5
WHT/BLA	21.0	20.1	23.1	22.7	19.4
WHT/BLA STR	20.3	20.3	21.3	20.3	24.1

Max. tension = 675 to 700 lbs.

Dielectric Breakdown Average = 19.95429
Standard Deviation = 3.741213
Coefficient of Variation = 18.74892 %

DIFFERENCE IN AVERAGES = -15.68274 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 5, Sample No. 45

Description: No. 14 7/C 600V
Insulation Type: PXMJ

Max SWBP 1362 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 7
No. Ind Conductors Tensioned: 35

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 35

Virgin Dielectric Breakdown Avg . : 23.76 kV Coefficient of Variation: 12.28%
Tensioned Dielectric Breakdown Avg: 23.18 kV Coefficient of Variation: 10.00%
Percent Difference in Averages. . : -2.44

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SLR Date: 5.29.86

171E-6

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 45
Control No. 5 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	5V1	5V2	5V3	5V4	5V5
BLA	20.2	22.1	20.9	21.8	20.7
RED	21.9	21.1	20.3	24.8	23.0
ORG	28.8	24.1	26.3	27.7	29.1
GRN	24.3	23.7	19.5	23.0	22.4
BLU	29.4	19.7	24.3	24.7	26.8
WHT	22.5	25.7	23.3	22.8	20.6
WHT/BLA	28.1	28.9	24.9	23.7	20.6

Dielectric Breakdown Average = 23.76286
Standard Deviation = 2.918409
Coefficient of Variation = 12.28139 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 45
Control No. 5 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	5T1	5T2	5T3	5T4	5T5
BLA	21.5	21.2	21.8	23.8	23.6
RED	21.4	23.4	21.3	24.0	22.9
ORG	29.0	27.0	27.9	24.1	24.6
GRN	22.9	22.1	22.5	23.0	22.1
BLU	27.7	20.7	26.3	20.4	23.9
WHT	23.3	19.3	20.7	22.8	19.1
WHT/BLA	23.9	21.7	23.3	23.0	25.2

Max. tension = 490 to 610 lbs.

Dielectric Breakdown Average = 23.18285
Standard Deviation = 2.317641
Coefficient of Variation = 9.997222 %

DIFFERENCE IN AVERAGES = -2.440808 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 6, Sample No. 794

Description: No. 16. 3/C, 600V
Insulation Type: XLPE

Max SWBP 643 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 3
No. Ind Conductors Tensioned: 15

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 15

Virgin Dielectric Breakdown Avg . : 22.9 Coefficient of Variation: 14.89%
Tensioned Dielectric Breakdown Avg: 21.77 Coefficient of Variation: 14.66%
Percent Difference in Averages. . : -4.92

Anomalies/Remarks: Pulls were made with lower tensions prior to this recorded data--
See Appendix J.

Prepared By: SLR Date: 5/29/86
Verified By: KDW Date: 5-29-86

71E-5

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 794
Control No. 6 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	6V1	6V2	6V3	6V4	6V5
BLA	22.7	22.4	25.7	23.1	19.0
RED	18.6	20.1	22.7	18.4	23.4
WHT	19.6	27.7	29.3	27.0	23.8

Dielectric Breakdown Average = 22.9
Standard Deviation = 3.40965
Coefficient of Variation = 14.8893 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 794
Control No. 6 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	6T6	6T7	6T8	6T9	6T10
BLA	16.2	24.1	19.4	19.7	20.3
RED	18.0	22.8	18.7	21.2	21.3
WHT	25.6	21.5	25.6	27.1	25.1

Max. tension = 255 to 288 lbs.

Dielectric Breakdown Average = 21.77333
Standard Deviation = 3.192282
Coefficient of Variation = 14.66143 %

DIFFERENCE IN AVERAGES = -4.919944 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 7, Sample No. 259

Description: No. 16, 3/C 300V
Insulation Type: XLPE

Max SWBP 670 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 3
No. Ind Conductors Tensioned: 15

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 15

Virgin Dielectric Breakdown Avg . : 17.45 kV Coefficient of Variation: 9.63%
Tensioned Dielectric Breakdown Avg: 17.52 kV Coefficient of Variation: 7.68%
Percent Difference in Averages. . : 0.42%

Anomalies/Remarks: Pulls were made with lower tensions prior to this recorded data. See Appendix J.

Prepared By: SGR Date: 5-29-86
Verified By: KDW Date: 5-29-86

171E-8

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 259
Control No. 7 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	7V1	7V2	7V3	7V4	7V5
BLA	14.6	17.5	14.9	18.8	18.0
RED	16.8	16.9	19.3	19.0	19.3
WHT	19.4	15.9	18.4	17.9	15.1

Dielectric Breakdown Average = 17.45333
Standard Deviation = 1.680929
Coefficient of Variation = 9.630993 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 259
Control No. 7 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	7T6	7T7	7T8	7T9	7T10
BLA	17.3	17.5	15.6	17.9	14.5
RED	17.0	17.1	20.0	17.3	19.5
WHT	18.6	18.0	17.0	17.8	17.8

Max. tension = 275 to 300 lbs.

Dielectric Breakdown Average = 17.52667
Standard Deviation = 1.346672
Coefficient of Variation = 7.683557 %

DIFFERENCE IN AVERAGES = .4201924 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 8, Sample No. 1168

Description: No. 16, 5/C Shielded
Insulation Type: XLPE

Max SWBP 937 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 5
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 25

Virgin Dielectric Breakdown Avg . : 20.15 kV Coefficient of Variation: 20.87%
Tensioned Dielectric Breakdown Avg: 19.71 kV Coefficient of Variation: 19.49%
Percent Difference in Averages. . : -2.18

Anomalies/Remarks: Pulls were made with lower tensions prior to this recorded data--
See Appendix J.

Prepared By: KDW Date: 5-29-86
Verified By: SR Date: 5.29.86

71E-9

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1168
Control No. 8 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	8V1	8V2	8V3	8V4	8V5
BLA	32.4	21.1	25.5	27.5	25.8
RED	18.1	11.8	17.4	17.9	23.1
ORG	18.1	16.0	16.6	17.7	20.7
GRN	18.9	18.1	20.4	17.0	20.9
WHT	18.2	19.2	21.6	19.9	19.9

Dielectric Breakdown Average = 20.152
Standard Deviation = 4.20497
Coefficient of Variation = 20.86626 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1168
Control No. 8 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	8T6	8T7	8T8	8T9	8T10
BLA	27.5	23.6	21.8	22.1	28.5
RED	21.4	19.2	18.0	20.6	20.2
ORG	24.4	19.4	19.6	13.4	16.6
GRN	19.4	18.2	18.4	20.8	20.4
WHT	11.0	17.6	15.6	17.8	17.3

Max. tension = 360 to 420

Dielectric Breakdown Average = 19.712
Standard Deviation = 3.84191
Coefficient of Variation = 19.49021 %

DIFFERENCE IN AVERAGES = -2.183409 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 9, Sample No. 323

Description: No. 16, 12/C, 600V, Shielded
Insulation Type: XLPE

Max SWBP 1228 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 12
No. Ind Conductors Tensioned: 60

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 60

Virgin Dielectric Breakdown Avg . : 25.59 kV Coefficient of Variation: 17.12%
Tensioned Dielectric Breakdown Avg: 26.93 kV Coefficient of Variation: 13.47%
Percent Difference in Averages. . : 5.23%

Anomalies/Remarks:
1. All cable samples had identations caused by steel drain wire.
2. Indentations on tensioned conductors were slightly higher than virgin cables.
3. Pulls were made with lower tensions prior to this recorded data--See Appendix J.
4. While pulling cables with higher tensions, ran out of cable, so pull 4T10 could not be made.

Prepared By: SLR Date: 5.29.86
Verified By: KDW Date: 5-29-86

71E-10

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 323
Control No. 9 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	9V1	9V2	9V3	9V4	9V5
BLA	25.5	24.2	30.1	26.3	28.4
RED	23.6	30.3	26.8	29.3	23.3
ORG	20.7	21.9	20.2	17.8	19.1
GRN	25.5	29.9	33.6	34.4	25.7
BLU	26.0	33.1	28.6	24.3	22.3
WHT	28.4	28.4	27.8	29.3	24.2
BLA/WHT	25.4	23.0	27.5	27.0	22.2
RED/BLA	25.4	25.3	22.1	26.4	22.1
ORG/BLA	18.6	29.0	13.9	23.1	24.8
GRN/BLA	30.3	26.5	37.5	30.6	23.5
BLU/BLA	23.5	27.9	14.8	26.1	21.5
WHT/BLA	25.0	27.8	23.7	28.4	23.5

Dielectric Breakdown Average = 25.59
Standard Deviation = 4.382233
Coefficient of Variation = 17.12479 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 323
Control No. 9 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	9T6	9T7	9T8	9T9	9T10
BLA	22.0	27.5	21.7	28.6	OUT OF CABLE
RED	21.2	25.2	29.2	21.3	
ORG	18.4	21.9	22.1	20.8	
GRN	27.2	27.5	32.4	31.0	
BLU	29.3	32.7	27.6	25.0	
WHT	27.2	25.5	31.5	23.9	
BLA/WHT	31.8	24.2	29.8	27.8	
RED/BLA	25.6	24.4	27.2	25.4	
ORG/BLA	26.7	31.4	27.4	20.5	
GRN/BLA	29.9	31.8	29.2	27.6	
BLU/BLA	25.2	29.8	30.2	26.8	
WHT/BLA	29.9	29.4	31.4	28.5	

Max. tension = 520 to 550 lbs.

Dielectric Breakdown Average = 26.92917
Standard Deviation = 3.6272
Coefficient of Variation = 13.46941 %

DIFFERENCE IN AVERAGES = 5.233179 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 10, Sample No. 40

Description: No. 16, 2/C
Insulation Type: XLPE

Max SWBP 447 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 2
No. Ind Conductors Tensioned: 10

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 10

Virgin Dielectric Breakdown Avg . : 13.81 kV Coefficient of Variation: 14.03%
Tensioned Dielectric Breakdown Avg: 12.48 kV Coefficient of Variation: 7.07%
Percent Difference in Averages. . : -9.63

Anomalies/Remarks: Pulls were made at lower tensions prior to this recorded data--
See Appendix J.

Prepared By: KDW Date: 5-29-86
Verified By: SGR Date: 5/29/86

71E-11

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 40
Control No. 10 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	10V1	10V2	10V3	10V4	10V5
BLA	14.1	13.5	12.2	14.0	14.0
WHT	18.8	11.7	12.6	13.5	13.7

Dielectric Breakdown Average = 13.81
Standard Deviation = 1.937036
Coefficient of Variation = 14.02633 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 40
Control No. 10 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	10T6	10T7	10T8	10T9	10T10
BLA	11.9	13.9	12.2	12.8	11.5
WHT	12.0	13.9	11.4	12.8	12.4

Max. tension = 184 to 200 lbs.

Dielectric Breakdown Average = 12.48
Standard Deviation = .8829244
Coefficient of Variation = 7.074715 %

DIFFERENCE IN AVERAGES = -9.630702 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 11, Sample No. 131

Description: No. 16, 3 SHLD PR, 1/C
Insulation Type: Tefzel

Max SWBP 1127 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 7
No. Ind Conductors Tensioned: 35

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 35

Virgin Dielectric Breakdown Avg . : 22.39 kV Coefficient of Variation: 32.19%
Tensioned Dielectric Breakdown Avg: 20.21 kV Coefficient of Variation: 38.02%
Percent Difference in Averages. . : -9.75%

Anomalies/Remarks: The coefficient of variation is high on the virgin and tensioned samples partially due to the difference in insulation between individual conductors. Two samples with low breakdown values of 11T6 were retested after removing the failure area from the water. The retest values were 17.9 kV and 20.5 kV. This indicates a flaw in the the conductor not related to SWBP.

Prepared By: KDW Date: 5-29-86
Verified By: [illegible] Date: 5.29.86

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 131
Control No. 11 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	11V1	11V2	11V3	11V4	11V5
SINGLE RED	38.6	40.1	37.5	37.8	40.2
RED	20.1	20.1	23.8	22.4	18.2
WHT W/RED	20.5	18.1	23.4	20.4	19.9
BRN	16.7	19.3	18.1	15.7	21.1
WHT W/BRN	14.0	17.0	18.9	17.8	21.6
ORG	17.5	24.7	18.3	19.8	22.1
WHT W/ORG	21.0	22.8	18.9	20.9	16.5

Dielectric Breakdown Average = 22.39429
Standard Deviation = 7.208245
Coefficient of Variation = 32.18788 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 131
Control No. 11 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	11T6	11T7	11T8	11T9	11T10
SINGLE RED	34.7	35.1	35.0	34.2	38.0
RED	15.0	20.1	18.9	18.2	16.9
WHT W/RED	16.5	23.4	20.7	21.4	16.7
BRN	2.3	17.7	14.0	17.2	20.1
WHT W/BRN	5.8	17.6	16.1	21.8	17.1
ORG	21.1	20.5	21.5	23.9	19.9
WHT W/ORG	19.1	20.5	10.4	14.7	21.3

Max. tension = 460 to 505 lbs.

Dielectric Breakdown Average = 20.21143
Standard Deviation = 7.685004
Coefficient of Variation = 38.02305 %

DIFFERENCE IN AVERAGES = -9.747392 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 12 , Sample No. 1067

Description: No. 16,12/C Shielded
Insulation Type: XLPE

Max SWBP 1496 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 12
No. Ind Conductors Tensioned: 60

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 60

Virgin Dielectric Breakdown Avg . : 19.17 Coefficient of Variation: 8.70%
Tensioned Dielectric Breakdown Avg: 19.91 Coefficient of Variation: 9.30%
Percent Difference in Averages. . : 3.88

Anomalies/Remarks: Pulls were made at lower tensions prior to this recorded data--
See Appendix J.

Prepared By: KDW Date: 5-29-86
Verified By: SLR Date: 5-29-86

71E-14

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1067
Control No. 12 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	12V1	12V2	12V3	12V4	12V5
BLA	15.7	16.7	16.0	16.6	16.8
RED	18.6	16.9	18.2	20.6	20.7
ORG	20.0	17.7	19.8	18.2	20.4
GRN	19.2	19.6	18.7	20.0	20.8
BLU	16.4	21.2	19.3	19.9	19.7
WHT	18.4	19.3	17.1	17.7	18.7
BLA/WHT	18.4	18.5	17.7	18.0	20.2
RED/BLA	18.5	17.8	17.9	21.6	21.3
ORG/BLA	18.6	21.0	21.7	21.2	23.1
GRN/BLA	18.6	21.0	20.1	17.2	19.5
BLU/BLA	19.9	20.5	18.9	18.1	20.1
WHT/BLA	20.7	22.1	21.3	20.4	17.2

Dielectric Breakdown Average = 19.16666
Standard Deviation = 1.667198
Coefficient of Variation = 8.698423 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1067
Control No. 12 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	12T6	12T7	12T8	12T9	12T10
BLA	14.2	15.3	18.3	17.9	16.9
RED	19.3	21.4	20.1	18.8	19.7
ORG	20.5	23.4	20.5	22.7	19.4
GRN	19.3	20.4	19.4	20.2	19.9
BLU	19.0	19.9	20.2	18.5	19.9
WHT	17.9	19.9	19.9	18.7	19.5
BLA/WHT	16.5	20.4	20.3	19.1	19.5
RED/BLA	20.1	23.1	21.9	18.0	21.1
ORG/BLA	20.0	19.7	20.2	20.7	20.5
GRN/BLA	21.1	19.4	21.2	19.0	22.4
BLU/BLA	18.6	21.1	16.8	20.5	20.4
WHT/BLA	23.2	21.2	23.6	23.8	20.2

Max. tension = 540 to 670 lbs.

Dielectric Breakdown Average = 19.91
Standard Deviation = 1.851129
Coefficient of Variation = 9.297482 %

DIFFERENCE IN AVERAGES = 3.878305 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 13, Sample No. 1173

Description: No. 16, 2/C TW SH XLPE
Insulation Type: XLPE

Max SWBP 770 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 2
No. Ind Conductors Tensioned: 10

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 10

Virgin Dielectric Breakdown Avg . : 24.58 kV Coefficient of Variation: 11.05%
Tensioned Dielectric Breakdown Avg: 25.77 kV Coefficient of Variation: 10.05%
Percent Difference in Averages. . : 4.84%

Anomalies/Remarks: Pulls were made with lower tensions prior to this recorded data--
See Appendix J.

Prepared By: SLR Date: 5.29.86
Verified By: KDW Date: 5-29-86

171E-12

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1173
Control No. 13 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	13V1	13V2	13V3	13V4	13V5
BLA	29.1	23.2	27.1	26.2	27.0
WHT	20.5	24.8	22.4	23.5	22.0

Dielectric Breakdown Average = 24.58
Standard Deviation = 2.716943
Coefficient of Variation = 11.05347 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1173
Control No. 13 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	13T6	13T7	13T8	13T9	13T10
BLA	30.6	29.0	25.1	25.5	28.1
WHT	24.1	23.1	24.7	24.6	22.9

Max. tension = 320 to 345 lbs.

Dielectric Breakdown Average = 25.77
Standard Deviation = 2.590174
Coefficient of Variation = 10.05112 %

DIFFERENCE IN AVERAGES = 4.841337 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 14, Sample No. 1003

Description: No. 14,1/C,600V
Insulation Type: PXJ

Max SWBP 839 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 35.46 kV Coefficient of Variation: 7.11%
Tensioned Dielectric Breakdown Avg: 33.19 kV Coefficient of Variation: 11.06%
Percent Difference in Averages. . : -6.40

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SLR Date: 5-29-86

71E-15

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1003
Control No. 14 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	14V1	14V2	14V3	14V4	14V5
1/C	39.9	33.7	34.2	34.7	34.8

Dielectric Breakdown Average = 35.46
Standard Deviation = 2.520516
Coefficient of Variation = 7.108055 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1003
Control No.14 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	14T1	14T2	14T3	14T4	14T5
1	27.2	32.9	27.3	34.6	33.8
2	30.6	38.0	28.8	36.9	37.9
3	30.8	35.7	37.5	40.6	31.6
4	29.2	32.4	28.6	37.9	30.6
5	32.0	32.2	32.7	34.1	35.9

Max. tension = 430 to 550 lbs.

Dielectric Breakdown Average = 33.192
Standard Deviation = 3.670936
Coefficient of Variation = 11.0597 %

DIFFERENCE IN AVERAGES = -6.395933 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 15, Sample No. 577

Description: No. 14, 1/C, 600V
Insulation Type: PX

Max SWBP 602 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 33.96 kV Coefficient of Variation: 22.49%
Tensioned Dielectric Breakdown Avg: 31.76 kV Coefficient of Variation: 13.61%
Percent Difference in Averages. . : -6.45%

Anomalies/Remarks: None

Prepared By: SGR Date: 5-29-86
Verified By: KDW Date: 5-29-86

171E-16

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 577
Control No. 15 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	15V1	15V2	15V3	15V4	15V5
1/C	34.3	21.4	34.2	41.3	38.6

Dielectric Breakdown Average = 33.96
Standard Deviation = 7.637604
Coefficient of Variation = 22.49 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 577
Control NO.15 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	15T1	15T2	15T3	15T4	15T5
1	33.7	24.3	30.6	35.7	33.8
2	30.5	24.1	31.6	32.7	26.8
3	33.5	27.8	22.7	37.2	29.6
4	31.5	28.3	37.0	36.6	34.4
5	33.0	34.5	32.7	31.6	40.0

Max. tension = 495 to 520 lbs.

Dielectric Breakdown Average = 31.768
Standard Deviation = 4.325382
Coefficient of Variation = 13.61553 %

DIFFERENCE IN AVERAGES = -6.454652 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 16, Sample No. 637

Description: No. 6, 1/C, 600V
Insulation Type: FR-EPR

Max SWBP 2027 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 35.9 kV Coefficient of Variation: 4.85%
Tensioned Dielectric Breakdown Avg: 38.2 kV Coefficient of Variation: 11.98%
Percent Difference in Averages. . : 6.38%

Anomalies/Remarks: Pulls were made with lower tensions, prior to this recorded data--
See Appendix J.

Prepared By: SGR Date: 5-29-86
Verified By: KDW Date: 5-29-86

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 632
Control No. 16 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	16V1	16V2	16V3	16V4	16V5
1/C	36.4	36.0	35.3	38.3	33.5

Dielectric Breakdown Average = 35.9
Standard Deviation = 1.742125
Coefficient of Variation = 4.852716 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 632
Control No. 16 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	16T6	16T7	16T8	16T9	16T10
1	39.5	37.2	38.0	36.0	34.9
2	37.3	37.0	40.1	36.2	34.1
3	40.3	36.7	36.9	44.9	34.6
4	29.5	39.4	48.6	36.5	34.3
5	39.9	42.3	38.4	32.4	49.8

Max. tension = 2550 to 3220 lbs.

Dielectric Breakdown Average = 38.192
Standard Deviation = 4.576473
Coefficient of Variation = 11.9828 %

DIFFERENCE IN AVERAGES = 6.384401 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 17, Sample No. 150

Description: No. 6, 1/C, 600V
Insulation Type: PXJ

Max SWBP 1398 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 35.86 kV Coefficient of Variation: 6.91%
Tensioned Dielectric Breakdown Avg: 35.82 kV Coefficient of Variation: 7.77%
Percent Difference in Averages. . : -0.12

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SLR Date: 5.29.86

171E-18

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 150
Control No. 17 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	17V1	17V2	17V3	17V4	17V5
1/C	36.6	32.5	38.0	34.1	38.1

Dielectric Breakdown Average = 35.86
Standard Deviation = 2.476489
Coefficient of Variation = 6.905994 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 150
Control No. 17 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	17T1	17T2	17T3	17T4	17T5
1	36.3	39.4	37.2	37.1	37.6
2	36.4	34.8	34.5	39.8	31.6
3	36.3	37.8	34.5	36.3	37.1
4	39.2	34.1	32.2	34.2	39.4
5	37.1	35.9	29.9	37.2	29.5

Max. tension = 2010 to 2200 lbs.

Dielectric Breakdown Average = 35.816
Standard Deviation = 2.782038
Coefficient of Variation = 7.767585 %

DIFFERENCE IN AVERAGES = -.1227171 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 18, Sample No. 740

Description: No. 2, 1/C, 600V
Insulation Type: CPJ

Max SWBP 1862 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 45.72 kV Coefficient of Variation: 4.56%
Tensioned Dielectric Breakdown Avg: 44.26 kV Coefficient of Variation: 6.38%
Percent Difference in Averages. . : -3.17%

Anomalies/Remarks: None

Prepared By: SGR Date: 5-29-86
Verified By: KDW Date: 5-29-86

171E-19

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 740
Control No. 18 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	18V1	18V2	18V3	18V4	18V5
1/C	43.9	45.9	47.7	43.3	47.8

Dielectric Breakdown Average = 45.72
Standard Deviation = 2.08854
Coefficient of Variation = 4.56811 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 740
Control No. 18 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	18T1	18T2	18T3	18T4	18T5
1	44.5	46.5	46.3	43.6	34.7
2	45.8	46.3	42.8	45.7	44.5
3	46.6	45.5	43.3	47.3	47.7
4	45.5	45.3	43.9	44.3	41.6
5	38.9	44.5	41.5	43.8	46.3

Max. tension = 2590 to 2620 lbs.

Dielectric Breakdown Average = 44.268
Standard Deviation = 2.824553
Coefficient of Variation = 6.380575 %

DIFFERENCE IN AVERAGES = -3.175861 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 19, Sample No. 58

Description: No. 2, 1/C, 600V
Insulation Type: PXJ

Max SWBP 1957 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 45.82 kV Coefficient of Variation: 12.53%
Tensioned Dielectric Breakdown Avg: 39.20 kV Coefficient of Variation: 13.37%
Percent Difference in Averages. . : -14.43%

Anomalies/Remarks: None

Prepared By: SGR Date: 5/29/86
Verified By: KDW Date: 5-29-86

71E-31

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 58
Control No. 19 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	19V1	19V2	19V3	19V4	19V5
1/C	49.5	43.7	52.5	45.9	37.5

Dielectric Breakdown Average = 45.82
Standard Deviation = 5.742125
Coefficient of Variation = 12.53192 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 58
Control No. 19 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	19T1	19T2	19T3	19T4	19T5
1	37.9	43.8	29.3	42.2	38.1
2	46.2	42.7	35.8	48.3	35.3
3	29.8	33.4	34.4	37.8	36.7
4	46.1	47.3	38.7	45.9	39.6
5	32.9	38.5	39.9	41.3	38.3

Max. tension = 2650 to 2760 lbs.

Dielectric Breakdown Average = 39.208
Standard Deviation = 5.24229
Coefficient of Variation = 13.37046 %

DIFFERENCE IN AVERAGES = -14.43039 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 20, Sample No. 1114

Description: No. 2, 1/C,600V
Insulation Type: PXJ

Max SWBP 1769 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 34.36 kV Coefficient of Variation: 10.57%
Tensioned Dielectric Breakdown Avg: 33.89 kV Coefficient of Variation: 12.26%
Percent Difference in Averages. . : -1.36%

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SGR Date: 5/29/86

71E-20

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1114
Control No. 20 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	20V1	20V2	20V3	20V4	20V5
1/C	33.6	35.5	29.6	39.6	33.5

Dielectric Breakdown Average = 34.36
Standard Deviation = 3.630839
Coefficient of Variation = 10.56705 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1114
Control No. 20 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	20T1	20T2	20T3	20T4	20T5
1	30.5	39.7	33.8	35.7	38.4
2	32.6	29.8	34.4	32.7	34.2
3	31.9	40.6	38.0	32.5	30.7
4	38.5	35.1	34.9	35.8	24.9
5	30.3	40.8	30.5	35.2	25.8

Max. tension = 2600 to 2700 lbs.

Dielectric Breakdown Average = 33.892
Standard Deviation = 4.155912
Coefficient of Variation = 12.26222 %

DIFFERENCE IN AVERAGES = -1.362045 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 21, Sample No. 1046

Description: No. 6, 1/C, 600V
Insulation Type: PXJ

Max SWBP 1408 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 36.02 kV Coefficient of Variation: 3.92%
Tensioned Dielectric Breakdown Avg: 39.24 kV Coefficient of Variation: 10.81%
Percent Difference in Averages. . : 8.94%

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SLR Date: 5/29/86

71E-21

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1046
Control No. 21 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	21V1	21V2	21V3	21V4	21V5
1/C	35.5	34.2	35.5	37.3	37.6

Dielectric Breakdown Average = 36.02
Standard Deviation = 1.413152
Coefficient of Variation = 3.923242 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1046
Control No. 21 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	21T1	21T2	21T3	21T4	21T5
1	35.5	41.8	35.5	37.8	44.5
2	37.3	41.7	39.9	33.5	38.9
3	40.6	35.5	44.3	43.8	42.8
4	35.7	36.7	32.3	38.8	44.9
5	42.2	45.9	29.7	41.5	39.9

Max. tension = 2100 to 2200 lbs.

Dielectric Breakdown Average = 39.24
Standard Deviation = 4.240381
Coefficient of Variation = 10.80627 %

DIFFERENCE IN AVERAGES = 8.939482 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 22, Sample No. 1108

Description: No. 4, 1/C, 600V
Insulation Type: CPJ

Max SWBP 1796 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 50.98 kV Coefficient of Variation: 17.16%
Tensioned Dielectric Breakdown Avg: 49.64 kV Coefficient of Variation: 7.65%
Percent Difference in Averages. . : -2.62%

Anomalies/Remarks: Indentations and seams noticed in cable samples.

Prepared By: SLR Date: 5.29.86
Verified By: KDW Date: 5-29-86

171E-22

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1108
Control No. 22 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	22V1	22V2	22V3	22V4	22V5
1/C	55.7	48.7	57.6	56.3	36.6

Dielectric Breakdown Average = 50.98
Standard Deviation = 8.751971
Coefficient of Variation = 17.16746 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 1108
Control No. 22 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	22T1	22T2	22T3	22T4	22T5
1	48.8	47.5	48.4	49.5	50.5
2	53.6	52.0	49.0	50.3	54.7
3	52.7	49.6	49.5	53.8	51.3
4	55.7	50.6	41.5	47.9	50.2
5	50.0	38.9	43.8	49.4	51.8

Max. tension = 2560 to 2780 lbs.

Dielectric Breakdown Average = 49.64
Standard Deviation = 3.798464
Coefficient of Variation = 7.652023 %

DIFFERENCE IN AVERAGES = -2.628482 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 23, Sample No. 502

Description: No. 12, 7/C 600V
Insulation Type: SROJJ

Max SWBP 1585 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 7
No. Ind Conductors Tensioned: 35

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 35

Virgin Dielectric Breakdown Avg . : 22.77 kV Coefficient of Variation: 16.46%
Tensioned Dielectric Breakdown Avg: 22.65 kV Coefficient of Variation: 18.30%
Percent Difference in Averages. . : -0.55%

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SbR Date: 5.29.86

171E-32

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 502
Control No. 23 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	23V1	23V2	23V3	23V4	23V5
BLA	23.6	18.2	27.6	29.4	21.4
RED	25.8	22.7	12.8	28.2	24.5
YEL	23.9	22.7	20.6	17.7	18.9
GRN	24.0	28.4	21.0	17.6	22.7
BLU	20.9	21.4	17.4	24.0	19.5
WHT	23.7	28.2	26.2	25.1	26.3
WHT/BLA	24.1	24.8	17.9	23.4	22.5

Dielectric Breakdown Average = 22.77429
Standard Deviation = 3.749694
Coefficient of Variation = 16.46459 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 502
Control No. 23 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	23T1	23T2	23T3	23T4	23T5
BLA	24.1	26.1	26.7	25.2	28.6
RED	29.6	20.9	13.3	21.5	24.7
YEL	20.5	16.3	19.1	26.6	24.4
GRN	24.5	20.8	24.8	23.9	20.8
BLU	20.3	21.9	17.2	18.0	18.2
WHT	19.6	26.1	16.5	29.0	27.8
WHT/BLA	24.7	26.5	16.5	21.6	26.4

Max. tension = 690 to 710 lbs.

Dielectric Breakdown Average = 22.64857
Standard Deviation = 4.145826
Coefficient of Variation = 18.30502 %

DIFFERENCE IN AVERAGES = -.5520135 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 24, Sample No. 26

Description: No. 14, 1/C, 600V
Insulation Type: SROAJ

Max SWBP 864 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 21.66 kV Coefficient of Variation: 14.16%
Tensioned Dielectric Breakdown Avg: 30.10 kV Coefficient of Variation: 11.31%
Percent Difference in Averages. . : 39.00%

Anomalies/Remarks: The difference in dielectric breakdown average may be due to moisture absorption, contamination, insulation thickness deviation, etc. There is no documented explanation.

Prepared By: [illegible] Date: 5/29/86
Verified By: KDW Date: 5-29-86

77E-30

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 26
Control No. 24 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	24V1	24V2	24V3	24V4	24V5
1/C	24.4	22.8	20.4	23.8	16.9

Dielectric Breakdown Average = 21.66
Standard Deviation = 3.067246
Coefficient of Variation = 14.16088 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 26
Control No. 24 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	24T6	24T7	24T8	24T9	24T10
1	29.9	29.9	32.2	32.9	36.7
2	31.8	34.6	33.1	25.8	28.3
3	30.5	34.3	29.2	28.3	26.8
4	31.5	26.1	20.8	29.9	26.2
5	31.9	32.2	28.0	29.7	32.1

Max. tension = 750 to 805 lbs.

Dielectric Breakdown Average = 30.108
Standard Deviation = 3.40599
Coefficient of Variation = 11.31257 %

DIFFERENCE IN AVERAGES = 39.00277 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 25, Sample No. 440

Description: No. 14, 1/C,600V
Insulation Type: PN

Max SWBP 619 lbs/ft

No. Cables in a Pull. . . . . : 5
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 25

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 41.24 kV Coefficient of Variation: 11.45%
Tensioned Dielectric Breakdown Avg: 37.5 kV Coefficient of Variation: 9.02%
Percent Difference in Averages. . : -9.07%

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SGR Date: 5/29/86

71E-23

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 440
Control No. 25 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	25V1	25V2	25V3	25V4	25V5
1/C	42.3	40.1	36.6	48.8	38.4

Dielectric Breakdown Average = 41.24
Standard Deviation = 4.721546
Coefficient of Variation = 11.44895 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 440
Control No. 25 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	25T1	25T2	25T3	25T4	25T5
1	38.6	37.7	39.2	35.7	31.7
2	44.5	41.5	38.6	35.4	39.6
3	41.2	34.6	32.4	34.2	36.2
4	40.2	31.3	36.2	42.2	37.3
5	36.1	40.3	40.0	38.6	34.2

Max. tension = 500 to 510 lbs.

Dielectric Breakdown Average = 37.5
Standard Deviation = 3.381568
Coefficient of Variation = 9.017513 %

DIFFERENCE IN AVERAGES = -9.068869 %

CLSB CONTROL No. 26 NOT TESTED

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 27, Sample No. 103

Description: No. 2/0 1/C 8 kV
Insulation Type: CPSJ

Max SWBP 3104 lbs/ft

No. Cables in a Pull. . . . . : 3
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 15

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 93.4 kV Coefficient of Variation: 15.80%
Tensioned Dielectric Breakdown Avg: 100 kV Coefficient of Variation: 0
Percent Difference in Averages. . : 7.07%

Anomalies/Remarks: The test was limited to a voltage of 100 kV because materials and equipment were not available to eliminate corona and arcing.

Prepared By: KDW Date: 5-29-86
Verified By: SGR Date: 5/29/86

71E-24

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 103
Control No. 27 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	27V1	27V2	27V3	27V4	27V5
8 KV	100	100	100	100	67

Minimum average - all cables not taken to breakdown:

Dielectric Breakdown Average = 93.4
Standard Deviation = 14.75805
Coefficient of Variation = 15.80091 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 103
Control No. 27 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	27T3	27T4	27T5	27T6	27T7
1	100	100	100	100	100
2	100	100	100	100	100
3	100	100	100	100	100

Max. tension = 5400 to 6500 lbs.
Minimum average - all cables not taken to breakdown:

Dielectric Breakdown Average = 100
Standard Deviation = 0
Coefficient of Variation = 0 %

DIFFERENCE IN AVERAGES = 7.06638 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 28, Sample No. 197

Description: No. 2/0, 1/C, 8 kV
Insulation Type: EPSJ

Max SWBP 2889 lbs/ft

No. Cables in a Pull. . . . . : 3
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 15

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 100 kV Coefficient of Variation: 0
Tensioned Dielectric Breakdown Avg: 90.46 kV Coefficient of Variation: 15.36%
Percent Difference in Averages. . : -9.53%

Anomalies/Remarks: The test was limited to a voltage of 100 kV because materials and equipment were not available to eliminate corona and arcing.

Prepared By: SLR Date: 5/29/86
Verified By: KDW Date: 5-29-86

77E-25

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 197
Control No. 28 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	28V1	28V2	28V3	28V4	28V5
8 KV	100	100	100	100	100

Minimum average - all cables not taken to breakdown:

Dielectric Breakdown Average = 100
Standard Deviation = 0
Coefficient of Variation = 0 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 197
Control No. 28 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	28T1	28T2	28T3	28T5	28T6
1	90	100	94	100	58
2	75	100	100	100	100
3	100	66	100	92	82

Max. tension = 5600 to 6050 lbs.
Minimum average - all cables not taken to breakdown:

Dielectric Breakdown Average = 90.46667
Standard Deviation = 13.90204
Coefficient of Variation = 15.36703 %

DIFFERENCE IN AVERAGES = -9.533333 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 29, Sample No. 5000

Description: No. 22, Coax RG59 B/U
Insulation Type: N/A

Max SWBP 373 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 1
No. Ind Conductors Tensioned: 5

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 5

Virgin Dielectric Breakdown Avg . : 52 kV Coefficient of Variation: 18.14%
Tensioned Dielectric Breakdown Avg: 53.2 kV Coefficient of Variation: 20.35%
Percent Difference in Averages. . : 2.31%

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SLR Date: 5/29/86

71E-26

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 5000
Control No. 29 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	29V1	29V2	29V3	29V4	29V5
COAX	55.0	61.0	53.0	36.0	55.0

Dielectric Breakdown Average = 52
Standard Deviation = 9.433981
Coefficient of Variation = 18.14227 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 5000
Control No. 29 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	29T1	29T2	29T3	29T4	29T5
COAX	61.0	37.0	60.0	61.0	47.0

Max. tension = 105 to 132 lbs.

Dielectric Breakdown Average = 53.2
Standard Deviation = 10.8259
Coefficient of Variation = 20.34943 %

DIFFERENCE IN AVERAGES = 2.307694 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 30 , Sample No. 5001

Description: TP No. 22 W/SH, TP No. 20, 2/C, No. 22 2-Coax
Insulation Type: N/A

Max SWBP 1242 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 8
No. Ind Conductors Tensioned: 40

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 40

Virgin Dielectric Breakdown Avg . : 24.59 kV Coefficient of Variation: 35.09%
Tensioned Dielectric Breakdown Avg: 23.60 kV Coefficient of Variation: 37.76%
Percent Difference in Averages. . : -4.05%

Anomalies/Remarks: The coefficient of variation is high on the virgin and tensioned samples due to the difference in insulation between the coax conductors and other conductors.

Prepared By: KDW Date: 5-29-86
Verified By: SGR Date: 5.29.86

71E-27

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 5001
Control No. 30 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	30V1	30V2	30V3	30V4	30V5
BL COAX	44.0	44.0	39.0	38.0	37.0
WH COAX	34.0	38.0	33.0	37.0	40.0
LIT BLA	21.8	16.3	21.3	18.3	21.0
LIT WHT	20.2	18.1	18.1	18.8	17.9
RED	20.7	20.8	18.0	23.0	22.8
GRN	16.3	21.2	23.7	18.7	16.6
BIG BLA	21.8	20.3	23.1	21.5	16.8
BIG WHT	26.9	16.5	13.7	24.3	21.2

Dielectric Breakdown Average = 24.5925
Standard Deviation = 8.630488
Coefficient of Variation = 35.09398 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 5001
Control No. 30 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	30T1	30T2	30T3	30T4	30T5
BL COAX	40.0	44.0	40.0	39.0	40.0
WH COAX	34.0	38.0	32.0	34.0	40.0
LIT BLA	18.0	15.4	15.1	21.2	16.7
LIT WHT	17.8	17.3	19.9	20.0	19.9
RED	18.0	21.0	19.9	16.7	18.2
GRN	17.8	21.0	21.0	21.1	22.1
BIG BLA	18.5	19.2	21.2	20.1	20.4
BIG WHT	12.4	21.3	17.0	20.9	13.8

Max. tension = 420 to 440 lbs.

Dielectric Breakdown Average = 23.5975
Standard Deviation = 8.910911
Coefficient of Variation = 37.7621 %

DIFFERENCE IN AVERAGES = -4.045952 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 31, Sample No. 5002

Description: No. 14, 7/C
Insulation Type: PJJ

Max SWBP 1697 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 7
No. Ind Conductors Tensioned: 35

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 35

Virgin Dielectric Breakdown Avg . : 28.68 kV Coefficient of Variation: 14.80%
Tensioned Dielectric Breakdown Avg: 26.35 kV Coefficient of Variation: 14.51%
Percent Difference in Averages. . : -8.11%

Anomalies/Remarks: None

Prepared By: KDW Date: 5-29-86
Verified By: SGR Date: 5-29-86

171E-28

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 5002
Control No. 31 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	31V1	31V2	31V3	31V4	31V5
BLA	26.0	19.2	27.7	25.1	25.9
RED	33.8	30.6	21.5	28.3	24.6
ORG	22.1	26.8	27.2	31.0	27.1
GRN	30.2	26.8	34.3	29.3	34.6
BLU	25.8	27.9	38.8	29.5	29.5
WHT	29.1	32.5	28.8	39.3	30.9
WHT/BLA	29.7	28.3	24.8	29.9	26.9

Dielectric Breakdown Average = 28.68
Standard Deviation = 4.244775
Coefficient of Variation = 14.80047 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 5002
Control No. 31 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	31T1	31T2	31T3	31T4	31T5
BLA	26.1	21.7	20.2	24.3	27.5
RED	27.6	33.7	27.2	25.9	26.9
ORG	21.6	26.7	18.7	23.1	32.3
GRN	29.9	24.5	32.5	34.6	25.2
BLU	23.7	26.5	24.8	22.0	33.2
WHT	26.9	28.1	26.2	23.1	30.5
WHT/BLA	22.4	27.2	25.0	26.7	25.9

Max. tension = 720 to 760 lbs.

Dielectric Breakdown Average = 26.35429
Standard Deviation = 3.824021
Coefficient of Variation = 14.51006 %

DIFFERENCE IN AVERAGES = -8.109185 %

ATTACHMENT I

SIDEWALL BEARING PRESSURE CABLE TEST DATA SUMMARY

Cable ID: CLSB Control No. 32, Sample No. 5003

Description: No. 12, 7/C, 600V
Insulation Type: PNJ

Max SWBP 1831 lbs/ft

No. Cables in a Pull. . . . . : 1
No. Pulls . . . . . : 5
No. Conductors in Cable . . : 7
No. Ind Conductors Tensioned: 35

No. Virgin Cables. . . . . : 5
No. Virgin Ind Conductors: 35

Virgin Dielectric Breakdown Avg . : 28.82 kV Coefficient of Variation: 27.58%
Tensioned Dielectric Breakdown Avg: 32.60 kV Coefficient of Variation: 21.02%
Percent Difference in Averages. . : 13.11%

Anomalies/Remarks: None

Prepared By: SLR Date: 5/29/86
Verified By: KDW Date: 5-29-86

71E-29

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 5003
Control No. 32 - VIRGIN

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	32V1	32V2	32V3	32V4	32V5
BLA	22.2	26.8	25.5	30.2	24.1
RED	38.3	41.8	17.8	35.3	37.5
ORG	28.2	28.9	20.0	38.8	24.6
GRN	29.6	23.5	21.6	33.2	25.3
BLU	27.4	31.9	16.2	27.2	30.6
WHT	42.0	28.3	13.3	43.2	44.2
WHT/BLA	28.3	32.0	17.9	20.0	33.2

Dielectric Breakdown Average = 28.82572
Standard Deviation = 7.951669
Coefficient of Variation = 27.58533 %

CABLE SIDEWALL BEARING PRESSURE TESTS -- SAMPLE 5003
Control No. 32 - TENSIONED

CONDUCTOR	ELECTRICAL BREAKDOWN, KILOVOLTS @ 60 Hz, RMS				
	32T1	32T2	32T3	32T4	32T5
BLA	24.8	27.2	33.1	19.2	32.0
RED	44.6	35.4	36.0	41.8	43.8
ORG	26.8	34.1	24.0	32.1	29.4
GRN	36.3	37.1	41.9	31.2	38.9
BLU	29.2	20.0	38.8	21.5	33.0
WHT	34.2	38.0	42.8	32.0	39.8
WHT/BLA	26.3	29.1	33.9	29.8	23.1

Max. tension = 750 to 820 lbs.

Dielectric Breakdown Average = 32.60572
Standard Deviation = 6.855395
Coefficient of Variation = 21.02513 %

DIFFERENCE IN AVERAGES = 13.11328 %

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 335
Plant. . . . . = W
Manufacturer . . . . . = PWC
Contract No. . . . . = 85069-2
Mark No. . . . . = WLG
Description. . . . . = No. 12 7/C
Insulation . . . . . = CPJJ
Filler Material. . . . = Fabric

Standards Used = 543211, 902038, 543202

Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA
Wt/Ft (lb). . . . . = .3091

	Test No. IVI –	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1891	.1873	.0969	.0943	29.2			
2.	RED	.1932	.1897	.0971	.0920	32.0			
3.	ORG	.1934	.1903	.0969	~~.0944~~ .0904	34.4			
4.	BLU	.1842	.1823	.0971	.0941	31.4			
5.	GRN	.1847	.1802	.0968	.0938	31.4			
	WHT	.1898	.1853	.0963	.0911	29.5			
	WHT/BLA	.1963	.1918	.0961	.0935	31.6			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .7232 Max .6961 Min
Overall Virgin Dielectric Breakdown Average 31.07 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — JMT 4-24-86 (Micrometer) — JB R.A.T. 4/23/86 (Dielectric)
Verified By/Date HC 5/29/80 QA Approval/Date JBR 5/29/86
Test Observers BRC
Visual Cable Report: ok HC
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 335
Plant. . . . . = W
Manufacturer . . . . . = PWC
Contract No. . . . . = 85069-2
Mark No. . . . . = WLG
Description. . . . . = No. 12 7/C
Insulation . . . . . = CPJJ
Filler Material. . . . = Fabric

Standards Used = 543211, 902038
543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .3091

	Test No. 1V2-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1967	.1851	.0968	.0939	29.3			
2.	RED	.1926	.1899	.0948	.0909	33.4			
3.	ORG	.1958	.1887	.0984	.0941	33.8			
4.	BLU	.1856	.1819	.1024	.0918	33.2			
5.	GRN	.1841	.1817	.1014	.0945	29.2			
6.	WHT	.1910	.1893	.0984	.0948	25.4			
7.	WHT/BLA	.1964	.1897	.1030	.0951	32.2			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .7163 Max .6958 Min
Overall Virgin Dielectric Breakdown Average 31.07 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — DMF 4-23-86 (Micrometer) — JB R.A.T. 4/28/86 (Dielectric)
Verified By/Date 5/29/86 HE QA Approval/Date JBR 5/29/86
Test Observers RR
Visual Cable Report: OK HE
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 335
Plant. . . . . = W
Manufacturer . . . . . = PWC
Contract No. . . . . = 85069-2
Mark No. . . . . = WLG
Description. . . . . = No.12 7/c
Insulation . . . . . = CPJJ
Filler Material. . . . = Fabric

Standards Used = 543211, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .3091

	Test No. IV3-	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1943	.1871	.0975	.0908	30.4			
2.	RED	.1901	.1864	.0974	.0919	32.1			
3.	ORG	.1918	.1881	.0971	.0917	33.2			
4.	BLU	.1843	.1802	.0950	.0930	31.5			
5.	GRN	.1862	.1813	.0971	.0936	28.3			
	WHT	.1890	.1859	.0972	.0952	32.0			
	WHT/BLA	.1950	.1894	.0952	.0924	31.4			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .7121 Max .6866 Min
Overall Virgin Dielectric Breakdown Average 31.07 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — JMT 4-23-86 (Micrometer) — JB R.A.I 4/23/86 (Dielectric)
Verified By/Date Ne 5/29/86 QA Approval/Date JGR 5/29/86
Test Observers RR
Visual Cable Report: ok lde
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 335
Plant. . . . . = W
Manufacturer . . . . . = PWC
Contract No. . . . . = 85069-2
Mark No. . . . . = WLG
Description. . . . . = No. 12 7/C
Insulation . . . . . = CPJJ
Filler Material. . . . = Fabric

Standards Used = 543211, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .3091

	Test No. 1V4-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1885	.1797	.0949	.0923	29.9			
2.	RED	.1921	.1899	.0991	.0944	31.7			
3.	ORANGE	.1911	.1895	.1013	.0942	30.6			
4.	BLU	.1844	.1830	.0977	.0937	31.0			
5.	GRN	.1889	.1817	.1010	.0978	31.5			
6.	WHT	.1898	.1859	.1007	.0989	29.6			
7.	WHT/BLA	.1949	.1905	.1006	.0928	29.6			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .7212 Max .7014 Min
Overall Virgin Dielectric Breakdown Average 31.07 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — DM7 4-23-86 (Micrometer) — JB R.A.T 3/23/86 (Dielectric)
Verified By/Date HL 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers RR
Visual Cable Report: OK HL
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 335
Plant. . . . . = W
Manufacturer . . . . . = PWC
Contract No. . . . . = 85069-2
Mark No. . . . . = WLG
Description. . . . . = No 12 7/6
Insulation . . . . . = CPJJ
Filler Material. . . . = Fibric

Standards Used = 543211, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .3091

	Test No. IV5-	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1909	.1768	.0952	.0896	31.4			
2.	RED	.1936	.1889	.0983	.0933	26.5			
3.	ORG	.1906	.1882	.1025	.0958	33.8			
4.	BLU	.1840	.1819	.0978	.0948	32.4			
5.	GRN	.1869	.1825	.0966	.0906	31.4			
	WHT	.1914	.1854	.0957	.0930	31.7			
	WHT/BLA	.1956	.1910	.0983	.0926	31.4			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .7077 Max .6905 Min
Overall Virgin Dielectric Breakdown Average 31.07 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — DMZ 4-23-86 (Micrometer) — JB P.A.T. 4/23/86 (Dielectric)
Verified By/Date HK 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers PR
Visual Cable Report: OK HK
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 335
Plant. . . . . = W
Manufacturer . . . . . = PWC
Contract No. . . . . = 85069-2
Mark No. . . . . = WLG
Description. . . . . = No. 12 7/c
Insulation . . . . . = CPJJ
Filler Material. . . . = Fabric

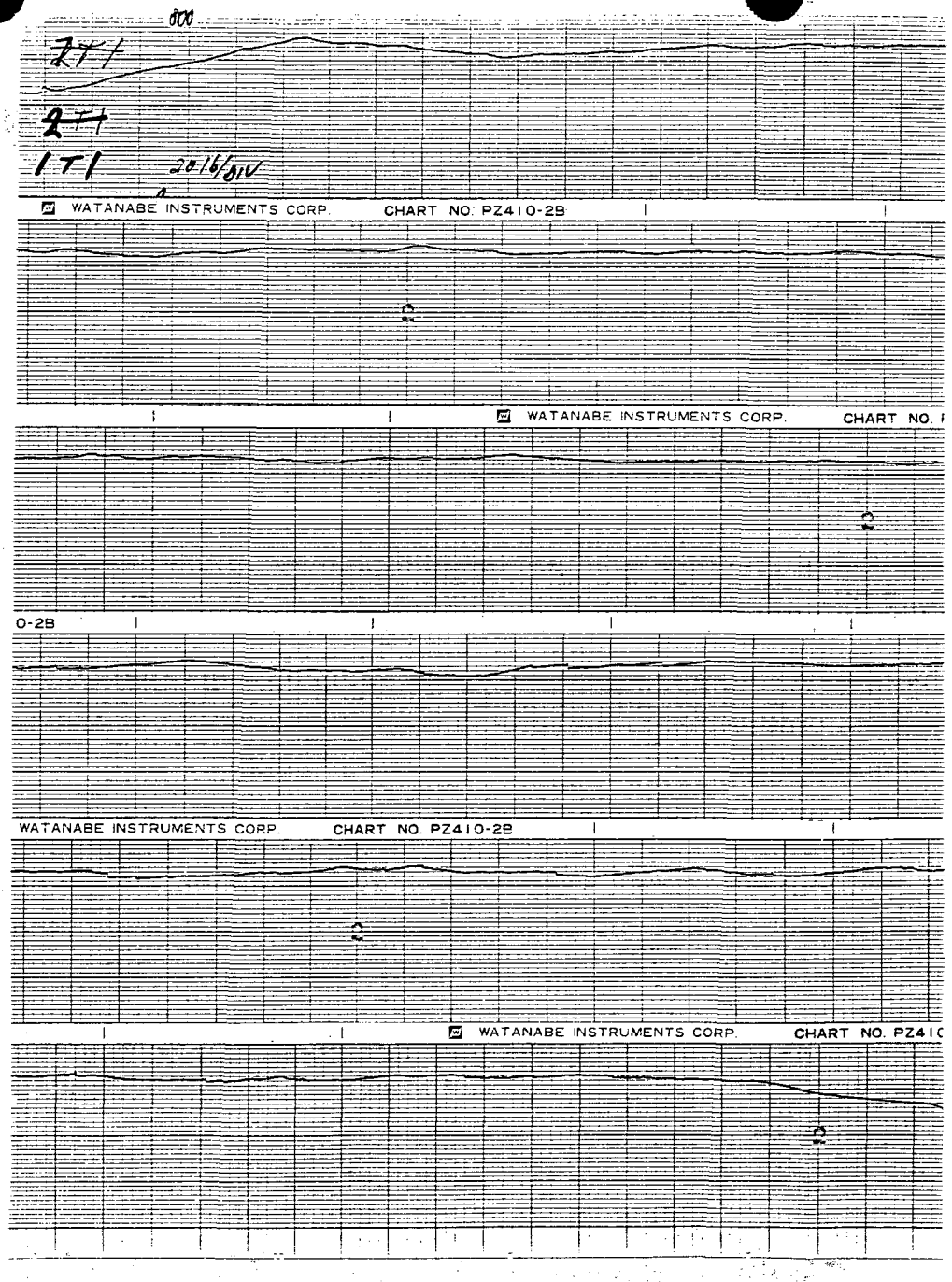
Standards Used = 506325, 543175, 522035, 543211, 902038, 502445, 543202, ~~212506~~ JB 5/6/86
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .3091

Test No. 1T1-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1. BLA	.1880	.1849	.0971	.0927	25.4	30.04	✓	
2. RED	.1882	.1858	.0976	.0945	33.4	31.14	✓	
3. ORG	.1929	.1890	.0971	.0919	34.0	33.16	✓	
4. BLU	.1817	.1806	.0964	.0931	31.2	31.90	✓	
5. GRN	.1882	.1811	.0963	.0938	32.3	30.36	✓	
6. WHT	.1897	.1849	.0960	.0932	33.1	29.64	✓	
7. WHT/BLA	.1975	.1912	.0968	.0948	33.2	31.24	✓	
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .7184 Max .7032 Min
Overall Virgin Dielectric Breakdown Average 31.07 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 700 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1563 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1563 lbs/ft.

Tested By/Date VEK 4-23-86 (Tension) DMZ 4.23.86 (Micrometer) JB R.A.T. 4/23/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers RR
Visual Cable Report: OK HC
Anomalies:

Continuity OK JB



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 335
Plant. . . . . = W
Manufacturer . . . . . = PWC
Contract No. . . . . = 85069-2
Mark No. . . . . = WLG
Description. . . . . = No 12 7/C
Insulation . . . . . = CPJJ
Filler Material. . . . = Fabric

Standards Used = 506325, 543175, 522035, 543240, 543211, 902038, 502445, 543202, 212506
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .3091

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	IT2								
1.	BLA	.1945	.1858	.0953	.0915	31.6	>10,000 MΩ		
2.	RED	.1959	.1865	.0978	.0900	32.7			
3.	ORG	.1940	.1876	.0932	.0900	30.9			
4.	BLU	.1971	.1805	.0926	.0910	32.0			
5.	GRN	.1902	.1853	.0915	.0904	35.1			
6.	WHT	.1887	.1840	.0943	.0905	25.6			
7.	WHT/BLA	.1951	.1937	.0928	.0905	30.1	R.A.I. 5/2/84		
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .7094 Max .6870 Min
Overall Virgin Dielectric Breakdown Average 31.07 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 690 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1541 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1541 lbs/ft.

Tested By/Date VEK 4-24-86 (Tension) KWR 4-25-86 Wm 7 4-25-86 (Micrometer) CB R.A.I. 5/2/84 (Dielectric)
Verified By/Date HO 5/29/86 QA Approval/Date JOR 5/29/86
Test Observers RR
Visual Cable Report: OK HO
Anomalies:

Continuity OK JB

IT2

2016/204

WATANABE INSTRUMENTS CORP CHART NO. PZ 410-2H

WATANABE INSTRUMENTS CORP CHART NO. PZ 410-2H

WATANABE INSTRUMENTS CORP CHART NO. PZ 410-2H

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 335
Plant. . . . . = W
Manufacturer . . . . . = PWC
Contract No. . . . . = RS069-2
Mark No. . . . . = WLG
Description. . . . . = No.12 7/C
Insulation . . . . . = CPJJ
Filler Material. . . . = Fabric

Standards Used = 506325, 543175, 522035, 543211, 543240, 543202, 902038, 212506, 502445
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .3091

	Test No. 1T3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1884	.1861	.0941	.0910	27.9			
2.	RED	.1941	.1887	.0949	.0900	33.4			
3.	ORG	.1920	.1876	.0939	.0913	32.2			
4.	BLU	.1864	.1829	.0930	.0912	36.2			
5.	GRN	.1845	.1794	.0917	.0904	31.3			
6.	WHT	.1855	.1846	.0924	.0896	32.6			
7.	WHT/BLA	.1977	.1934	.0960	.0908	27.8			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .7056 Max .6911 Min
Overall Virgin Dielectric Breakdown Average 31.07 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 680 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1518 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1518 lbs/ft.

Tested By/Date VEK 4-24-86 (Tension) — VWR 4-35-86 (Micrometer) — JB R.A.T. 5/2/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date JBC 5/29/86
Test Observers DR
Visual Cable Report: ok He
Anomalies:

>10,000MΩ was meggered on these cables

Continuity ok JB

1T3

2016/DN

WATANABE INSTRUMENTS CORP.

T NO. PZ410-2H

WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H

WATANABE INSTRUMENTS CORP. CHAR

PZ410-2H

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 335
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 502445, 543202, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	1T4							
1.	BLK	.1919	.1859	.0934	.0906	30.2	>10,000 MΩ	Est OK
2.	RED	.1930	.1889	.0915	.0909	31.8		
3.	ORG	.1860	.1891	.0915	.0879	34.2		
4.	BLU	.1854	.1891	.0914	.0912	37.5		
5.	GRN	.1830	.1808	.0911	.0907	36.8		
6.	WHT	.1880	.1852	.0913	.0910	29.6	R.A.T. 5/2/86	
7.	WHT/BLK	.1947	.1906	.0916	.0914	32.8		
8.								
9.								
10.								
11.								
12.								

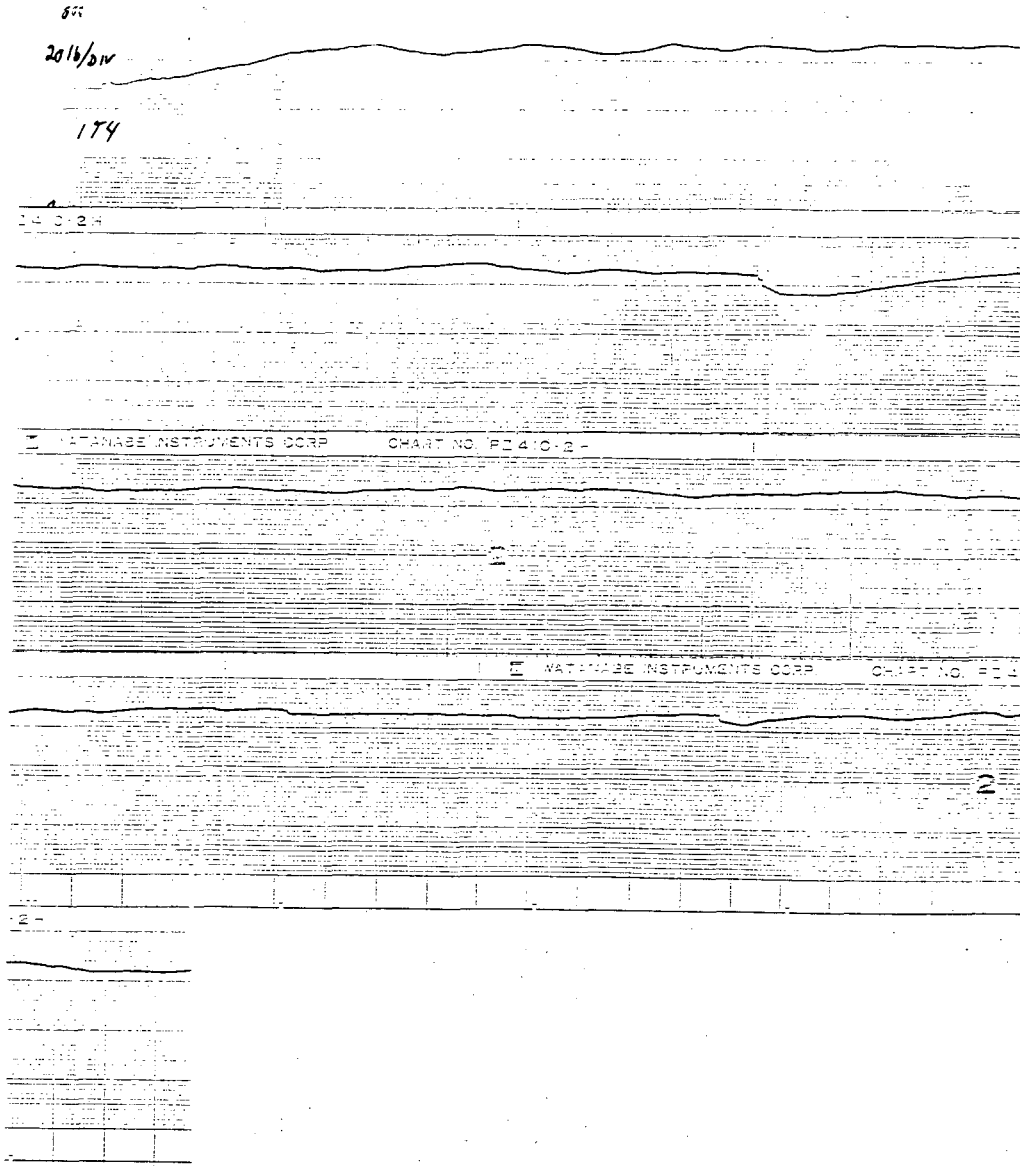
Multi-Conductor Jacket O.D. = .7114 Max .6893 Min
Tension (T) = 690 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1541 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1541 lbs/ft.

Tested By/Date VCK 5-1-86 (Tension) NLW 5-1-86 (Micrometer) JB R.A.T. 5/2/86 (Dielectric)
Verified By/Date He 5/29/86
QA Approval/Date 5/29/86
Test Observers

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 325
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522025, 543211, 543240, 902038, 502445, 543202, 212506

Test No. ITS	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1877	.1840	.0914	.0907	25.7	>10,000 MΩ	Test OK
2. Red	.1907	.1859	.0914	.0908	31.6		
3. ORG	.1881	.1851	.0912	.0908	32.9		
4. BLU	.1876	.1841	.0948	.0912	36.0		
5. GRN	.1841	.1802	.0929	.0908	37.8		
6. WHT	.1846	.1838	.0916	.0899	29.1		
7. WHT/BLA	.1960	.1903	.0917	.0913	26.8	R.A.T. 5/2/86	
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .7048 Max .6815 Min
Tension (T) = 685 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1529 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1529 lbs/ft

Tested By/Date VCK 5-1-86 (Tension) NLW 5-1-86 (Micrometer) JB R.A.T. 5/2/86 (Dielectric)
Verified By/Date HC 5/29/86 (QA Approval/Date) 5/29/86
Test Observers PAR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

2014/SIV

ITS

WATANABE INSTRUMENTS CORP. CHART NO. PZ 410-2H

WATANABE INSTRUMENTS CORP. CHART NO. PZ 410-2H

WATANABE INSTRUMENTS

CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 593
Plant. . . . . = H
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 825722-2
Mark No. . . . . = WHG-2
Description. . . . . = No 14 7/C
Insulation . . . . . = PXMJ
Filler Material. . . . . = NONE

Standards Used = 543211, 902038
543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1949

	Test No. 2V1-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1363	.1344	.0731	.0728	20.1			
2.	RED	.1421	.1339	.0731	.0721	23.0			
3.	ORG	.1372	.1352	.0730	.0727	18.7			
4.	BLU	.1371	.1302	.0729	.0725	18.5			
5.	GRN	.1378	.1342	.0731	.0724	21.3			
	WHT	.1379	.1344	.0727	.0711	24.5			
	WHT/BLA	.1359	.1335	.0725	.0718	31.5			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5381 Max .5277 Min
Overall Virgin Dielectric Breakdown Average 21.23 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — Dm 4-24-86 (Micrometer) — JB R.A.I. 4/24/86 (Dielectric)
Verified By/Date NO 5/29/86 — QA Approval/Date [illegible] 5/29/86
Test Observers AR
Visual Cable Report: OK NO
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 593
Plant. . . . . = H
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 825722-2
Mark No. . . . . = WHG-2
Description. . . . . = No. 14 7/c
Insulation . . . . . = PVMJ
Filler Material. . . . . = None

Standards Used = 543211, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1949

	Test No. 2V2-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1363	.1339	.0730	.0724	16.8			
2.	RED	.1379	.1346	.0732	.0727	20.2			
3.	ORG	.1387	.1338	.0734	.0727	18.2			
4.	BLU	.1369	.1310	.0736	.0728	17.6			
5.	GRN	.1376	.1356	.0746	.0710	23.9			
6.	WHT	.1380	.1370	.0724	.0712	24.0			
7.	WHT/BLA	.1358	.1338	.0727	.0722	21.8			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5394 Max .5229 Min
Overall Virgin Dielectric Breakdown Average 21.23 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) Dm7 4-24-86 (Micrometer) JB R.A.T. 4/24/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers RR
Visual Cable Report: OK He
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 593
Plant. . . . . = H
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 825722-2
Mark No. . . . . = WHG-2 JJ
Description. . . . . = ~~No 12 7/c~~ No 14 7/c
Insulation . . . . . = PXMJ
Filler Material. . . . = NONE

Standards Used = 543211, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1949

	Test No. 2V3 -	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1362	.1343	.0727	.0725	18.4			
2.	RED	.1385	.1351	.0730	.0728	18.6			
3.	ORG	.1358	.1335	.0732	.0727	15.7			
4.	BLU	.1361	.1319	.0740	.0727	17.5			
5.	GRN	.1375	.1343	.0729	.0727	22.2			
6.	WHT	.1395	.1350	.0726	.0718	24.9			
	WHT/BLA	.1351	.1321	.0723	.0720	24.5			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5400 Max .5249 Min
Overall Virgin Dielectric Breakdown Average 21.23 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) Jm7 4-24-86 (Micrometer) JB R.A.T. 4/24/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers AR
Visual Cable Report: OK (W)
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 593
Plant. . . . . = H
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 825
Mark No. . . . . = WHG-2
Description. . . . . = No.14 7/C
Insulation . . . . . = PXMJ
Filler Material. . . . = None

Standards Used = 543211, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1949

	Test No. 2V4-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1358	.1333	.0731	.0722	17.4			
2.	RED	.1381	.1347	.0730	.0728	21.1			
3.	ORG	.1354	.1340	.0732	.0726	18.2			
4.	BLU	.1355	.1317	.0730	.0728	17.7			
5.	GRN	.1362	.1346	.0730	.0725	23.1			
6.	WHT	.1394	.1347	.0727	.0714	23.6			
7.	WHT/BLA	.1361	.1317	.0737	.0724	23.6			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5443 Max .5253 Min
Overall Virgin Dielectric Breakdown Average 21.23 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) dm7 4-24-86 (Micrometer) JB R.A.T. 4/24/86 (Dielectric)
Verified By/Date NR 5/29/86 QA Approval/Date [illegible] 5/29/86
Test Observers [illegible]
Visual Cable Report: OK [illegible]
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 593
Plant. . . . . = H
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 825722-2
Mark No. . . . . = WHG-2
Description. . . . . = No 14 7/C
Insulation . . . . . = PXMJ
Filler Material. . . . = NONE

Standards Used = 543211
902038, 543203

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1949

	Test No. 2V5-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1355	.1339	.0731	.0725	20.5			
2.	RED	.1378	.1354	.0731	.0730	23.0			
3.	ORG	.1375	.1340	.0731	.0725	17.3			
4.	BLU	.1344	.1326	.0729	.0727	16.9			
5.	GRN	.1362	.1328	.0729	.0723	28.9			
	WHT	.1386	.1372	.0725	.0715	25.4			
	WHT/BLA	.1363	.1328	.0726	.0721	24.3			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5412 Max .5260 Min
Overall Virgin Dielectric Breakdown Average 21.23 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) Dm7 4-24-86 (Micrometer) JB R.A.T 4/24/84 (Dielectric)
Verified By/Date HE 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers RR
Visual Cable Report: OK HE
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 593
Plant. . . . . = H
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = R25722-2
Mark No. . . . . = WHG-2
Description. . . . . = #14 7/c
Insulation . . . . . = PXMS
Filler Material. . . . = NONE

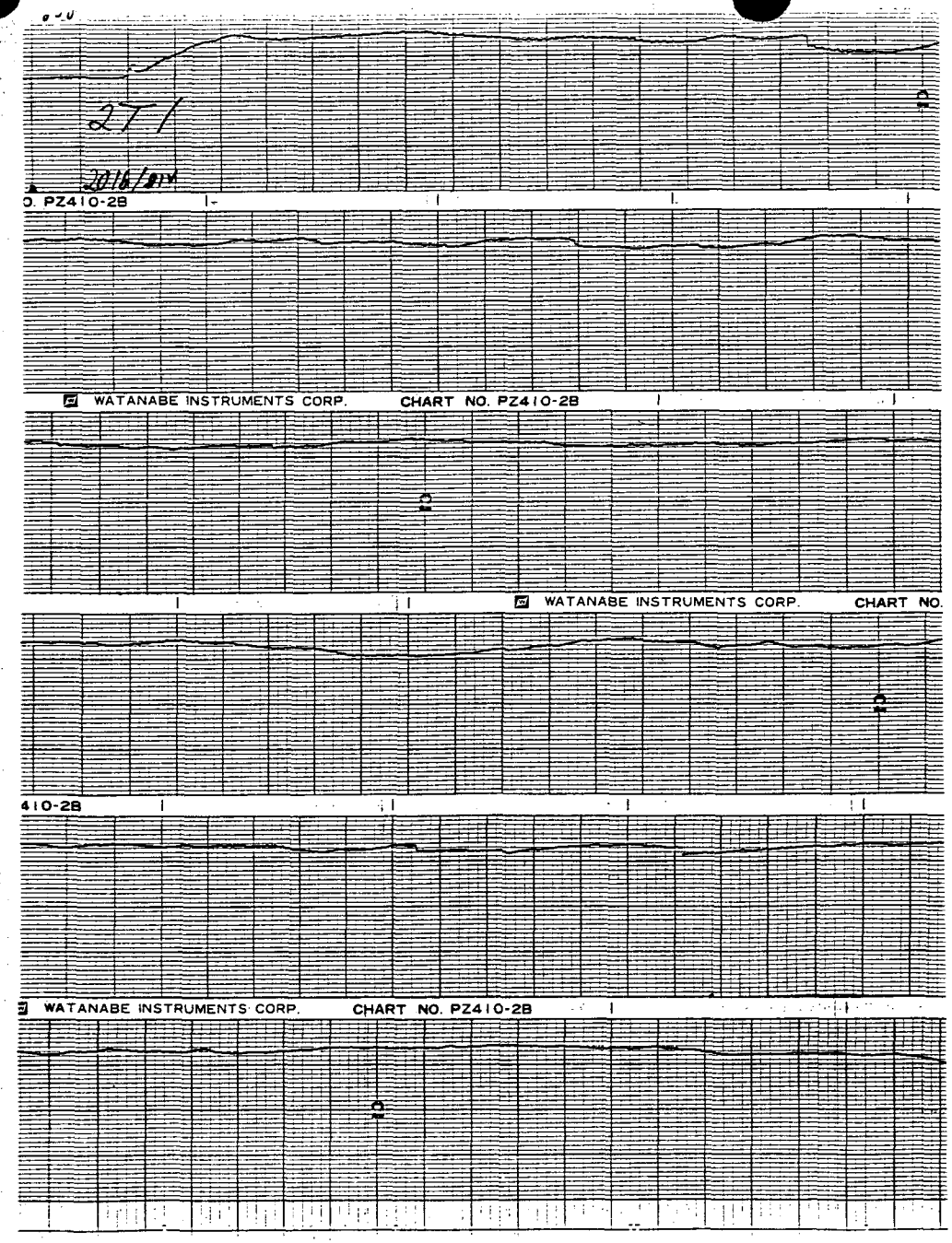
Standards Used = 506325, 543175, 522035, 543211, 502445, 543202, 902038
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .1949

Test No. 2T1		Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1357	.1349	.0727	.0717	18.1	18.64	✓	
2.	RED	.1374	.1339	.0729	.0724	20.4	21.18	✓	
3.	ORG	.1360	.1342	.0725	.0707	16.8	17.62		
4.	BLU	.1343	.1313	.0727	.0718	17.9	17.64	✓	
5.	GRN	.1364	.1320	.0725	.0709	18.3	23.88		
6.	WHT	.1364	.1350	.0724	.0711	21.2	24.48	✓	
7.	WHT/BLA	.1351	.1342	.0723	.0714	19.8	25.14		
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5366 Max .5189 Min
Overall Virgin Dielectric Breakdown Average 21.23 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 690 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1541 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1541 lbs/ft

Tested By/Date VCK 4-27-86 (Tension) Dm7 4-24-86 (Micrometer) JB R.D.T. 4/24/86 (Dielectric)
Verified By/Date HR 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers DR
Visual Cable Report: OK HR
Anomalies:

Continuity OK JB



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 593
Plant. . . . . = H
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 825722-2
Mark No. . . . . = WHG-2
Description. . . . . = 14.14 7/c
Insulation . . . . . = PXMJ
Filler Material. . . . = NONE

Standards Used = 506325, 543175, 522035, 534211, 534240, 502445, 543202, 902038.
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .1949

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
✓	2T2								
1.	BLA	.1391	.1351	.0739	.0722	17.7	18.64	✓	
2.	RED	.1376	.1347	.0755	.0719	21.2	21.18	✓	
3.	ORG	.1374	.1339	.0729	.0722	16.0	17.62		
4.	BLU	.1363	.1323	.0730	.0724	16.9	17.64		
5.	GRN	.1369	.1351	.0732	.0723	19.0	23.88		
6.	WHT	.1376	~~.1376~~ .1358	.0721	.0703	23.2	24.49	✓	
7.	WHT/BLA	.1366	.1347	.0727	.0724	19.6	25.14		
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5313 Max .5243 Min
Overall Virgin Dielectric Breakdown Average 21.23 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 685 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1529 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1529 lbs/ft.

Tested By/Date VEK 4-24-86 (Tension) Wm 7 4-24-86 (Micrometer) JB R.A.T. 4/25/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JHC 5/29/86
Test Observers RR
Visual Cable Report: OK HC
Anomalies:

Continuity OK JB

2T2

2016/DIR

WATANABE INSTRUMENTS CORP. CHART NO. PE 410-2H

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 543
Plant. . . . . = H
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 825722-2
Mark No. . . . . = WHG-2
Description. . . . . = #14 7/c
Insulation . . . . . = PXMJ
Filler Material. . . . = None

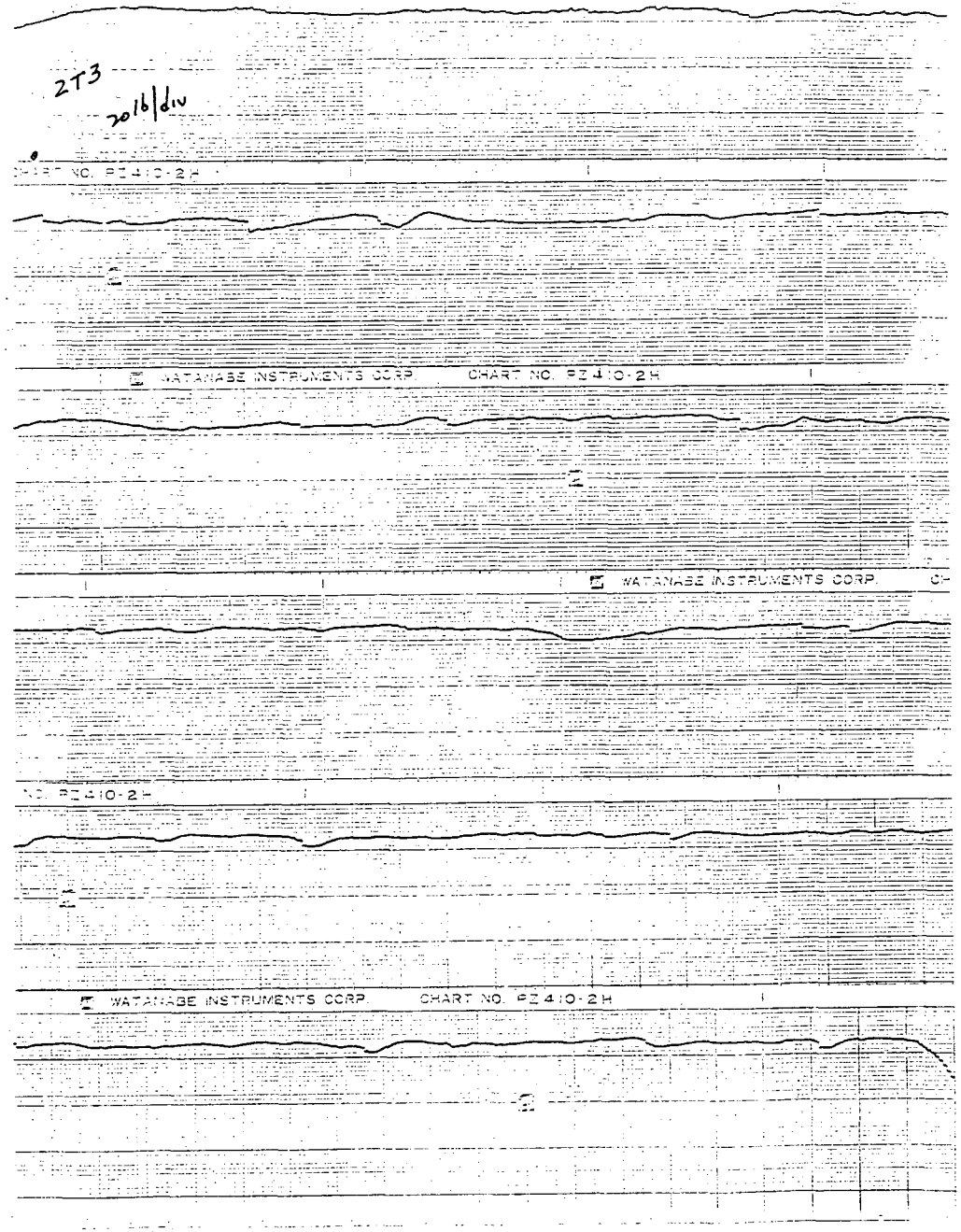
Standards Used = 506325, 543175, 522035, 543211, 543240, 502445, 543202, 902038
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .1949

	Test No. 2T3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1376	.1339	.0746	.0724	19.0	18.64	✓	
2.	RED	.1376	.1358	.0736	.0725	17.6	21.18	✓	
3.	ORG	.1359	.1324	.0736	.0724	16.4	17.62		
4.	BLU	.1337	.1298	.0736	.0719	15.6	17.64	✓	
5.	GRN	.1393	.1328	.0732	.0723	20.1	23.88	✓	
6.	WHT	.1377	.1352	.0742	.0709	23.2	24.48	✓	
7.	WHT/BLA	.1367	.1347	.0725	.0720	21.6	25.14	✓	
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5368 Max .5254 Min
Overall Virgin Dielectric Breakdown Average 21.23 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 600 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1518 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1518 lbs/ft.

Tested By/Date VEK 4-24-86 (Tension) — CMT 4-24-86 (Micrometer) — JB (Dielectric) R.A.T. 4/25/86
Verified By/Date HE 5/29/86 — QA Approval/Date JBR 5/29/86
Test Observers JR
Visual Cable Report: OK HE
Anomalies:

Continuity OK JB



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 593
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 913211, 543240, 543202, 902038, 212506, 502445

Test No. 2T4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1355	.1336	.0721	.0719	16.6	>16,000 MΩ	Test ok
2. Red	.1353	.1324	.0722	.0721	19.0		
3. ORG	.1342	.1326	.0723	.0719	18.2		
4. BLU	.1348	.1311	.0724	.0721	15.6		
5. GRN	.1346	.1315	.0721	.0718	16.5		
6. WHT	.1371	.1340	.0722	.0706	23.0		
7. WHT/BLA	.1367	.1348	.0723	.0717	22.8	R.A.T. 5/2/86	
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .5334 Max .5150 Min
Tension (T) = 680 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1518 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1518 lbs/ft

Tested By/Date VSX 5-1-86 (Tension) — dm7 5-2-86 NLW 5-2-86 (Micrometer) — JB R.A.T. 5/2/86 (Dielectric)
Verified By/Date HR 5/29/86 (Tension) — QA Approval/Date JSR 5/29/86 (Dielectric)
Test Observers RR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

2016/ON

2T4

WATANABE INSTRUMENTS CORP. CHART NO. PZ4-0-2-

WATANABE INSTRUMENTS CORP. CHART NO. PZ

WATANABE INSTRUME

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 593
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 516225, 543175, 522035, 543211, 543240, 543202, 902038, 212504, 502445

Test No. 2T5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1364	.1349	.0728	.0720	17.9	>10,000 MΩ	Test OK
2. Red	.1374	.1347	.0724	.0723	20.7		
3. ORG	.1365	.1330	.0731	.0724	14.8		
4. BLU	.1352	.1309	.0727	.0723	16.8		
5. GRN	.1376	.1328	.0734	.0718	21.5		
6. WHT	.1373	.1347	.0726	.0708	22.8		
7. WHT/BLA	.1386	.1360	.0724	.0720	21.7	R.A.T. 5/2/86	
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .5251 Max .5418 Min
Tension (T) = 680 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1518 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1518 lbs/ft

Tested By/Date VIX 5-1-86 (Tension) NLW 5-2-86 (Micrometer) JB R.A.T. 5/2/86 (Dielectric)
Verified By/Date 5/29/86 QA Approval/Date 5/29/86
Test Observers

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

2016/011

2T5

NATANABE INSTRUMENTS CORP. CHART NO. PZ 410-2H

NATANABE INSTRUMENTS CORP. CHART NO. PZ 410-2H

NATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 228
Plant. . . . . = W
Manufacturer . . . . . = CYPRUS W&C
Contract No. . . . . = 86150-1
Mark No. . . . . = WHH
Description. . . . . = No. 14 9/C
Insulation . . . . . = PJJ
Filler Material. . . . = NONE

Standards Used = 543211, 543240, 212506, 543202, 902038, R.A.T. 5/13/86

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2467

	Test No. 3V1	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.2178	.2152	.0744	.0710	44.3	>10,000MΩ		
2.	RED	.1451	.1443	.0755	.0726	39.7			
3.	ORG	.1450	.1433	.0729	.0708	37.9			
4.	GRN	.1454	.1434	.0744	.0732	37.4			
5.	BLU	.1462	.1445	.0765	.0729	34.7			
	WHT	.1422	.1401	.0720	.0709	34.4			
	RED/BLA	.1470	.1443	.0740	.0713	36.6			
8.	GRN/BLA	.1462	.1441	.0812	.0717	32.7			
9.	WHT/BLA	.1391	.1362	.0744	.0713	34.2	R.A.T. 5/13/86		
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .6591 Max .6352 Min
Overall Virgin Dielectric Breakdown Average 35.55 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — VWR 4-24-86 DM 4-24-86 (Micrometer) — JB R.A.T. 5/13/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date JBL 5/29/86
Test Observers BR
Visual Cable Report: ✓
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 228
Plant. . . . . = W
Manufacturer . . . . . = CYPRUS W&C
Contract No. . . . . = 86150-1
Mark No. . . . . = WHH
Description. . . . . = no.14 9/C
Insulation . . . . . = PJJ
Filler Material. . . . . = NONE

Standards Used = 543211, 212506, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2467

	Test No. 3V2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	~~Virgin Breakdown Avg AC KV~~ 500V Megger Test results	Acc.	Unacc.
1.	BLA	.2163	.2103	.0723	.0718	49.8	>10,000MΩ		
2.	RED	.1461	.1438	.0740	.0718	35.8			
3.	ORG	.1449	.1438	.0718	.0712	29.5			
4.	GRN	.1451	.1436	.0738	.0725	28.3			
5.	BLU	.1455	.1448	.0745	.0725	43.4			
6.	WHT	.1521	.1406	.0726	.0691	30.3			
7.	RED/BLA	.1473	.1450	.0730	.0715	36.6			
8.	GRN/BLA	.1439	.1435	.0727	.0714	26.9			
9.	WHT/BLA	.1385	.1371	.0730	.0712	30.6	R.A.T. 5/1/86		
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .6524 Max .6360 Min
Overall Virgin Dielectric Breakdown Average 35.55 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) JM7 4-24-86 (Micrometer) JB R.A.T. 5/1/86 (Dielectric)
Verified By/Date NE 5/29/86 QA Approval/Date JMR 5/29/86
Test Observers DOR
Visual Cable Report: ✓
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 228
Plant. . . . . = W
Manufacturer . . . . . = CYPRUS W&C
Contract No. . . . . = 86150-1
Mark No. . . . . = WHH
Description. . . . . = No. 14 9/C
Insulation . . . . . = PJJ
Filler Material. . . . = None

Standards Used = 543211, 212506, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2467

	Test No. 3V3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.2152	.2142	~~.0730~~ .0730	.0706	40.8	>16,000 MΩ		
2.	RED	.1460	.1454	.0729	.0710	32.5	↓		
3.	ORG	.1440	.1432	.0718	.0697	33.1	↓		
4.	GRN	.1450	.1445	.0726	.0718	32.2	↓		
5.	BLU	.1466	.1454	.0745	.0721	43.7	↓		
	WHT	.1416	.1405	.0723	.0711	29.3	↓		
	Red/BLA	.1455	~~.1445~~ .1443	.0728	.0711	31.8	↓		
8.	GRN/BLA	.1456	.1438	.0723	.0713	31.9	↓		
9.	WHT/BLA	.1392	.1373	.0721	.0709	37.7	R.A.T. 5/13/84		
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .6577 Max .6443 Min
Overall Virgin Dielectric Breakdown Average 35.55 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — DMT 4-24-86 (Micrometer) — JB R.A.T. 5/13/84 (Dielectric)
Verified By/Date JR 5/29/86 QA Approval/Date JR 5/29/86
Test Observers JR
Visual Cable Report: ✓
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 228
Plant. . . . . = W
Manufacturer . . . . . = CYPRUS W+C
Contract No. . . . . = 86150-1
Mark No. . . . . = WHH
Description. . . . . = No. 14 9/C
Insulation . . . . . = PJJ
Filler Material. . . . = None

Standards Used = 543240, 543211, 212506, 543207,

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2467

	Test No. 3V4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	~~Virgin Breakdown Avg AC KV~~ 500V Megger Test results	Acc.	Unacc.
1.	BLA	.2169	.2140	.0806	.0719	41.9	>10,000MΩ		
2.	RED	.1474	.1452	.0759	.0725	37.8			
3.	ORG	.1445	.1434	.0721	.0697	28.4			
4.	GRN	.1474	.1436	.0764	.0726	30.9			
5.	BLU	.1463	.1448	.0777	.0722	44.0			
6.	WHT	.1422	.1409	.0715	.0708	38.5			
7.	RED/BLA	.1485	.1443	.0716	.0699	33.8			
8.	GRN/BLA	.1458	.1439	.0712	.0706	28.9			
9.	WHT/BLA	.1393	.1378	.0740	.0709	33.6	R.A.T. 5/12/86		
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .6523 Max .6397 Min
Overall Virgin Dielectric Breakdown Average 35.55 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — DM7 4-24-86 (Micrometer) — JB R.A.T. 5/12/86 (Dielectric)

Verified By/Date HC 5/29/86 QA Approval/Date JSR 5/29/86
Test Observers RR
Visual Cable Report: ✓
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓
Irradiated ____

1-Conductor ____
Multi-Conductor ✓

Sample No. . . . . = 228
Plant. . . . . = W
Manufacturer . . . . . = CYPRUS W&C
Contract No. . . . . = 86150-1
Mark No. . . . . = WHH
Description. . . . . = NO. 14 9/C
Insulation . . . . . = PJJ
Filler Material. . . . = NONE

Standards Used = 543211, 212506, ~~922038~~, 543202
R.A.T 5/13/86
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2467

500 Volt Megger Test

	Test No. 3V5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	~~Virgin Breakdown Avg AC KV~~	Acc.	Unacc.
1.	BLA	.2169	.2140	.0806	.0719	56.5	>10,000MΩ		
2.	RED	.1474	.1452	.0759	.0725	42.2			
3.	ORG	.1445	.1434	.0721	.0697	34.6			
4.	GRN	.1474	.1436	.0764	.0726	28.2			
5.	BLU	.1463	.1448	.0777	.0722	37.9			
6.	WHT	.1422	.1409	.0715	.0708	30.6			
7.	RED/BLA	.1485	.1443	.0716	.0699	28.2			
8.	GRN/BLA	.1458	.1439	.0712	.0706	35.2			
9.	WHT/BLA	.1393	.1378	.0740	.0709	32.6	R.A.T. 5/10/86		
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .6676 Max .6376 Min
Overall Virgin Dielectric Breakdown Average 35.55 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — DM7 4-24-86 (Micrometer) — JB R.A.T. 5/10/86 (Dielectric)
Verified By/Date NC 5/29/86 QA Approval/Date JSR 5/29/86
Test Observers JSR
Visual Cable Report:
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ✓

Sample No. = 228
Plant = W
Manufacturer = Cyrus Wire
Contract No. = 86150-1
Mark No. = WHH
Description = No. 14 9k
Insulation = PIS
Filler Material = None

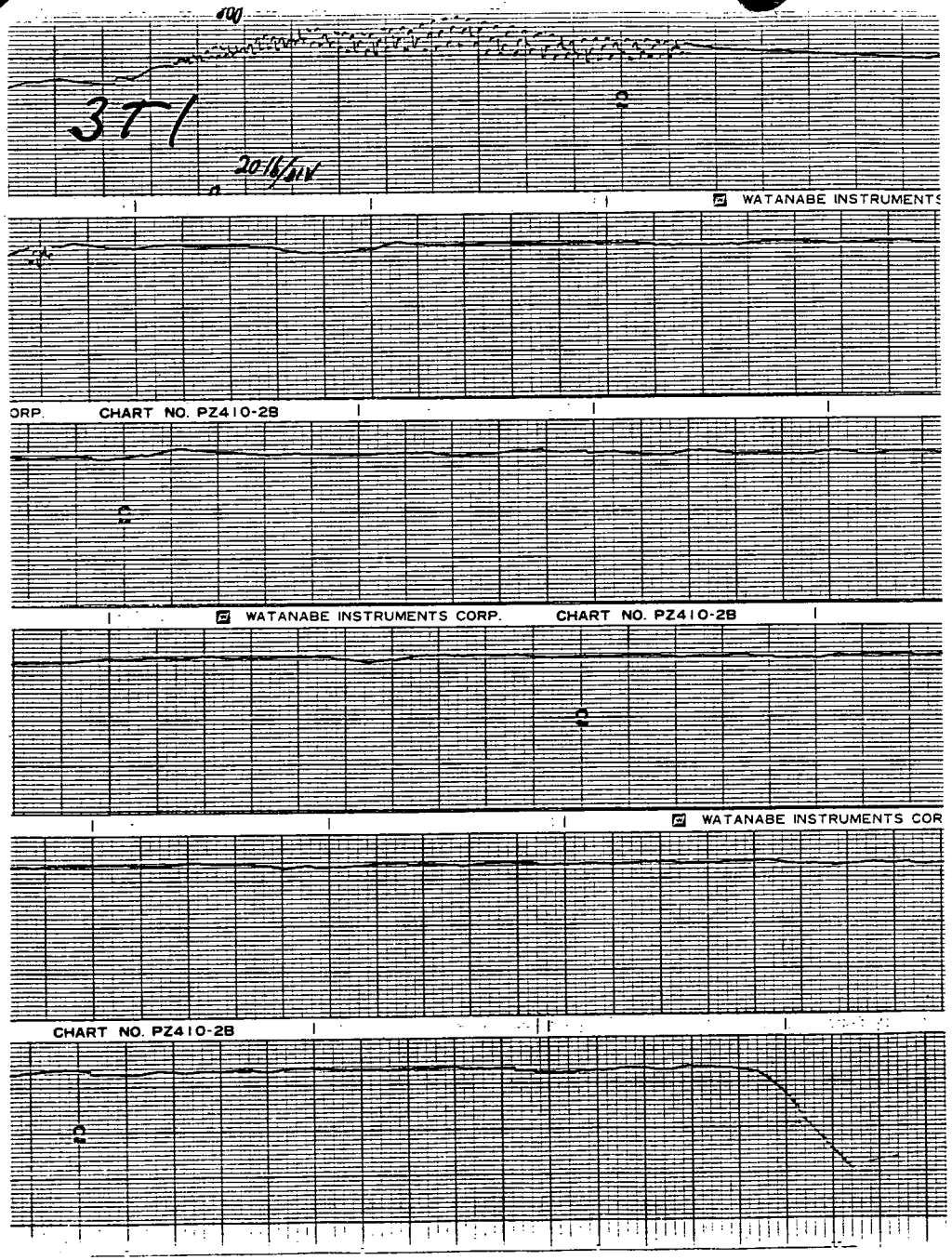
Standards Used = 506325, 543175, 522035, 543211, 543240, 212516, 507445, 543202, ~~902038~~ R.A.T. 5/1/86
Conduit Size in Test = 1"
No. Cables in Pull = 1
Wt/Ft (lb) = .2467

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	~~Virgin Breakdown Avg AC KV~~ 5/12/86	Acc.	Unacc.
	3T1						500V Megger Test Results		
1.	BLA	.2157	.2133	.0751	.0717	42.6 *	>10,000MΩ		
2.	RED	.1466	.1418	.0736	.0713	29.4			
3.	ORG	.1453	.1422	.0822	.0708	32.6			
4.	GRN	.1454	.1439	.0748	.0710	23.7			
5.	BLU	.1467	.1445	.0738	.0723	30.5			
6.	WHT	.1417	.1397	.0724	.0709	33.7			
7.	RED/BLA	.1467	.1446	.0756	.0703	35.9			
8.	GRN/BLA	.1444	.1434	.0729	.0704	29.9			
9.	WHT/BLA	.1399	.1374	.0748	.0711	27.3	R.A.T. 5/1/86		
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .6545 Max, .6423 Min
Overall Virgin Dielectric Breakdown Average 35.55 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 690 lbs (Max.)
Radius (R) = .4479 ft
T/R = ~~1540.52~~ 1540.52 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = ~~1540.52~~ 1540.52 lbs/ft

Tested By/Date VEK 4-23-86 (Tension) GMT 4-24-86 (Micrometer) JB R.A.T. 5/1/86 (Dielectric) WR 4-24-86
Verified By/Date HL 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers AR
Visual Cable Report: ✓
Anomalies: MAX TENSION = 760 lbs AT START OF PULL. NOT CONSIDERED APPLICABLE BECAUSE CABLE WAS LESS THAN 10 FT. IN PULL, AND THE TEST POSITION HAD NOT REACHED THE SECOND BEND.

* Unsure of reading at time of failure



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 228
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 212326, 502445, 543202, ~~902038~~. RAT 5/14/86

Test No. 3T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.2168	.2143	.0723	.0713	33.7	>10,000 MΩ	Est OK
2. RED	.1441	.1434	.0723	.0719	24.8		
3. ORG	.1443	.1430	.0714	.0702	33.9		
4. GRN	.1453	.1436	.0727	.0711	29.6		
5. BLU	.1445	.1437	.0721	.0716	38.3		
6. WHT	.1474	.1436	.0713	.0712	36.2		
7. RED/BLA	.1497	.1438	.0717	.0713	22.6		
8. GRN/BLA	.1447	.1438	.0723	.0710	35.6		✓
9. WHT/BLA	.1392	.1356	.0762	.0708	33.5*	R.A.T. 5/12/86	
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .6535 Max .6358 Min
Tension (T) = 685 lbs (Max.)
Radius (R) = .4479 ft
T/R = ~~1529.36~~ 1529.36 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = ~~1529.36~~ 1529.36 lbs/ft

Tested By/Date VEK 5-1-86 (Tension) — Micrometer — JB R.A.T. 5/12/86 (Dielectric)
Verified By/Date NR 5/29/86 — QA Approval/Date — JBR 5/29/86
Test Observers RK

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: * Failure was at a nicked place in the wire

0148E-2

2016/SIV

3T2

WATANABE INSTRUMENTS CORP. CHART NO. PC 410-2H

WATANABE INSTRUMENTS CORP. CHART NO. PC

WATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 228
Conduit Size in Test. . . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 542175, 522025, 543211, 543240, 212506, 502445, 543202, 902038 R.A.T. 5/1/86

	Test No. 373 JM7	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.2169	.2150	.0720	.0712	33.9	>10,000MΩ	Ext OK
2.	RED	.1466	.1440	.0723	.0717	31.7		
3.	ORG	.1450	.1435	.0715	.0708	33.6		
4.	GRN	.1445	.1414	.0702	.0715	29.2		
5.	BLU	.1449	.1435	.0725	.0719	44.7		
6.	WHT	.1423	.1403	.0745	.0708	34.6		
7.	Red/BLK	.1468	.1443	.0711	.0710	31.9		
8.	GRN/BLK	.1449	.1428	.0713	.0712	29.9		
9.	WHT/BLK	.1378	.1368	.0707	.0705	28.8	R.A.T. 5/1/86	
10.								
11.								
12.								

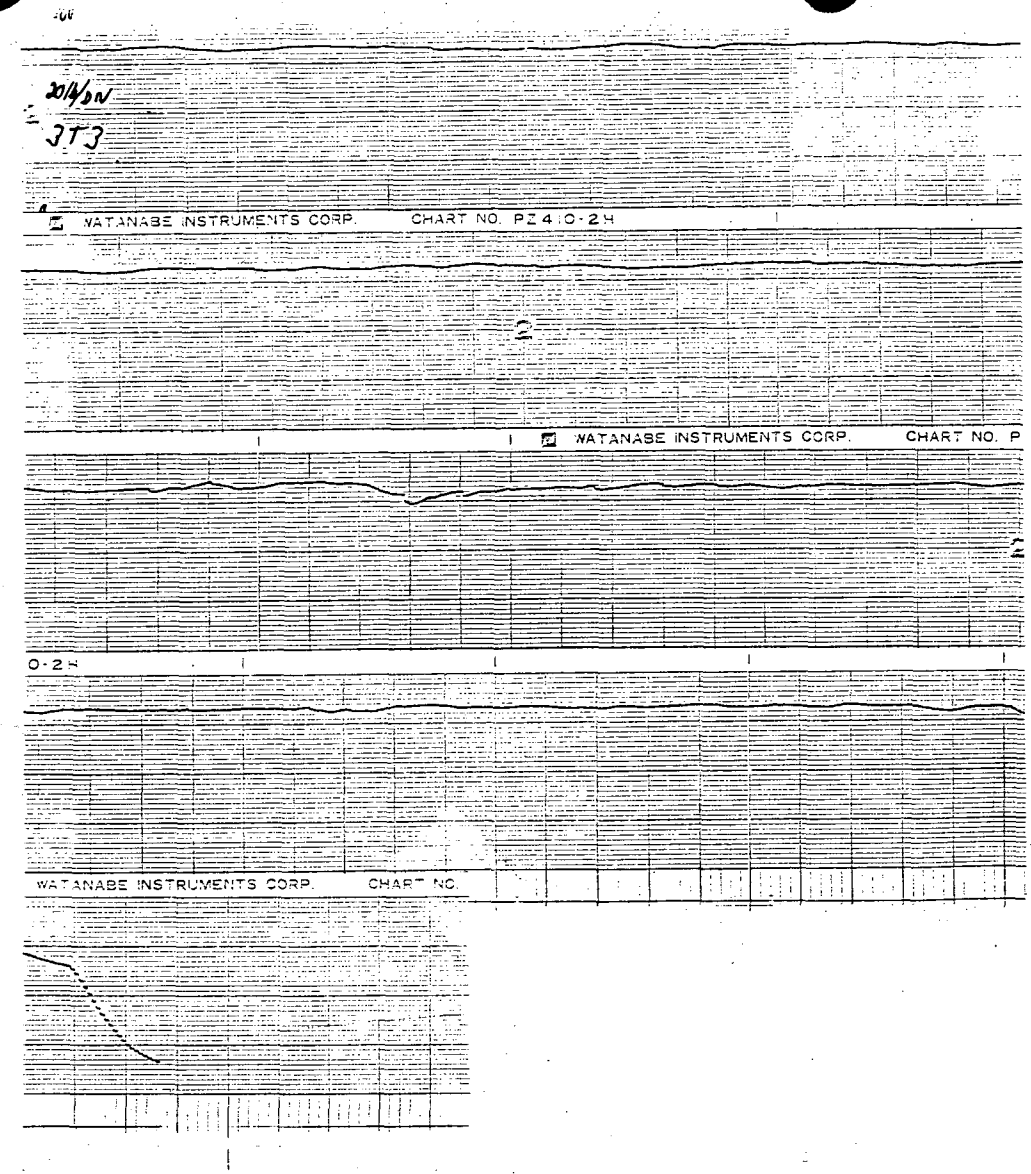
Multi-Conductor Jacket O.D. = .6535 Max .6353 Min
Tension (T) = 680 lbs (Max.)
Radius (R) = .4479 ft
T/R = ~~1518.20~~ 1518.20 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1518.20 lbs/ft

Tested By/Date VEK 5-1-86 (Tension) NLW 5-2-86 (Micrometer) JB R.A.T. 5/1/86 (Dielectric) JM7 5-2-86
Verified By/Date NL 5/29/86 (Tension) QA Approval/Date JBR 5/29/86 (Dielectric)
Test Observers RR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 3
Sample No. . . . . = 228
Description ~~#~~ No 14 9/c
VEK 5-22-86

Standards Used: 506325, 543175, 522035, 543211, 543240, 312526, 502445, 543202, ~~940038~~. R.A.T. 5/13/86

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___
Tensioned ✓

1-Conductor ___
Multi-Conductor ✓

	Test No. 3T4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.2154	.2110	.0716	.0711	52.3	>10,000 MΩ	Test OK
2.	RED	.1459	.1433	.0720	.0715	28.9		
3.	ORG	.1550	.1430	.0718	.0705	24.7		
4.	GRN	.1444	.1420	.0719	.0715	32.3		
5.	BLU	.1459	.1442	.0721	.0718	31.9		
6.	WHT	.1417	.1392	.0711	.0705	34.6		
7.	RED/BLA	.1458	.1466	.0712	.0709	31.6		
8.	GRN/BLA	.1443	.1428	.0714	.0707	32.5		
9.	WHT/BLA	.1386	.1374	.0711	.0705	35.9	R.A.T.	
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6513 Max .6365 Min

SWBP Data

Tension (T) = 670 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1495.87 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1495.87 lbs/ft

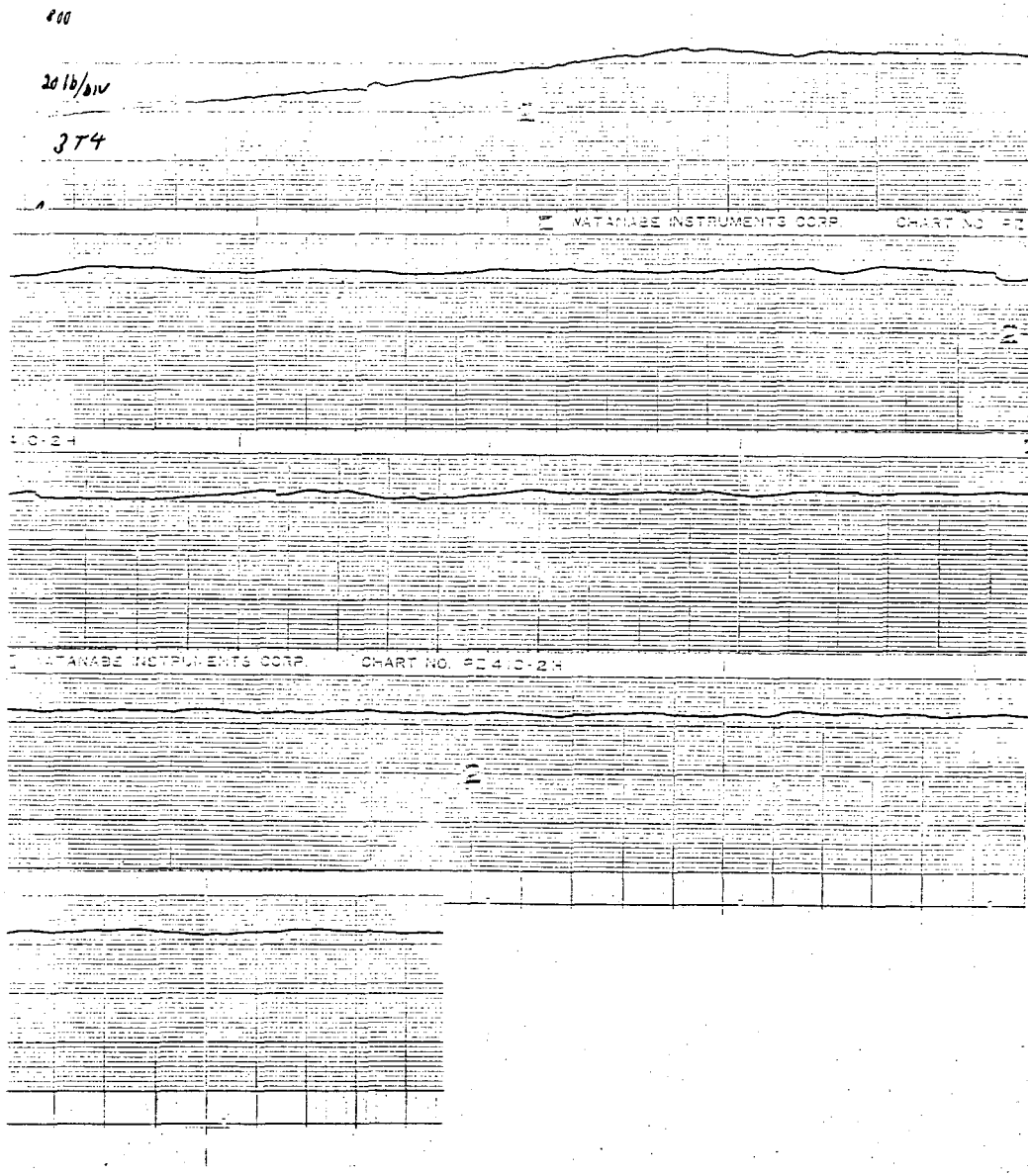
Anomalies:

Tested By/Date VEK 5-1-86 (Tension) Dm 7 5-2-86 (Micrometer) JB R.A.T. 5/13/86 (Dielectric) R.A.T. 5/13/86 (Resistance)

Verified By/Date Ha 5/29/86
Test Observers AR

QA Approval/Date ~~MC~~ 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 22F
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 212506, 502445, 543202, ~~502038~~ R.A.T. 4/7/86

	Test No. 3T5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.2145	.2133	.0746	.0715	34.9	>10,000 mΩ	Test OK
2.	RED	.1464	.1437	.0729	.0719	30.5		
3.	ORG	.1577	.1426	.0712	.0710	32.7		
4.	GRN	.1660	.1434	.0743	.0714	27.2		
5.	BLU	.1454	.1428	.0750	.0718	25.5		
6.	WHT	.1421	.1395	.0711	.0708	28.7		
7.	RED/BLK	.1467	.1434	.0762	.0712	33.7		
8.	ORG/BLK	.1566	.1432	.0742	.0706	29.8		
9.	WHT/BLK	.1386	.1372	.0717	.0707	35.8	R.A.T. 5/12/86	
10.								
11.								
12.								

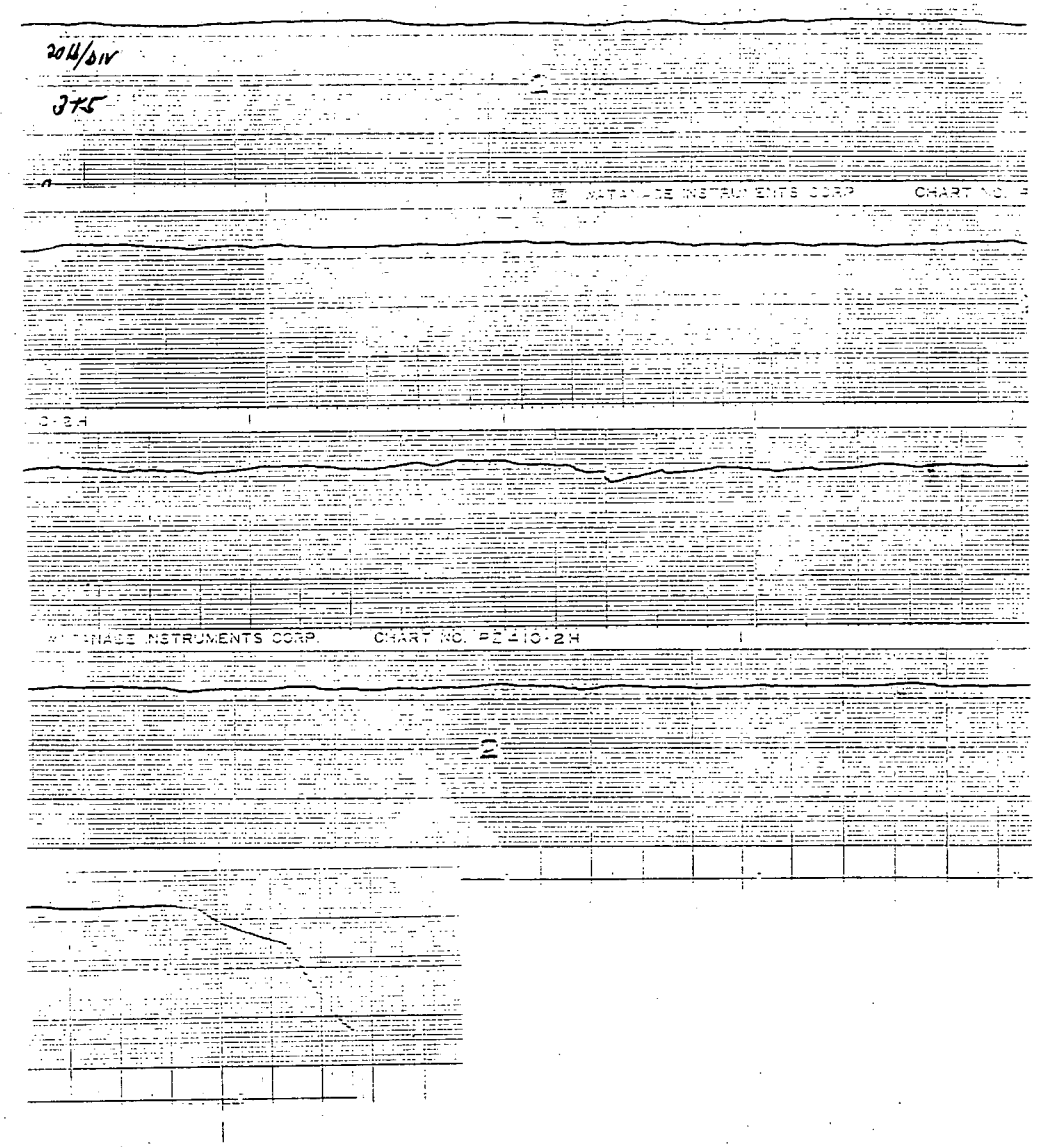
Multi-Conductor Jacket O.D. = .6573 Max .6592 Min
Tension (T) = 680 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1518.20 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1518.20

Tested By/Date VCK 5-1-86 (Tension) — Dm 7 5-2-86 (Micrometer) — JB R.A.T. 5/12/86 (Dielectric)
Verified By/Date HC 5/29/86 (Tension) — QA Approval/Date (Micrometer) — JAC 5/29/86 (Dielectric)
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 685
Plant. . . . . = H
Manufacturer . . . . . = OKONITE
Contract No. . . . . = 827928
Mark No. . . . . = WH6-1
Description. . . . . = NO.14 7/C
Insulation . . . . . = PVC
Filler Material. . . . = NONE

Standards Used = 543211, 543240, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2191

	Test No. 4V1-	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1344	.1326	.0746	.0719	23.4			
2.	RED	.1364	.1322	.0749	.0719	27.0			
3.	GRN	.1370	.1346	.0746	.0716	21.0			
4.	YEL	.1371	.1356	.0738	.0716	27.2			
5.	BLU	.1377	.1332	.0739	.0720	27.8			
	WHT/BLA	.1392	.1362	.0733	.0713	25.7			
	WHT	.1408	.1344	.0736	.0720	28.2			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5553 Max .5457 Min
Overall Virgin Dielectric Breakdown Average 23.67 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — VWR 4-24-86 (Micrometer) — JB R.A.T 4/24/86 (Dielectric)
Verified By/Date HR 5/29/86 QA Approval/Date JPR 5/29/86
Test Observers HR
Visual Cable Report: OK HR
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 685
Plant. . . . . = H
Manufacturer . . . . . = OKONITE
Contract No. . . . . = 827928
Mark No. . . . . = WHG-1
Description. . . . . = No 14 7/6
Insulation . . . . . = PXMJ
Filler Material. . . . = None

Standards Used = 543211, 543240
543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2191

	Test No. 4V2 -	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1387	.1316	.0733	.0714	25.8			
2.	RED	.1388	.1321	.0727	.0719	28.9			
3.	GRN	.1382	.1349	.0722	.0718	27.9			
4.	YEL	.1402	.1367	.0721	.0713	23.7			
5.	BLU	.1476	.1382	.0762	.0719	22.6			
6.	WHT/BLA	.1414	.1315	.0732	.0713	23.9			
7.	WHT	.1444	.1395	.0765	.0721	28.6			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5543 Max .5467 Min
Overall Virgin Dielectric Breakdown Average 23.67 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — DMT 4-24-86 (Micrometer) — JB R.A.T. 4/24/86 (Dielectric)
Verified By/Date HE 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers AR
Visual Cable Report: OK HE
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 685
Plant. . . . . = H
Manufacturer . . . . . = OKONITE
Contract No. . . . . = 827928
Mark No. . . . . = WHG-1
Description. . . . . = NO14 7/C
Insulation . . . . . = PXMJ
Filler Material. . . . = None

Standards Used = 543211, 543240
543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2191

	Test No. 4V3-	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1407	.1317	.0724	.0720	23.3			
2.	RED	.1363	.1344	.0732	.0720	21.9			
3.	GRN	.1384	.1341	.0725	.0722	24.1			
4.	YEL	.1409	.1374	.0730	.0719	23.4			
5.	BLU	.1384	.1281	.0724	.0720	20.0			
	WHT/BLA	.1391	.1344	.0723	.0713	22.6			
	WHT	.1488	.1379	.0723	.0716	22.5			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5510 Max .5450 Min
Overall Virgin Dielectric Breakdown Average 23.67 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) V.W.R 4-24-86 (Micrometer) JB R.A.T 4/24/86 (Dielectric)
Verified By/Date HE 5/29/86 QA Approval/Date JBC 5/29/86
Test Observers PR
Visual Cable Report: OK HE
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 685
Plant. . . . . = H
Manufacturer . . . . . = OKONITE
Contract No. . . . . = 827928
Mark No. . . . . = WHG-1
Description. . . . . = No 14 7/C
Insulation . . . . . = PXMJ
Filler Material. . . . = NONE

Standards Used = 543240, 543211
543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .12191

	Test No. 4V4-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1429	.1404	.0723	.0716	23.2			
2.	RED	.1428	.1357	.0785	.0725	20.0			
3.	GRN	.1386	.1340	.0725	.0720	24.2			
4.	YEL	.1472	.1370	.0717	.0710	24.1			
5.	BLU	.1363	.1333	.0736	.0716	25.0			
6.	WHT/BLA	.1379	.1363	.0719	.0713	19.2			
7.	WHT/BLASTR	.1412	.1405	.0724	.0715	20.4			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = ~~.5403~~ .5595 Max .5403 Min
Overall Virgin Dielectric Breakdown Average 23.67 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A VWR 4-24-86

Tested By/Date N/A (Tension) — (Micrometer) 4-24-86 — (Dielectric) R.A.T. 4/25/84

Verified By/Date HE 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers PR
Visual Cable Report: OK HE
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 685
Plant. . . . . = H
Manufacturer . . . . . = OKONITE
Contract No. . . . . = 827928
Mark No. . . . . = W1HG-1
Description. . . . . = NO14 7/C
Insulation . . . . . = PXMJ
Filler Material. . . . = NONE

Standards Used = 543211, 543240, 543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2191

Test No. 4V5-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1. BLA	.1386	.1282	.0723	.0716	25.3			
2. RED	.1381	.1347	.0778	.0719	23.9			
3. GRN	.1380	.1329	.0734	.0718	11.8			
4. YEL	.1409	.1382	.0719	.0716	22.8			
5. BLU	.1375	.1324	.0745	.0723	23.7			
WHT/BLA	.1404	.1376	.0723	.0716	22.9			
WHT/BLA. STRIP	.1410	.1394	.0720	.0715	22.5			
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5475 Max .5375 Min
Overall Virgin Dielectric Breakdown Average 23.67 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) VWR 4-24-86 (Micrometer) JM7 4-24-86 (Dielectric) JB R.A.I. 4/25/86

Verified By/Date HC 5/29/86 QA Approval/Date JSC 5/29/86
Test Observers BR
Visual Cable Report: OK HC
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 685
Plant. . . . . = H
Manufacturer . . . . . = OKONITE
Contract No. . . . . = 827928
Mark No. . . . . = WHG-1
Description. . . . . = No. 14 3/c
Insulation . . . . . = PXMJ
Filler Material. . . . = None

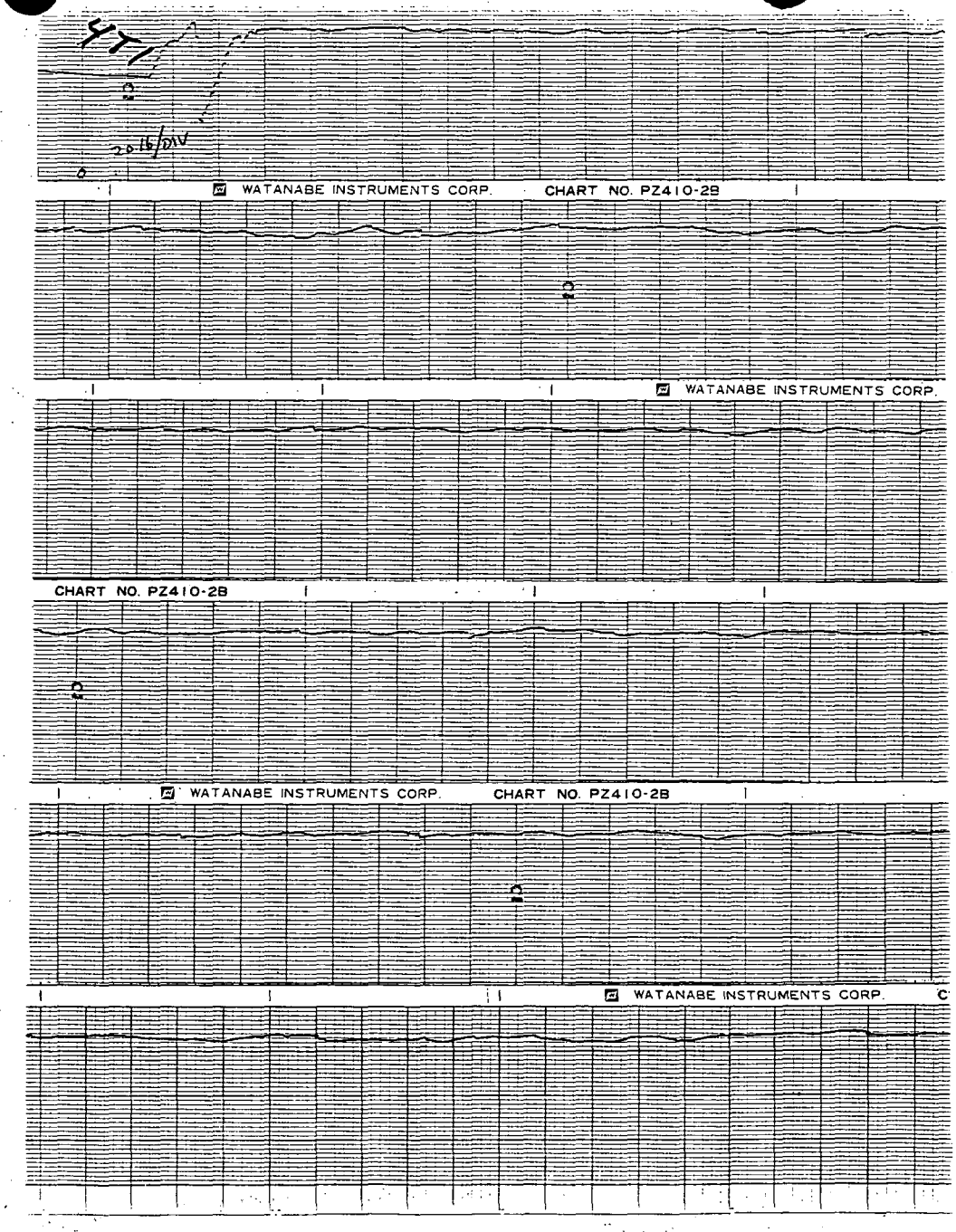
Standards Used = 506325, 543175, 522035, ~~543~~ 543240, 543211, 903035, 543207
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .2191

Test No. 4T1-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1. BLA	.1354	.1311	.0720	.0712	19.0	24.20		
2. RED	.1395	.1324	.0778	.0722	21.4	24.34	✓	
3. GRN	.1417	.1339	.0724	.0718	19.6	21.75	✓	
4. YEL	.1432	.1356	.0758	.0713	20.9	24.24	✓	
5. BLU	.1360	.1332	.0716	.0712	18.7	23.82		
6. WHT/BLA	.1450	.1335	.0716	.0711	21.0	22.86	✓	
7. WHT/BLA STR	.1392	.1376	.0717	.0712	20.3	24.44	✓	
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5469 Max .5384 Min
Overall Virgin Dielectric Breakdown Average 23.67 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 700 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1563 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1563 lbs/ft VWR 4-24-86

Tested By/Date VEK 4-23-86 (Tension) Dm7 4-24-86 (Micrometer) JB R.A.T. 4/25/86 (Dielectric)
Verified By/Date HE 5/29/86
QA Approval/Date JAR 5/29/86
Test Observers AR
Visual Cable Report: OK HE
Anomalies:

Continuity OK JB



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 685
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506725, 543175, 522025, 543211, 543240, 543202, 902035, 212506, 502445

Test No. 4T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1342	.1280	.0717	.0709	18.9	>10,000 mΩ	Test OK
2. Red	.1341	.1319	.0713	.0708	*1.5 (20.0)		
3. GRN	.1332	.1307	.0721	.0709	20.8		
4. Yel	.1362	.1308	.0717	.0703	18.5		
5. Blue	.1317	.1297	.0713	.0711	20.6		
6. WHT/BLA	.1342	.1329	.0712	.0704	20.1		
7. WHT	.1386	.1364	.0715	.0706	20.3	R.A.I. 5/2/86	
8.							
9.							
10.							
11.							
12.							

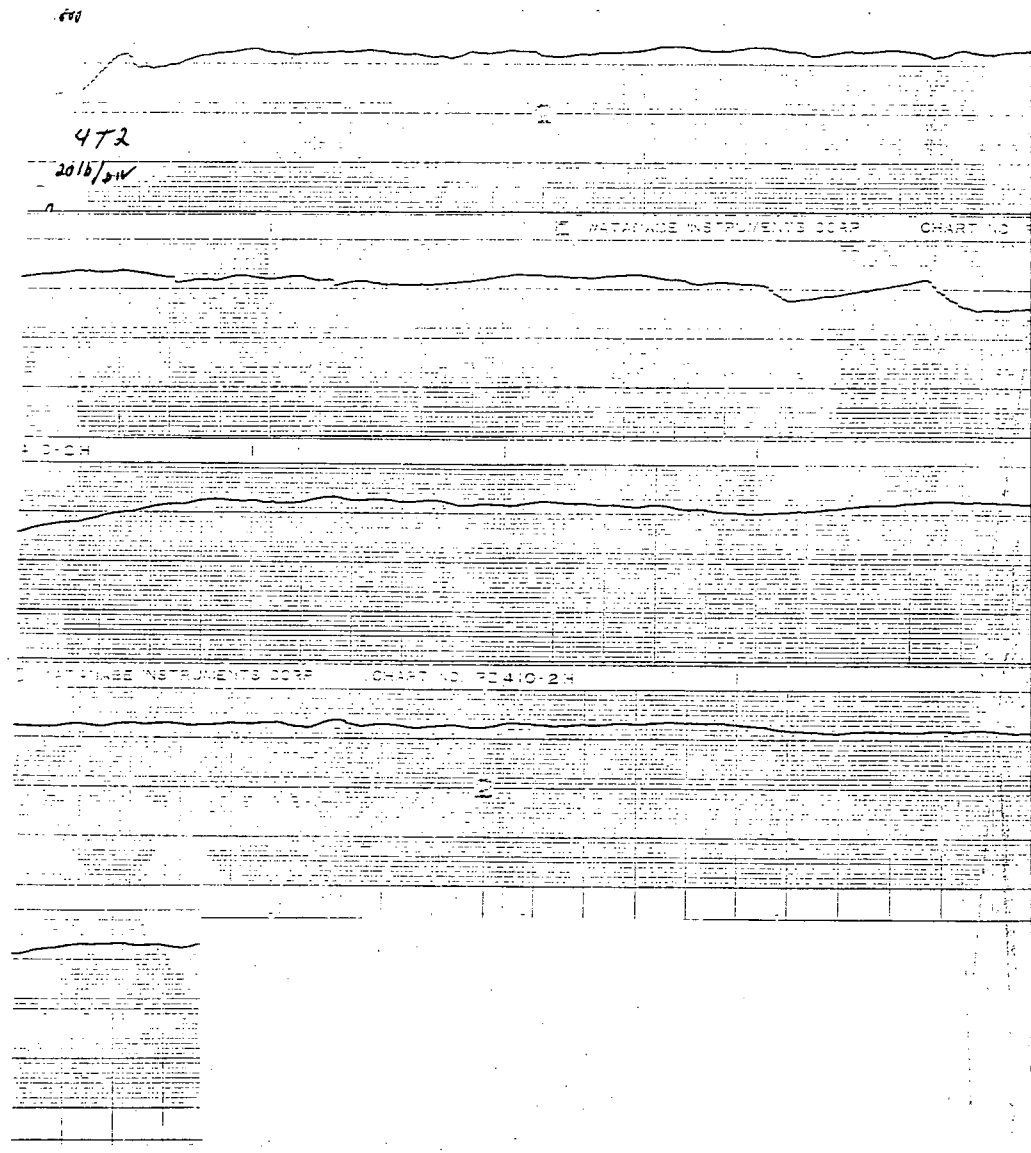
Multi-Conductor Jacket O.D. = .5436 Max .5400 Min
Tension (T) = 675 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1507 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1507 lbs/ft

Tested By/Date VEK 5-1-86 (Tension) DRH 5-2-86 NLW 5-2-86 (Micrometer) JB R.A.I 5/2/86 (Dielectric)
Verified By/Date HC 5/29/86 (Tension) QA Approval/Date (Micrometer) JOR 5/29/86 (Dielectric)
Test Observers DR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: *Lifted the "1.5kV hole" out of water and cable went to 20.0kV

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin Tensioned ✓ 1-Conductor ✓ Multi-Conductor ✓

Sample No. . . . . = 685
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506225, 543175, 522075, 543211, 543240, 543202, 902035, 212506, 502445

Test No. 4T3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1320	.1284	.0718	.0710	20.1	>6000 mΩ	Test OK
2. Red	.1391	.1252	.0713	.0712	26.7		
3. GRN	.1426	.1303	.0721	.0712	18.7		
4. yel	.1441	.1362	.0712	.0706	21.8		
5. Blu	.1341	.1289	.0719	.0706	22.6		
6. WHT/BLA	.1354	.1295	.0713	.0705	23.1		
7. WHT	.1391	.1328	.0717	.0710	21.3	R.A.I. 5/2/86	
8.							
9.							
10.							
11.							
12.							

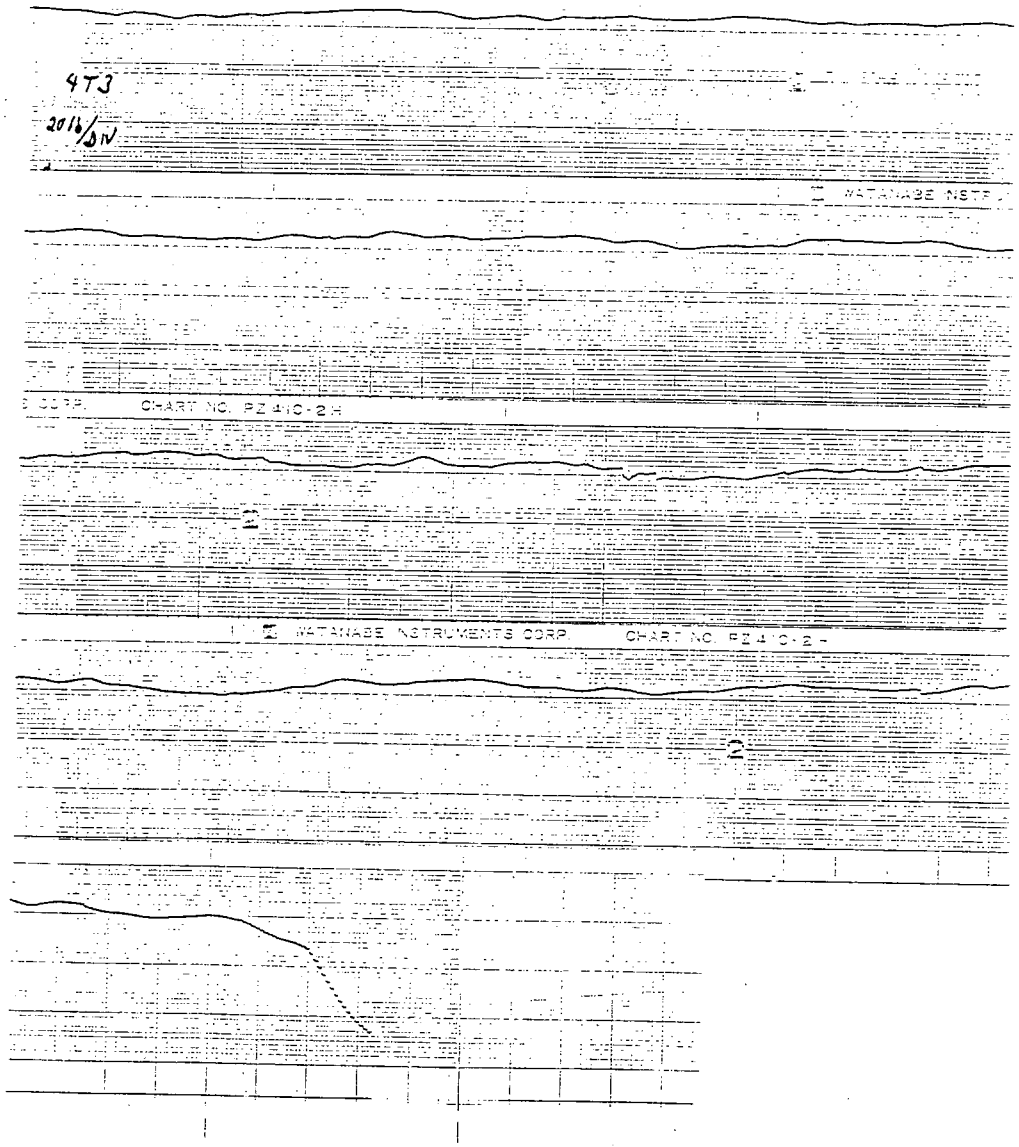
Multi-Conductor Jacket O.D. = .5495 Max .5393 Min
Tension (T) = 675 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1507 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1507 lbs/ft

Tested By/Date VEK 5-1-86 (Tension) DRH 5-2-86 NLW 5-2-86 (Micrometer) JB R.A.I. 5/2/86 (Dielectric)
Verified By/Date HC 5/29/86 (Tension)
Test Observers JAR
QA Approval/Date
JAR 5/29/86 (Dielectric)

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways:

Anomalies:

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 685
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 542175, 532035, 543211, 543240, 543202, 902038, 212506, 502445

	Test No. 4T4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1310	.1270	.0711	.0709	18.1	>10,000 MΩ	Est OK
2.	Red	.1430	.1266	.0718	.0713	21.8		
3.	GRN	.1349	.1292	.0714	.0708	18.7		
4.	yel	.1364	.1347	.0706	.0698	19.1		
5.	BLU	.1440	.1300	.0712	.0698	21.0		
6.	WHT/BLA	.1408	.1315	.0713	.0711	29.7		
7.	WHT	~~.1365~~ .1471	~~.1377~~ .1365	.0718	.0708	20.3	R.A.T. 5/2/86	
8.								
9.								
10.								
11.								
12.								

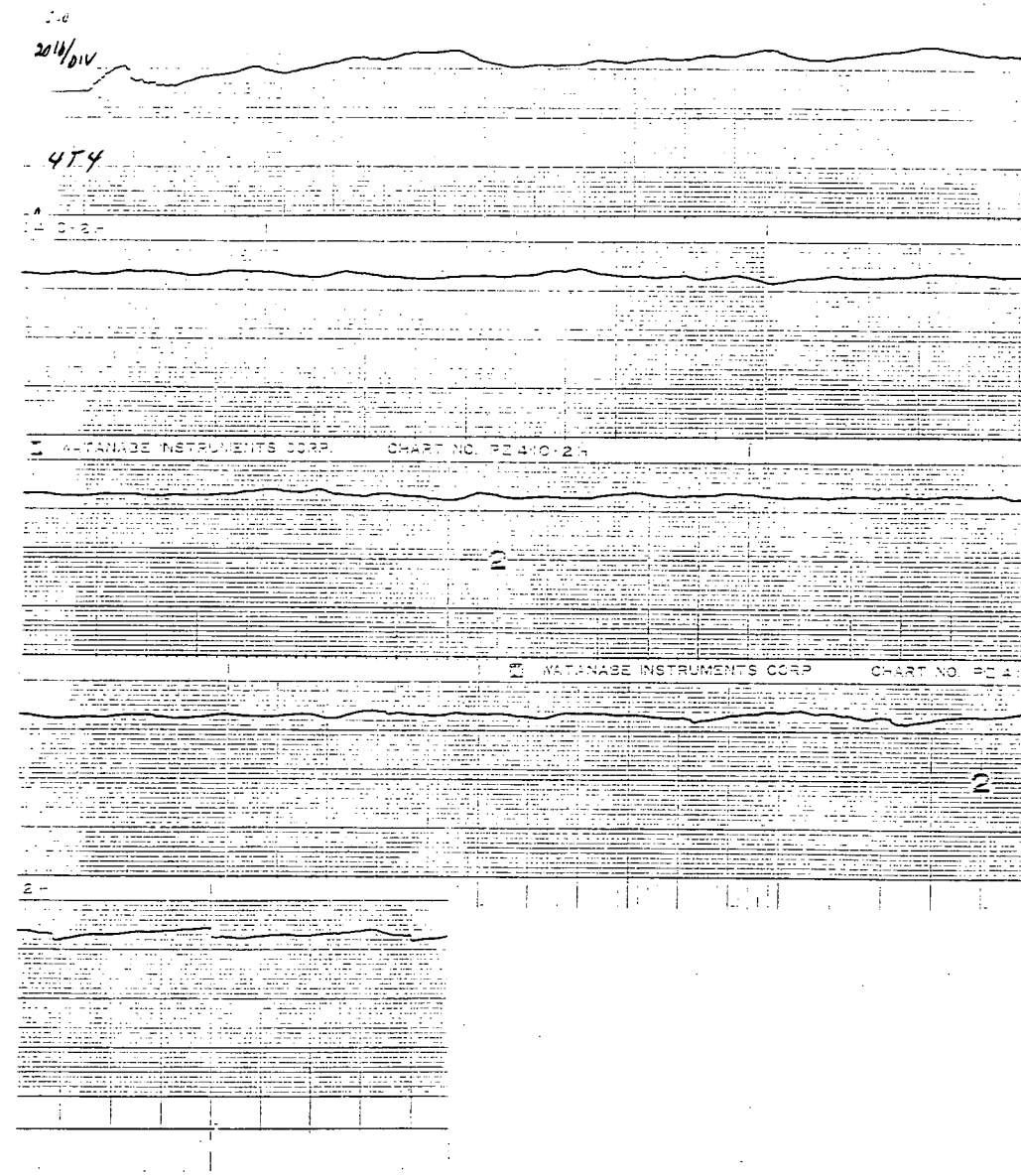
Multi-Conductor Jacket O.D. = .5570 Max .5324 Min
Tension (T) = 690 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1541 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1541 lbs/ft

	Tension	Micrometer	Dielectric
Tested By/Date	VEK 5-2-86	DEH 5-2-86 NLW 5-2-86	JB R.A.T. 5/2/86
Verified By/Date	He 5/29/86	QA Approval/Date	JAK 5/29/86
Test Observers	AR		

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 685
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325 543175 522035 543211 543240 543302 902038, 212524, 502445

Test No. 4T5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLK	.1350	.1285	.0717	.0710	20.5	>10,000 MΩ	Test OK
2. Red	.1556	.1337	.0760	.0726	21.5		
3. GRN	.1452	.1331	.0720	.0717	16.1		
4. Yel	.1391	.1336	.0715	.0711	18.7		
5. BLU	.1350	.1308	.0727	.0702	20.5		
6. WHT/BLK	.1347	.1326	.0768	.0760	19.4		
7. WHT	.1412	.1341	.0768	.0712	24.1	R.A.T. 5/5/86	
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .5699 Max .5420 Min
Tension (T) = 695 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1552 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1552 lbs/ft

Tested By/Date VEK 5-2-86 (Tension) CRH 5-2-86 NLW 5-2-86 (Micrometer) RB RAT 5/5/86 (Dielectric)
Verified By/Date HC 5/29/86 (Tension) QA Approval/Date JAR 5/29/86 (Dielectric)
Test Observers HR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

4T5

2016/DIV

HATHAWAY INSTRUMENTS CORP. CHART NO. FE 410-2H

HATHAWAY INSTRUMENTS CORP. CHART NO. FE

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 45
Plant. . . . . = W
Manufacturer . . . . . = AIW
Contract No. . . . . = 825342-2
Mark No. . . . . = WHG-1
Description. . . . . = No-14 7/C
Insulation . . . . . = PVMJ
Filler Material. . . . = BLK Nylon

Standards Used = 543211, 543240, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2199

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	5V1								
1.	BLK	.1445	.1378	.0734	.0714	20.2			
2.	RED	.1419	.1360	.0725	.0722	21.9			
3.	ORG	.1390	.1324	.0728	.0721	28.8			
4.	GRN	.1378 ~~.138~~	.1350	.0717	.0713	24.3			
5.	BLU	.1364	.1299	.0718	.0710	29.4			
	WHT	.1370	.1306	.0718	.0712	22.5			
	WHT/BLK	.1378	.1340	.0729	.0715	28.1			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5547 Max. .5395 Min
Overall Virgin Dielectric Breakdown Average 23.76 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) VWR 4-24-86 (Micrometer) JB R.A.T. 4/25/86 (Dielectric)
Verified By/Date DR 5/29/86 QA Approval/Date JSR 5/29/86
Test Observers AK
Visual Cable Report: OK HR
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 45
Plant. . . . . = W
Manufacturer . . . . . = AIW
Contract No. . . . . = 825342-2
Mark No. . . . . = WHG-1
Description. . . . . = No 14 7/c
Insulation . . . . . = PXMJ
Filler Material. . . . = Bla Nylon

Standards Used = 543211, 543246
902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2199

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	5V2								
1.	BLA	.1442	.1371	.0724	.0717	22.1			
2.	RED	.1417	.1340	.0736	.0723	21.1			
3.	ORG	.1399	.1332	.0739	.0722	24.1			
4.	GRN	.1408	.1343	.0717	.0712	23.7			
5.	BLU	.1363	.1323	.0717	.0711	19.7			
6.	WHT	.1362	.1317	.0727	.0714	25.7			
7.	WHT/BLA	.1353	.1338	.0726	.0721	28.9			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5684 Max .5422 Min
Overall Virgin Dielectric Breakdown Average 23.76 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — VaWR 4-25-86 (Micrometer) — JB R.A.T. 4/25/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers BR
Visual Cable Report: OK HC
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 45
Plant. . . . . = W
Manufacturer . . . . . = AIW
Contract No. . . . . = 825342-2
Mark No. . . . . = WHG-1
Description. . . . . = No.14 7/C
Insulation . . . . . = PXM5
Filler Material. . . . = B/A Nylon

Standards Used = 543211, 543240, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2199

	Test No. 5V3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1434	.1387	.0719	.0716	20.9			
2.	RED	.1382	.1360	.0724	.0721	20.3			
3.	ORG	.1402	.1362	.0724	.0721	26.3			
4.	GRN	.1409	.1338	.0719	.0712	19.5			
5.	BLU	.1354	.1333	.0728	.0711	24.3			
6.	WHT	.1332	.1307	.0717	.0714	23.3			
7.	WHT/BLA	.1356	.1345	.0726	.0721	24.9			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5534 Max .4849 Min
Overall Virgin Dielectric Breakdown Average 23.76 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — VWR 4-24-86 (Micrometer) — QB R.A.T. 4/25/86 (Dielectric)
Verified By/Date 5/29/86 QA Approval/Date 5/29/86
Test Observers
Visual Cable Report: OK
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 45
Plant. . . . . = W
Manufacturer . . . . . = AIW
Contract No. . . . . = 825342-2
Mark No. . . . . = WHG-1
Description. . . . . = No 14 7/c
Insulation . . . . . = PXMJ
Filler Material. . . . = BLA Nylon

Standards Used = 543211, 543240, 902038, 543202

Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA
Wt/Ft (lb). . . . . = .2199

	Test No. 5V4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1413	.1373	.0745	.0716	21.8			
2.	RED	.1424	.1393	.0742	.0723	24.8			
3.	ORG	.1421	.1371	.0739	.0724	27.7			
4.	GRN	.1408	.1350	.0719	.0712	23.0			
5.	BLU	.1377	.1325	.0724	.0710	24.7			
6.	WHT	.1398	.1310	.0721	.0717	22.8			
7.	WHT/BLA	.1388	.1354	.0728	.0719	23.7			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5565 Max .5408 Min
Overall Virgin Dielectric Breakdown Average 23.76 KV
Dielectric Test Length = 15 Ft.
Tension (T) = NA lbs (Max.)
Radius (R) = NA ft
T/R = NA lbs/ft
Correction Factor (X) = NA
SWBP = X(T/R) = NA

Tested By/Date N/A (Tension) — VWR 4-25-86 (Micrometer) — JB R.A.T. 4/25/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers AR
Visual Cable Report: OK HC
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 45
Plant. . . . . = W
Manufacturer . . . . . = AIW
Contract No. . . . . = 825342-2
Mark No. . . . . = WHG-1
Description. . . . . = NO-14 7/C
Insulation . . . . . = PXMJ
Filler Material. . . . = Bla Nylon

Standards Used = 543211, 543240, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2199

	Test No. 5V5	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1432	.1387	.0727	.0717	20.7			
2.	RED	.1405	.1357	.0725	.0718	23.0			
3.	ORG	.1389	.1347	.0737	.0721	29.1			
4.	GRN	.1372	.1330	.0715	.0713	22.4			
5.	BLU	.1369	.1345	.0719	.0714	26.8			
6.	WHT	.1387	.1350	.0718	.0715	20.6			
7.	WHT/BLA	.1387	.1357	.0735	.0723	20.6			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5503 Max .5380 Min
Overall Virgin Dielectric Breakdown Average 23.76 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) VWR 4-24-86 (Micrometer) JB (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JRC 5/29/86
Test Observers JR
Visual Cable Report: OK HC
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 45
Plant. . . . . = W
Manufacturer . . . . . = AIW
Contract No. . . . . = B25342-2
Mark No. . . . . = WHG-1
Description. . . . . = No14 7/c
Insulation . . . . . = PXMJ
Filler Material. . . . = B/2 Nylon

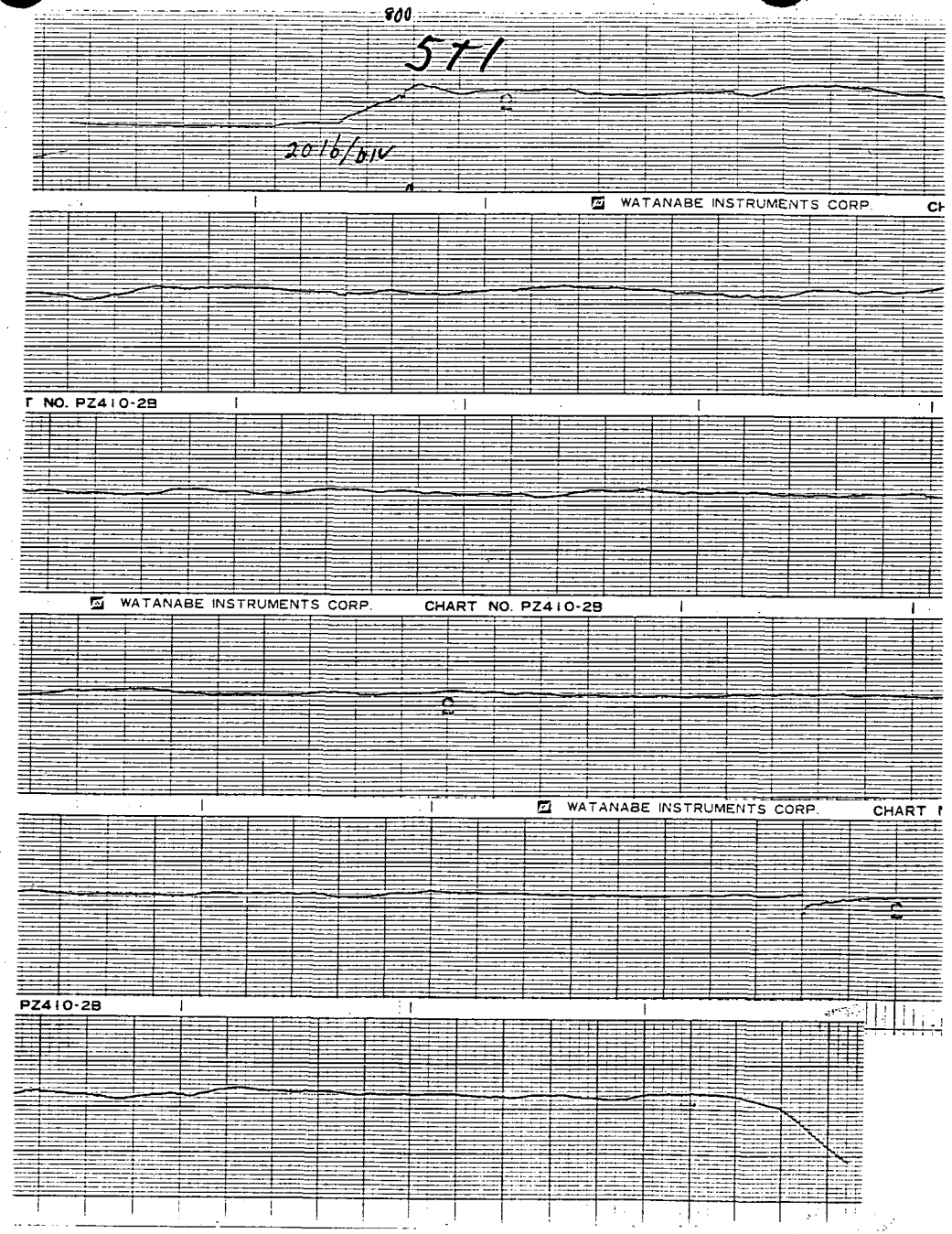
Standards Used = 506325, 543175, 522035, 543211, 543240, 502445, 502033, 543202
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .2199

	Test No. 5T1	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1423	.1348	.0721	.0714	21.5	21.14	✓	
2.	RED	.1417	.1364	.0729	.0720	21.4	22.22	✓	
3.	ORG	.1399	.1365	.0726	.0719	29.0	27.20	✓	
4.	ORN	.1385	.1373	.0717	.0711	22.9	22.58	✓	
5.	BLU	.1358	.1290	.0719	.0711	27.7	24.98	✓	
6.	WHT	.1377	.1314	.0719	.0713	23.3	22.98	✓	
7.	WHT/BLA	.1358	.1317	.0728	.0721	23.9	25.24	✓	
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5563 Max .5376 Min
Overall Virgin Dielectric Breakdown Average 23.76 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 490 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1094 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1094 lbs/ft

Tested By/Date VEK 4-23-86 (Tension) — DJM 4-25-86 VWR 4-25-86 (Micrometer) — JB R.A.T. 4/25/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date [illegible] 5/29/86
Test Observers DR
Visual Cable Report: OK He
Anomalies:

Continuity OK JB



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 45
Plant. . . . . = W
Manufacturer . . . . . = AIW
Contract No. . . . . = 825342-2
Mark No. . . . . = WHG-1
Description. . . . . = No. 14 7/C
Insulation . . . . . = PXMJ
Filler Material. . . . = BLA Nylon

Standards Used = 506325 542175 522025, 543211, 542240, 902038, 543202, 502445, 212506
Conduit Size in Test. . . . = 1
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .2199

Test No. 5T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1. BLA	.1430	.1364	.0733	.0702	21.2			
2. RED	.1430	.1374	.0724	.0714	23.4			
3. ORG	.1380	.1337	.0727	.0718	27.0			
4. GRN	.1367	.1339	.0723	.0709	22.1			
5. BLU	.1350	.1313	.0717	.0711	20.7			
6. WHT	.1342	.1299	.0734	.0714	19.3			
7. WHT/BLA	.1346	.1302	.0724	.0719	21.7			
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5534 Max .5422 Min
Overall Virgin Dielectric Breakdown Average 23.76 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 590 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1317 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1317 lbs/ft. VWK 4-28-86

Tested By/Date VEK 4-28-86 (Tension) JMZ 4-28-86 (Micrometer) JB R.A.T. 4/28/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JGR 5/29/86
Test Observers AR
Visual Cable Report: OK HC
Anomalies:

Continuity OK JB
All cables meggered greater than 10,000 MΩ R.A.T. 4/28/86

800

5T2

2016/01N

WATANABE INSTRUMENTS CORP. CHART NO. PZ4.0-2H

WATANABE INSTRUMENTS CORP. CHART NO. PZ4

WATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 45
Plant. . . . . = W
Manufacturer . . . . . = AIW
Contract No. . . . . = 825342-2
Mark No. . . . . = WHG-1
Description. . . . . = 16/14 7/C
Insulation . . . . . = PXMJ
Filler Material. . . . = Blanket

Standards Used = 506325, 543175, 512035, 543211, 543240, 902038, 543202, 502445, 212506
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .2159

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	STJ								
1.	BLA	.1420	.1347	.0733	.0711	21.8			
2.	RED	.1408	.1376	.0730	.0721	21.3			
3.	ORG	.1419	.1342	.0724	.0714	27.9			
4.	GRN	.1391	.1360	.0717	.0712	22.5			
5.	BLU	.1376	.1320	.0716	.0711	26.3			
6.	WHT	.1384	.1310	.0731	.0715	20.7			
7.	WHT/BLA	.1398	.1348	.0724	.0721	23.3			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .5645 Max .5506 Min
Overall Virgin Dielectric Breakdown Average ~~23.68 KV~~ 23.76 KV JLR 5/24/86
Dielectric Test Length = 15 Ft.
Tension (T) = 595 lbs (Max.)
Radius (R) = 0-4479 ft
T/R = 1328 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1328 lbs/ft VWR 4-28-86

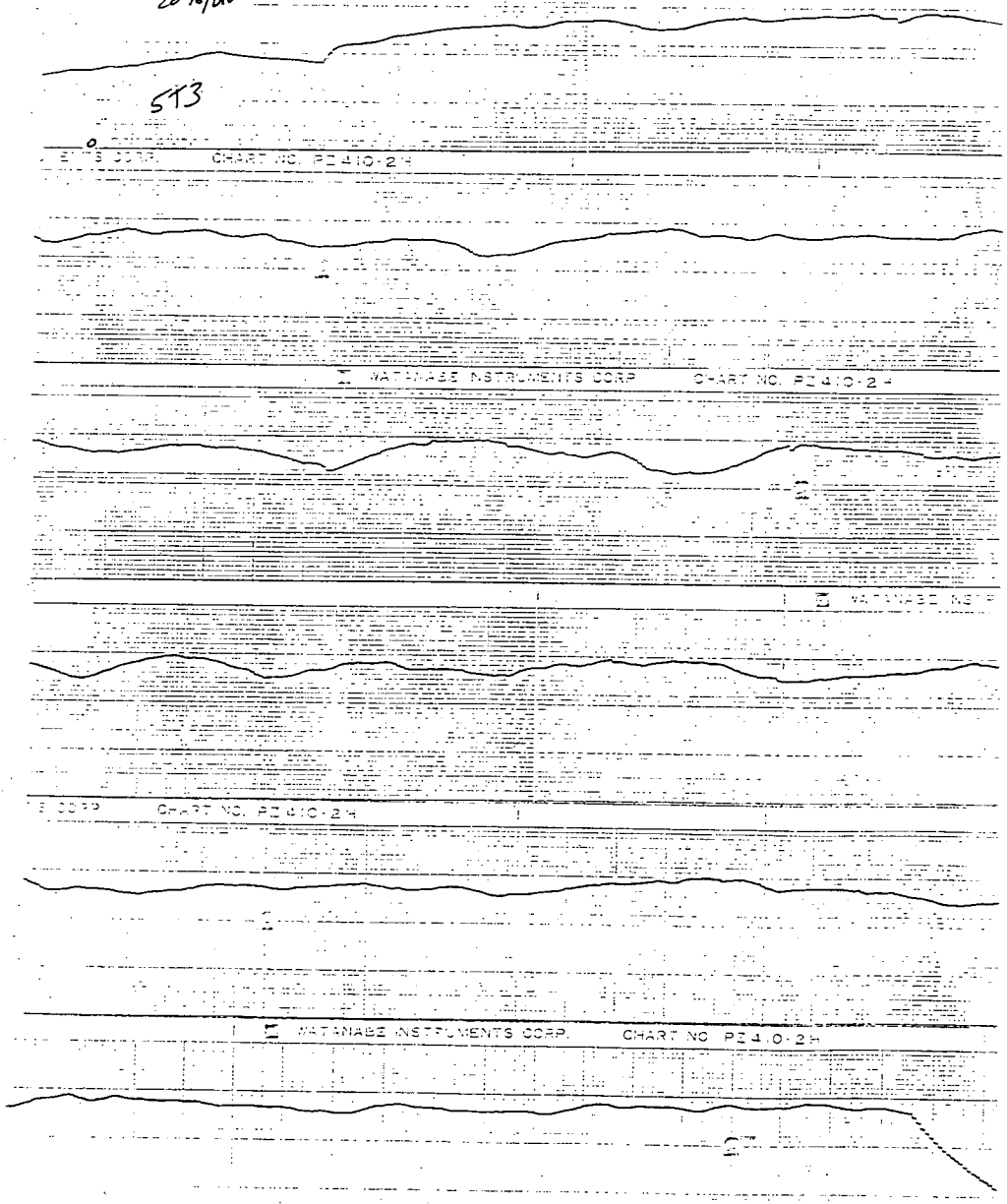
Tested By/Date VRK 4-28-86 (Tension) CHM 4-28-86 (Micrometer) JB R.A.T. 4/28/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date JLR 5/29/86
Test Observers PR
Visual Cable Report: OK HE
Anomalies:

Continuity OK JB

All cables meggered greater than 10,000 MΩ R.A.T. 4/28/86

20 16/DIV

STJ



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin Tensioned ✓ 1-Conductor Multi-Conductor ✓

Sample No. . . . . = 45
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522025, 543211, 543240, 902038, 543207, 502445, 212506

	Test No. 5T4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1365	.1336	.0717	.0712	23.8	>10,000 MΩ	Test OK
2.	Red	.1399	.1350	.0724	.0721	24.0		
3.	ORG	.1377	.1337	.0726	.0719	24.1		
4.	GRN	.1362	.1338	.0715	.0712	23.0		
5.	BLU	.1362	.1308	.0712	.0710	20.4		
6.	WHT	.1325	.1275	.0724	.0715	22.8		
7.	WHT/BLA	.1339	.1313	.0727	.0723	23.0	R.A.T. 5/1/86	
8.								
9.								
10.								
11.								
12.								

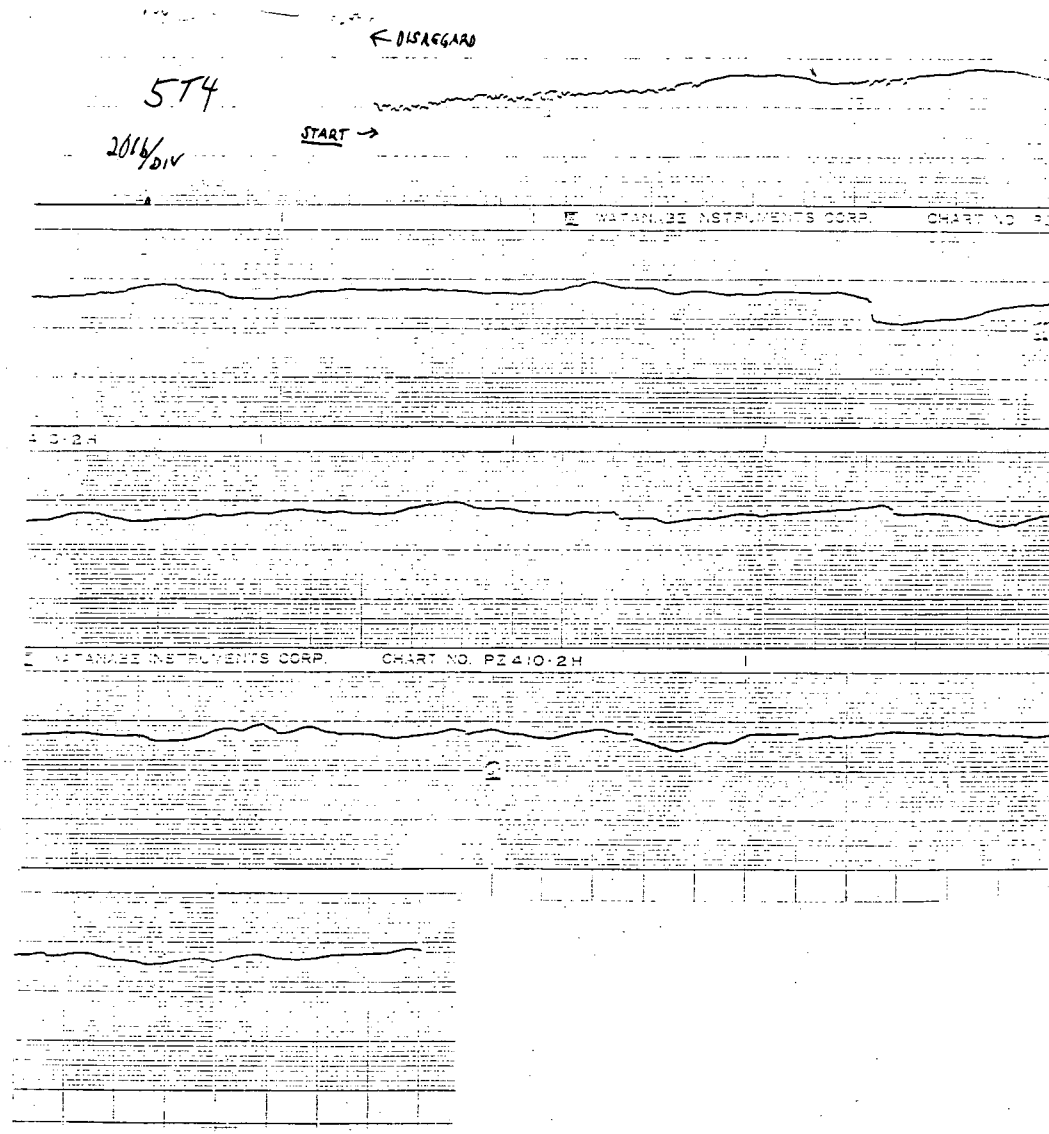
Multi-Conductor Jacket O.D. = .5473 Max .5321 Min
Tension (T) = 590 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1317 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1317 lbs/ft

Tested By/Date VEK 4-30-86 (Tension) — Micrometer 4-30-86 — JB R.A.T. 5/1/86 (Dielectric)
Verified By/Date HC 5/29/86 — QA Approval/Date JAR 5/29/86
Test Observers AR

Visual Cable Report: Nothing abnormal found
Cable appeared abnormal in the following ways: MODERATE BUNCHING & WRINKLING OF OUTER JACKET IN TWO PLACES.

Anomalies:

)148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin Tensioned ✓ 1-Conductor Multi-Conductor ✓

Sample No. . . . . = 45
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522025, 547211, 543240, 902038, 543202, 502445, 212506

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
5T5							
1. BLA	.1382	.1351	.0717	.0710	23.6	>10000 MΩ	Est OK
2. Red	.1388	.1359	.0724	.0724	22.9	↓	↓
3. ORG	.1343	.1329	.0749	.0719	24.6		
4. GRN	.1373	.1334	.0714	.0712	22.1		
5. BLU	.1331	.1300	.0723	.0711	23.9		
6. WHT	.1337	.1303	.0719	.0715	19.1		
7. WHT/BLA	.1369	.1316	.0726	.0719	25.2		
8.						R.A.T. 5/1/86	
9.							
10.							
11.							
12.							

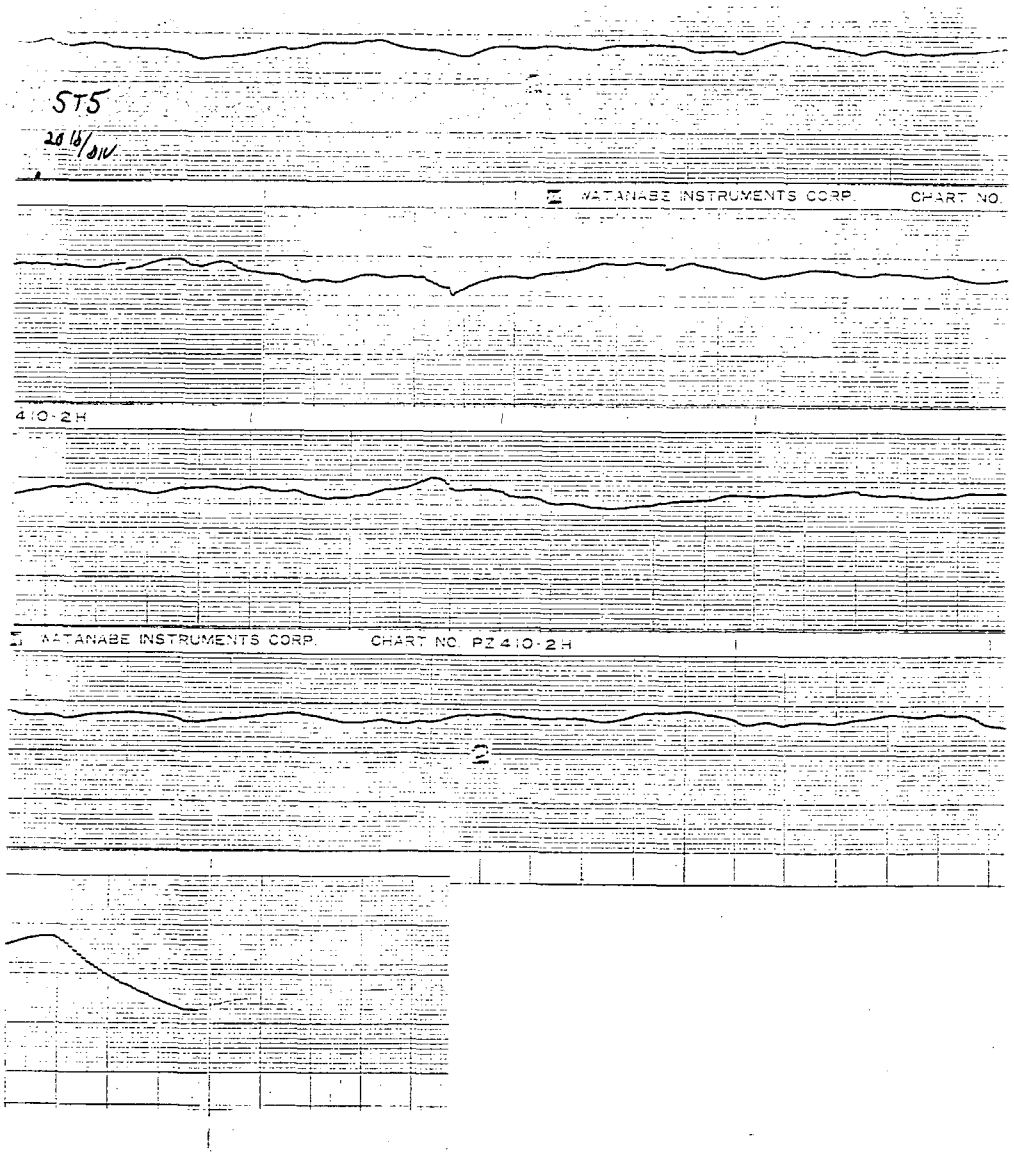
Multi-Conductor Jacket O.D. = .5493 Max .5374 Min
Tension (T) = 610 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1362 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1362 lbs/ft

Tested By/Date VEK 4-30-86 (Tension) MZW 4-30-86 (Micrometer) JB R.A.T 5/1/86 (Dielectric)
Verified By/Date HC 5/29/86 (Tension) QA Approval/Date JBR 5/29/86 (Dielectric)
Test Observers JR

Visual Cable Report: Nothing abnormal found
Cable appeared abnormal in the following ways: OUTER INSULATION MODERATELY BUNCHED & WRINKLED IN TWO PLACES, VERY WRINKLED IN ONE PLACE

Anomalies:

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ✓
Irradiated ___ Multi-Conductor ✓

Sample No. . . . . = 794
Plant. . . . . = B
Manufacturer . . . . . = EATON
Contract No. . . . . = 825772
Mark No. . . . . = WVB
Description. . . . . = NO.16 3/C
Insulation . . . . . = XLPE
Filler Material. . . . = BARE WIRE

Standards Used = 543211, 543240, 543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .0846

	Test No. 6V1	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1155	.1131	.0586	.0582	22.7			
2.	RED	.1132	.1106	.0586	.0577	18.6			
3.	WHT	.1169	.1145	.0595	.0574	19.6			
4.	BARE	—	—	.0506	.0485				
5.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3874 Max .3705 Min
Overall Virgin Dielectric Breakdown Average 22.9 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) / Van W. Ross 4-25-86 (Micrometer) / JB (Dielectric) DMZ 4-25-86 R.A.T. 4/28/86

Verified By/Date HC 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers BR
Visual Cable Report: OK HC
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 794
Plant. . . . . = B
Manufacturer . . . . . = EATON
Contract No. . . . . = 825772
Mark No. . . . . = WUB
Description. . . . . = NO. 16-3/C
Insulation . . . . . = XLPE
Filler Material. . . . = Bare Wire

Standards Used = 543211, 543240
543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .0846

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	6V2								
1.	BLA	.1177	.1147	.0588	.0580	22.4			
2.	RED	.1148	.1123	.0590	0.581	20.1			
3.	WHT	.1191	.1140	.0595	0.576	27.7			
4.	BARE	—	—	.0489	.0485				
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = ~~.3592~~ .3799 Max, .3592 Min
Overall Virgin Dielectric Breakdown Average 22.9KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — VWR 4-25-86 (Micrometer) — JB RAT. 4/28/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers BR
Visual Cable Report: OK He
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ___
Irradiated ___ Multi-Conductor —

Sample No. . . . . = 794
Plant. . . . . = B
Manufacturer . . . . . = EATON
Contract No. . . . . = 825772
Mark No. . . . . = WVB
Description. . . . . = No. 16 3/C
Insulation . . . . . = XLPE
Filler Material. . . . = Bare Wire

Standards Used = 543211, 543240, 543202, 902038

Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA
Wt/Ft (lb). . . . . = .0844

Test No. 6V3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg. AC KV	Acc.	Unacc.
1. BLA	.1178	.1140	.0595	.0584	25.7			
2. RED	.1138	.1110	.0594	.0577	22.7			
3. WHT	.1177	.1143	.0591	.0577	29.3			
4. BARE	—	—	.0491	.0482				
5.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3874 Max .3491 Min
Overall Virgin Dielectric Breakdown Average 22.9 KV
Dielectric Test Length = 15 Ft.
Tension (T) = NA lbs (Max.)
Radius (R) = NA ft
T/R = NA lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = NA

Tested By/Date N/A (Tension) | VWR 4-25-86 (Micrometer) | JB R.D.T. 4/28/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers RK
Visual Cable Report: OK He
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 794
Plant. . . . . = B
Manufacturer . . . . . = EATON
Contract No. . . . . = 825772
Mark No. . . . . = WVB
Description. . . . . = No 16 3/c
Insulation . . . . . = XLPE
Filler Material. . . . = Bare Wire

Standards Used = 643211, 543240
543202, 902038.

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .0844

	Test No. 6V4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1174	.1140	.0600	.0579	23.1			
2.	RED	.1131	.1120	.0588	.0578	18.4			
3.	WHT	.1186	.1145	.0599	.0573	27.0			
4.	BARE	—	—	.0509	.0489				
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3899 Max .3230 Min
Overall Virgin Dielectric Breakdown Average 22.9 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) DWR 4-25-86 (Micrometer) JB R.A.C. 4/25/84 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers RR
Visual Cable Report: OK HC
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 794
Plant. . . . . = B
Manufacturer . . . . . = EATON
Contract No. . . . . = 825772
Mark No. . . . . = WVB
Description. . . . . = No. 16 3/c
Insulation . . . . . = XLPE
Filler Material. . . . = Bare Wire

Standards Used = 543211, 543240, 543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .0846

	Test No. 6V5	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1162	.1133	.0588	.0578	19.0			
2.	RED	.1133	.1112	.0585	.0576	23.4			
3.	WHT	.1157	.1139	.0582	.0574	23.8			
4.	BARE	—	—	.0488	.0484				
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3890 Max .3726 Min
Overall Virgin Dielectric Breakdown Average 22.9 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) | JWR 4-25-86 (Micrometer) | JB RAE 4/28/86 (Dielectric)

Verified By/Date HC 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers AR
Visual Cable Report: OK HC
Anomalies:

-SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 794
Plant. . . . . = 8
Manufacturer . . . . . = EATON
Contract No. . . . . = 825772
Mark No. . . . . = WV8
Description. . . . . = No. 16 3/C
Insulation . . . . . = XLPE
Filler Material. . . . = Bare wire

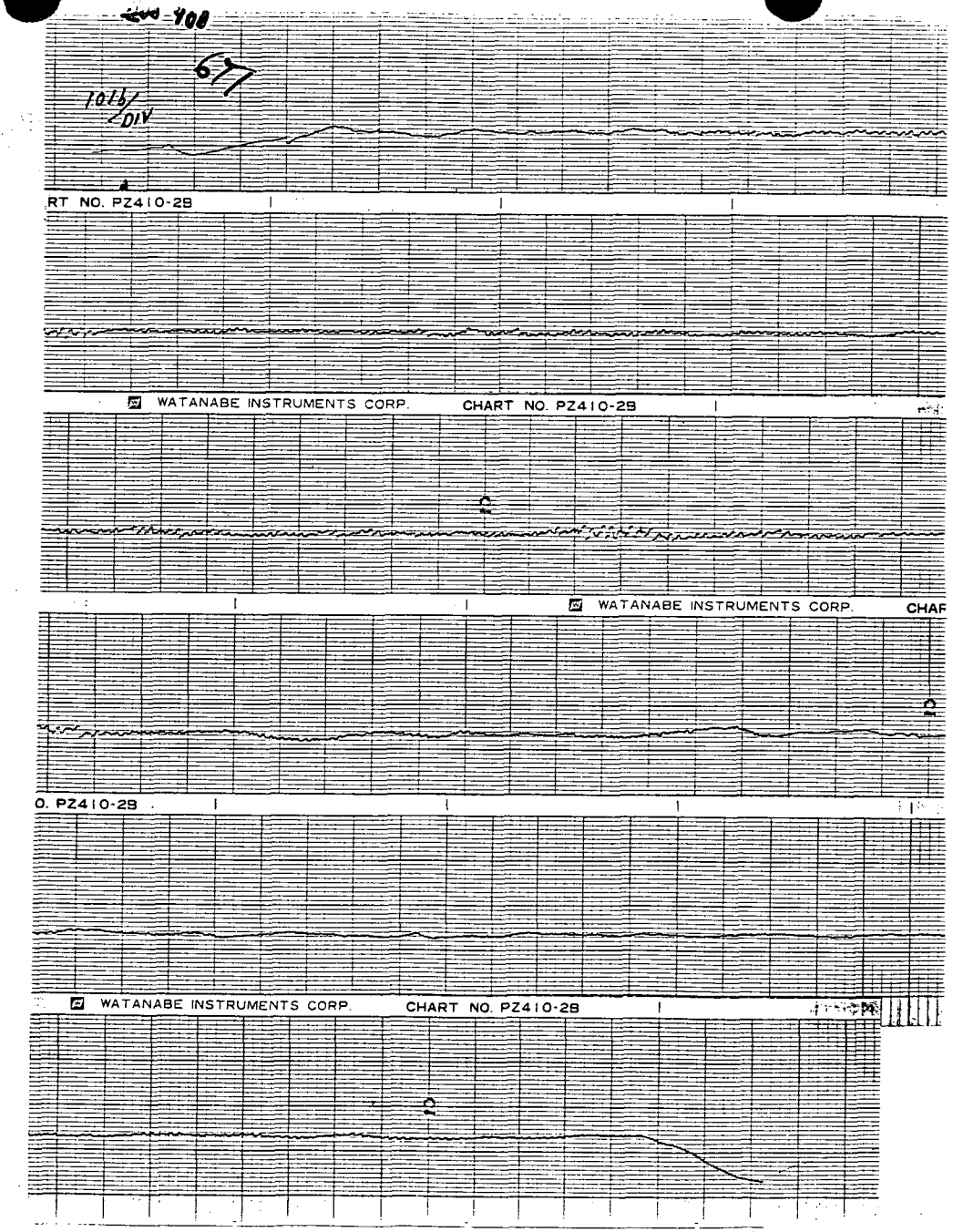
Standards Used = 506325, 543175, 522035, 543211, 503240, 502445, 543202, 902038
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .0846

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
GTI								
1. BLA	.1152	.1139	.0588	.0527	24.0			
2. RED	.1133	.1125	.0579	.0573	23.6			
3. WHT	.1158	.1148	.0585	.0558	22.5			
4. BARE	—	—	.0489	.0484				
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3946 Max .3594 Min
Overall Virgin Dielectric Breakdown Average 22.9 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 155 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 346 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 346 lbs/ft

Tested By/Date VEK 4-22-86 (Tension) — KWR 4-25-86 (Micrometer) — JB R.A.T. 4/28/86 (Dielectric)
Verified By/Date HR 5/29/86 (Tension) — QA Approval/Date JBR 5/29/86 (Micrometer)
Test Observers RR
Visual Cable Report: OK HR
Anomalies:

Continuity OK JB



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 794
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325
543175 522035, 543211,
543240, 502445, 543202, 902038, 212506

	Test No. 6T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1141	.1124	.0584	.0578	19.6	>10,000MΩ	Test OK
2.	RED	.1113	.1106	.0580	.0576	15.6	↓	↓
3.	WHT	.1143	.1130	.0582	.0550	25.8	↓	↓
4.	BARE	—	—	.0489	.0482			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .398, Max .3580 Min
Tension (T) = 148 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 330 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 330 lbs/ft

Tested By/Date VEK 4-29-86 (Tension) — Micrometer 4-29-86 — Dielectric R.A.T. 4/29/86
Verified By/Date 5/29/86 — Micrometer QA Approval/Date — Dielectric 5/29/86
Test Observers

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

)148E-2

10/6/010
6T2

WATANABE INSTRUMENTS CORP. CHART NO. PE4-0-24

WATANABE INSTRUMENTS CORP. CHART NO.

WATANABE INSTRUMENTS CORP. CHART NO. PE4-0-24

WATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 794
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 504325, 543175, 522035, 543211, 543245, 502445, 543202, 902038, 215506

Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
6T3							
1. BLA	.1139	.1127	.0580	.0569	18.6	>10,000 MΩ	Test OK
2. RED	.1111	.1106	.0589	.0575	20.6	↓	↓
3. WH	.1136	.1131	.0576	.0573	25.5	↓	↓
4. BARE	—	—	.0486	.0481			
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3836 Max .3474 Min
Tension (T) = 148 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 330 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 330 lbs/ft

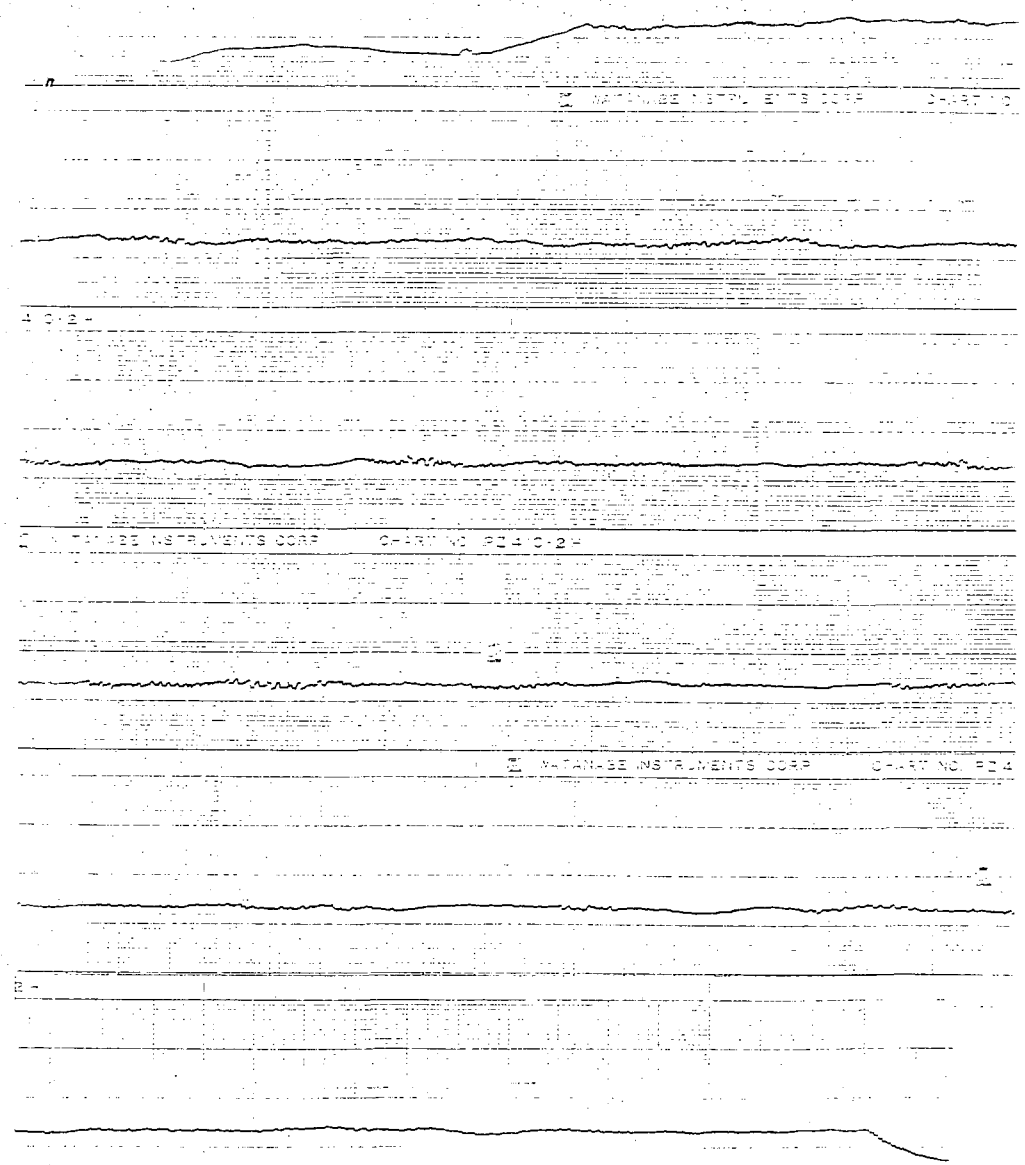
Tested By/Date VEK 4-29-86 (Tension) — JLW 4-29-86 (Micrometer) — R.A.T. 4/29/86 (Dielectric)
Verified By/Date He 5/29/86 (Tension) — QA Approval/Date JAR 5/29/86 (Dielectric)
Test Observers BR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

TOO
10/8/81U
6T3



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 794
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 502445, 543202, 902035, 212506

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
GT4							
1. BLA	.1148	.1130	.0579	.0576	22.8	>10,000MΩ	Test OK
2. RED	.1119	.1108	.0581	.0577	22.0	↓	↓
3. WHT	.1175	.1130	.0586	.0573	25.5		
4. BARE	—	—	.0501	.0489			
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3771 Max .3599 Min
Tension (T) = 150 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 335 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 335 lbs/ft

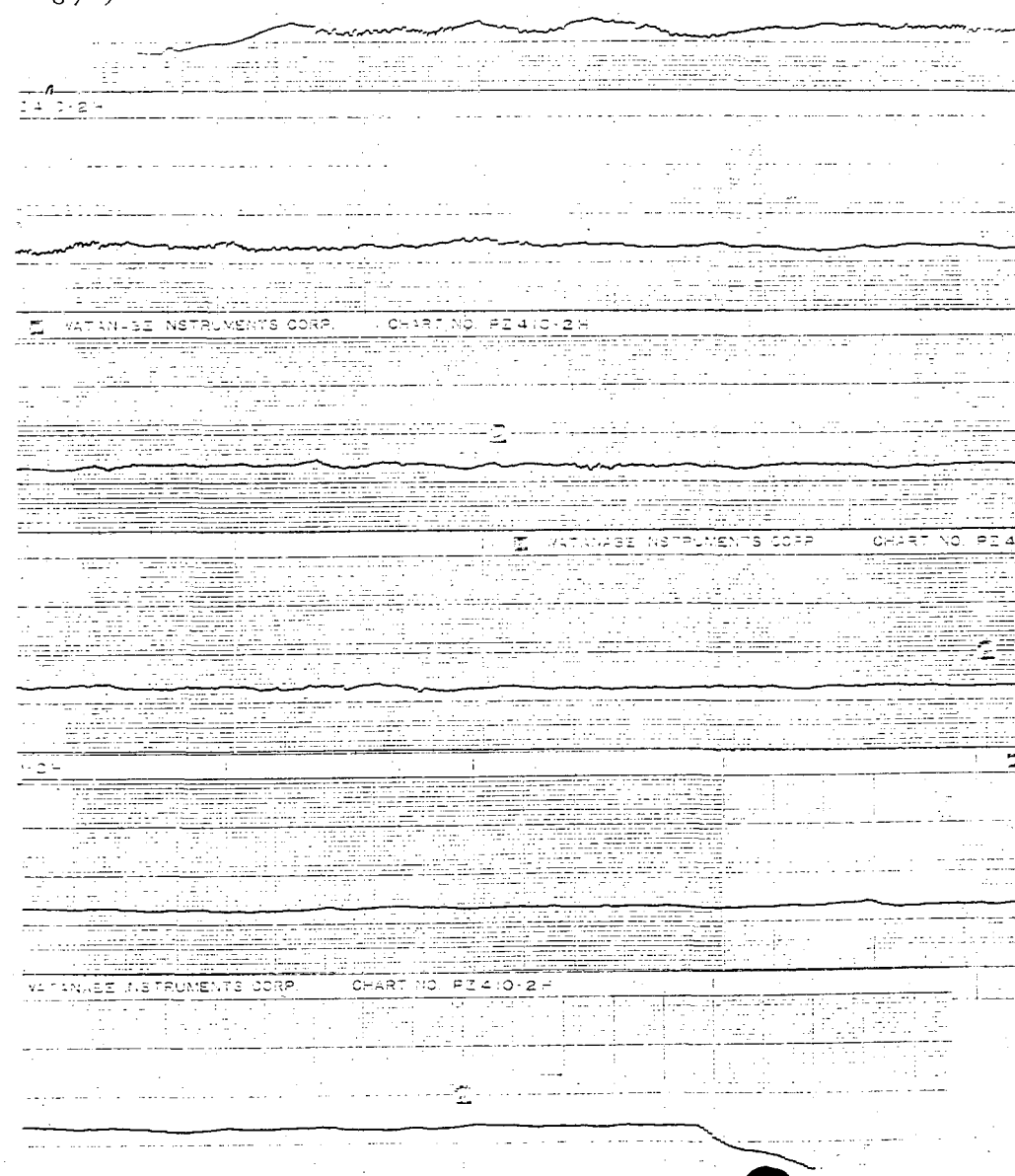
Tested By/Date VEK 4-29-86 (Tension) — MLW 4-29-86 (Micrometer) — R.A.T. 4/29/86 (Dielectric)
Verified By/Date HC 5/29/86 — QA Approval/Date — 5/29/86
Test Observers HR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

700
10/6/01N
GT4



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 794
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 547211, 547240, 212506, 502445, 543202, 902038

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	6T5							
1.	BLK	.1143	.1124	.0580	.0571	22.4	>10,000MΩ	Test OK
2.	RED	.1119	.1101	.0578	.0575	18.4	↓	↓
3.	WHT	.1133	.1121	.0575	.0549	23.7	↓	↓
4.	BARE	—	—	.0484	.0484			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

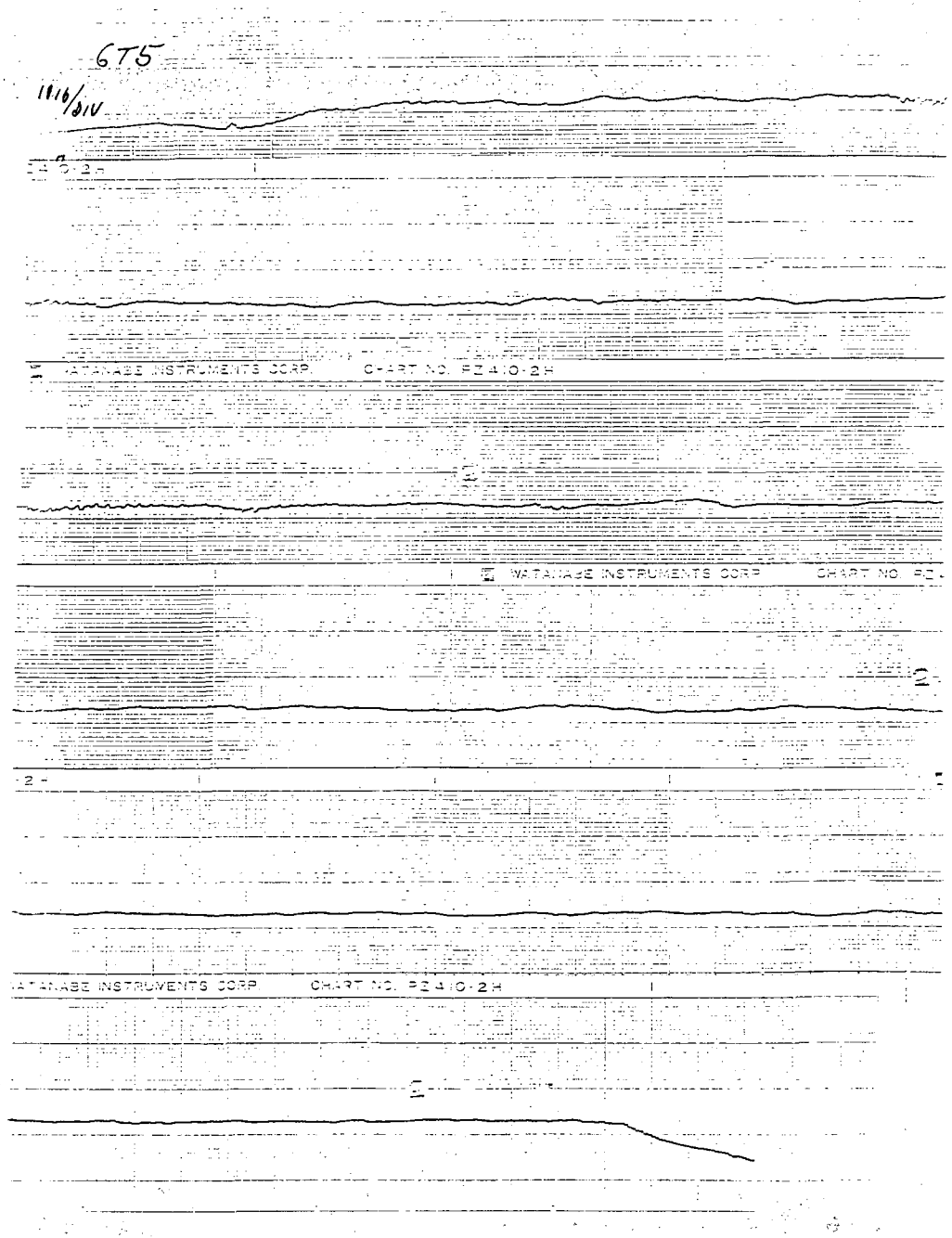
Multi-Conductor Jacket O.D. = .3717 Max .3512 Min
Tension (T) = 140 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 313 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 313 lbs/ft. MLW 4-29-86

Tested By/Date VEK 4-29-86 (Tension) GMF-4-29-86 (Micrometer) JB R.A.L. 4/29/86 (Dielectric)
Verified By/Date HC 5/29/86 (Tension) QA Approval/Date JAR 5/29/86 (Dielectric)
Test Observers JR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 6
Sample No. . . . . = 794
Description No 16 3/C

Standards Used: 506326, 543175, 522035, 543211, 212504, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

Test No. 6T6	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1140	.1127	.0580	.0576	16.2	>10,000 MΩ	Test OK
2. RED	.1117	.1112	.0581	.0576	18.0	↓	↓
3. WHT	.1141	.1125	.0592	.0571	25.6		
4. BARE	—	—	.0487	.0485			
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3869 Max .3504 Min

SWBP Data

Tension (T) = 268 lbs (Max.)
Radius (R) = .4479 ft
T/R = 598.35 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 598.35 lbs/ft

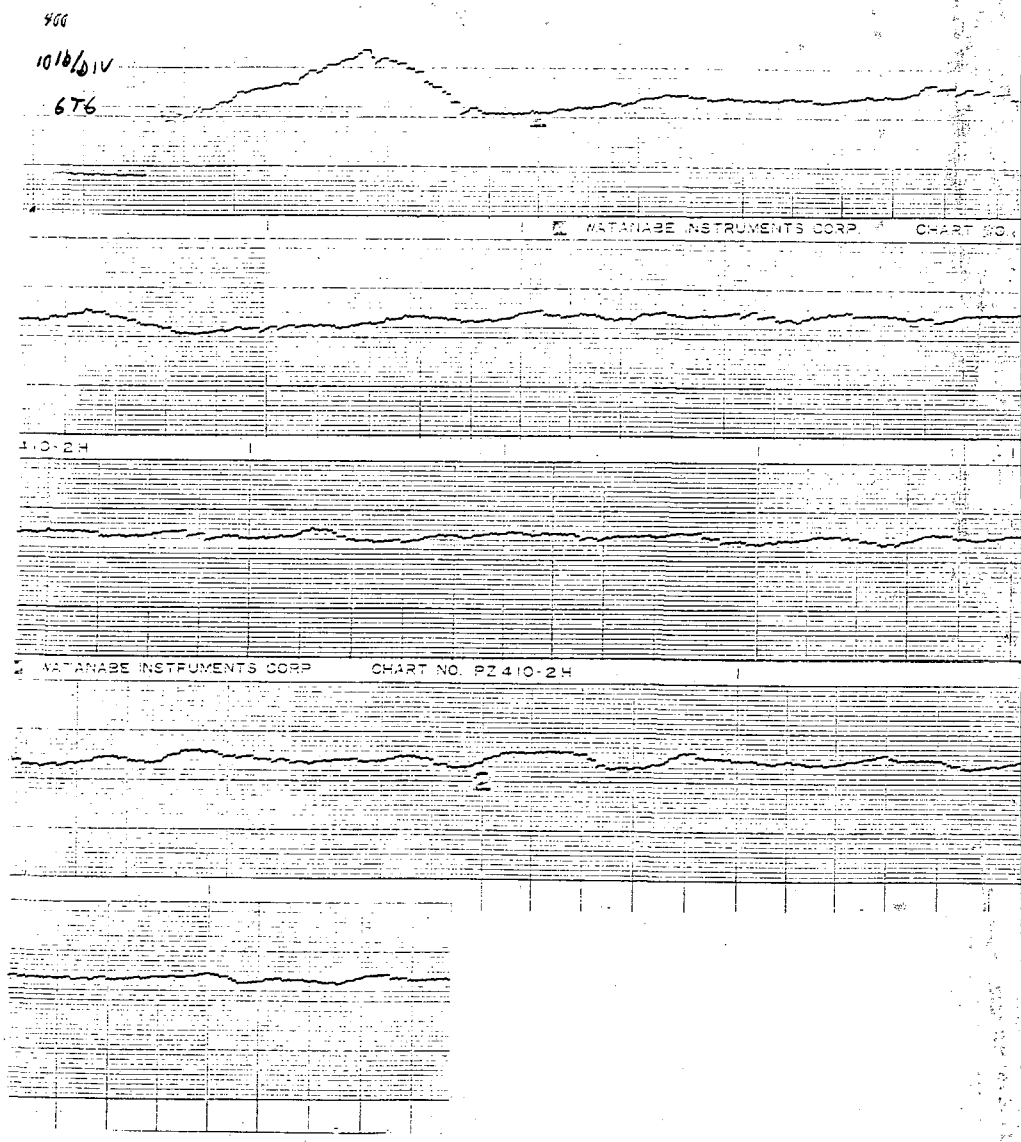
Anomalies:

Tested By/Date VER 5-13-86 (Tension) Dm 7 5-14-86 (Micrometer) QB R.A.T. 5/14/86 (Dielectric) R.A.T. 5/14/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers AR

QA Approval/Date JAR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 6
Sample No. . . . . = 794
Description M16 3/C

Standards Used: 506326, 543175, 522035, 543211, 312506, 502445, 543202, ~~[illegible]~~ R.A.T. 5/14/86, 903038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	GT7							
1.	BLA	.1148	.1128	.10580	.0573	24.1	>19000 mΩ	Test OK
2.	RED	.1124	.1094	.10584	.0575	22.8	↓	↓
3.	WHT	.1159	.1132	.10580	.10570	21.5		
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/C Max N/C Min

SWBP Data

Tension (T) = 288 lbs (Max.)
Radius (R) = 4479 ft
T/R = 643.00 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 643.00 lbs/ft

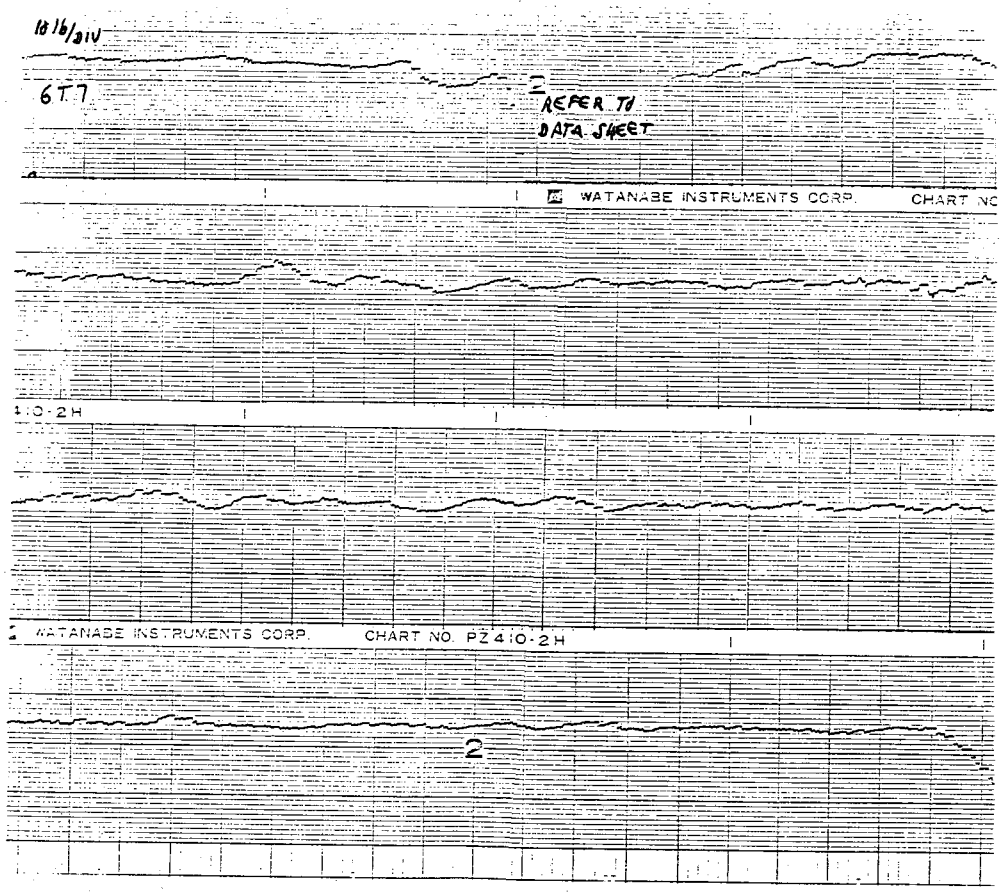
Anomalies: CHART RECORDING SHOWS WHERE SAMPLE CABLE DETACHED FROM PULL CABLE. CABLES WERE REATTACHED AND PULL CONTINUED. RED CLOTH INSIDE CABLE WAS TORN IN 2 PLACES DUE TO CABLE STRETCH.

Tested By/Date VEK 5-8-86 (Tension) — DM 7 5-14-86 (Micrometer) — JB R.A.T. 5/14/86 (Dielectric) — R.A.T. 5/14/86 (Resistance)

Verified By/Date HE 5/29/86
Test Observers JR

QA Approval/Date [illegible] 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 6
Sample No. . . . . = 794
Description No 16 3/c

Standards Used: 506326 543175 522035 543211 312506, 502445 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	6T8							
1.	BLA	.1135	.1120	.0609	.0576	19.4	>10,000MΩ	Est OK
2.	RED	.1123	.1113	.0583	.0576	~~25.4~~ 18.9	↓	↓
3.	WHT	.1149	.1135	.0586	.0572	25.6		
4.	GRN	—	—	.0486	.0435			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3224 Max .3497 Min

SWBP Data

Tension (T) = 255 lbs (Max.)
Radius (R) = .4479 ft
T/R = 569.32 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 569.32 lbs/ft

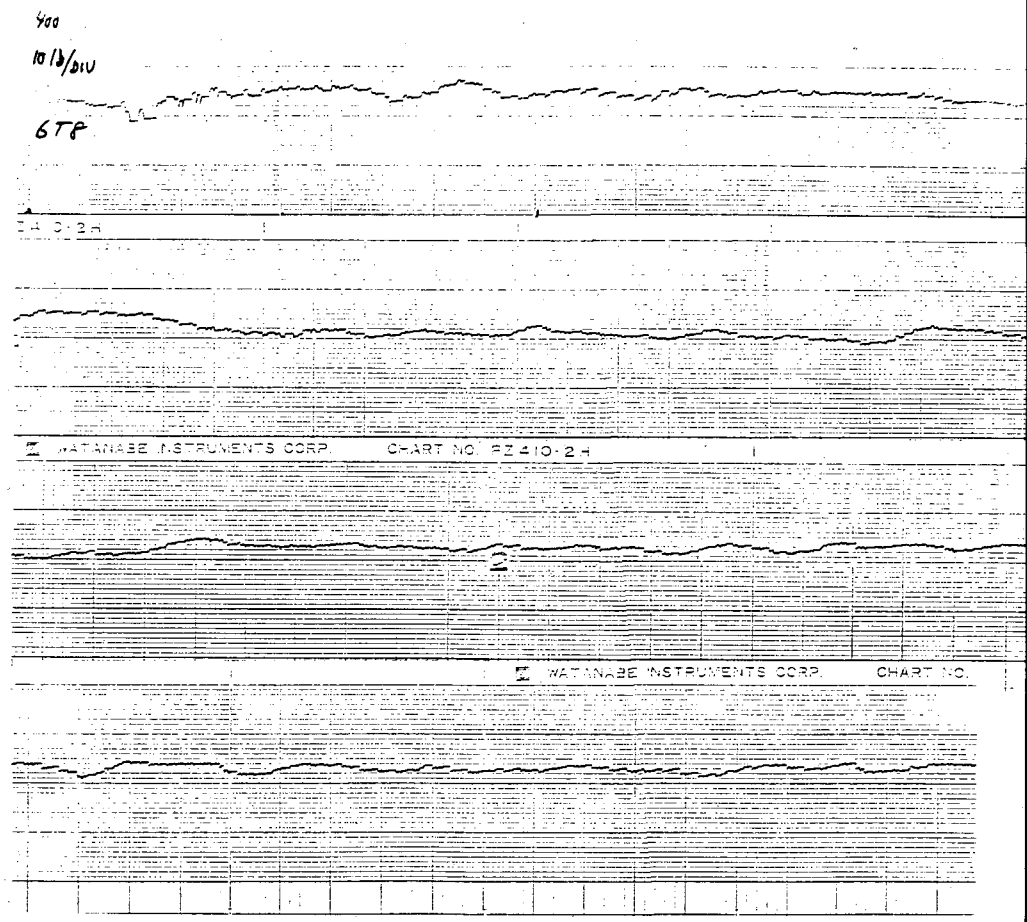
Anomalies: Red cloth jacket torn in 2 places

Tested By/Date VEK 5-13-86 (Tension) SMT 5-14-86 (Micrometer) JB RAJ 5/14/86 (Dielectric) JB (Resistance)

Verified By/Date 5/29/86
Test Observers JB

QA Approval/Date JBC 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 6
Sample No. . . . . = 794
Description No 16 3/C

Standards Used: 506326, 543175, 522035, 543211, 212502, 502445, 543202, 902038,

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

Test No. 6T9		Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1138	.1119	.0583	.0578	19.7	>10,000MΩ	Test OK
2.	RED	.1119	.1113	.0579	.0576	21.2	↓	↓
3.	WHT	.1145	.1137	.0580	.0574	27.1		
4.	BARE	—	—	.0493	.0485			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3671 Max .3577 Min

SWBP Data

Tension (T) = 265 lbs (Max.)
Radius (R) = .4479 ft
T/R = 591.65 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 591.65 lbs/ft

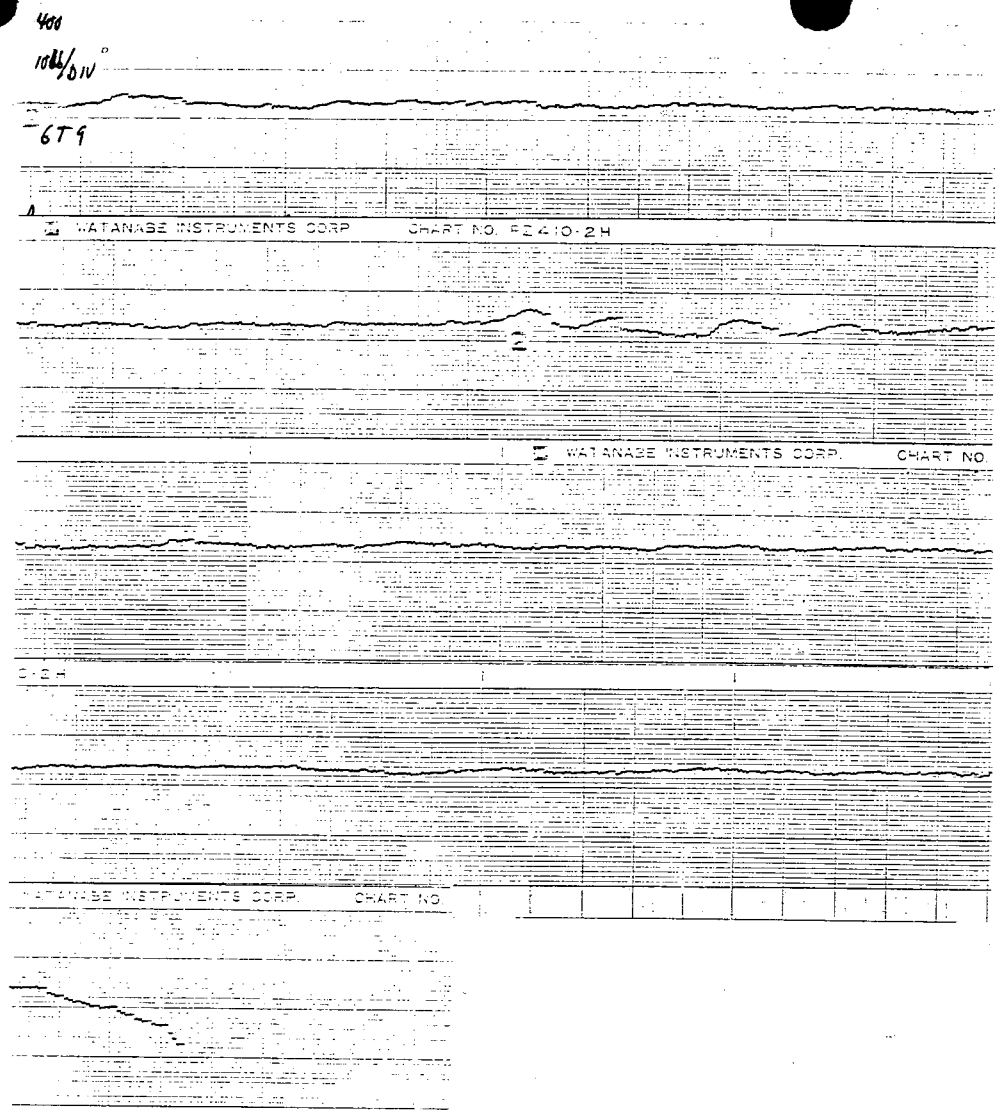
Anomalies:

Tested By/Date VEK 5-12-86 (Tension) / [illegible] 5-14-86 (Micrometer) / R.A.T. 5/14/ (Dielectric) / R.A.T. 5/14/86 (Resistance)

Verified By/Date [illegible] 5/29/86
Test Observers [illegible]

QA Approval/Date [illegible] 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 6
Sample No. . . . . = 794
Description NA 16 3/C

Standards Used: 506652, 506326, 522035, 543211, 212506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

	Test No. 6T10	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1142	.1137	.0587	.0576	20.3	>10,000MΩ	Test OK
2.	RED	.1115	.1100	.0578	.0574	21.3	↓	↓
3.	WHT	.1143	.1125	.0578	.0572	25.1		
4.	BARE	—	—	.0484	.0484			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3780 Max .3503 Min

SWBP Data

Tension (T) = 262 lbs (Max.)
Radius (R) = .4479 ft
T/R = 584.95 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 584.95 lbs/ft

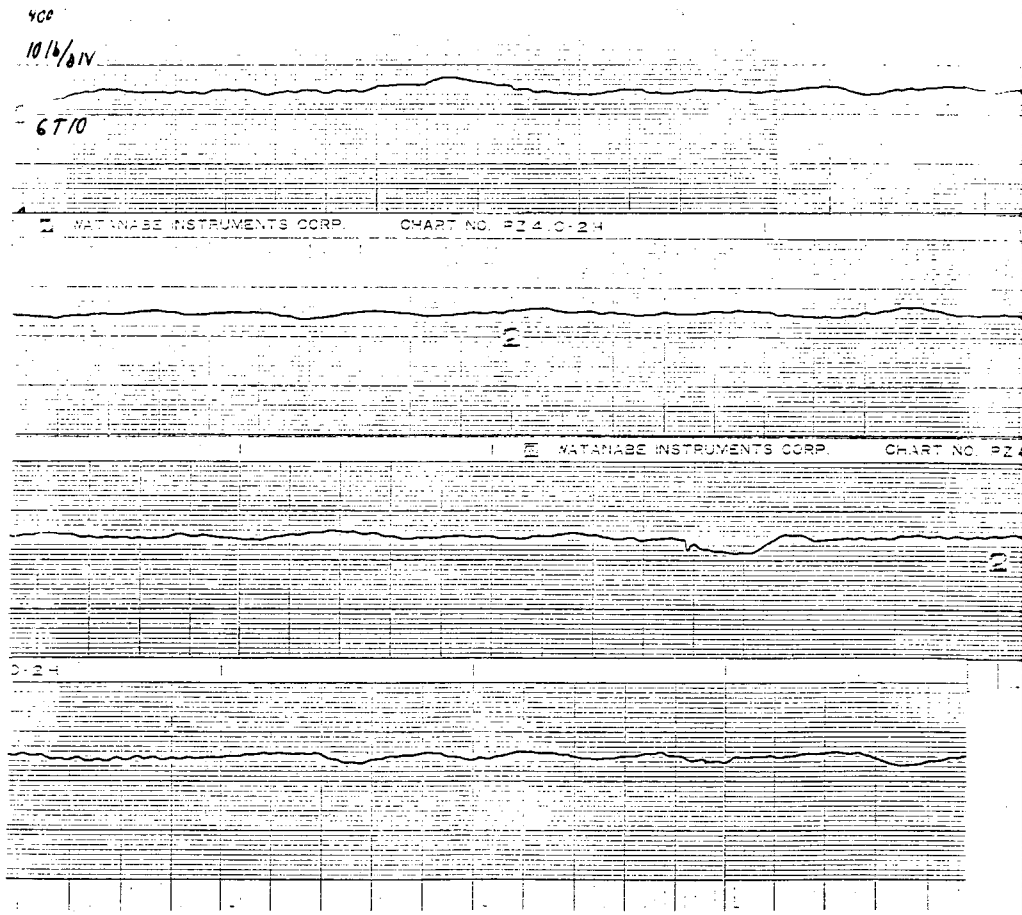
Anomalies:

Tested By/Date VEK 5-14-86 (Tension) — [illegible] 5-14-86 (Micrometer) — JB (Dielectric) — R.A.T. 5/14/86 (Resistance)

Verified By/Date [illegible] 5/29/86
Test Observers [illegible]

QA Approval/Date [illegible] 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 259
Plant. . . . . = W
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 827380
Mark No. . . . . = ~~WVB~~ WVB
Description. . . . . = NO. 16 3/C
Insulation . . . . . = XLPE
Filler Material. . . . = Bare Wire

Standards Used = 543211, 543240, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .0719

	Test No. 7V1	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1146	.1125	.0605	.0594	14.6			
2.	RED	.1178	.1143	.0594	.0579	16.8			
3.	WHT	.1176	.1156	.0600	~~.04~~ .0584	19.4			
4.	BARE	—	—	.0459	.0451				
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3497 Max .3418 Min
Overall Virgin Dielectric Breakdown Average 17.45 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) | [illegible] 4-25-86 (Micrometer) | JB R.A.T 4/28/86 (Dielectric)

Verified By/Date HC 5/29/86 QA Approval/Date [illegible] 5/29/86
Test Observers HC
Visual Cable Report: OK HC
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 259
Plant. . . . . = W
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 827380
Mark No. . . . . = WVB
Description. . . . . = NO.16 3/C
Insulation . . . . . = XLPE.
Filler Material. . . . = Bare Wire

Standards Used = 543211, 543240
902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .0719

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
7V2								
1. BLA	.1178	.1165	.0589	.0580	17.5			
2. RED	.1171	.1151	.0587	.0573	16.9			
3. WHT	.1189	.1160	.0605	.0592	15.9			
4. BARE	—	—	.0454	.0434				
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3493 Max .3426 Min
Overall Virgin Dielectric Breakdown Average 17.45 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) / [illegible] 4-25-86 (Micrometer) / JB R.A.T. 4/28/86 (Dielectric)
Verified By/Date [illegible] 5/29/86 QA Approval/Date [illegible] 5/29/86
Test Observers [illegible]
Visual Cable Report: OK [illegible]
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

[illegible]in ✓ 1-Conductor ____
[illegible]ioned ____ Multi-Conductor ✓

Sample No. . . . . = 259
Plant. . . . . = W
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 827380
Mark No. . . . . = WVB
Description. . . . . = No. 16 3/C
Insulation . . . . . = XLPE
Filler Material. . . . = Bare Wire

Standards Used = 543211, 543240, 902038, 543202

Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA
Wt/Ft (lb). . . . . = .0719

	Test No. 7V3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1152	.1124	.0599	.0586	14.9			
2.	RED	.1171	.1143	.0589	.0574	19.3			
3.	WHT	.1169	.1163	.0604	.0584	18.4			
4.	BARE	—	—	.0475	.0460				
5.									
[illegible]									
[illegible]									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3426 Max .3416 Min
Overall Virgin Dielectric Breakdown Average 17.45 KV
Dielectric Test Length = 15 Ft.
Tension (T) = NA lbs (Max.)
Radius (R) = NA ft
T/R = NA lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — V.W. Ross 4-25-86 (Micrometer) — JB R.A.T. 4/28/84 (Dielectric)
Verified By/Date HS 5/29/86 QA Approval/Date JER 5/29/86
Test Observers RR
Visual Cable Report: OK RL
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 259
Plant. . . . . = W
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 827380
Mark No. . . . . = WVB
Description. . . . . = No. 16 3/C
Insulation . . . . . = XLPE.
Filler Material. . . . = Bakelite

Standards Used = 543211, 543240, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .0719

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	7V4								
1.	BLA	.1152	.1138	.0590 ~~.0580~~	.0580	18.8			
2.	RED	.1157	.1149	.0578	.0571	19.0			
3.	WHT	.1164	.1155	.0589	.0580	17.9			
4.	BARE	—	—	.0452	.0447				
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3477 Max .3427 Min
Overall Virgin Dielectric Breakdown Average 17.45 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — Omf 4-25-86 (Micrometer) — JB R.A.T. 4/28/8 (Dielectric)
Verified By/Date HE 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers BR
Visual Cable Report: OK HE
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin _____ 1-Conductor _____
Irradiated _____ Multi-Conductor _____

Sample No. . . . . = 259
Plant. . . . . = W
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = X27380
Mark No. . . . . = WVB
Description. . . . . = No. 16 3/C
Insulation . . . . . = XLPE
Filler Material. . . . = Bare Wire

Standards Used = 543211, 543240, 902038, 543202, 212506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .0719

	Test No. 745	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1163	.1154	.0593	.0578	18.0			
2.	RED	.1160	.1147	.0590	.0571	19.3			
3.	WHT	.1171	.1158	.0597	.0587	15.1			
4.	BARE	—	—	.0465	.0456				
5.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3456 Max .3365 Min
Overall Virgin Dielectric Breakdown Average 17.45 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) | VWR 4-25-86 (Micrometer) | JB RAT. 11/28/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JCR 5/29/86
Test Observers RR
Visual Cable Report: OK HC
Anomalies:

All megger greater than 10,000 MΩ

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 259
Plant. . . . . = W
Manufacturer . . . . . = ANACONDA
Contract No. . . . . = 827380
Mark No. . . . . = WVB
Description. . . . . = 16.16 3/C
Insulation . . . . . = XLPE
Filler Material. . . . = Bare wire

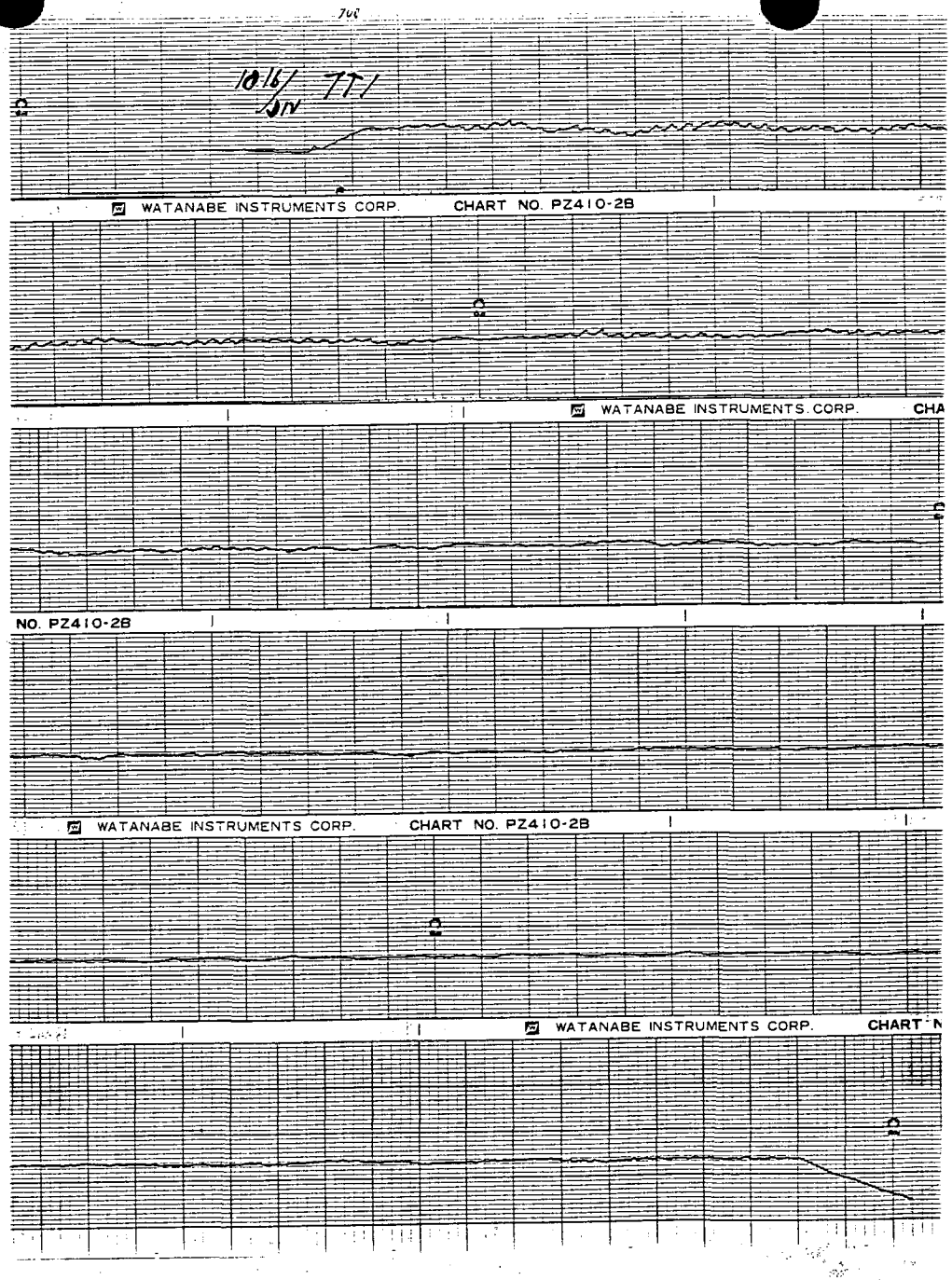
Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .0719

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	TT1								
1.	BLA	.1163	.1154	.0593	.0578	17.2			
2.	RED	.1160	.1147	.0590	.0591	17.0			
3.	WHT	.1171	.1158	.0597	.0587	19.5			
4.	BARE	—	—	.0465	.0456				
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3414 Max, .3331 Min
Overall Virgin Dielectric Breakdown Average 17.45KV
Dielectric Test Length = 15 Ft.
Tension (T) = 155 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 346 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 346 lbs/ft. VWR 4-25-86

Tested By/Date VEK 4-23-86 (Tension) Sm 4-25-86 (Micrometer) JB (Dielectric) R.A.T. 4/26/86
Verified By/Date 5/29/86 QA Approval/Date 5/29/86
Test Observers
Visual Cable Report: OK
Anomalies:

Continuity OK JB



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 259
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	TT2							
1.	BLA	.1177	.1138	.0590	.0578	18.0	>10,000 MΩ	Test OK
2.	RED	.1153	.1138	.0586	.0570	17.5	↓	↓
3.	WHT	.1162	.1138	.0604	.0587	17.6	↓	↓
4.	BARE	—	—	.0452	.0450			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3462 Max .3293 Min
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 324 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 324 lbs/ft

Tested By/Date: Tension — VEK 4-29-86; Micrometer — 4-29-86 4-29-86 4117 MFW; Dielectric — JB R.A.T. 4/30/86
Verified By/Date: Tension — HR 5/29/86; QA Approval/Date — JAR 5/29/86
Test Observers: RAR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

700
1016/DIV
TT2

WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 259
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 502035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	7T3							
1.	BLA	.1151	.1135	.0582	.0578	16.7	710.000MΩ	Test OK
2.	RED	.1140	.1130	.0573 ~~.0582~~	.0569	16.9	↓	↓
3.	WHT	.1150	.1139	.0591	.0584	18.6		
4.	BARE	—	—	.0452	.0449			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

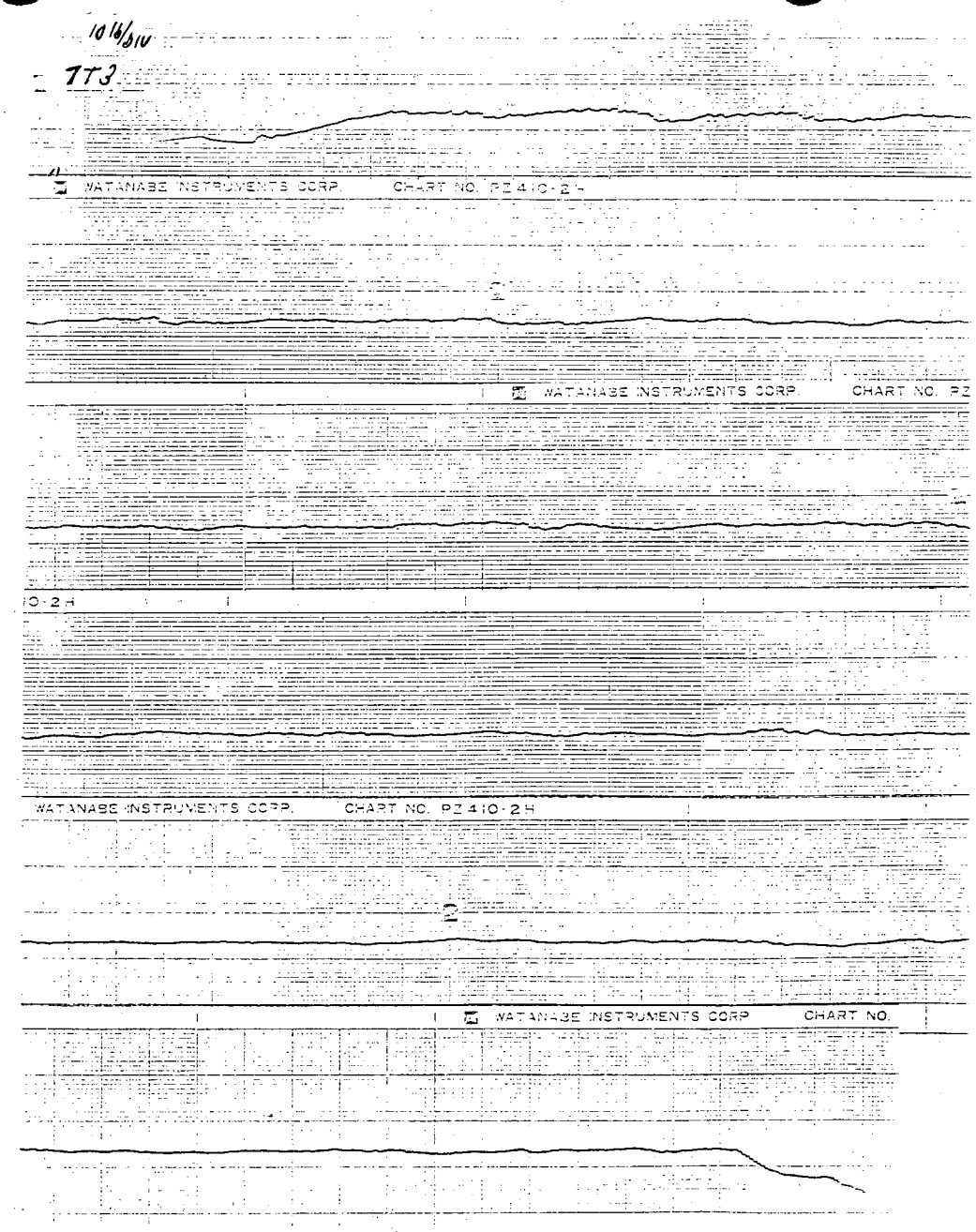
Multi-Conductor Jacket O.D. = .3469 Max .3362 Min
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 324 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 324 lbs/ft.

Tested By/Date VEK 4-29-86 (Tension) — MEW 4-29-86 (Micrometer) — JB R.A.T. 5/1/86 (Dielectric)
Verified By/Date HC 5/29/86 (Tension) — QA Approval/Date (Micrometer) — JBC 5/29/86 (Dielectric)
Test Observers BR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 259
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	7T4							
1.	BLA	.1140	.1117	.0578	.0575	16.8	>10,000 MΩ	Test OK
2.	RED	.1148	.1138	.0577	.0569	16.0	↓	↓
3.	WHT	.1161	.1135	.0608	.0575	17.8		
4.	BARE	—	—	.0466	.0450			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3378 Max, .3307 Min
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 324 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 324 lbs/ft

Tested By/Date VCK 4-29-86 (Tension) — Micrometer 4-29-86 — JB R.A.T. 5/1/86 (Dielectric)
Verified By/Date AC 5/29/86 — QA Approval/Date JAC 5/29/86
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

410

N 16/810

7T4

WATANABE INSTRUMENTS CORP. CHART NO. PE 410-2H

WATANABE INSTRUMENTS CORP. CHART NO. PE

WATANABE INSTRUMENTS CORP. CHART NO. PE 410-2H

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 259
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 542175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
7T5							
1. BLA	.1156	.1141	.0584	.0576	17.5	>10,000 mΩ	Test ok
2. RED	.1160	.1140	.0575	.0571	17.4	↓	↓
3. WHT	.1155	.1132	.0588	.0583	15.9		
4. BARE	—	—	.0451	.0448			
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3457 Max .3352 Min
Tension (T) = 150 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 335 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 335 lbs/ft.

Tested By/Date VEK 4-29-86 (Tension) — JM 4-29-84 / MZW 4-29-86 (Micrometer) — JB R.A.T. 5/1/86 (Dielectric)
Verified By/Date NC 5/29/86 (Tension) — QA Approval/Date JBR 5/29/86 (Dielectric)
Test Observers RR

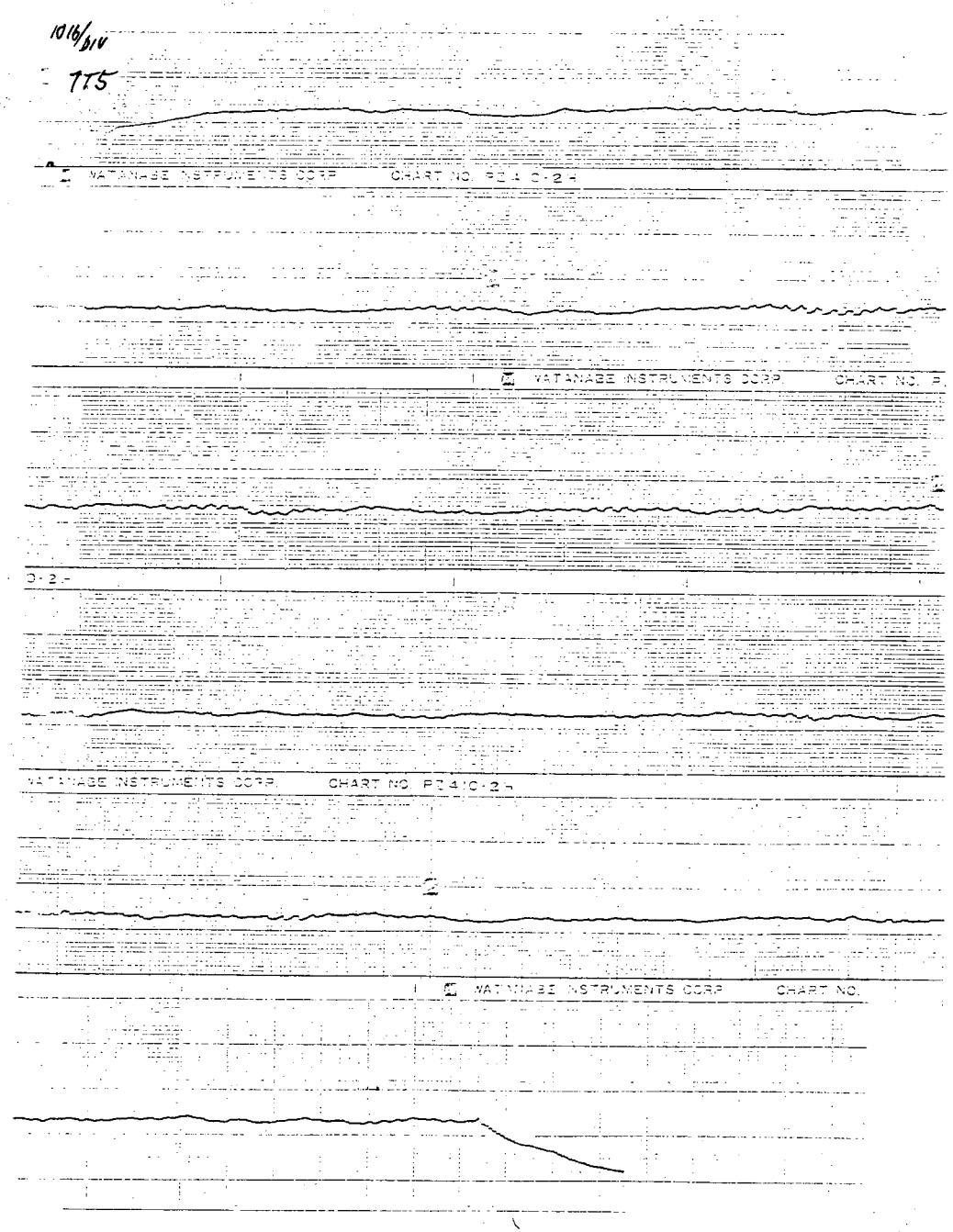
Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

1016/BIV

7T5



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 7
Sample No. . . . . = 259
Description Nb 16 3/c

Standards Used: 506652, 506326, 522035, 543211, 212506, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	7T6							
1.	BLA	.1168	.1136	.0579	.0571	17.3	>10,000 MΩ	Test OK
2.	RED	.1158	.1136	.0581	.0567	17.0	↓	↓
3.	WHT	.1141	.1126	.0590	.0580	18.6	↓	↓
4.	BARE	—	—	.0449	.0445			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3358 Max .3282 Min

SWBP Data

Tension (T) = 280 lbs (Max.)
Radius (R) = .4479 ft
T/R = 625.14 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 625.14 lbs/ft

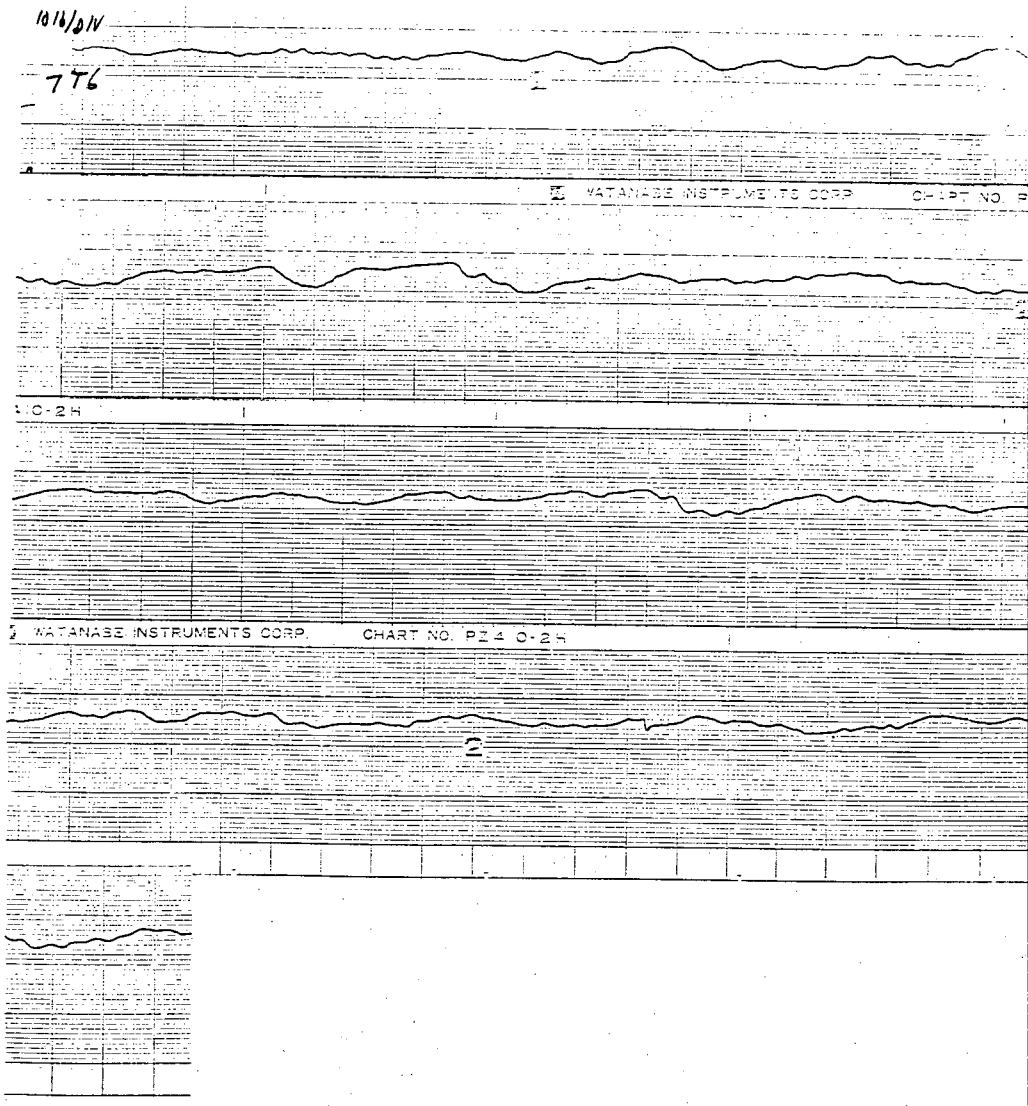
Anomalies:

Tested By/Date VEK 5-14-86 Tension; DMT 5-14-86 Micrometer; GB R.A.T. 5/14/86 Dielectric; R.A.T. 5/14/86 Resistance

Verified By/Date HE 5/29/86
Test Observers PAR

QA Approval/Date JAR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE-CABLE TEST DATA

CLSB Control No. 7
Sample No. . . . . = 259
Description No 16 3/C

Standards Used: 506652, 506326, 522035, 212576, 502445, 543262, 902038, 543211

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	777							
1.	BLA	.1150	.1140	.0592	.0574	~~17.3~~ 17.5	>10,000MΩ	Test OK
2.	RED	.1154	.1126	.0582	.0565	~~17.0~~ 17.1	↓	↓
3.	WHT	.1155	.1134	.0586	.0582	~~19.4~~ 18.0		
4.	BARE	—	—	.0463	.0447			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3397 Max .3304 Min

SWBP Data

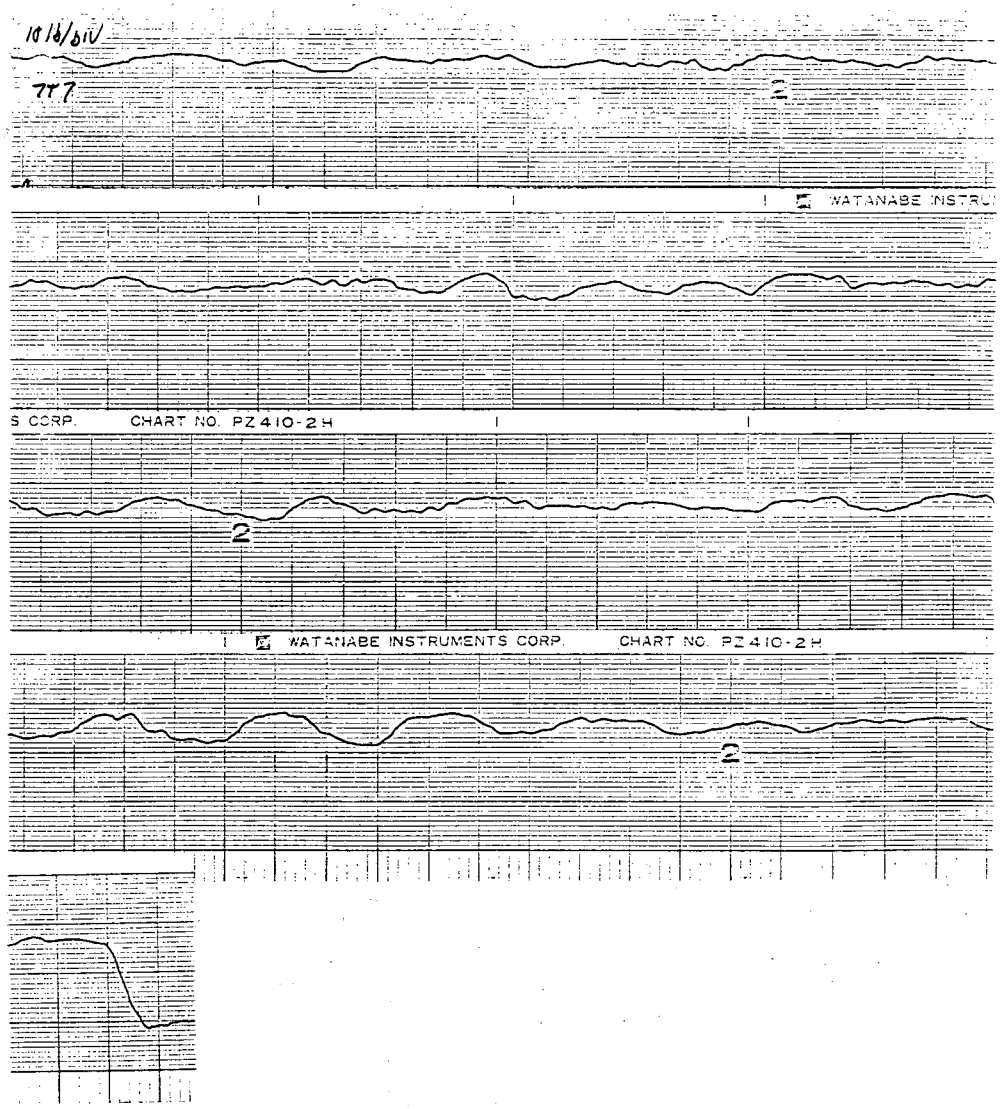
Tension (T) = 280 lbs (Max.)
Radius (R) = .4479 ft
T/R = 625.14 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 625.14 lbs/ft

Anomalies:

Tested By/Date VCK 5-14-86 Tension; Gm 5-14-86 Micrometer; JB R.A.T. 5/14/86 Dielectric; R.A.T. 5/14/86 Resistance

Verified By/Date HR 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers PR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 7
Sample No. . . . . = 259
Description #16 3/C

Standards Used: 506652, 506326, 522035, 212506, 502445, 543202, 902038, 543211

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No. 778	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1158	.1126	.0578	.0571	15.6	>10,000 MΩ	Test OK
2.	RED	.1156	.1123	.0568	.0565	20.0	↓	↓
3.	WHT	.1145	.1119	.0586	.0580	17.0		
4.	BARE	—	—	.0449	.0445			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3374 Max .3267 Min

SWBP Data

Tension (T) = 275 lbs (Max.)
Radius (R) = .4479 ft
T/R = 613.98 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 613.98 lbs/ft

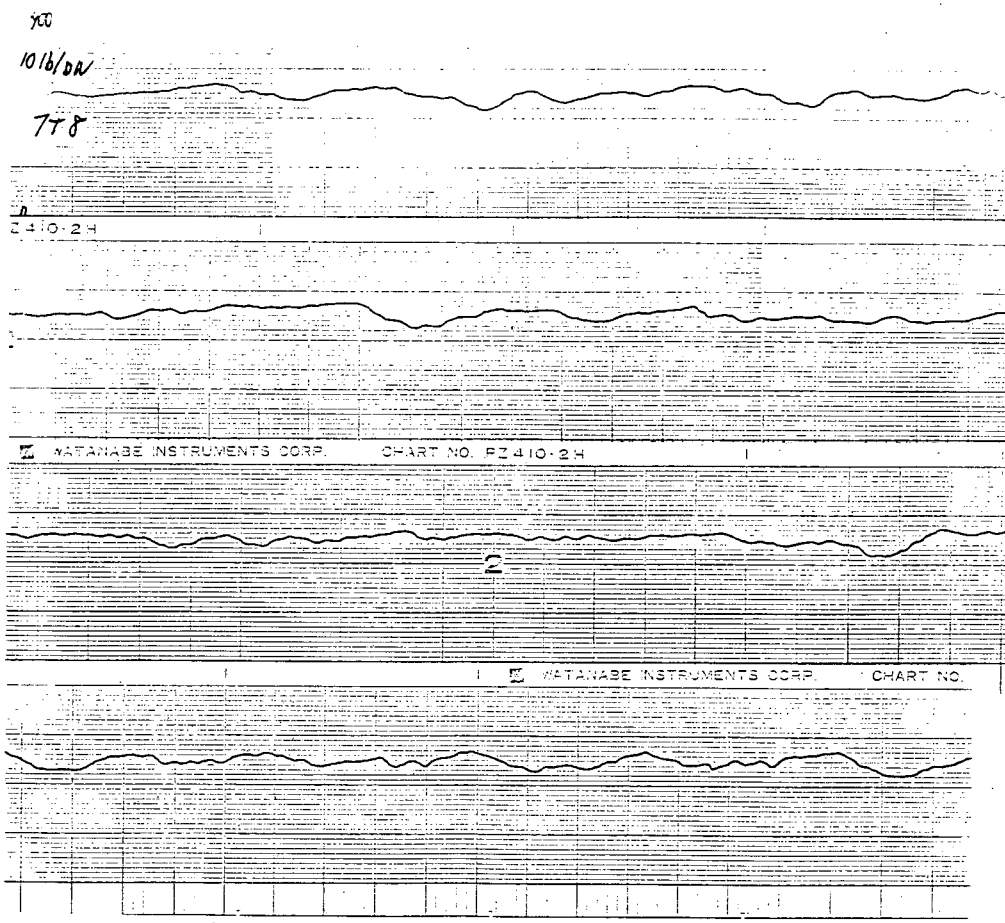
Anomalies:

Tested By/Date VEK 5-14-86 Tension; Dm 7 5-14-86 Micrometer; JB R.A.T. 5/14/86 Dielectric; JB Resistance

Verified By/Date HR 5/29/86
Test Observers JR

QA Approval/Date JAR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 7
Sample No. . . . . = 259
Description No 16 3/C

Standards Used: 506652, 506326, 522035, 543211, 212506, 502445, 543262, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___
Tensioned ✓

1-Conductor ___
Multi-Conductor ✓

	Test No. 7T9	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1155	.1130	.0586	.0576	17.9	>10000MΩ	Est OK
2.	RED	.1155	.1134	.0582	.0569	17.3	↓	↓
3.	WHT	.1129	.1123	.0588	.0581	17.8		
4.	BARE	—	—	.0456	.0447			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3451 Max .3254 Min

SWBP Data

Tension (T) = 300 lbs (Max.)
Radius (R) = .4479 ft
T/R = 669.79 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 669.79 lbs/ft

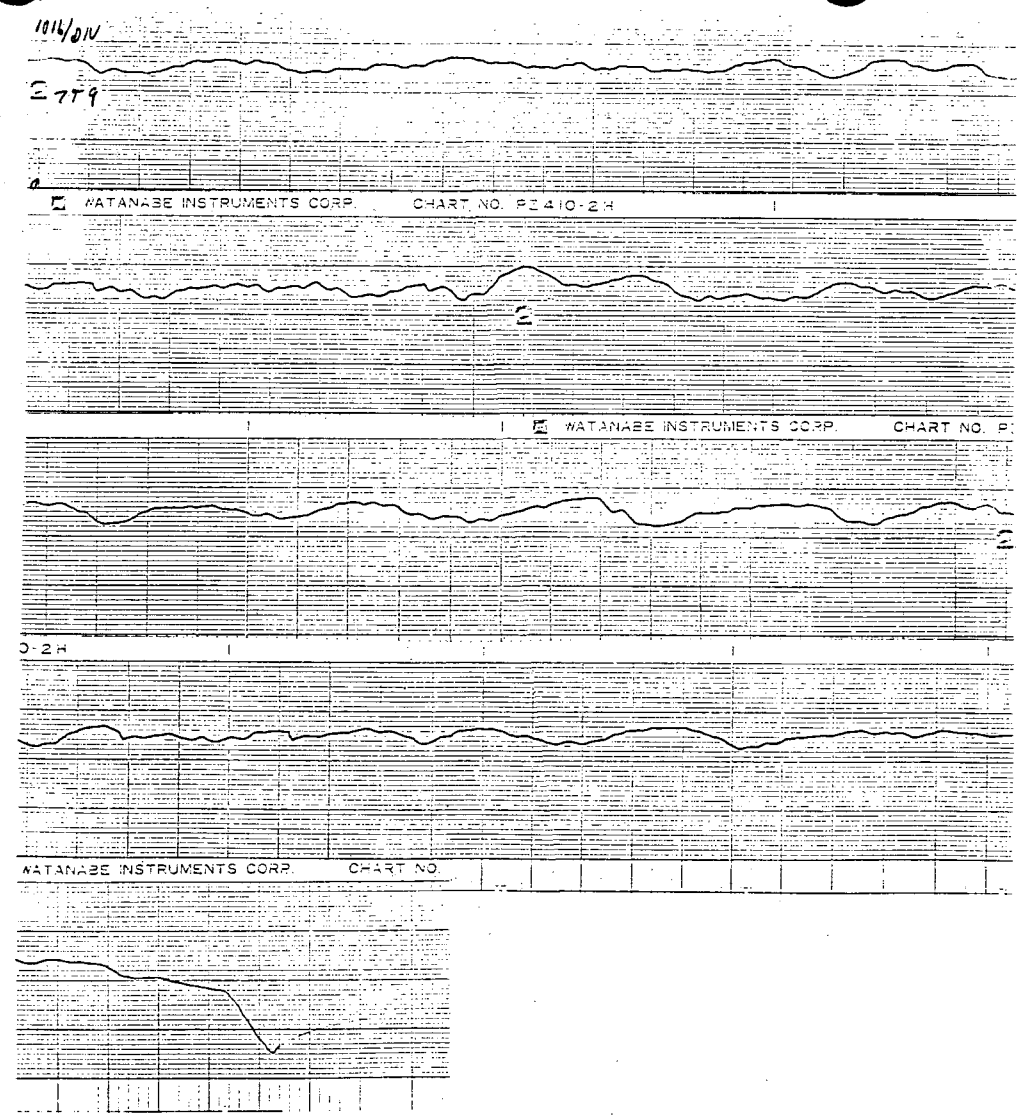
Anomalies:

Tested By/Date VEK 5-14-86 (Tension) DMZ 5-14-86 (Micrometer) JB R.A.T. 5/14/86 (Dielectric) R.A.T. 5/14/86 (Resistance)

Verified By/Date HR 5/29/86
Test Observers RR

QA Approval/Date JBR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 7
Sample No. . . . . = 259
Description No 16 3/C

Standards Used: 506652, 506326, 523035, 543211, 712506, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No. 7T10	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1169	.1126	.0572	.0568	14.5	>10,000MΩ	Test OK
2.	RED	.1161	.1127	.0569	.0564	19.5	↓	↓
3.	WHT	.1140	.1123	.0579	.0575	17.8		
4.	BARE	—	—	.0449	.0443			
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3369 Max .3288 Min

SWBP Data

Tension (T) = 278 lbs (Max.)
Radius (R) = .4479 ft
T/R = 620.67 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 620.67 lbs/ft

Anomalies:

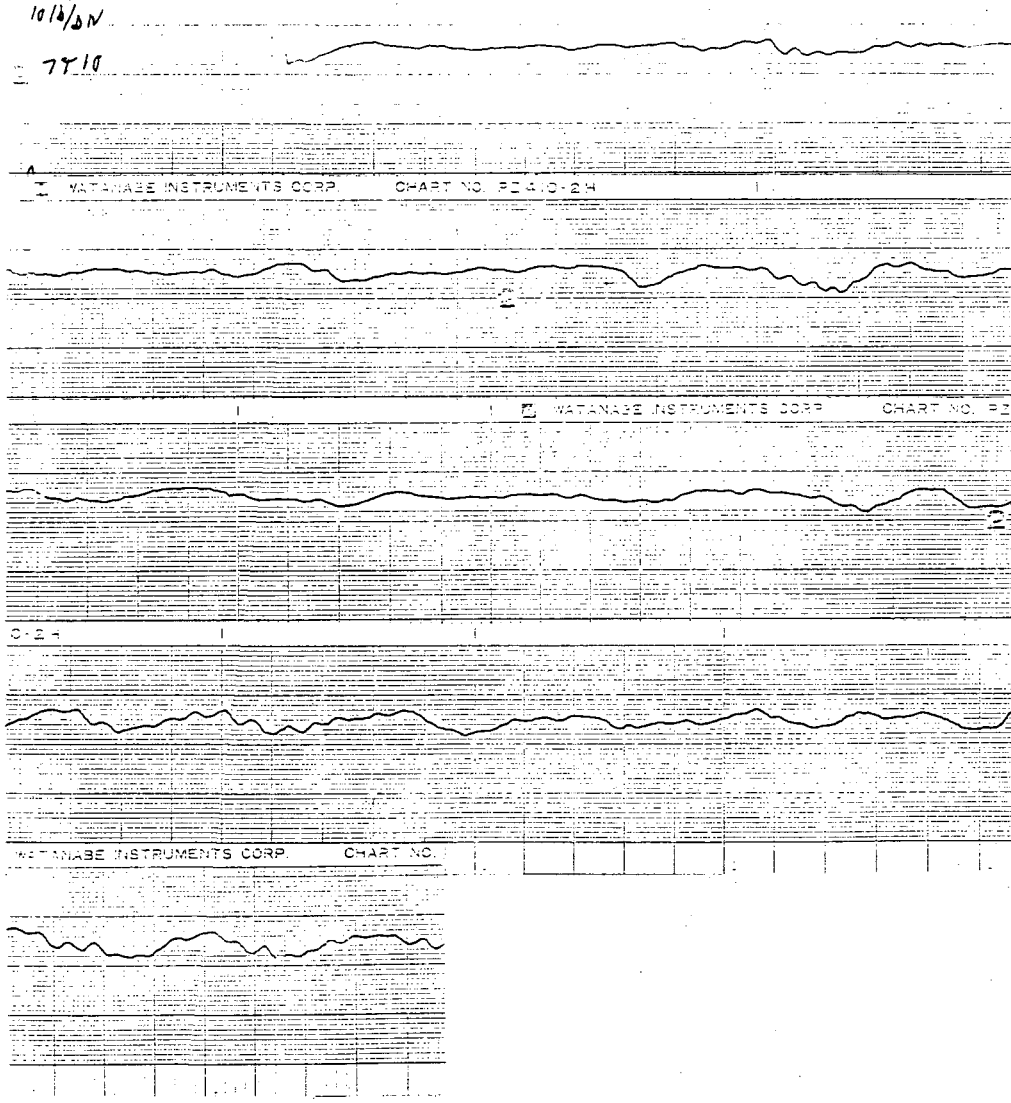
Tested By/Date VEX 5-14-86 (Tension) | Dm 7 5-15-86 (Micrometer) | JB (Dielectric) | R.A.T. (Resistance) R.A.T. 5/14/86

Verified By/Date Ae 5/29/86
Test Observers PR

QA Approval/Date JAR 5/29/86

0148E-4

700
10/6/86
7T10



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 1168
Plant. . . . . = S
Manufacturer . . . . . = ITT
Contract No. . . . . = 84211
Mark No. . . . . = WVD
Description. . . . . = NO.16 S/C
Insulation . . . . . = SHIELD ~~LOCA~~ LOCA
Filler Material. . . . = WHT Nylon string

Standards Used = 543240, 543211, 212506, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1043

	Test No. 8V1	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1149	.1133	.0666	.0586	32.4			
2.	RED	.1149	.1147	.0627	.0623	18.1			
3.	ORG	.1139	.1130	.0549	.0548	18.1			
4.	GR	.1159	.1159	.0584	.0576	18.9			
5.	WHT	.1168	.1161	.0567	.0524	18.2			
	BARE	—	—	.0449	.0449				
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3933 Max .3836 Min
Overall Virgin Dielectric Breakdown Average 20.15 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) | JM 4-28-86 (Micrometer) | JB R.A.T. 4/28/86 (Dielectric)
Verified By/Date HE 5/29/86 QA Approval/Date JMR 5/29/86
Test Observers PK
Visual Cable Report: OK HE
Anomalies:

All cables meggered greater than 10,000 MΩ R.A.T. 4/28/86

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 1168
Plant. . . . . = S
Manufacturer . . . . . = ITT
Contract No. . . . . = 84211
Mark No. . . . . = WVD
Description. . . . . = No. 16 S/C
Insulation . . . . . = SHIELD ~~LOCA~~ LOCA
Filler Material. . . . = WHT Nylon String

Standards Used = 543240, 543211, 212506, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1043

	Test No. 8V2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1141	.1132	.0591	.0571	21.1			
2.	RED	.1157	.1144	.0568	.0555	11.8			
3.	ORG	.1143	.1132	.0570	.0569	16.0			
4.	GR	.1163	.1153	.0570	.0568	18.1			
5.	WHT	.1162	.1158	.0567	.0565	9.2			
6.	BARE	—	—	.0449	.0446				
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3934 Max .3874 Min
Overall Virgin Dielectric Breakdown Average 20.15 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — 4-28-86 (Micrometer) — R.A.T. 4/28/84 (Dielectric)
Verified By/Date 5/29/86 QA Approval/Date 5/29/86
Test Observers
Visual Cable Report: OK
Anomalies:

All cables meggered greater than 10,000 MΩ 4/28/84

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 1168
Plant. . . . . = S
Manufacturer . . . . . = ITT
Contract No. . . . . = 84211
Mark No. . . . . = WUD
Description. . . . . = No.16 5/C
Insulation . . . . . = SHIELD LOCA
Filler Material. . . . = WHT Nylon String

Standards Used = 543240, 543211, 212506, 543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1043

	Test No. 8V3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1143	.1135	.0578	.0571	25.5			
2.	RED	.1174	.1160	.0581	.0564	17.4			
3.	ORG	.1149	.1132	.0567	.0566	16.6			
4.	GR	.1164	.1156	.0604	.0582	20.4			
5.	WHT	.1161	.1160	.0569	.0567	21.6			
	BARE	—	—	.0449	.0446				
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3924 Max .3855 Min
Overall Virgin Dielectric Breakdown Average 20.15 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — MR 4-28-86 (Micrometer) — JB R.A.T. 4/29/86 (Dielectric)
Verified By/Date HE 5/29/86 QA Approval/Date JOR 5/29/86
Test Observers JOR
Visual Cable Report: OK HE
Anomalies:

All cables meggered greater than 10,000 MΩ JB 4/29/86

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 1168
Plant. . . . . = S
Manufacturer . . . . . = ITT
Contract No. . . . . = 84211
Mark No. . . . . = WYD
Description. . . . . = No. 16 5/C
Insulation . . . . . = SHIELD LOCA
Filler Material. . . . = WHT Nylon Strong

Standards Used = 534211, 534240, 543202, 902038, 212506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1043

	Test No. 8V4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	BLA	.1137	.1124	.0573	.0569	27.5			
2.	RED	.1150	.1146	.0553	.0550	17.9			
3.	ORG	.1131	.1130	.0580	.0570	17.7			
4.	GRN	.1154	.1148	.0565	.0562	17.0			
5.	WHT	.1165	.1157	.0570	.0568	19.9			
6.	BARE	—	—	.0454	.0446				
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3926 Max .3855 Min
Overall Virgin Dielectric Breakdown Average 20.15 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A Note 4-28-86

Tested By/Date N/A (Tension) 04-28-86 (Micrometer) JB RAT. 4/29/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JBC 5/29/86
Test Observers RK
Visual Cable Report: OK HC
Anomalies:

All cables meggered greater than 10,000 MΩ JB 4/29/86

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 1168
Plant. . . . . = 5
Manufacturer . . . . . = ITT
Contract No. . . . . = 84211
Mark No. . . . . = WVD
Description. . . . . = No. 16 S/C
Insulation . . . . . = Shield LOCA
Filler Material. . . . = WHT Nylon String

Standards Used = 543211, 543240, 543202, 902038, 212506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .1043

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	8V5								
1.	BLA	.1136	.1130	.0573	.0569	25.8			
2.	RED	.1163	.1155	.0568	.0566	23.1			
3.	ORG	.1143	.1140	.0574	.0571	20.7			
4.	GRN	.1163	.1162	.0567	.0546	20.9			
5.	WHT	.1175	.1165	.0569	.0569	19.9			
	BARE	—	—	.0447	.0445				
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3934 Max .3834 Min
Overall Virgin Dielectric Breakdown Average 20.15 KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — JWR 4-28-86 (Micrometer) — JB R.A.T. 4/29/86 (Dielectric)

Verified By/Date NC 5/29/86 QA Approval/Date JWR 5/29/86
Test Observers RR
Visual Cable Report: OK
Anomalies:

All cables meggered greater than 10,000 MΩ JB 4/29/86

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1168
Plant. . . . . = S
Manufacturer . . . . . = ITT
Contract No. . . . . = 84211
Mark No. . . . . = WVD
Description. . . . . = No. 16 5/C
Insulation . . . . . = SHIELD COEA
Filler Material. . . . = WHT Nylon String

Standards Used = 506325, 543175, 522035, 502445, 543302, 962038, 213506, 543211, 543240
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .1043

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	STI								
1.	BLA	.1156	.1128	.0583	.0556	29.1			
2.	RED	.1166	.1152	.0572	.0565	23.9			
3.	ORG	.1143	.1131	.0654	.0607	17.9			
4.	GRN	.1167	.1151	.0571	.0560	13.8			
5.	WHT	.1171	.1158	.0579	.0570	13.7			
6.	BARE	—	—	.0457	.0448				
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = .3846 Max .3841 Min
Overall Virgin Dielectric Breakdown Average 20.15 KV
Dielectric Test Length = 15 Ft.
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 324 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 324 lbs/ft WR 4-28-86

Tested By/Date VEK 4-23-86 (Tension) Dm7 4-28-86 (Micrometer) JB (Dielectric) R.A.T. 4/28/86
Verified By/Date HG 5/29/86 QA Approval/Date JMR 5/29/86
Test Observers
Visual Cable Report: OK HC
Anomalies:

Continuity OK JB
All cables meggered greater than 10,000 MΩ. R.A.T. 4/28/86

400

10 lb/DIV STI

RZ 410-2H

WATANABE INSTRUMENTS CORP. CHART NO. RZ 410-2H

WATANABE INSTRUMENTS CORP. CHART NO. RZ

2H

WATANABE INSTRUMENTS CORP. CHART NO. RZ 410-2H

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 1168
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 542175, 522025, 543211, 542268, 502445, 543202, 902038, 212506

	Test No. 8T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1137	.1113	.0579	.0567	18.8	>10,000 MΩ	Test OK
2.	Red	.1170	.1144	.0560	.0560	19.8	↓	↓
3.	ORG	.1137	.1117	.0569	.0565	19.7	↓	↓
4.	GRN	.1162	.1145	.0577	.0565	19.9	↓	↓
5.	WHT	.1160	.1149	.0572	.0563	18.4	R.A.T. 5/1/86	
6.	BARE	—	—	.0448	.0445			
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3787 Max .3823 Min
Tension (T) = 138 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 308 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 308 lbs/ft

Tested By/Date VEK 4-31-86 (Tension) — Micrometer 4-30-86 — JB R.A.T. 5/1/86 (Dielectric)

Verified By/Date Me 5/29/86 (Tension) — QA Approval/Date — JAR 5/29/86 (Dielectric)

Test Observers

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

1014/DIV 8T2

WATANABE INSTRUMENTS CORP CHART NO. PZ 4.0-24

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 1168
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 502445, 543202, 902038, 212526, 543211, 543240

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	PT3							
1.	BLA	.1140	.1167	.0573	.0563	24.9	>10,000 MΩ	Test OK
2.	RED	.1156	.1650	.0581	.0567	18.7		
3.	ORG	.1157	.1124	.0573	.0565	17.9		
4.	GRN	.1164	.1152	.0574	.0565	19.9		
5.	WHT	.1180	.1145	.0568	.0564	14.0	R.A.T. 5/1/86	
6.	BARE	—	—	.0454	.0542			
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3912 Max .3813 Min
Tension (T) = 141 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 313 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 313 lbs/ft

Tested By/Date VCK 4-28-86 (Tension) GW 4-30-86 (Micrometer) JB R.A.T. 5/1/86 (Dielectric)
Verified By/Date HE 5/29/86 (QA Approval/Date) JHR 5/29/86
Test Observers JHR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

1818/DIV
PT3

WATANABE INSTRUMENTS CORP. CHART NO. PZ4.0-2H

WATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1168
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522075, 543211, 543240, 502445, 543202, 502038, 312506

Test No. RT4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1142	.1120	.0571	.0565	23.0	>10,000MΩ	Test OK
2. Red	.1163	.1149	.0566	.0554	23.3		
3. ORG	.1144	.1127	.0573	.0566	14.8		
4. GRN	.1166	.1149	.0573	.0569	18.6		
5. WHT	.1163	.1153	.0572	.0567	18.0	RAT 5/1/86	
6. BARE	—	—	.0447	.0445			
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3973 Max .3814 Min
Tension (T) = 140 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 313 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 313 lbs/ft

Tested By/Date VEX 4-30-86 (Tension) DMT 4-30-86 (Micrometer) JB RAT 5/1/86 (Dielectric)
Verified By/Date He 5/29/86 (Tension) NZW 4-30-86 (Micrometer QA Approval/Date) JAR 5/29/86 (Dielectric)
Test Observers JR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

400
10/6/DIV

874

MATHEWS INSTRUMENTS CORP. CHART NO. PE 41C-2H

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1168
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 516225, 543175, 522035, 543240, 542211, 502445, 543202, 902038, 212506

Test No. 8T5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1142	.1123	.0570	.0567	20.8	>10,000 MΩ	Est ok
2. Red	.1170	.1152	.0572	.0563	18.1	↓	↓
3. ORG	.1143	.1128	.0572	.0568	17.9		
4. GRN	.1170	.1150	.0582	.0557	17.4		
5. WHT	.1171	.1164	.0570	.0565	15.4	R.A.T. 5/1/86	
6. BARE	—	—	.0449	.0434			
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3896 Max .3842 Min
Tension (T) = 140 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 313 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 313 lbs/ft

Tested By/Date: Tension 4-30-86; Micrometer 4-30-86; Dielectric R.A.T 5/1/86
Verified By/Date: 5/29/86
QA Approval/Date: 5/29/86
Test Observers

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

MU
10 lb/div
8T5

WATTLINE INSTR.
CHART NO. FD 4.0-24
WATTLINE INSTRUMENTS CORP. CHART NO. FD 4.0-24

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 8
Sample No. . . . . = 1168
Description No 16 5/c

Standards Used: 506652, 506326, 522035, 543211, 217506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

	Test No. 8T6	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1134	.1123	.0571	.0564	27.5	>10,000 MΩ	Test OK
2.	RED	.1157	.1141	.0579	.0570	21.4		
3.	ORG	.1144	.1135	.0569	.0564	24.4		
4.	GRN	.1159	.1147	.0576	.0565	19.4		
5.	WHT	.1168	.1158	.0578	.0564	11.0		
6.	BARE	—	—	.0477	.0445	~~11.0~~ Failed RAT		
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3913 Max .3865 Min

SWBP Data

Tension (T) = 360 lbs (Max.)
Radius (R) = .4479 ft
T/R = 803.75 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 803.75 lbs/ft

Anomalies:

Tested By/Date VEK 5-14-86 Tension; DMZ 5-15-86 Micrometer; JB RAT 5/16/86 Dielectric; R.A.T. 5/14/86 Resistance

Verified By/Date NE 5/29/86
Test Observers JR

QA Approval/Date JMR 5/29/86

0148E-4

20/6/JN

8T6

WATANABE INSTRUMENTS CORP. CHART NO. PI 4 10-2 H

WATANABE INSTRUMENTS CORP. CHART NO. PI

0-2H

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 8
Sample No. . . . . = 1168
Description No. 16 S/C

Standards Used: 506652, 506326, 522035, 543211, 712506, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No. 8T7	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1134	.1130	.0576	.0570	23.6	>10,000 MΩ	Test OK
2.	RED	.1160	.1147	.0598	.0573	19.2		
3.	ORG	.1148	.1139	.0572	.0567	19.4		
4.	GRN	.1164	.1155	.0569	.0565	18.2		
5.	WHT	.1174	.1167	.0580	.0566	17.6		
6.	BARE	—	—	.0467	.0445			
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3981 Max .3850 Min

SWBP Data

Tension (T) = 370 ~~285~~ VEK 5-14-86 lbs (Max.)
Radius (R) = .4479 ft
T/R = 826.08 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 826.08 lbs/ft

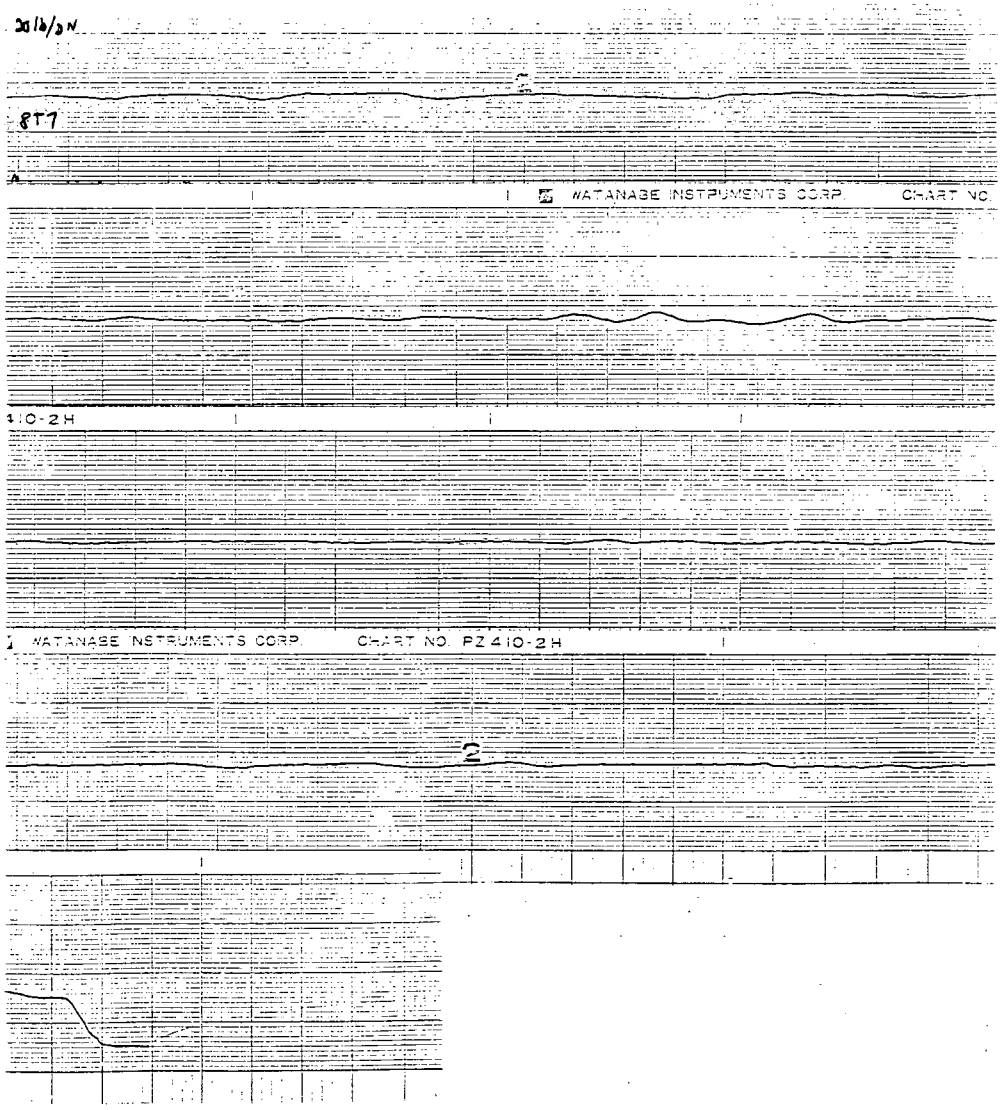
Anomalies:

Tested By/Date VEK 5-14-86 Tension | DMT 5-15-86 Micrometer | JB R.A.T. 5/16/86 Dielectric | R.A.T. 5/16/86 Resistance

Verified By/Date [illegible] 5/29/86
Test Observers [illegible]

QA Approval/Date [illegible] 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 8
Sample No. . . . . = 1168
Description No 16 5/C

Standards Used: 506652, 506326, 522035, 543211, 312506, 502445, 543202, 962038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	8T8							
1.	BLA	.1139	.1124	.0575	.0570	21.8	>10,000MΩ	Est OK
2.	RED	.1158	.1156	.0569	.0562	18.0		
3.	ORG	.1139	.1139	.0567	.0564	19.6		
4.	GRN	.1174	.1148	.0573	.0567	18.4		
5.	WHT	.1166	.1158	.0564	.0563	15.6		
6.	BARE	—	—	.0450	.0448			
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3886 Max .3854 Min

SWBP Data

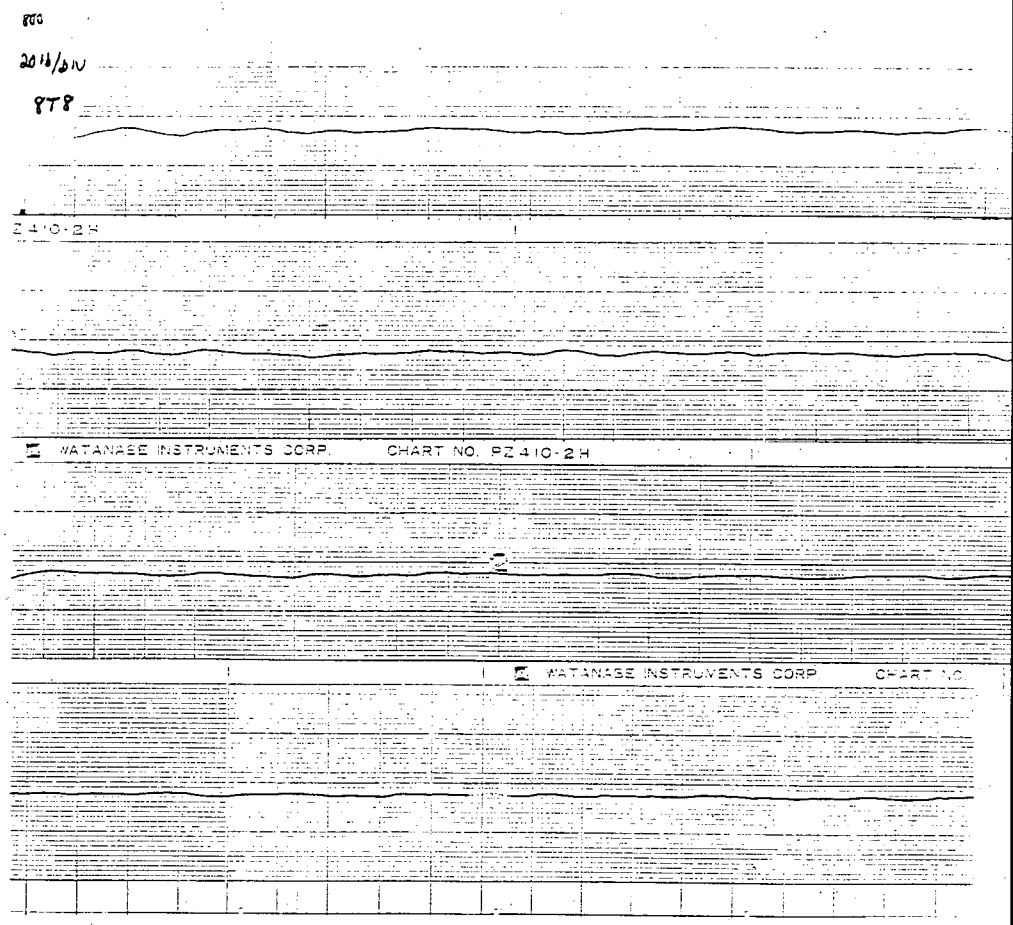
Tension (T) = 360 lbs (Max.)
Radius (R) = .4479 ft
T/R = 803.75 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 803.75 lbs/ft

Anomalies:

Tested By/Date VEK 5-15-86 (Tension) DMZ 5-15-86 (Micrometer) JB R.A.T. 5/14/86 (Dielectric) R.A.T. 5/14/86 (Resistance)

Verified By/Date HC 5/29/86 QA Approval/Date JSC 5/29/86
Test Observers

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 8
Sample No. . . . . = 1168
Description No 16 S/C

Standards Used: 506652, 506326, 522035, 543211, 212506, 507445, 543202/902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___
Tensioned ✓

1-Conductor ___
Multi-Conductor ✓

Test No. 8T9	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLK	.1135	.1133	.0571	.0566	22.1	>10,000 MΩ	Est OK
2. RED	.1156	.1148	.0581	.0564	20.6		
3. ORG	.1151	.1135	.0569	.0565	13.4		
4. GRN	.1158	.1150	.0584	.0569	20.5		
5. ~~BRN~~ WHT	.1170	.1160	.0565	.0564	17.8		
6. BARE	—	—	.0455	.0447			
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3808 Max .3821 Min

SWBP Data

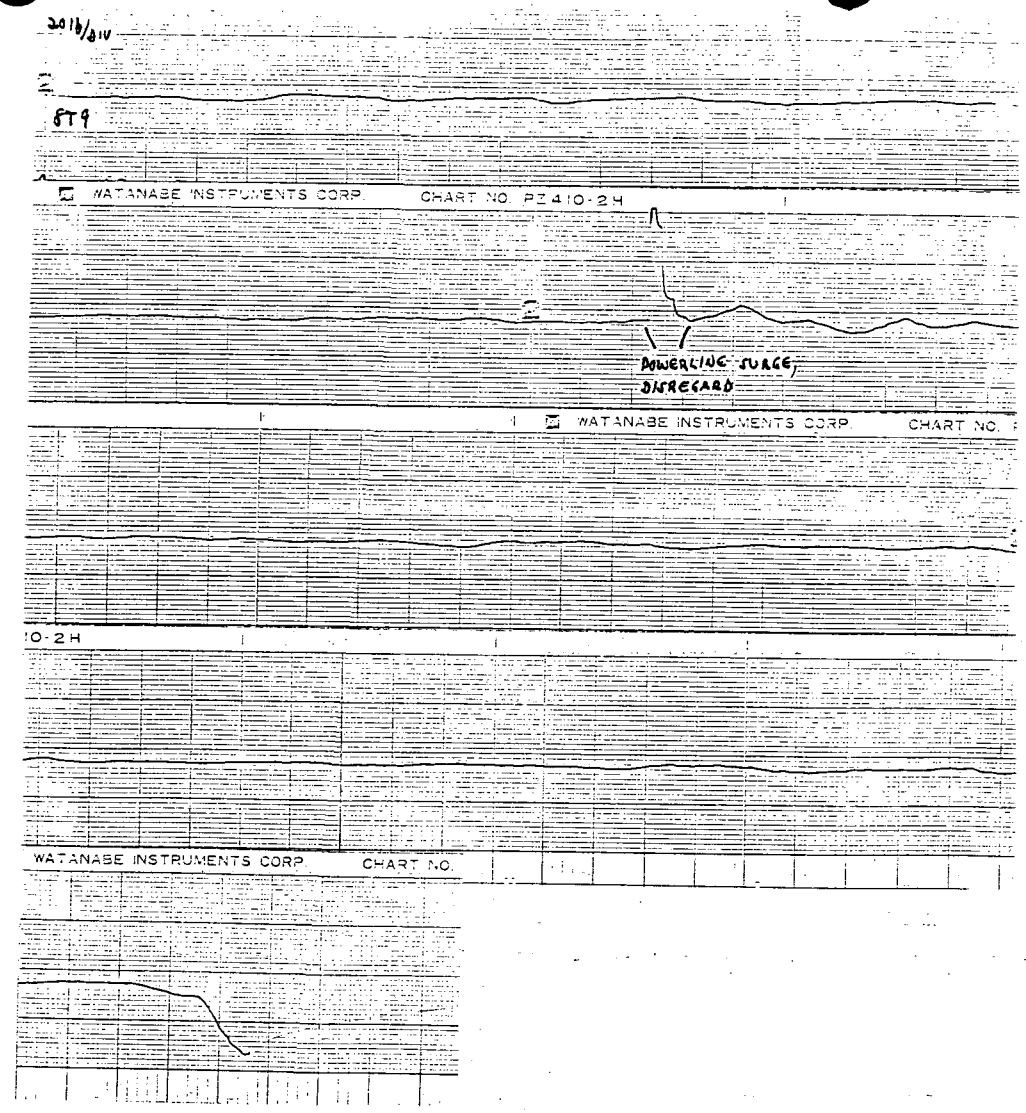
Tension (T) = 420 lbs (Max.)
Radius (R) = .4479 ft
T/R = 937.71 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 937.71 lbs/ft

Anomalies: OVERRANGE ON CHART RECORDING WAS CAUSED BY POWERLINE SURGE, NOT OVER TENSIONING.

Tested By/Date VEK 5-14-86 (Tension) Jm7 5-15-86 (Micrometer) JB R.A.T. 5/14/86 (Dielectric) R.A.T. 5/14/86 (Resistance)

Verified By/Date He 5/29/86 QA Approval/Date JGR 5/29/86
Test Observers HR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 8
Sample No. . . . . = 1168
Description No 16 S/C

Standards Used: ~~506665, 506326~~ 516325 543175 522035, 712506, 502445, 543202, 902038, 503211

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ Tensioned ✓
1-Conductor ___ Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	8T10							
1.	BLA	.1137	.1130	.0576	.0572	28.5	>10,000 MΩ	Test OK
2.	RED	.1160	.1145	.0571	.0566	20.2	↓	↓
3.	ORG	.1146	.1131	.0570	.0562	16.6		
4.	GRN	.1160	.1150	.0572	.0570	20.4		
5.	WHT	.1162	.1157	.0580	.0566	17.3		
6.	BARE	—	—	.0451	.0445			
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3930 Max .3837 Min

SWBP Data

Tension (T) = 380 lbs (Max.)
Radius (R) = .4479 ft
T/R = 848.40 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 848.40

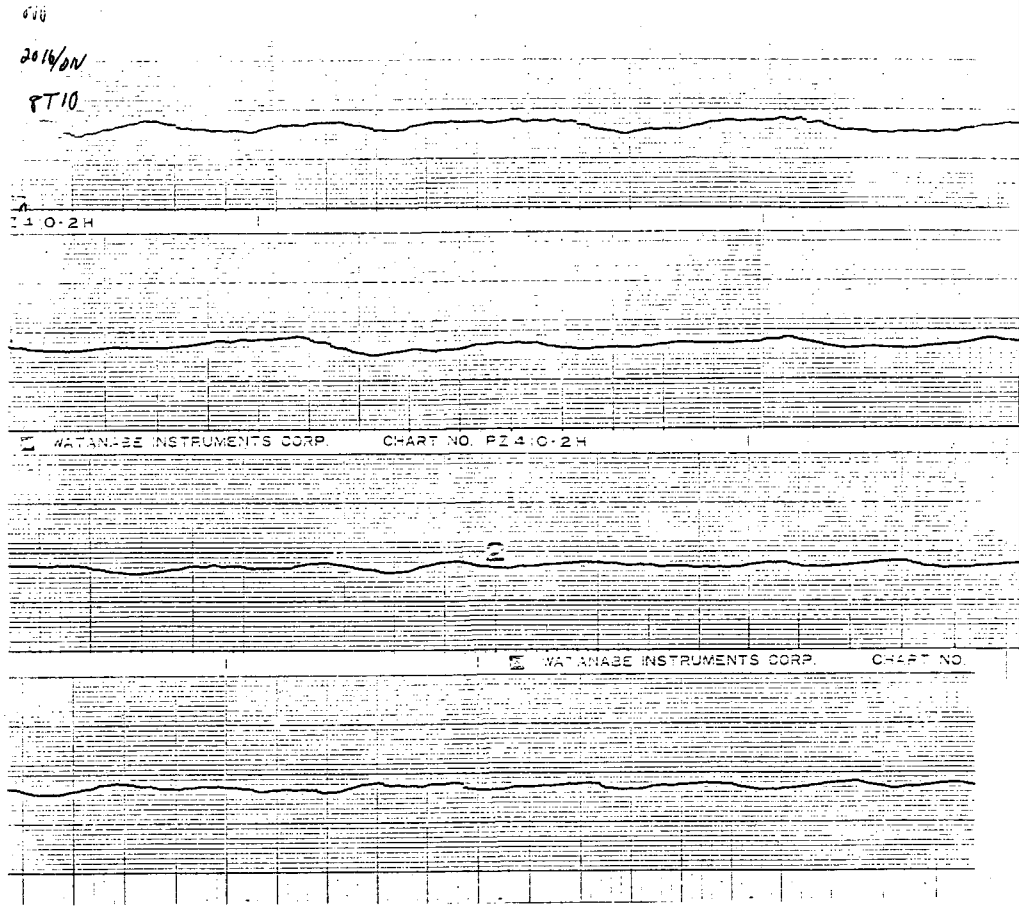
Anomalies:

Tested By/Date VSK 5-15-86 (Tension) Dm 7 5-15-86 (Micrometer) DB R.A.T. 5/14/86 (Dielectric) R.A.T. 5/14/86 (Resistance)

Verified By/Date 5/29/86
Test Observers

QA Approval/Date 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST FORM

[redacted]in ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 323
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 543211, 543240
902038, 543202, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	9V1							
	Bare	—	—	.0473	.0471			
1.	BLA	.1204	.1119	.0582	.0578	25.5	>10,000 mΩ	N/A
2.	RED	.1136	.1117	.0574	.0571	23.6	↓	↓
3.	ORG	.1208	.1147	.0583	.0576	20.7	↓	↓
4.	GRN	.1223	.1179	.0575	.0572	25.5	↓	↓
5.	BLU	.1211	.1196	.0603	.0602	26.0	↓	↓
6.	WHT	.1180	.1138	.0579	.0578	28.4	↓	↓
7.	BLA/WT	.1206	.1193	.0619	.0572	25.4	↓	↓
8.	RED/BLA	.1137	.1133	.0693	.0676	25.4	↓	↓
[redacted]	ORG/BLA	.1147	.1145	.0579	.0576	18.6	↓	↓
10.	GRN/BLA	.1181	.1176	.0576	.0576	30.3	↓	↓
11.	BLU/BLA	.1225	.1207	.0572	.0572	23.5	↓	↓
12.	WHT/BLA	.1253	.1180	.0572	.0572	25.0	R.A.T. 4/30/86	↓

Multi-Conductor Jacket O.D. = .6209 Max .6076 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

	Tension	Micrometer	Dielectric
Tested By/Date	N/A	Dm 7-29-86	JB R.A.T. 4/30/86
Verified By/Date	JR 5/29/86		
Test Observers	DR		
QA Approval/Date			JBR 5/29/86

Visual Cable Report: Nothing abnormal found ~~See 9T1~~
Cable appeared abnormal in the following ways: See 9T1

Anomalies:

[redacted]

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 323
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 543211, 543240, 902038, 543202, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	9V2 BARE	—	—	.0464	.0431			
1.	BLA	.1224	.1091	.0574	.0571	24.2	>10000MΩ	N/A
2.	RED	.1150	.1136	.0570	.0570	30.3		
3.	ORG	.1166	.1124	.0588	.0582	21.9		
4.	GRN	.1222	.1186	.0569	.0565	29.9		
5.	BLU	.1186	.1156	.0571	.0570	33.1		
6.	WHT	.1179	.1152	.0583	.0573	28.4		
7.	BLA/WHT	.1224	.1164	.0567	.0540	23.0		
8.	RED/BLA	.1120	.1093	.0566	.0565	25.3		
9.	ORG/BLA	.1094	.1093	.0578	.0568	29.0		
10.	GRN/BLA	.1218	.1167	.0576	.0576	26.5		
11.	BLU/BLA	.1215	.1175	.0572	.0572	27.9		
12.	WHT/BLA	.1194	.1161	.0572	.0572	27.8		

Multi-Conductor Jacket O.D. = .6176 Max .6076 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date NA (Tension) — Om 7-29-86 (Micrometer) — JB R.A.I. 4/30/86 (Dielectric)
Verified By/Date Nr 5/29/86 (Tension) — QA Approval/Date JBR 5/29/86 (Dielectric)
Test Observers PB

Visual Cable Report: Nothing abnormal found ~~See 9T1~~
Cable appeared abnormal in the following ways: See 9T1

Anomalies:

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Begin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 323
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 534211
534240, 902038, 543202
212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	9V3 BARE	—	—	.0475	.0473			
1.	BLA	.1196	.1182	.0507	.0503	30.1	>10,000 MΩ	N/A
2.	RED	.1199	.1193	.0584	.0576	26.8	↓	↓
3.	ORG	.1177	.1152	.0575	.0573	20.2		
4.	GRN	.1236	.1202	.0585	.0571	33.6		
5.	BLU	.1199	.1189	.0578	.0578	28.6		
6.	WHT	.1204	.1202	.0661	.0621	27.8		
7.	BLA/WHT	.1187	.1187	.0588	.0581	27.5		
8.	Red/BLA	.1187	.1171	.0572	.0570	22.1		
9.	ORG/BLA	.1153	.1143	.0648	.0641	13.9 *		
10.	GRN/BLA	.1187	.1175	.0590	.0574	37.5		
11.	BLU/BLA	.1205	.1193	.0574	.0569	14.8 **		
12.	WHT/BLA	.1189	.1180	.0578	.0573	23.7	↓	↓

Multi-Conductor Jacket O.D. = .6191 Max .6039 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date NA — Tension; 4-29-86 — Micrometer; R.A.T. 4/30/86 — Dielectric
Verified By/Date He 5/29/86 — Tension; QA Approval/Date; 5/29/86 — Dielectric
Test Observers AR

Visual Cable Report: Nothing abnormal found ____
Cable appeared abnormal in the following ways: See below

Anomalies: * Lift puncture hole out of water & raised 23.7
This cable indented with drain wire but both puncture holes was opposite indentation
** Second puncture went to 24.0 and was in the indentation

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 323
Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA

Standards Used = 534211, 534240, 902038, 543202, 212506

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
9V4 BARE	—	—	.0475	.0443			
1. BLA	.1211	.1163	.0575	.0573	26.3	>10,000MΩ	N/A
2. Red	.1200	.1123	.0572	.0569	29.3		
3. ORG	.1163	.1130	.0581	.0567	17.8		
4. GRN	.1203	.1177	.0570	.0568	34.4		
5. BLU	.1219	.1141	.0577	.0575	24.3		
6. WHT	.1162	.1130	.0586	.0586	29.3		
7. BLA/WHT	.1173	.1172	.0574	.0553	27.0		
8. RED/BLA	.1136	.1121	.0576	.0571	26.4		
9. ORG/BLA	.1141	.1130	.0577	.0567	23.1		
10. GRN/BLA	.1193	.1181	.0571	.0569	30.6		
11. BLU/BLA	.1199	.1198	.0575	.0575	24.1		
12. WHT/BLA	.1195	.1159	.0575	.0573	28.4		

Multi-Conductor Jacket O.D. = .6255 Max .6012 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

	Tension	Micrometer	Dielectric
Tested By/Date	NA	Dm 7 4-29-86	JB R.A.T. 4/30/86
Verified By/Date	He 5/29/86	QA Approval/Date	JBC 5/29/86
Test Observers	RA		

Visual Cable Report: Nothing abnormal found ____
Cable appeared abnormal in the following ways: See 9T1

Anomalies: ____

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Begin ✓ 1-Conductor
Tensioned Multi-Conductor ✓

Sample No. . . . . = 323
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 543211, 543240, 902038, 543202, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	9V5			.0463	.0451			
	BARE	—	—					
1.	BLA	.1153	.1121	.0574	.0574	28.4	>10.000 MΩ	N/A
2.	RED	.1187	.1126	.0573	.0573	23.3		
3.	ORG	.1156	.1102	.0575	.0570	19.1		
4.	GRN	.1200	.1190	.0567	.0558	25.7		
5.	BLU	.1184	.1145	.0573	.0539	22.3		
6.	WHT	.1180	.1156	.0588	.0582	24.2		
7.	BLA/WHT	.1186	.1155	.0567	.0565	22.2		
8.	RED/BLA	.1128	.1091	.0575	.0569	22.1		
9.	ORG/BLA	.1159	.1086	.0570	.0570	24.8		
10.	GRN/BLA	.1171	.1158	.0576	.0569	23.5		
11.	BLU/BLA	.1196	.1173	.0580	.0574	21.5		
12.	WHT/BLA	.1213	.1162	.0570	.0569	23.5		

Multi-Conductor Jacket O.D. = .6187 Max .6136 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date MA (Tension) — MLW 4-29-86 CM7 4-29-86 (Micrometer) — JB R.A.T. 4/30/86 (Dielectric)
Verified By/Date NRA 5/29/86 (Tension) — QA Approval/Date NBR 5/29/86 (Dielectric)
Test Observers RA

Visual Cable Report: Nothing abnormal found
Cable appeared abnormal in the following ways: See 9T1

Anomalies:

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ Tensioned

1-Conductor ✓ Multi-Conductor

Sample No. . . . . = 323
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
9T1 Bare			.0466	.0457			
1. BLK	.1257	.1154	.0574	.0569	22.8	>10,000 MΩ	Test OK
2. RED	.1193	.1174	.0569	.0560	25.0		
3. ORG	.1173	.1130	.0570	.0567	22.9		
4. GRN	.1232	.1187	.0573	.0568	26.9		
5. BLU	.1209	.1145	.0569	.0566	30.0		
6. WHT	.1205	.1134	.0578	.0574	28.0		
7. BLK/WHT	.1175	.1156	.0573	.0561	27.0		
8. RED/BLK	.1173	.1129	.0573	.0569	23.0		
9. ORG/BLK	.1143	.1103	.0571	.0569	28.6		
10. GRN/BLK	.1174	.1166	.0572	.0566	20.1		
11. BLU/BLK	.1211	.1143	.0573	.0568	24.3		
12. WHT/BLK	.1196	.1163	.0575	.0549	24.7	R.A.T. 4/30/86	

Multi-Conductor Jacket O.D. = .6198 Max .6069 Min
Tension (T) = 160 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 357.22 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 357.22

Tested By/Date VEK 4-24-86 (Tension) — MZW 4-29-86 (Micrometer) — JB R.A.T. 4/30/86 (Dielectric)
Verified By/Date HC 5/29/86 (Tension) — QA Approval/Date (Micrometer) — JBK 5/29/86 (Dielectric)
Test Observers AR

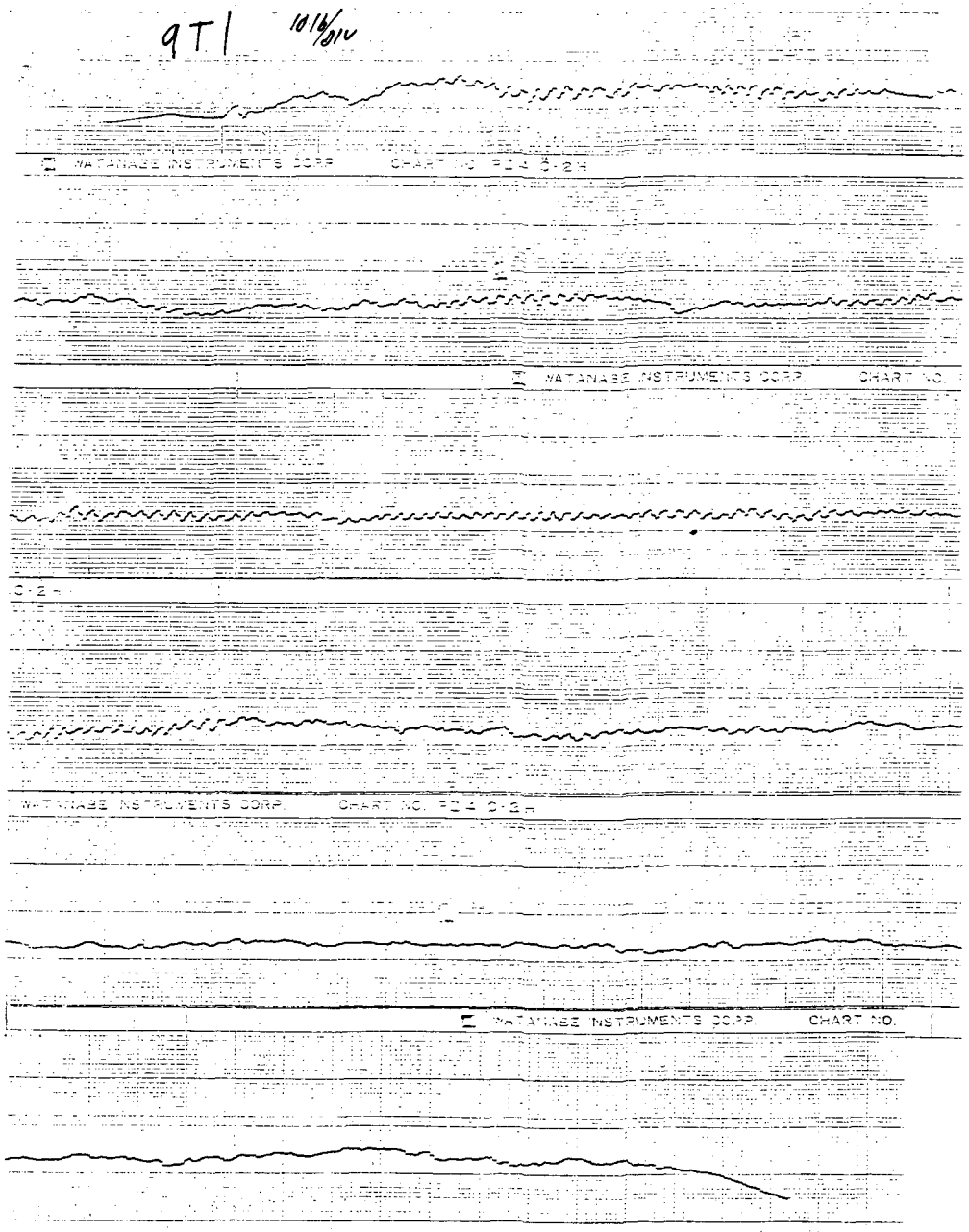
Visual Cable Report: Nothing abnormal found
Cable appeared abnormal in the following ways: Indentations caused by steel drain wire were slightly greater in tensioned cable as compared to virgin cable.

Anomalies:

0148E-2

400

9T1 10/16/84



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 323
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506225, 543175, 502035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	9T2 BARE	—	—	.0473	.0431			
1.	BLA	.1232	.1146	.0572	.0570	29.6	>10,000MΩ	Est OK
2.	RED	.1200	.1110	.0590	.0567	31.5		
3.	ORG	.1193	.1156	.0574	.0570	27.8		
4.	GRN	.1242	.1178	.0574	.0569	27.9		
5.	BLU	.1204	.1163	.0576	.0573	29.8		
6.	WHT	.1200	.1197	.0580	.0575	28.6		
7.	BLA/WHT	.1242	.1208	.0573	.0551	31.1		
8.	RED/BLA	.1171	.1074	.0576	.0569	25.2		
9.	ORG/BLA	.1144	.1102	.0577	.0571	20.5		
10.	GRN/BLA	.1190	.1175	.0576	.0568	29.1		
11.	BLU/BLA	.1196	.1119	.0573	.0564	27.6		
12.	WHT/BLA	.1223	.1124	.0580	.0569	26.0	R.A.T. 5/1/86	

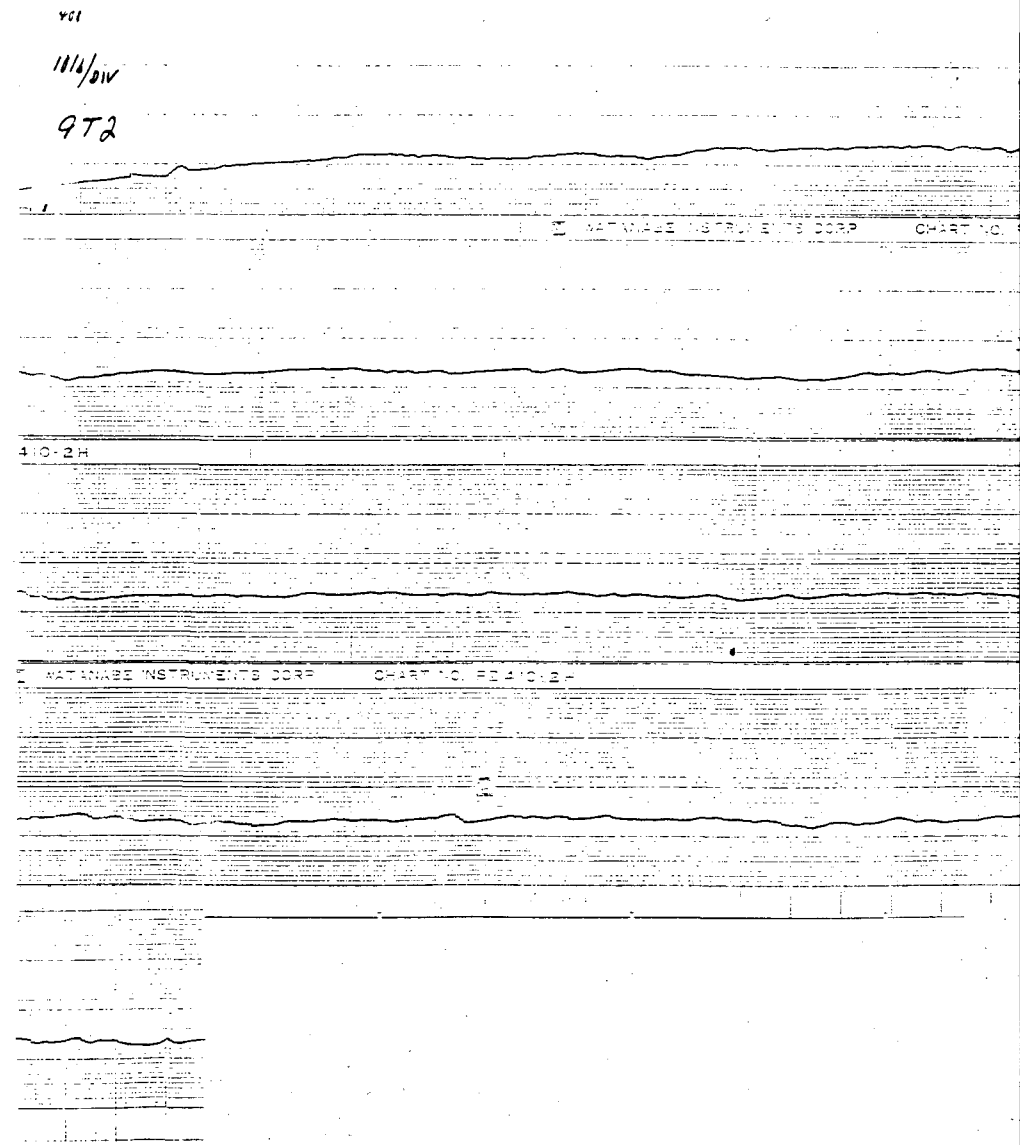
Multi-Conductor Jacket O.D. = .6164 Max .5979 Min
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 323.73 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 323.73

Tested By/Date VEK 4-30-86 (Tension) — MGW 5-1-86 (Micrometer) — GB R.A.T. 5/1/86 (Dielectric)
Verified By/Date HE 5/29/86 — QA Approval/Date JSC 5/29/86
Test Observers RR

Visual Cable Report: Nothing abnormal found See below
Cable appeared abnormal in the following ways: ____

Anomalies: Indentations in conductors

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 723
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522025, 543211, 543240, 903038, 543262, 502445, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	9T3 BARE	—	—	.0466	.0454			
1.	BLA	.1196	.1124	.0582	.0572	38.0	>10,000 MΩ	Test OK
2.	RED	.1216	.1156	.0579	.0573	27.1		
3.	ORG	.1182	.1148	.0579	.0569	24.3		
4.	GRN	.1192	.1178	.0574	.0566	31.9		
5.	BLU	.1223	.1155	.0575	.0563	23.7		
6.	WHT	.1206	.1128	.0583	.0569	29.3		
7.	BLA/WHT	.1220	.1171	.0572	.0565	29.7		
8.	RED/BLA	.1178	.1090	.0574	.0565	22.6		
9.	ORG/BLA	.1157	.1103	.0573	.0563	23.6		
10.	GRN/BLA	.1232	.1149	.0577	.0565	25.8		
11.	BLU/BLA	.1215	.1186	.0599	.0574	22.7		
12.	WHT/BLA	.1242	.1169	.0576	.0567	22.7		

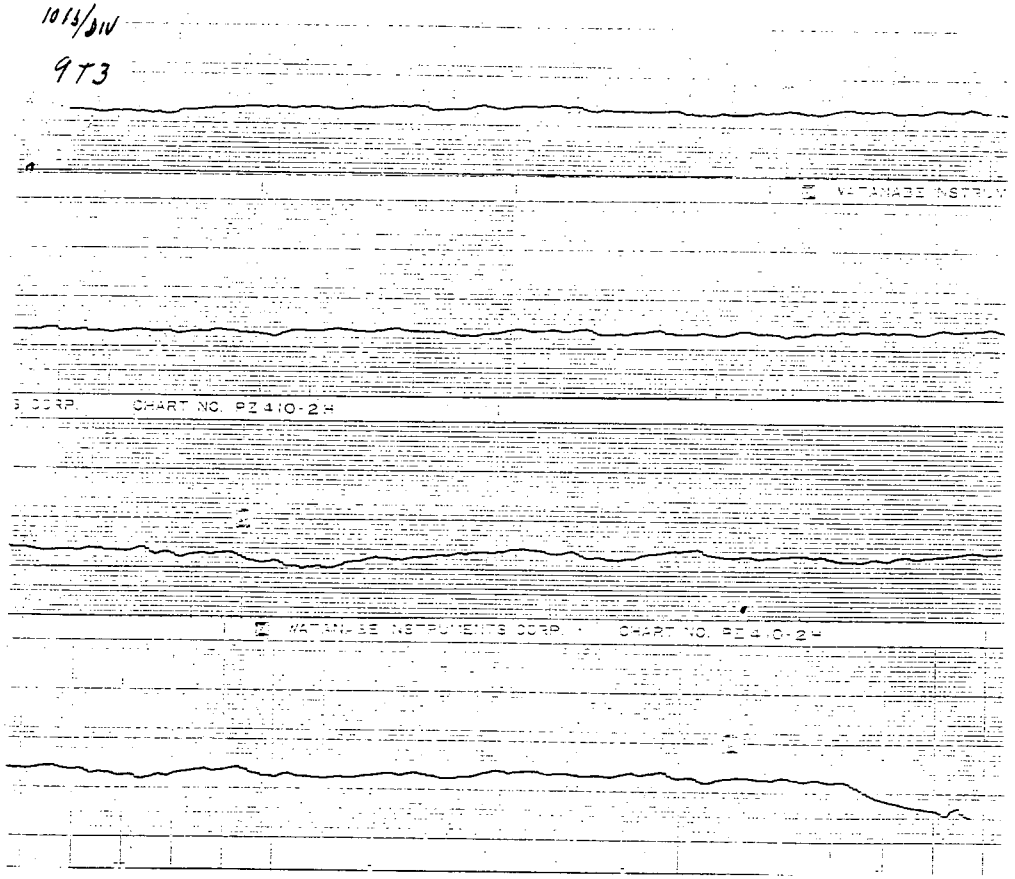
Multi-Conductor Jacket O.D. = .6193 Max .5922 Min
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 323.73 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 323.73

Tested By/Date VEK 4-30-86 (Tension) — MAF 5-1-86 (Micrometer) — QB R.A.I. 5/1/86 (Dielectric)
Verified By/Date He 5/29/86 (Tension) — QA Approval/Date (Micrometer) — MR 5/29/86 (Dielectric)
Test Observers AR

Visual Cable Report: Nothing abnormal found see below
Cable appeared abnormal in the following ways: ____

Anomalies: Indentations in some cables

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 227
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No. 9T4 BARE	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max .0576	Min .0567	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1220	.1104	.0574	.0568	24.0	>10,000MΩ	Test OK
2.	RED	.1221	.1151	.0580	.0568	20.5		
3.	ORG	.1202	.1176	.0573	.0571	23.4		
4.	GRN	.1208	.1160	.0579	.0561	28.9		
5.	BLU	.1205	.1182	.0573	.0569	26.9		
6.	WHT	.1201	.1164	.0582	.0576	32.6		
7.	BLA/WHT	.1242	.1161	.0575	.0572	29.3		
8.	RED/BLA	.1140	.1109 ~~.1106~~	.0571	.0569	22.9		
9.	ORG/BLA	.1146	.1106	.0583	.0572	28.7		
10.	GRN/BLA	.1195	.1173	.0576	.0568	23.1		
11.	BLU/BLA	.1179	.1132	.0574	.0571	25.6		
12.	WHT/BLA	.1181	.1171	.0577	.0573	25.4	R.A.T. 5/1/86	

Multi-Conductor Jacket O.D. = .6139 Max .5977 Min
Tension (T) = 142 lbs (Max.)
Radius (R) = 2.4479 ft
T/R = 317.03 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 317.03

Tested By/Date VEK 4-30-86 (Tension) — Micrometer — R.A.T. 5/1/86 (Dielectric)
Verified By/Date HE 5/29/86 (Tension) — QA Approval/Date — 5/29/86 (Dielectric)
Test Observers AK

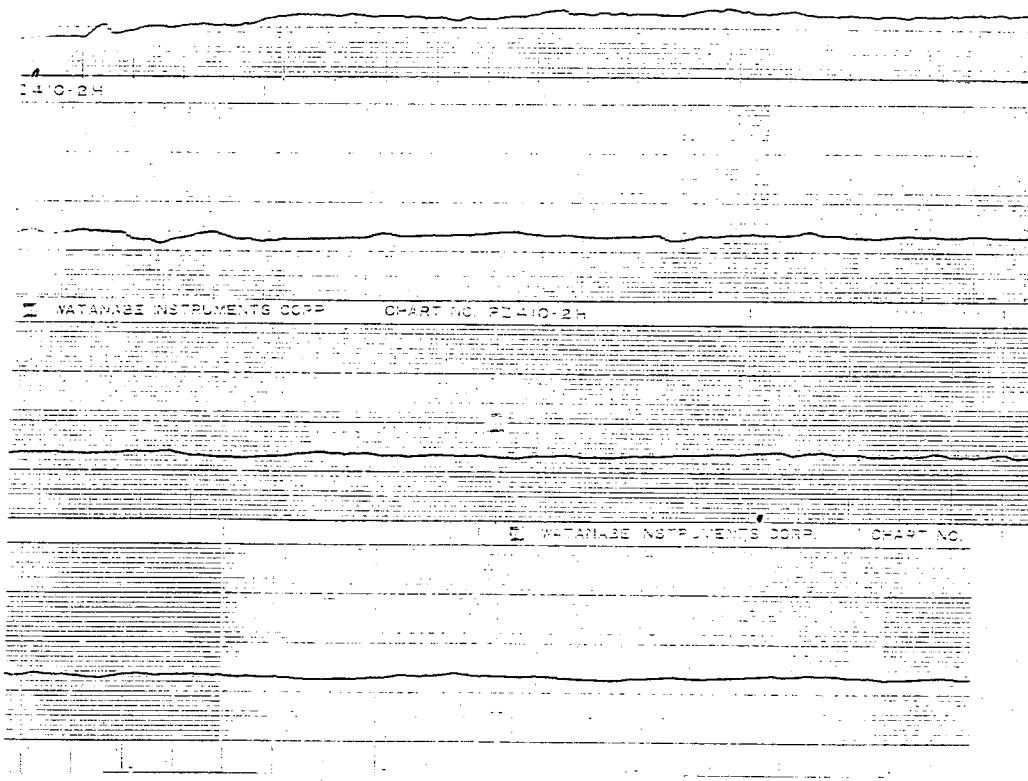
Visual Cable Report: Nothing abnormal found ____
Cable appeared abnormal in the following ways: See below

Anomalies: Indentations in cables

9148E-2

10/6/DIV

9T4



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 223
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 562445, 212506

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
9T5 BARE	—	—	.0469	.0428			
1. BLA	.1213	.1142	.0576	.0571	27.3	>10,000MΩ	Est OK
2. Red	.1202	.1125	.0580	.0569	25.4		
3. ORG	.1190	.1111	.0582	.0565	22.2		
4. GRN	.1204	.1156	.0580	.0567	26.6		
5. BLU	.1201	.1154	.0574	.0561	27.8		
6. WHT	.1219	.1166	.0582	.0574	34.2		
7. BLA/WHT	.1204	.1171	.0577	.0570	22.5		
8. Red/BLA	.1169	.1151	.0573	.0571	21.6		
9. ORG/BLA	.1132	.1092	.0579	.0574	26.4		
10. GRN/BLA	.1181	.1173	~~.0569~~ .0574	.0569	25.4		
11. BLU/BLA	.1211	.1183	.0574	.0571	23.3		
12. WHT/BLA	.1226	.1187	.0573	.0565	27.7		

Multi-Conductor Jacket O.D. = .6143 Max .5941 Min
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 323.73 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 323.73

Tested By/Date VEK 4-30-86 (Tension) — MRW 5-1-86 (Micrometer) — JB R.A.T. 5/1/86 (Dielectric)
Verified By/Date HK 5/29/86
Test Observers RAT
QA Approval/Date MRC 5/29/86

Visual Cable Report: Nothing abnormal found ____
Cable appeared abnormal in the following ways: see below

Anomalies: Indentations in cables

0148E-2

10/14/81W

9T5

WATANABE INSTRUMENTS CORP. CHART NO. RE410-2H

WATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 9
Sample No. . . . . = 323
Description 16/16 12/c

Standards Used: 506325, 543175, 522095, 543211, 212506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

Test No. 9T6	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
			Bare .0464	.0445			
1. BLA	.1227	.1114	.0595	.0567	32.0	>10,000MΩ	Test OK
2. RED	.1193	.1136	.0572	.0559	21.2		
3. ORG	.1200	.1151	.0572	.0568	18.4		
4. GRN	.1226	.1170	.0568	.0565	37.2		
5. BLU	.1209	.1158	.0577	.0569	29.3		
6. WHT	.1214	.1189	.0576	.0571	37.2		
7. BLA/WHT	.1221	.1162	.0571	.0567	~~25.6~~ 31.8		
8. RED/BLA	.1162	.1069	.0574	.0567	25.6		
9. ORG/BLA	.1136	.1089	.0572	.0562	26.7		
10. GRN/BLA	.1184	.1156	.0576	.0567	29.9		
11. BLU/BLA	.1181	.1147	.0575	.0568	25.2		
12. WHT/BLA	.1197	.1175	.0570	.0566	29.9	R.A.T. 5/14/86	

Multi-Conductor Jacket O.D. = .6156 Max .6000 Min

SWBP Data

Tension (T) = 540 ~~240~~ VEK 5-2-86 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1205.63 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1205.63

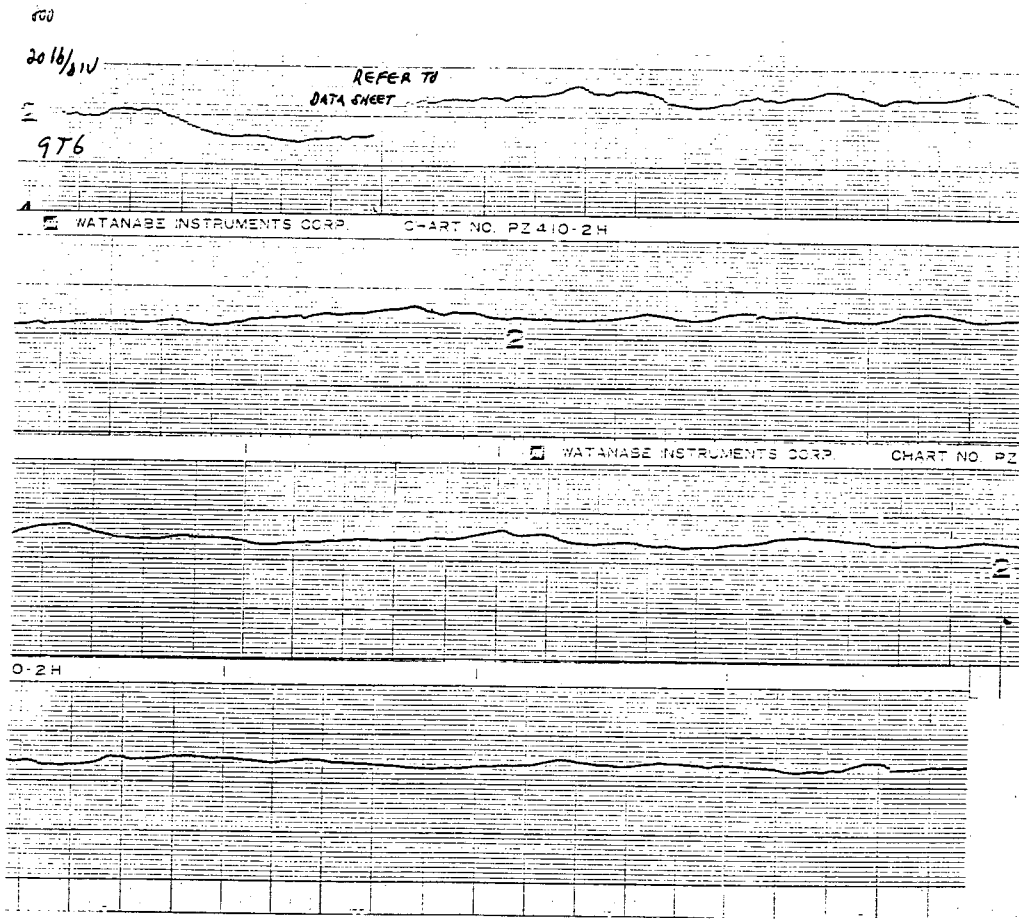
Anomalies: CHART RECORDING SHOWS WHERE SAMPLE DETACHED FROM PULL CABLE ON LEAD END. CABLES WERE REATTACHED AND PULL CONTINUED. CABLES DETACHED AT TRAILING END, REATTACHED AND COMPLETED PULL (SHOWN ON 9T7 CHART).

Tested By/Date VEK 5-15-86 (Tension) DMT 5-16-86 (Micrometer) JB R.A.T. 5/14/86 (Dielectric) JB (Resistance)

Verified By/Date HR 5/29/86
Test Observers AR

QA Approval/Date JSR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 9
Sample No. . . . . = 323
Description M 16 12/c

Standards Used: 506325, 543175, 522075, 543211, 312566, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
9T7			BARE .0464	.0451			
1. BLA	.1214	.1140	.0573	.0570	27.5	>10,000 MΩ	Test OK
2. RED	.1197	.1094	.0571	.0564	25.2		
3. ORG	.1184	.1100	.0575	.0553	21.9		
4. GRN	.1235	.1145	.0571	.0567	27.5		
5. BLU	.1217	.1141	.0571	.0569	32.7		
6. WHT	.1195	.1154	.0578	.0574	25.5		
7. BLA/WHT	.1267	.1133	.0576	.0564	24.2		
8. RED/BLA	.1156	.1150	.0570	.0567	24.4		
9. ORG/BLA	.1154	.1100	.0574	.0563	31.4*		
10. GRN/BLA	.1173	.1165	.0575	.0566	31.8		
11. BLU/BLA	.1206	.1169	.0572	.0567	29.8		
12. WHT/BLA	.1203	.1162	.0569	.0565	29.4		

Multi-Conductor Jacket O.D. = .6184 Max .6067 Min

SWBP Data

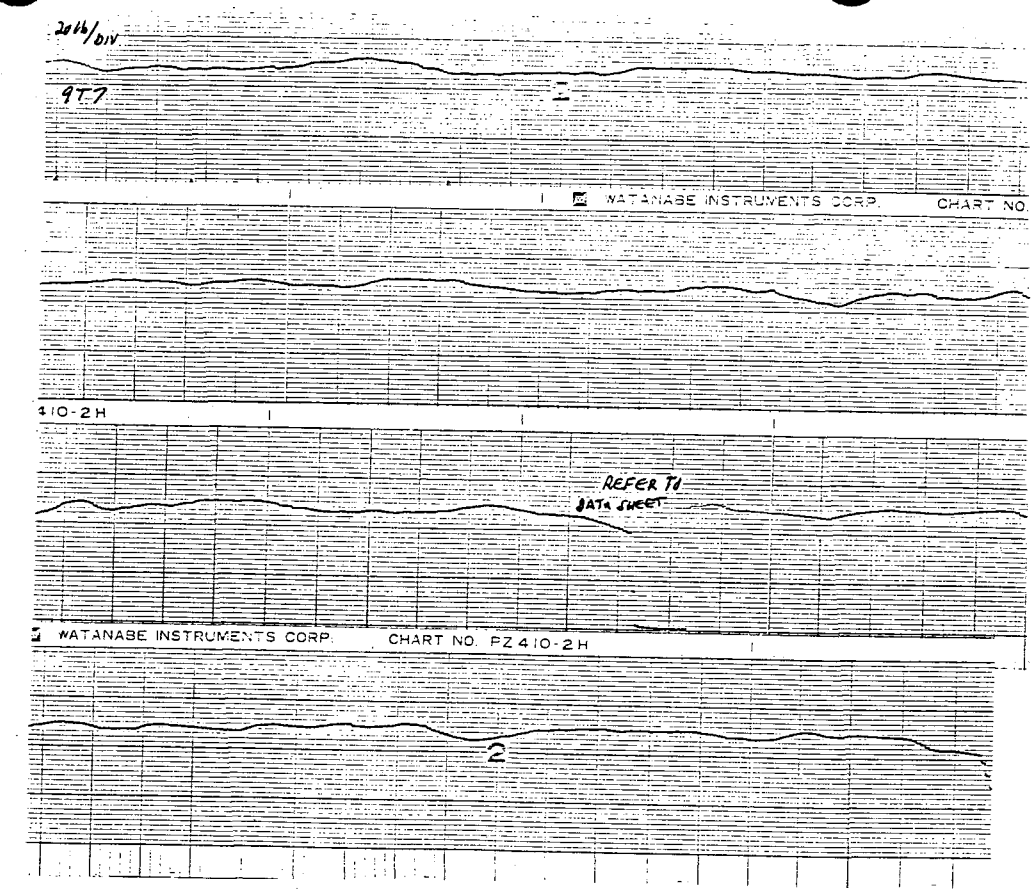
Tension (T) = 520 ~~720~~ VER 5-22-86 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1160.97 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1160.97

Anomalies: REFER TO ANAMALIES SECTION ~~#~~ ON TEST 9T6

Tested By/Date VER 5-15-86 Tension, DMT 5-16-86 Micrometer, JB R.A.T. 5/16/86 Dielectric, R.A.T. 5/16/86 Resistance

Verified By/Date HC 5/29/86 QA Approval/Date JRC 5/29/86
Test Observers RK

0148E-4 * Failed at drain wire indentation



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 9
Sample No. . . . . = 323
Description No 16 W/C

Standards Used: 506325, 543175, 522035, 543211, 212506, 502445, 543202, 502038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
9T8			Bare .0467	.0463			
1. BLA	.1197	.1152	.0569	.0567	21.7	>10,000 MΩ	Ext OK
2. RED	.1186	.1119	.0573	.0561	27.2		
3. ORG	.1161	.1091	.0571	.0570	22.1		
4. GRN	.1212	.1172	.0581	.0561	32.4		
5. BLU	.1210	.1147	.0573	.0568	27.6		
6. WHT	.1188	.1122	.0578	.0575	31.5		
7. BLA/WHT	.1212	.1166	.0571	.0563	29.8		
8. RED/BLA	.1150	.1128	.0575	.0569	27.2		
9. ORG/BLA	.1149	.1084	.0571	.0568	27.4*		
10. GRN/BLA	.1207	.1145	.0575	.0572	29.2		
11. BLU/BLA	.1196	.1130	.0583	.0565	30.2		
12. WHT/BLA	.1179	.1170	.0567	.0553	31.4		

Multi-Conductor Jacket O.D. = .6159 Max .5961 Min

SWBP Data

Tension (T) = 540 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1206 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1206 lbs/ft

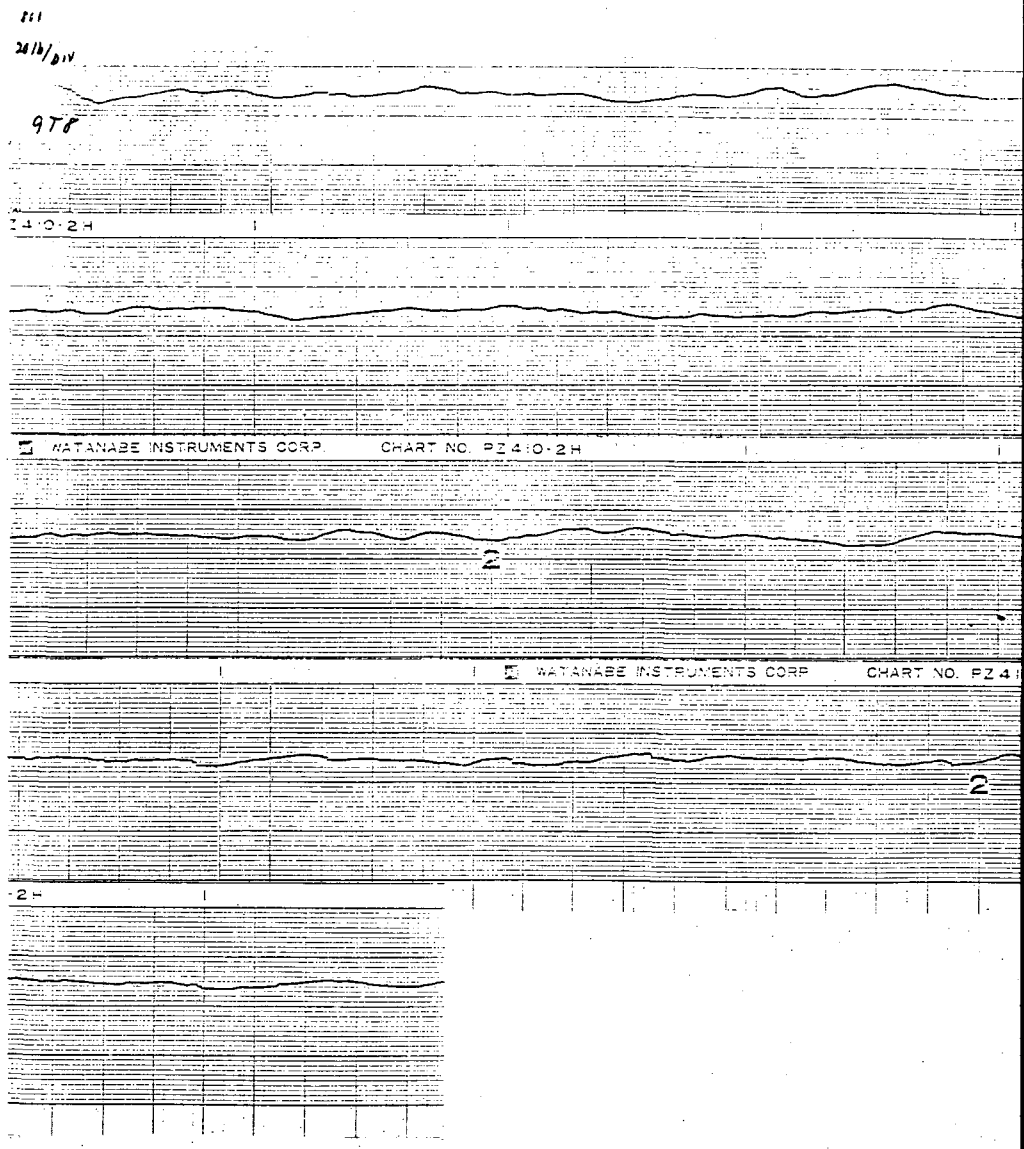
Anomalies: * Failed ≅ 1/4 inch above water

Tested By/Date VER 5-15-86 (Tension) DMZ 5-16-86 (Micrometer) JB R.A.T. 5/17/86 (Dielectric) R.A.T. 5/17/86 (Resistance)

Verified By/Date HE 5/29/86
Test Observers RR

QA Approval/Date JAR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 9
Sample No. . . . . = 323
Description No 16 12/C

Standards Used: 506325, 543175, 522035, 543211, 212506, 502445, 543202, 502038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No. 9T9	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
				BARE .0469	.0456			
1.	BLA	.1208	.1106	.0571	.0568	28.6	>10,000MΩ	Test OK
2.	RED	.1176	.1169	.0571	.0568	21.3		
3.	ORG	.1199	.1147	.0572	.0568	20.8		
4.	GRN	.1237	.1159	.0568	.0553	31.0		
5.	BLU	.1185	.1167	.0577	.0570	25.0		
6.	WHT	.1175	.1128	.0579	.0576	23.9		
7.	BLA/WHT	.1201	.1116	.0575	.0569	27.8		
8.	RED/BLA	.1171	.1138	.0588	.0572	35.4		
9.	ORG/BLA	.1126	.1096	.0573	.0563	20.5		
10.	GRN/BLA	.1197	.1143	.0578	.0571	27.6		
11.	BLU/BLA	.1187	.1136	.0572	.0570	26.8*		
12.	WHT/BLA	.1199	.1160	.0574	.0562	28.5		

Multi-Conductor Jacket O.D. = ~~.1256~~ .6236 Max ~~.5006~~ .5996 Min Ø7

SWBP Data

Tension (T) = 550 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1228 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1228 lbs/ft

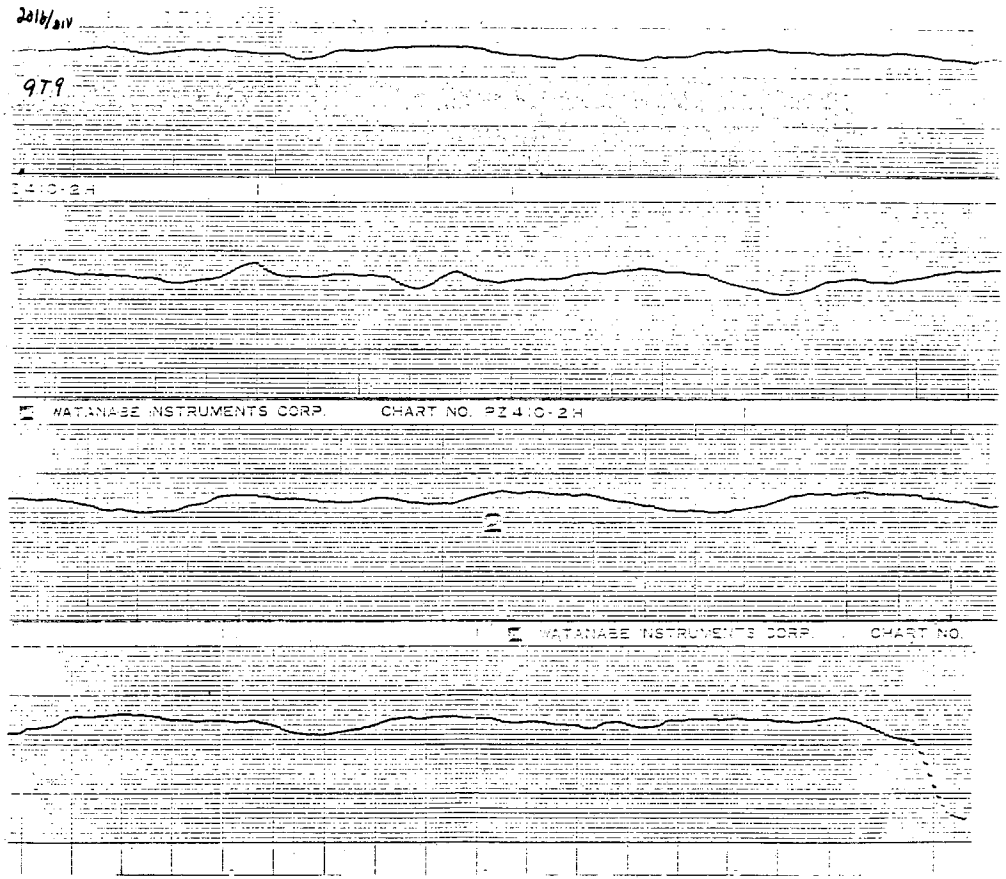
Anomalies: * Failed at drain wire indentation

Tested By/Date VEK 5-15-86 (Tension) DMT 5-16-86 (Micrometer) JB RAT 5/16/86 (Dielectric) RRS 5/16/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers AR

QA Approval/Date JSR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST FORM

[illegible]in ✓ 1-Conductor ____
[illegible]nsioned ____ Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA

Standards Used = 543211, 543240, 902038, 543202, 212506

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	10V1							
1.	BLA	.1084	.1067	.0561	.0558	14.1	>10,000MΩ	N/A
2.	WHT	.1060	.1042	.0538	.0535	18.8	↓	
3.							R.A.T. 4/30/86	
4.								
5.								
6.								
7.								
8.								
[illegible]								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3534 Max .3389 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = NA ft
T/R = NA lbs/ft
Correction Factor (X) = NA
SWBP = X(T/R) = NA

Tested By/Date N/A — Tension; TLW 4-30-86 — Micrometer; R.A.T. 4/30/86 — Dielectric
Verified By/Date HC 5/29/86 — QA Approval/Date JBR 5/29/86
Test Observers AA

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA

Standards Used = 543211, 543240
902038, ~~[illegible]~~ QB 5/6/86
543202, 212506

	Test No. 10V2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BCA	.1062	.1060	.0562	.0561	13.5	76,000 MΩ	N/A
2.	WHT	.1045	.1041	.0546	.0526	11.7	↓	↓
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3496 Max .3434 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

NLW 4-30-86

Tested By/Date N/A (Tension) — Jm Z 4-30-86 (Micrometer) — JB R.A.T. 4/30/86 (Dielectric)

Verified By/Date He 5/29/86 (Tension) — QA Approval/Date JBR 5/29/86 (Dielectric)
Test Observers BR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

[illegible]in ✓ 1-Conductor
[illegible]sioned ____ Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 543240, 543211, 902038, 543202, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	10V3							
1.	BLA	.1100	.1048	.0564	.0554	12.2	710,000 MΩ	N/A
2.	WHT	.1089	.1040	.0532	.0493	12.6	↓	↓
3.								
4.								
5.								
6.								
7.								
8.								
[illegible]								
[illegible]								
11.								
12.								

Multi-Conductor Jacket O.D. = .3463 Max .3397 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — MZW 4-30-86 (Micrometer) — JB R.A.T. 4/30/86 (Dielectric)
Verified By/Date He 5/29/86 (Tension) — QA Approval/Date ____ (Micrometer) — JAK 5/29/86 (Dielectric)
Test Observers RAK

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

[illegible]
0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 543211, 543240
902038, 543202, 212506

	Test No. 1004	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1074	.1067	.0557	.0555	14.0	710,000MΩ	N/A
2.	WHT	.1062	.1054	.0539	.0538	13.5	↓	✓
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3570 Max .3434 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — Jim 7 4-30-86 (Micrometer) — JB R.A.T 4/30/86 (Dielectric)
Verified By/Date HR 5/29/86 (Tension) — MLW 4-30-86 (Micrometer) — JB 5/29/86 (Dielectric)
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

[illegible]in ✓ 1-Conductor ____
[illegible]sioned ____ Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 543211, 543240, 902038, 543202, 212506

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	10V5							
1.	BLA	.1074	.1038	.0567	.0560	14.0	>10,000 MΩ	N/A
2.	WHT	.1060	.1022	.0538	.0526	13.7	↓	↓
3.								
4.								
5.								
6.								
7.								
8.								
[illegible]								
[illegible]								
11.								
12.								

Multi-Conductor Jacket O.D. = .3569 Max .3450 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — NLW 4-30-86 (Micrometer) — JB R.A.T. 4/30/86 (Dielectric)
Verified By/Date He 5/29/86 (Tension) — QA Approval/Date [illegible] 5/29/86 (Dielectric)
Test Observers [illegible]

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

[illegible]148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin Tensioned ✓ 1-Conductor Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	10T1							
1.	BLA	.1082	.1055	.0580	.0559	10.3	710,000 MΩ	Est ok
2.	WHT	.1050	.1029	.0541	.0532	14.0	↓	↓
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

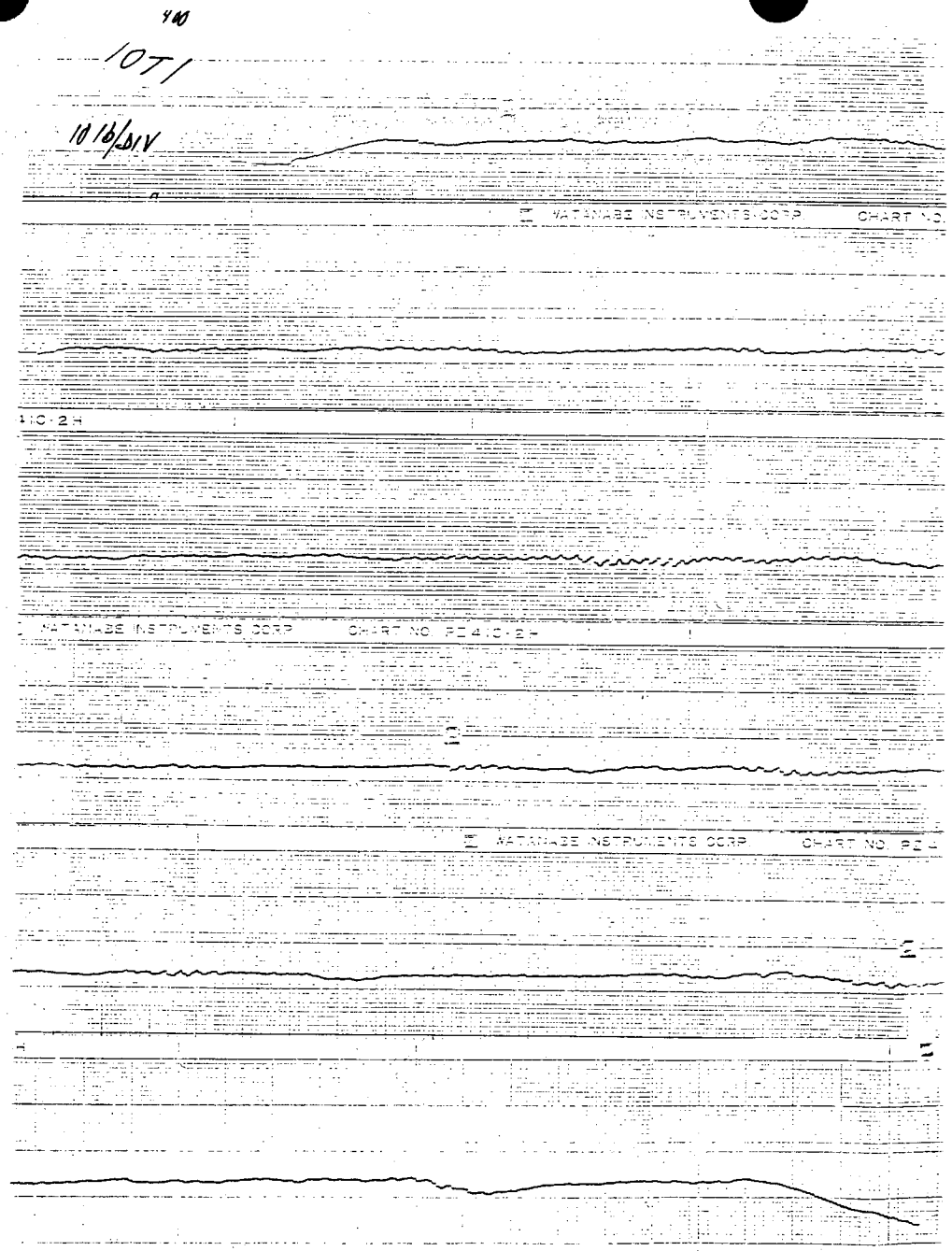
Multi-Conductor Jacket O.D. = .3578 Max .3004 Min
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 324 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 324 lbs/ft

Tested By/Date VER 4-29-86 (Tension) — RLW 4-30-86 (Micrometer) — JB R.A.S. 4/30/86 (Dielectric)
Verified By/Date He 5/29/86 (Tension) — JMZ 4-30-86 (Micrometer QA Approval/Date) — JAR 5/29/86 (Dielectric)
Test Observers AA

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways:

Anomalies:

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No. 10T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1073	.1052	.0563	.0555	12.6	710,000 MΩ	Test OK
2.	WHT	.1067	.1047	.0537	.0532	13.8	↓	↓
3.							R.A.T. 4/30/86	
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3428 Max .2617 Min
Tension (T) = 140 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 313 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 313 lbs/ft

Tested By/Date VEK 4-30-86 (Tension) — MLW 4-30-86 (Micrometer) — JB R.A.T. 4/30/86 (Dielectric)
Verified By/Date HE 5/29/86 (Tension) — QA Approval/Date (Micrometer) — pm 5/29/86 (Dielectric)
Test Observers

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

700

10T2
1016/01V

WATANABE INSTRUMENTS CORP. CHART NO.

WATANABE INSTRUMENTS CORP. CHART NO. PC4-0-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 902038, 543202, 502445, 212506, 543211, 543240

	Test No. 10T3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1095	.1068	.0562	.0553	13.7	>10,000 MΩ	Est OK
2.	WHT	.1066	.1037	.0544	.0533	13.8	↓	↓
3.							R.A.T. 4/30/86	
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3510 Max .3385 Min
Tension (T) = 142 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 317 lbs/ft
Correction Factor (X) =
SWBP = X(T/R) = 317 lbs/ft

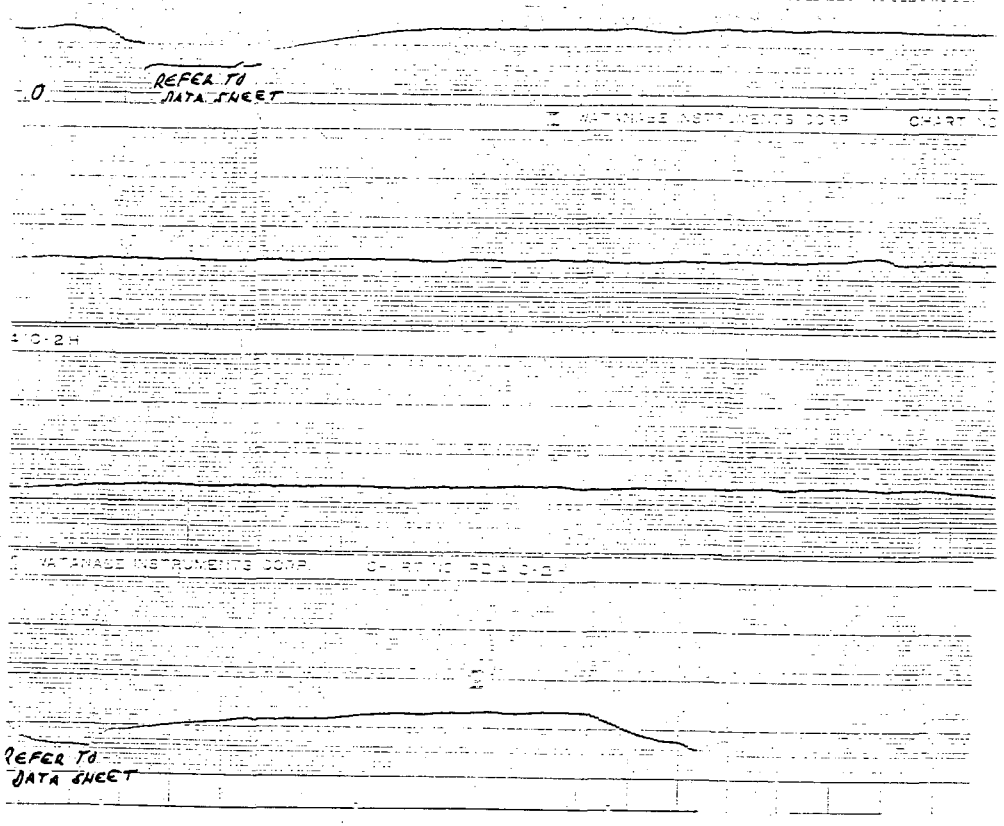
Tested By/Date: VEK 4-30-86 (Tension); DMZ 4-30-86 (Micrometer); JB R.A.T. 4/30/86 (Dielectric)
Verified By/Date: 5/29/86 (Tension); QA Approval/Date: 5/29/86 (Dielectric)
Test Observers: AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: PULL CABLE DETACHED FROM SAMPLE TWICE DURING TEST, CABLE WAS REATTACHED AND PULL WAS CONTINUED. THESE TWO POINTS ARE MARKED ON THE CHART.

0148E-2

T00
10/6/01V
10T3



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	10T4							
1.	BLA	.1079	.1039	.0567	.0558	13.2	>10,000 MΩ	Test OK
2.	WHT	.1064	.1032	.0571	.0529	14.4	↓	↓
3.							R.A.T. 5/2/86	
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = ~~.3570~~ .3570 Max .3314 Min
Tension (T) = 132 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 295 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 295 lbs/ft

Tested By/Date: VEK 5-1-86 (Tension) NLW 5-1-86 (Micrometer) JB RAT 5/2/86 (Dielectric)
Verified By/Date: HC 5/29/86
QA Approval/Date: JBK 5/29/86
Test Observers: AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: RECORDER CHART SHOWS WHERE PULL CABLE DETACHED FROM SAMPLE, PULL CABLE WAS REATTACHED AND PULL WAS CONTINUED.

0148E-2

700

10 lb/div

10T4

WATANABE INSTRUMENTS CORP. CHART NO. PC4 0-24

WATANABE INSTRUMENTS CORP. CHART NO. PC

REFER TO DATA SHEET

0-2 -

WATANABE INSTRUMENTS CORP. CHART

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin Tensioned ✓ 1-Conductor Multi-Conductor ✓

Sample No. . . . . = 40
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506225, 542175, 522035, 543211, 543240, 902038, 543203, 502445, 212506

	Test No. 1075	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1073	.1052	.0569	.0557	14.4	>10,000 MΩ	Test OK
2.	WHT	.1063	.1036	.0563	.0550	13.9	↓	↓
3.							R.A.T. 5/2/86	
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3406 Max .3341 Min
Tension (T) = 170 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 290 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 290 lbs/ft

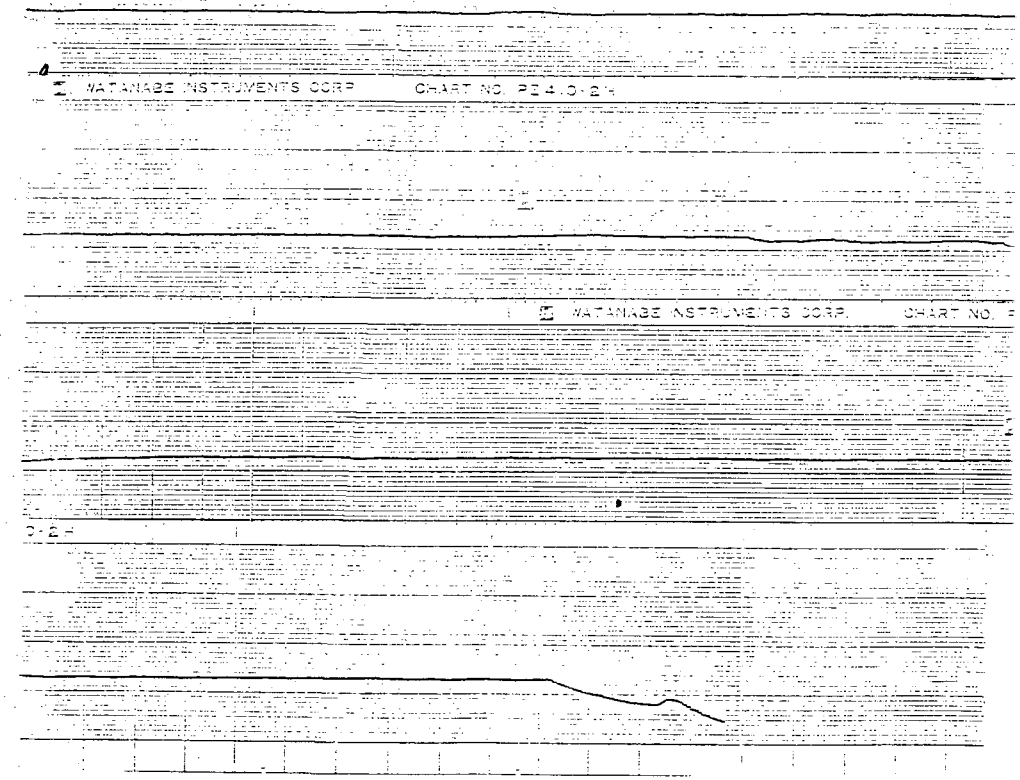
Tested By/Date VEK 5-1-86 Tension NLW 5-1-86 Micrometer JB R.A.T. 5/2/86 Dielectric
Verified By/Date HE 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways:

Anomalies:

0148E-2

700
1014/1V
1075



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 10
Sample No. . . . . = 40
Description No 16 2/c

Standards Used: 506325 543175 522035, 543211, 242506, 502445, 543202, 902038.

Conduit Size in Test. . . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
10T6							
1. BLK	.1060	.1049	.0556	.0549	11.9	>10,000MΩ	Test OK
2. WHT	.1047	.1024	.0530	.0508	13.0	↓	↓
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3496 Max .3320 Min

SWBP Data

Tension (T) = ~~220~~ 200 lbs (Max.)
Radius (R) = .449 ft
T/R = 446.53 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 446.53 lbs/ft

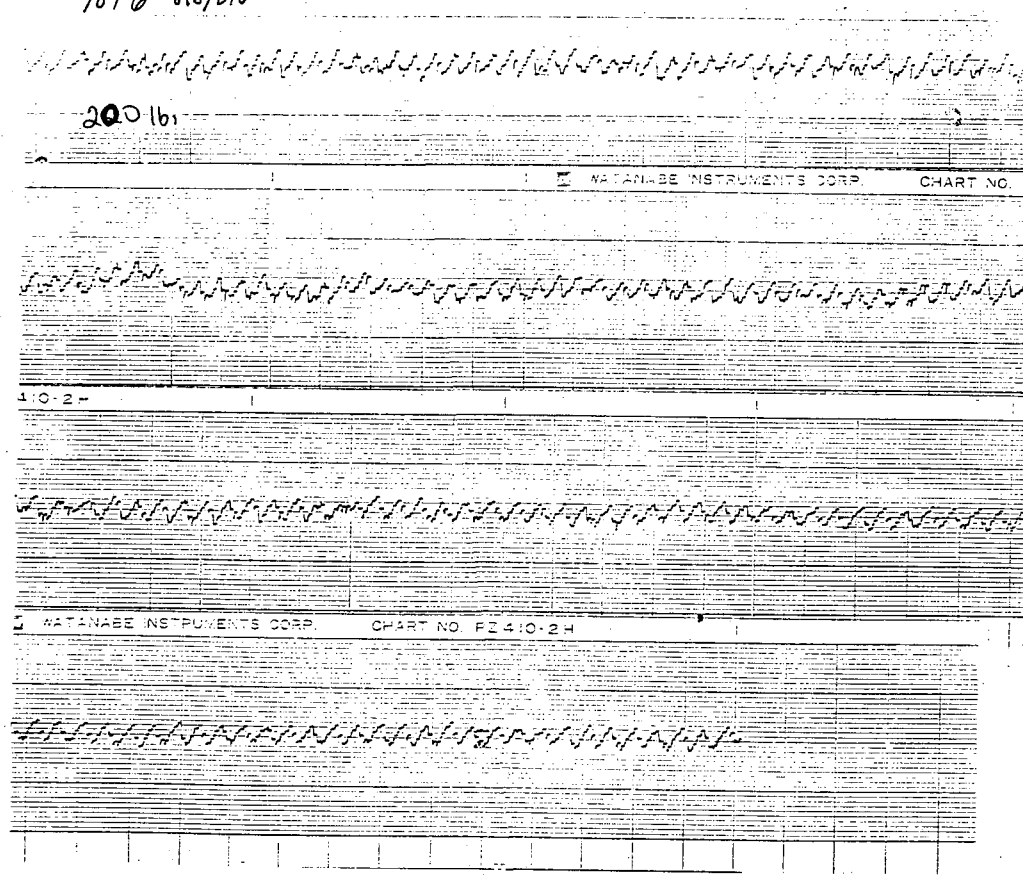
Anomalies:

Tested By/Date DMZ 5-15-86 (Tension) DMZ 5-16-86 (Micrometer) JB R.A.T. 5/16/86 (Dielectric) R.A.T. 5/17/86 (Resistance)

Verified By/Date HC 5/29/86 QA Approval/Date JAK 5/29/86
Test Observers

0148E-4

10T6 816/DIU



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 10
Sample No. . . . . = 40
Description No 16 2/c

Standards Used: 506225 543175 522025, 543211, 212506, 502445, 543207, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___
Tensioned ✓

1-Conductor ___
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	10T7							
1.	BLA	.1089	.1095	.0558	.0549	13.9	>10,000 MΩ	Est OK
2.	WHT	.1089	.1001	.0552	.0532	13.9	↓	↓
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3425 Max .3250 Min

SWBP Data

Tension (T) = 208 188 lbs (Max.)
Radius (R) = .4479 ft
T/R = 419.74 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 419.74 lbs/ft

Anomalies:

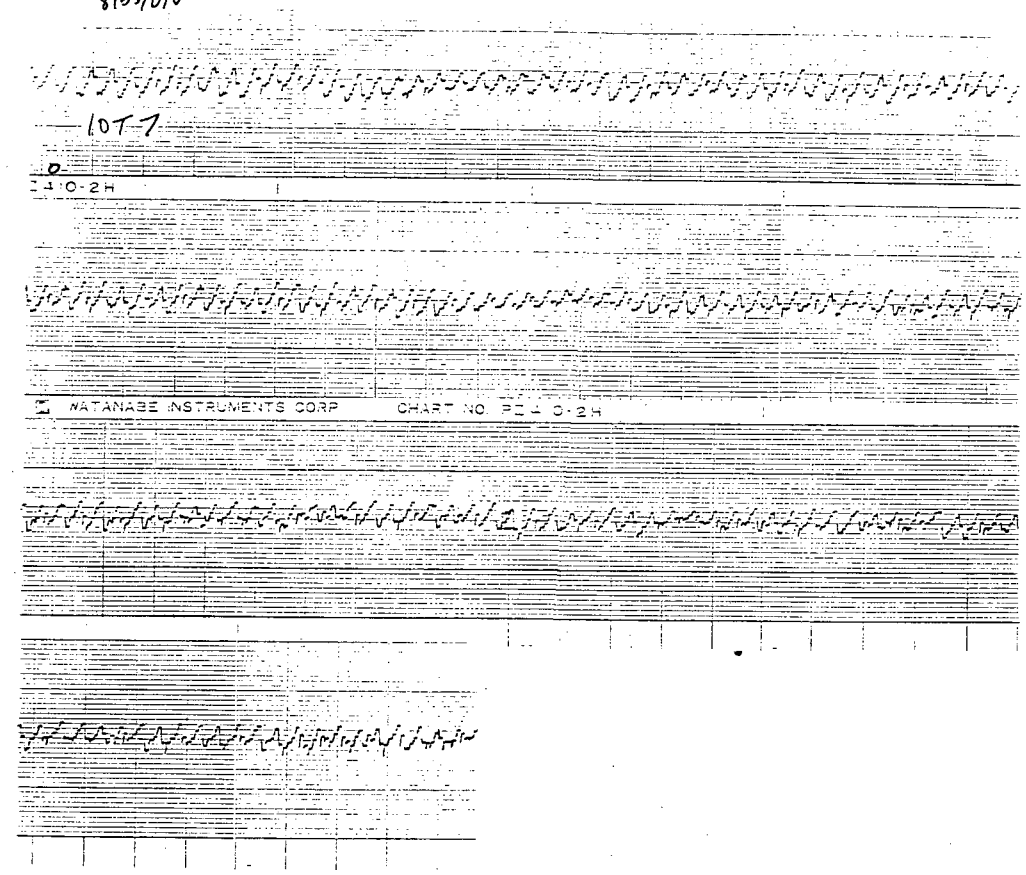
Tested By/Date Dm7 5-15-86 (Tension) Dm7 5-16-86 (Micrometer) JB 5/17/86 (Dielectric) R.A.T. 5/17/86 (Resistance)

Verified By/Date 5/29/86
Test Observers

QA Approval/Date 5/29/86

0148E-4

8lbs/DIV



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 10
Sample No. . . . . = 40
Description No 16 2/c

Standards Used: 506325, 543175, 522035, 543211, 212506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ✓
Tensioned

1-Conductor
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	10T8							
1.	BLA	.1065	.1043	.0555	.0549	12.2	>10,000 MΩ	Test OK
2.	WHT	.1050	.1024	.0534	.0508	11.4	↓	↓
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3999 Max .3344 Min

SWBP Data

Tension (T) = ~~204~~ 184 lbs (Max.)
Radius (R) = .4479 ft
T/R = 410.81 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 410.81 lbs/ft

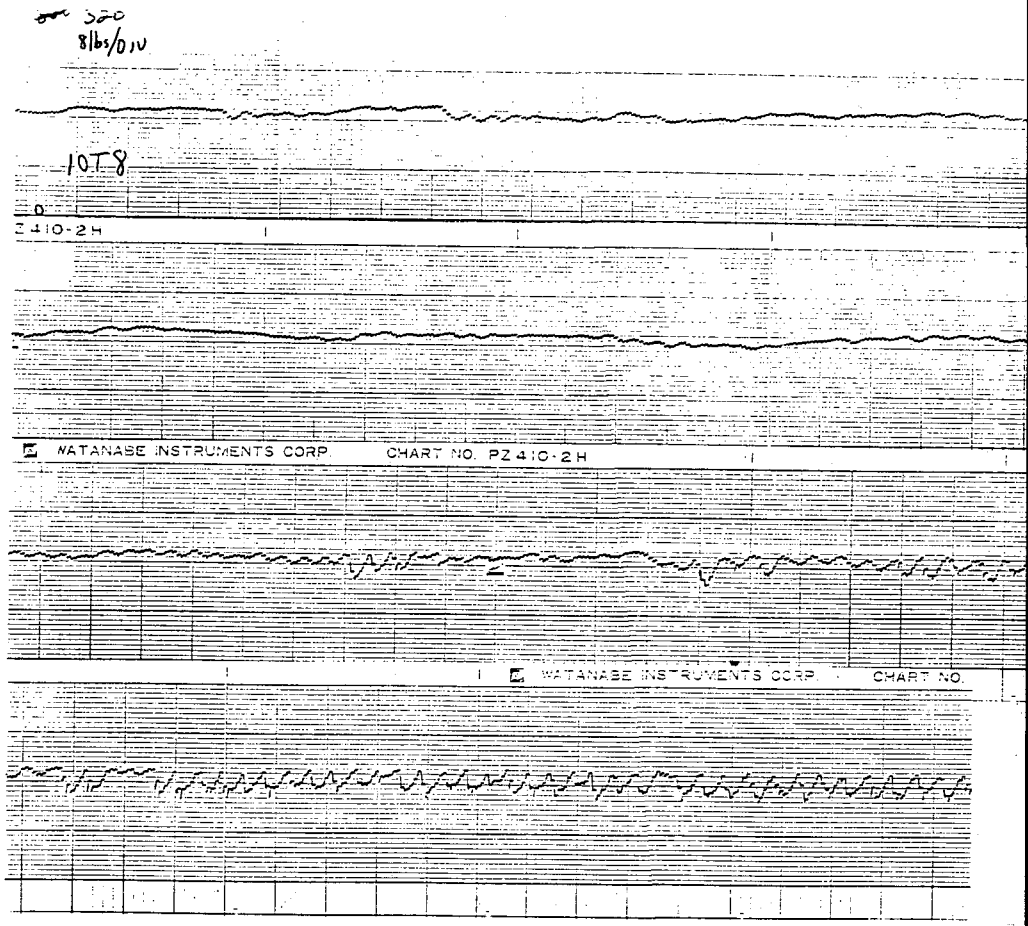
Anomalies:

Tested By/Date Dm 5-15-86 (Tension) Dm 5-16-86 (Micrometer) JB R.A.T. 5/17/86 (Dielectric) R.A.T. 5/17/86 (Resistance)

Verified By/Date He 5/29/86
Test Observers

QA Approval/Date JBR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 10
Sample No. . . . . = 40
Description No. 16 2/c

Standards Used: 506325, 543175, 522035, 543211, 217506, 502445, 543202, 902037

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ Tensioned ✓

1-Conductor ___ Multi-Conductor ✓

	Test No. 10T9	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1062	.1051	.0553	.0530	12.8	>10,000 MΩ	Test OK
2.	WHT	.1048	.1029	.0548	.0499	12.8	↓	↓
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3471 Max .3356 Min

SWBP Data

Tension (T) = ~~216~~ Dm7 196 lbs (Max.)
Radius (R) = .4479 ft
T/R = 437.60 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 437.60 lbs/ft

Anomalies:

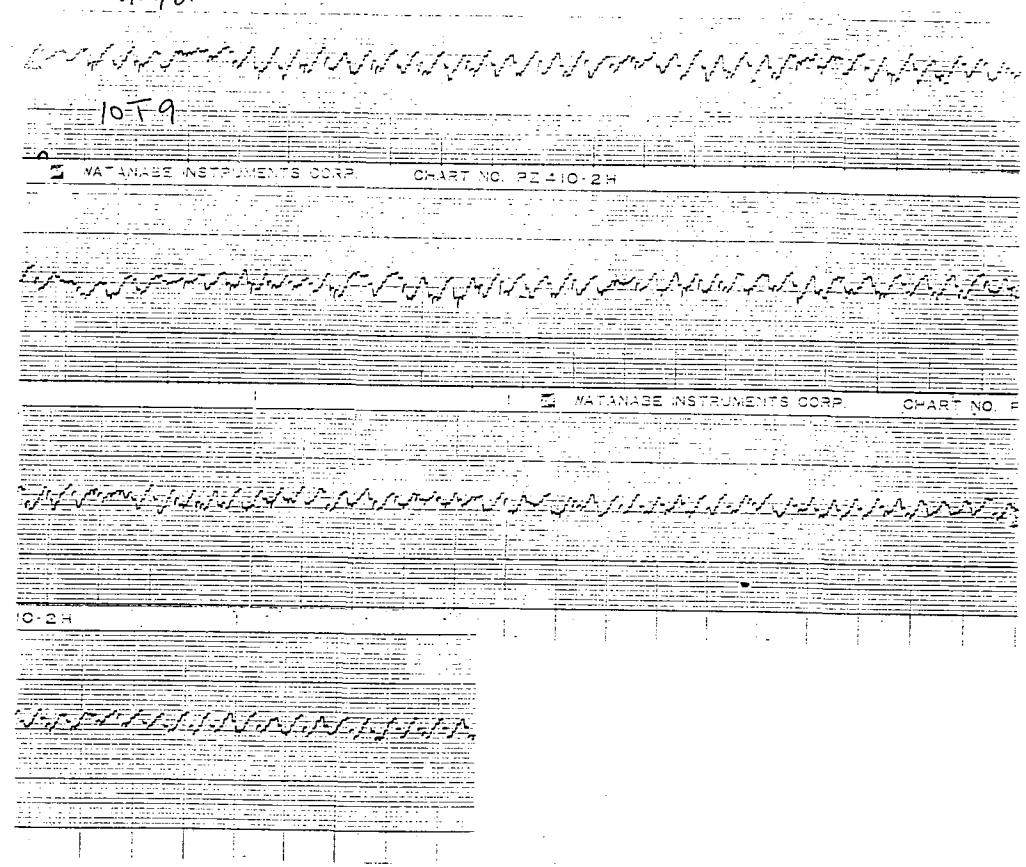
Tested By/Date Dm7 5-15-86 (Tension) cJm7 5-16-86 (Micrometer) JB R.A.T. 5/16/86 (Dielectric) R.A.T. 5/16/86 (Resistance)

Verified By/Date He 5/29/86
Test Observers AR

QA Approval/Date JAR 5/29/86

0148E-4

~~300~~
8 lbs/DIV



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 10
Sample No. . . . . = 40
Description No. 16 2/c

Standards Used: 506325 543175, 522035 543211, 212566, 502445, 543202, 962038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	10T10							
1.	BLA	.1065	.1027	.0544	.0526	11.5	>10.000MΩ	Est OK
2.	WHT	.1056	.1031	.0534	.0495	12.4	↓	↓
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3463 Max .3229 Min

SWBP Data

Tension (T) = 192 lbs (Max.)
Radius (R) = .4479 ft
T/R = 428.67 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 428.67 lbs/ft

Anomalies:

Tested By/Date DM 5-15-86 (Tension) DM 5-16-86 (Micrometer) JB (Dielectric) R.A.T. 5/17/86 (Resistance) R.A.T. 5/17/86

Verified By/Date 5/29/86
Test Observers

QA Approval/Date MR 5/25/86

0148E-4

320

8 lbs/DIV

10T10

WATANABE INSTRUMENTS CORP. CHART NO.

4-10-24

WATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 131
Description No 16 3pr & 1 SINGLE

Standards Used: 543211, 212506
543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 11V1	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	SINGLE RED	.0873	.0861	.0550	.0541	38.6	>10,000 MΩ	N/A
2.	RED	.0728	.0717	.0543	.0541	20.1	↓	↓
3.	WHT W/RED	.0704	.0695	.0545	.0535	20.5	↓	↓
4.	BRN	.0712	.0695	.0549	.0526	16.7	↓	↓
5.	WHT W/BRN	.0706	.0702	.0547	.0536	14.8	↓	↓
6.	ORG	.0719	.0709	.0555	.0553	17.5	↓	↓
7.	WHT W/ORG	.0702	.0685	.0548	.0548	21.0	↓	↓
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .4395 Max .3917 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies:

Tested By/Date N/A Tension; [illegible] 5-9-86 Micrometer; JB R.A.T. 5/9/86 Dielectric; R.A.T. 5/9/86 Resistance

Verified By/Date HC 5/29/86
Observers [illegible]

QA Approval/Date [illegible] 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 131
Description No 16 3pr & 1SNG

Standards Used: 543211, 212506, 543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 11V2	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	SNG RED	.0869	.0869	.0552	.0539	40.1	710,000 MΩ	N/A
2.	RED	.0716	.0702	.0566	.0540	20.1	↓	↓
3.	WHT/W RED	.0710	.0706	.0569	.0544	18.1	↓	↓
4.	BRN	.0718	.0704	.0547	.0544	19.3	↓	↓
5.	WHT W/BRN	.0700	.0686	.0559	.0543	17.0	↓	↓
6.	ORG	.0724	.0705	.0550	.0539	24.7	↓	↓
7.	WHT W/ORG	.0713	.0703	.0565	.0562	22.8		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .4478 Max .3967 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension | DM7 5-6-86 Micrometer | JB Dielectric | R.A.T. 5/6/86 Resistance

Verified By/Date HE 5/29/86
Test Observers AR

QA Approval/Date JBC 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 131
Description NO 16 3pr & 1SNG

Standards Used: 543211, 212506, 543202, 902038,

Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

	Test No. 11 V3	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	SNG RED	.0863	.0857	.0555	.0549	37.5	>10,000 MΩ	N/A
2.	RED	.0715	.0712	.0541	.0539	23.8		
3.	WHT W/RED	.0701	.0701	.0560	.0548	23.4		
4.	BRN	.0704	.0702	.0541	.0539	18.1		
5.	WHT W/BRN	.0707	.0703	.0558	.0537	18.9		
6.	ORG	.0705	.0703	.0544	.0542	18.3		
7.	WHT W/ORG	.0713	.0700	.0547	.0543	18.9		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .4300 Max .3976 Min

SWBP Data

Tension (T) = NA lbs (Max.)
Radius (R) = NA ft
T/R = NA lbs/ft
Correction Factor (X) = NA
SWBP = X(T/R) = NA

Anomalies: ____

Tested By/Date NA Tension | JM 7 5-9-86 Micrometer | JB R.A.T. 5/9/86 Dielectric | R.A.T. 5/9/86 Resistance

Verified By/Date HR 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers RR

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 131
Description No 16 3pr + 1sno

Standards Used: 543211, 543202, 902038, 212506, ~~212506, 902038,~~ ~~543202~~ R.A.T. s/le.

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 11 ✓ 4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	SINGLE RED	.0858	.0856	.0539	.0532	37.8	>10,000 MΩ	N/A
2.	RED	.0725	.0720	.0552	.0547	22.4	↓	↓
3.	WHT W/RED	.0729	.0723	.0550	.0547	20.4	↓	↓
4.	BRN	.0742	.0706	.0550	.0543	15.7	↓	↓
5.	WHT W/BRN	.0692	.0688	.0545	.0545	17.8	↓	↓
6.	ORG	.0713	.0708	.0550	.0543	19.8	↓	↓
7.	WHT W/ORG	.0697	.0690	.0546	.0538	20.9		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .4297 Max .3994 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension — DM 7-6-86 Micrometer — JB Dielectric — R.A.T. 5/6/86 Resistance

Verified By/Date HE 5/29/86
Test Observers RR

QA Approval/Date JBR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 131
Description No 16 3pr + 1 SWG

Standards Used: 543211, 543202, 902038, 212506,

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

Test No. 11V5		Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	SINGLE RED	.0861	.0858	.0540	.0532	40.2	>10,000 MΩ	N/A
2.	RED	.0720	.0712	.0560	.0548	18.2		
3.	WHT W/RED	.0710	.0706	.0554	.0543	19.9		
4.	BRN	.0704	.0699	.0548	.0543	21.1		
5.	WHT W/BRN	.0699	.0689	.0546	.0545	21.6		
6.	ORG	.0719	.0715	.0552	.0547	22.1		
7.	WHT W/ORG	.0702	.0701	.0559	.0547	16.5		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .4376 Max .3884 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension | Am 7 5-6-86 Micrometer | JB R.A.T. 5/6/86 Dielectric | R.A.T. 5/6/86 Resistance

Verified By/Date He 5/29/86
Test Observers AR

QA Approval/Date gsr 5/29/86

0148E-4

VOID

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

Sample No. . . . . = 131
Conduit Size in Test. . . . . = 11
No. Cables in Pull . . . . . = 1

Standards Used = 606125, 543175, 522035

Test No. 11T1	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. VOID							
2.							
3.							
4.				VEK			
5.				4-24-86			
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = ____ Max ____ Min
Tension (T) = 140 lbs (Max.)
Radius (R) = ____ ft
T/R = ____ lbs/ft
Correction Factor (X) = ____
SWBP = X(T/R) = ____

Tested By/Date VEK 4-24-86 ____ ____
Tension Micrometer Dielectric
Verified By/Date ____ QA Approval/Date ____
Test Observers ____ ____

Visual Cable Report: Nothing abnormal found ____
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

11T1

10lb/DIV

WATANABE INSTRUMENTS CORP CHART NO.

410-2H

WATANABE INSTRUMENTS CORP. CHART NO. PZ 410-2H

WATANABE INSTRUMENTS CORP CHART NO. PZ 41

2

VOID

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 131
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035

Test No. 1172	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	VOID						
2.							
3.							
4.				VEK	5-1-86		
5.				~~4-24-86~~			
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = ____ Max ____ Min
Tension (T) = 138 lbs (Max.)
Radius (R) = ____ ft
T/R = ____ lbs/ft
Correction Factor (X) = ____
SWBP = X(T/R) = ____

Tested By/Date VEK 5-1-86 (Tension) ____ (Micrometer) ____ (Dielectric)
Verified By/Date ____ QA Approval/Date ____
Test Observers ____

Visual Cable Report: Nothing abnormal found ____
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

1014/01V

1172

WATANABE INSTRUMENTS CORP. CHART NO.

WATANABE INSTRUMENTS CORP. CHART NO. PE-10-2H

VOID

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 131
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506225 543175 522035

Test No. 11T3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	VOID						
2.							
3.							
4.			VEK				
5.			5-1-86				
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = ____ Max ____ Min
Tension (T) = 138 lbs (Max.)
Radius (R) = ____ ft
T/R = ____ lbs/ft
Correction Factor (X) = ____
SWBP = X(T/R) = ____

Tested By/Date VEK 5-1-86 Tension ____ Micrometer ____ Dielectric ____
Verified By/Date ____ QA Approval/Date ____
Test Observers ____

Visual Cable Report: Nothing abnormal found ____
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

10lb/DIV

11T3

P24-0-2H

WATANABE INSTRUMENTS CORP. CHART NO. P24-0-2H

WATANABE INSTRUMENTS CORP. CHART NO. P2

VOID

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 131
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325 543175 522035

Test No. 1174	Conductor Insulation O.D. in Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
VOID							
1.							
2.							
3.							
4.				VEK			
5.				5-1-86			
6.							
7.							
8.							
9.							
10.							
11.							
12.							

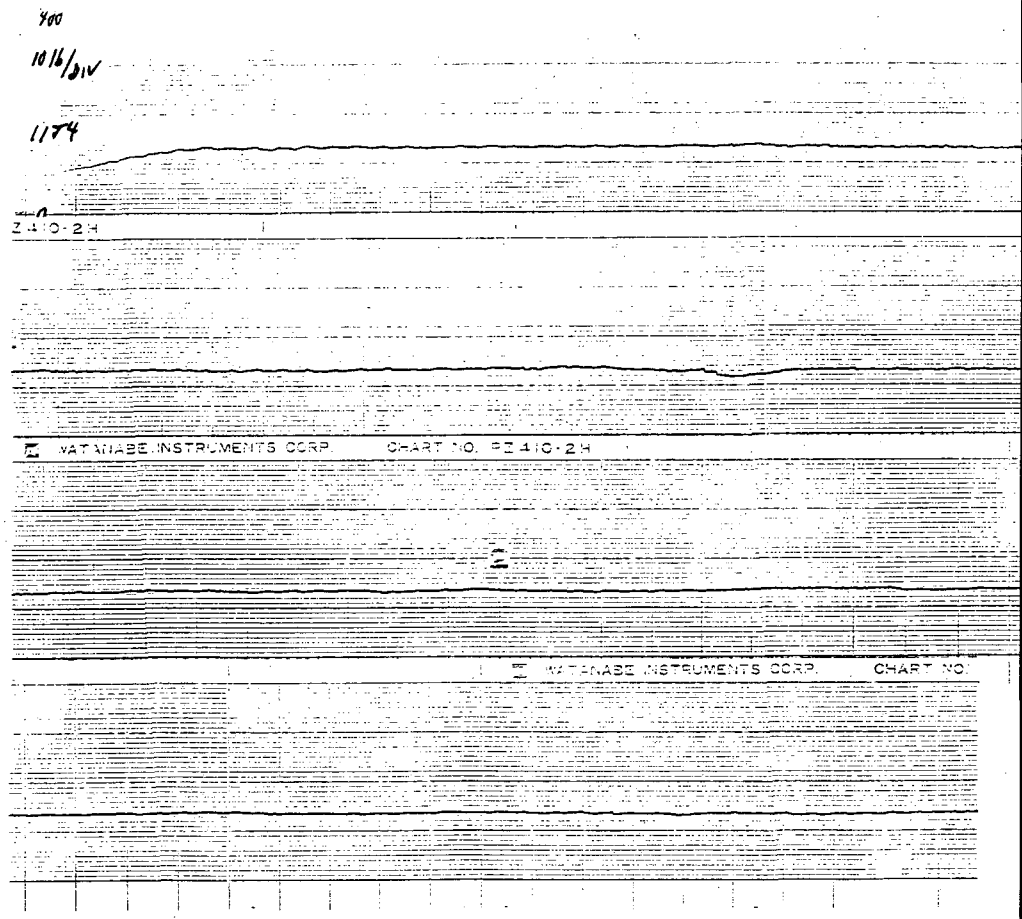
Multi-Conductor Jacket O.D. = ____ Max ____ Min
Tension (T) = 140 lbs (Max.)
Radius (R) = ____ ft
T/R = ____ lbs/ft
Correction Factor (X) = ____
SWBP = X(T/R) = ____

Tested By/Date VEK 5-1-86 ____ ____
Tension Micrometer Dielectric
Verified By/Date ____ QA Approval/Date ____
Test Observers ____ ____ ____

Visual Cable Report: Nothing abnormal found ____
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



VOID

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 131
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . = 1

Standards Used = 506325 543175 522035

Test No. 11T5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	VOID						
2.							
3.							
4.				VEK			
5.				5-1-86			
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = ____ Max ____ Min
Tension (T) = 140 lbs (Max.)
Radius (R) = ____ ft
T/R = ____ lbs/ft
Correction Factor (X) = ____
SWBP = X(T/R) = ____

Tested By/Date VEK 5-1-86 ____ ____
Tension Micrometer Dielectric
Verified By/Date ____ QA Approval/Date ____
Test Observers ____ ____

Visual Cable Report: Nothing abnormal found ____
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

40V
1016/D1V
11T5

WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H

WATANABE INSTRUMENTS CORP. CHART NO. P

0-2H

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 131
Description No 16 ~~3/C~~ VER 3/PR

Standards Used: 506325, 543175, 522035, 593211, 212506, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
11T6							
1. S. Red	.0883	.0854	.0541	.0549	34.7	>10000 MΩ	Est OK
2. Red	.0795	.0722	.0558	.0542	15.0		
3. WHT/Red	.0758	.0706	.0563	.0551	16.5		
4. BRN	.0730	.0718	.0558	.0533	2.3 *		
5. WHT/BRN	.0706	.0689	.0573	.0539	5.8 **		
6. ORG	.0742	.0708	.0573	.0541	21.1		
7. WHT/ORG	.0726	.0697	.0589	.0555	19.1		
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .4212 Max .3662 Min

SWBP Data

Tension (T) = 460 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1027.01 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1027.01 lbs/ft

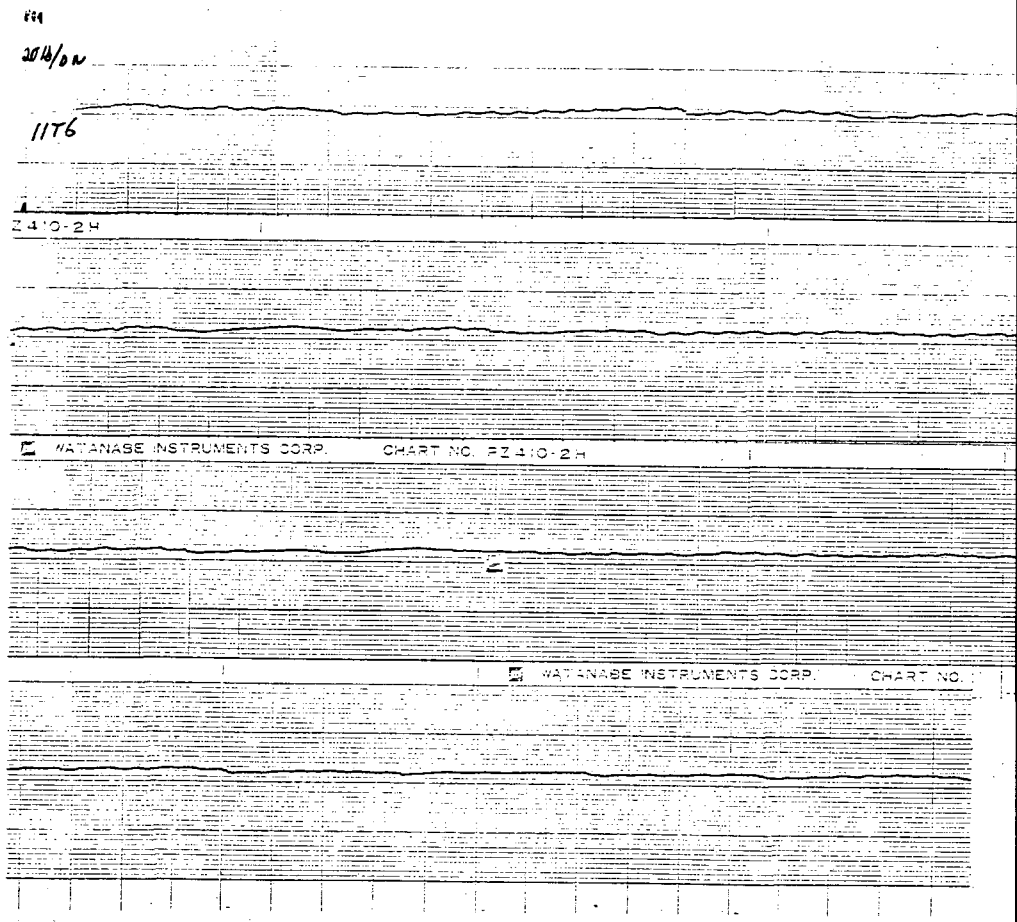
Anomalies: * 17.9 KV with failed spot lifted out of water
* 30.5 KV " " " " " " "

Tested By/Date VEK 5-15-86 Tension | RW Bass 5-22-86 Micrometer | VER D.A.T. Dielectric | D.A.T. 5/29/86 Resistance

Verified By/Date 5/29/86
Test Observers

QA Approval/Date 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 131
Description No 16 ~~3/c~~ 3/PR

Standards Used: 506325, 543175, 522035, 50321, 425106, 502445, 543202, 902036

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ 1-Conductor
Tensioned ✓ Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1177							
1. S Red	.0866 ~~.0863~~	.0853	.0544	.0535	35.1	>10,000 MΩ	Test ok
2. Red	.0739	.0714	.0551	.0535	20.1		
3. WHT/RED	.0722	.0706	.0584	.0548	23.4		
4. BRN	.0710	.0700	.0558	.0541	17.7		
5. WHT/BRN	.0712	.0687	.0558	.0543	17.4		
6. ORG	.0726	.0710	.0553	.0543	20.5		
7. WHT/ORG	.0762	.0706	.0563	.0539	20.5		
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .4535 Max .3760 Min

SWBP Data

Tension (T) = 465 lbs (Max.)
Radius (R) = .4479 ft.
T/R = 1038.18 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1038.18 lbs/ft

Anomalies:

Tested By/Date VEK 5-15-86 (Tension) | WR 5-22-86 (Micrometer) | VEK R.A.T. (Dielectric) | R.A.T. 5/25/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers RAK

QA Approval/Date JAR 5/29/86

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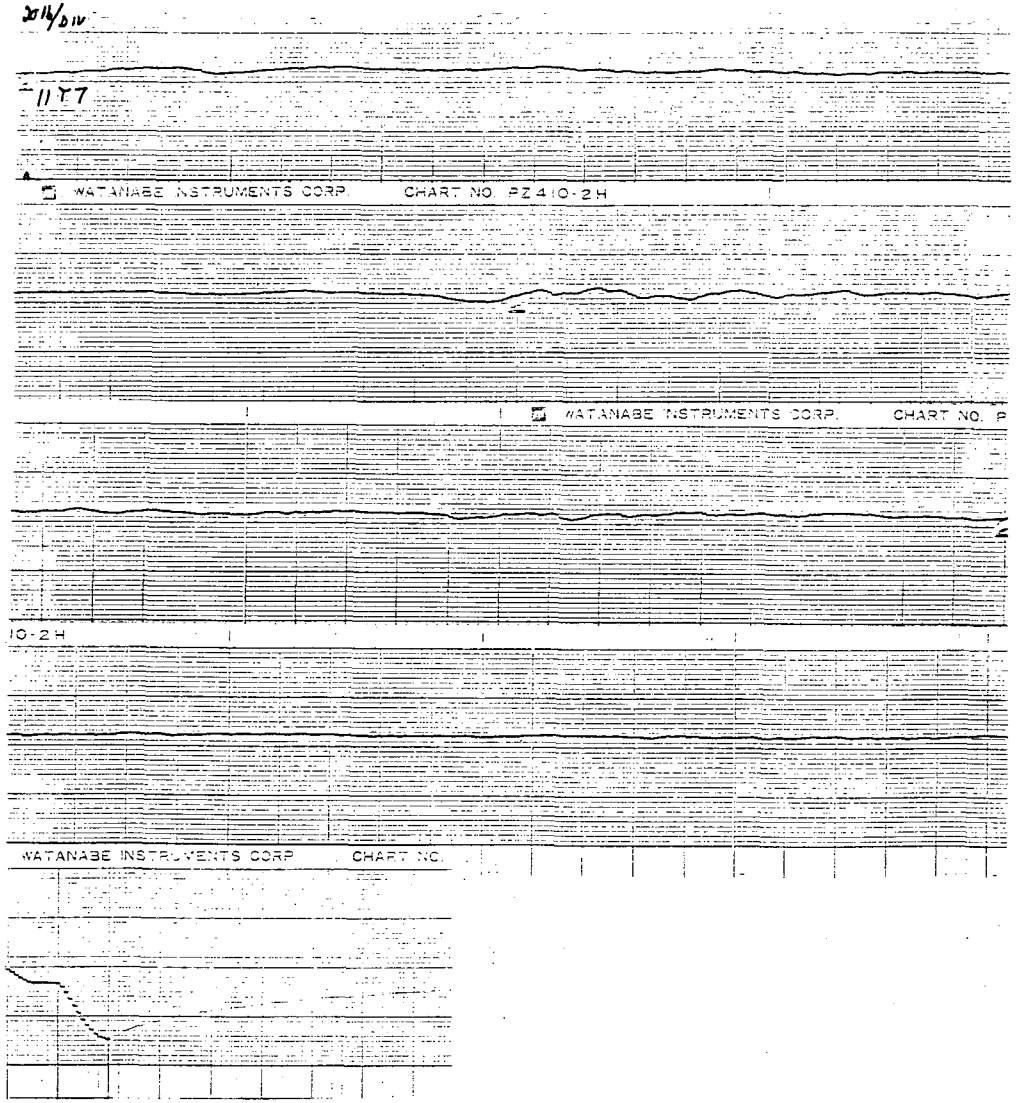

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 121
Description No 16 3/PR

Standards Used: 506325, 543175, 522025, 543211, 212506, 502445, 543262, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	11T8							
1.	S. Red	.0865	.0855	.0550	.0534	35.0	>10,000 MΩ	Test OK
2.	Red	.0706	.0700	.0557	.0539	18.9		
3.	WHT/Red	.0731	.0704	.0560	.0539	20.7		
4.	BRN	.0706	.0703	.0550	.0535	14.0		
5.	WHT/BRN	.0734	.0693	.0563	.0534	16.1		
6.	ORG	.0708	.0700	.0591	.0558	21.5		
7.	WHT/ORG	.0696	.0716	.0557	.0538	10.8		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .4169 Max .3815 Min

SWBP Data

Tension (T) = 500 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1116.32 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1116.32 lbs/ft

Anomalies:

Tested By/Date VEK 5-15-86 (Tension) WK 5-22-86 (Micrometer) VEK RAT (Dielectric) RAT 5/23/86 (Resistance)

Verified By/Date HE 5/29/86
Test Observers AR

QA Approval/Date JAR 5/29/86

0148E-4

11T8

WATANABE INSTRUMENTS CORP. CHART NO

410-2H

WATANABE INSTRUMENTS CORP. CHART NO. PZ 410-2H

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 131
Description No 16 3/12

Standards Used: 506325, 542175, 522035, 543240, 712526, 502465, 543202, 902038, 902203

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___
Tensioned ✓

1-Conductor ___
Multi-Conductor ✓

	Test No. 1179	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	SING RED	.0864	.0845	.0554	.0524	34.2	>10000MΩ	Test ok
2.	RED	.0736	.0697	.0548	.0532	18.2		
3.	WHT W/RED	.0725	.0690	.0556	.0529	21.4		
4.	GRN	.0717	.0694	.0547	.0530	17.2		
5.	WHT W/GRN	.0702	.0680	.0541	.0534	21.8		
6.	ORG	.0739	.0703	.0544	.0536	23.94		
7.	WHT W/ORG	.0715	.0697	.0552	.0532	14.7		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .4115 Max .3991 Min

SWBP Data

Tension (T) = 505 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1127.48 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1127.48 lbs/ft

Anomalies: Failed Hi-Pot Test at water line

Tested By/Date YEK 5-15-86 Tension — DMZ 5-19-86 Micrometer — JB R.A.T. 5/19/86 Dielectric — R.A.T. 5/16/86 Resistance

Verified By/Date HR 5/29/86
Test Observers DR

QA Approval/Date JMR 5/25/86

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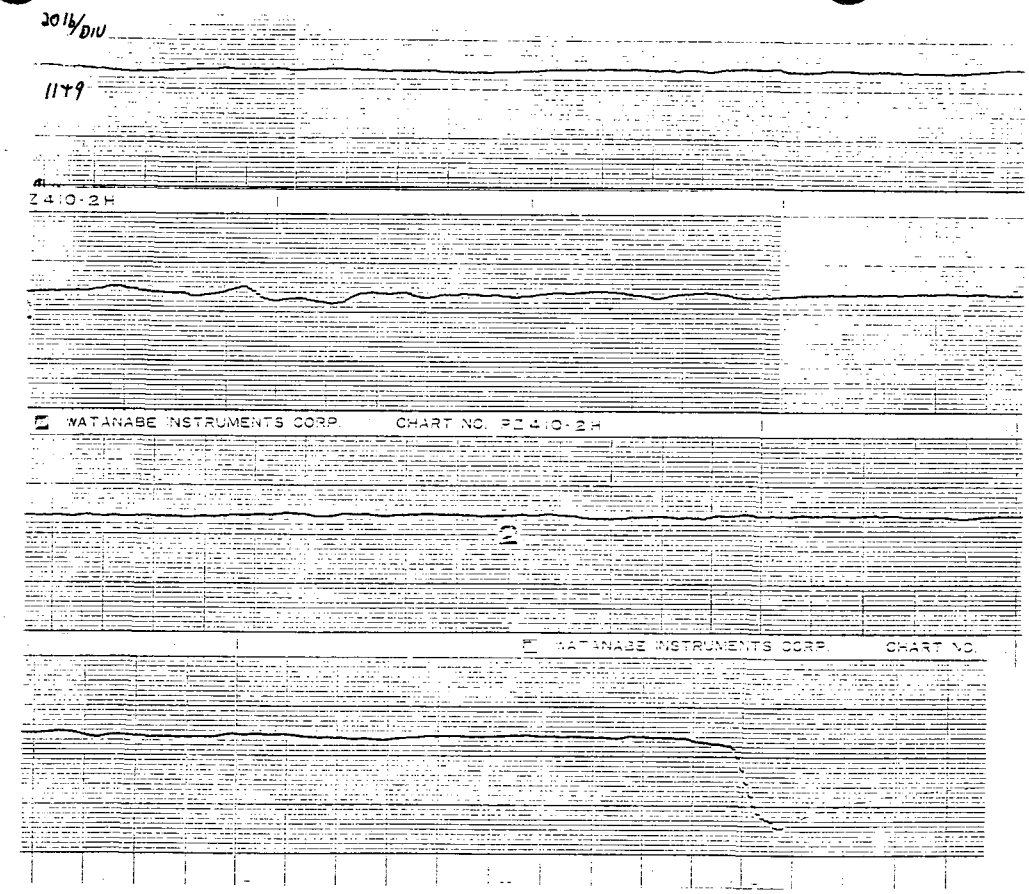

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 11
Sample No. . . . . = 131
Description No. 16 3/PR

Standards Used: 506325, 543175, 522035, 543211, 312506, 502445, 542262, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
11T10							
1. *S. Red	~~.0864~~ .0875	.0852	.0549	.0534	38.0	>10,000 MΩ	Test OK
2. Red	.0728	.0712	.0559	.0551	16.9		
3. WHT/RED	.0713	.0691	.0564	.0533	16.7		
4. BRN	.0728	.0700	.0557	.0534	20.1		
5. WHT/BRN	.0719	.0676	.0575	.0543	17.1		
6. ORG	.0716	.0707	.0562	.0538	19.9 * 19.9		
7. WHT/ORG	.0702	.0698	.0579	.0544	21.3 ** 5/29/86		
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .4565 Max, .3643 Min

SWBP Data

Tension (T) = 495 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1105.16 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1105.16 lbs/ft

Anomalies: * Improperly Tested failed spot lifted out of water for official Test.
** Failed Hi-pot Test lifted out of water.

Tested By/Date VEK 5-15-86 (Tension) | VWR 5-22-86 (Micrometer) | VEK R.A.T. (Dielectric) | R.A.T. 5/29/86 (Resistance)

Verified By/Date AR 5/29/86
Test Observers AR

QA Approval/Date JGR 5/29/86

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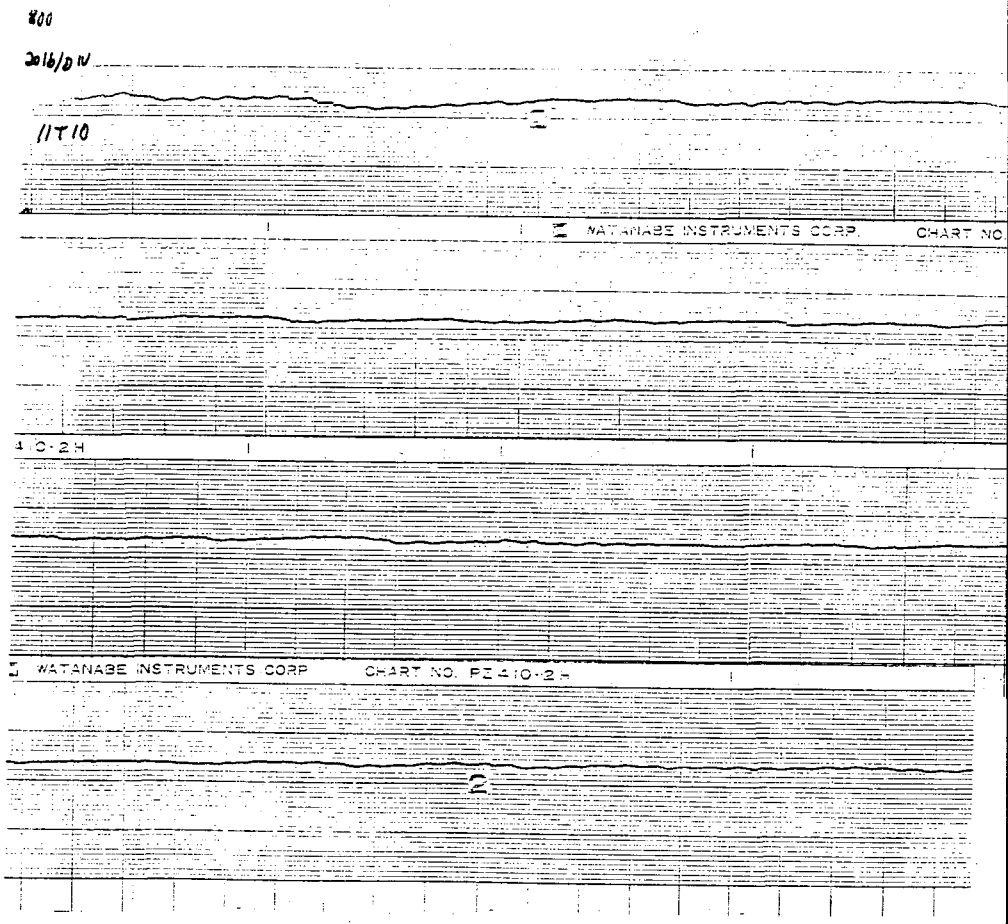


SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 1067
Plant. . . . . = F
Manufacturer . . . . . = BRAND-REX
Contract No. . . . . = 928072
Mark No. . . . . = WVG
Description. . . . . = No 16 12/C
Insulation . . . . . = Shield Locn
Filler Material. . . . = NONE

Standards Used = 543211, 543240, ~~502445~~, 543202, 902038, 212504
R.A.T. 5/5/86
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2321

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	12V1								
	BARE	—	—	.0480	.0470				
1.	BLA	.1102	.1078	.0575	.0570	15.7			
2.	RED	.1110	.1097	.0571	.0569	18.6			
3.	ORG	.1110	.1103	.0587	.0572	20.0			
4.	GRN	.1114	.1096	.0569	.0559	19.2			
5.	BLU	.1121	.1120	.0576	.0573	16.4			
	WHT	.1103	.1102	.0578	.0573	18.4			
	BLA/WHT	.1146	.1126	.0582	.0573	18.4			
8.	RED/BLA	.1144	.1119	.0579	.0576	18.5			
9.	ORG/BLA	.1114	.1103	.0583	.0571	18.6			
10.	GRN/BLA	.1123	.1114	.0578	.0547	18.6			
11.	BLU/BLA	.1108	.1102	.0563	.0555	19.9			
12.	WHT/BLA	.1110	.1105	.0573	.0572	20.7			

Multi-Conductor Jacket O.D. = .6034 Max .5932 Min
Overall Virgin Dielectric Breakdown Average ~~19.16 KV~~ 19.17 KV 5/29/86
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — 7-4-28-86 (Micrometer) — JB (Dielectric) R.A.T. 4/29/86
Verified By/Date 5/29/86 QA Approval/Date 5/29/86
Test Observers
Visual Cable Report: OK
Anomalies:

All cables meggered greater than 10,000 MΩ
R.A.T. 4/29/86

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 1067
Plant. . . . . = F
Manufacturer . . . . . = BRAND-REX
Contract No. . . . . = 828077
Mark No. . . . . = WVG
Description. . . . . = No 16 12/C
Insulation . . . . . = Shield LOCA
Filler Material. . . . = None

Standards Used = 543211, 543240, 543202, 902038, 212504

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2321

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	12V2 BARE	—	—	.0467	.0467				
1.	BLA	.1097	.1089	.0609	.0568	16.7			
2.	RED	.1135	.1130	.0569	.0548	16.9			
3.	ORG	.1131	.1116	.0653	.0630	17.7			
4.	GRN	.1135	.1135	.0574	.0574	19.6			
5.	BLU	.1129	.1123	.0567	.0565	21.2			
6.	WHT	.1091	.1090	.0576	.0572	19.3			
7.	BLA/WHT	.1152	.1124	.0582	.0576	18.5			
8.	RED/BLA	.1135	.1122	.0590	.0575	17.8			
9.	ORG/BLA	.1120	.1116	.0583	.0578	21.0			
10.	GRN/BLA	.1125	.1108	.0576	.0570	21.0			
11.	BLU/BLA	.1110	.1108	.0572	.0569	20.5			
12.	WHT/BLA	.1120	.1117	.0586	.0572	22.1			

Multi-Conductor Jacket O.D. = .6089 Max .5916 Min
Overall Virgin Dielectric Breakdown Average ~~19.76KV~~ 19.17KV
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date MA (Tension) Omz 4-28-86 (Micrometer) JB R.A.T 4/29/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date 5/29/86
Test Observers RR
Visual Cable Report: OK HC
Anomalies:

All cables meggered greater than 10,000 MΩ
R.A.T. 4/29/86

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 1067
Plant. . . . . = F
Manufacturer . . . . . = BRAND-REX
Contract No. . . . . = 828072
Mark No. . . . . = WVG
Description. . . . . = No 1612/C
Insulation . . . . . = Shield Loca
Filler Material. . . . = NONE

Standards Used = 543211, 543202, 902038, 242506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2321

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	12V3 BARE	—	—	.0474	.0473				
1.	BLA	.1097	.1071	.0573	.0572	16.0			
2.	RED	.1114	.1112	.0573	.0571	18.2			
3.	ORG	.1102	.1097	.0575	.0564	19.8			
4.	GRN	.1139	.1126	.0563	.0560	18.7			
5.	BLU	.1123	.1121	.0570	.0568	19.3			
	WHT	.1100	.1084	.0576	.0573	17.1			
	BLA/WHT	.1147	.1127	.0576	.0551	17.7			
8.	RED/BLA	.1138	.1123	.0577	.0576	17.9			
9.	ORG/BLA	.1114	.1113	.0573	.0552	21.7			
10.	GRN/BLA	.1123	.1093	.0576	.0565	~~18.7~~ 20.1			
11.	BLU/BLA	.1108	.1107	.0566	.0549	18.9			
12.	WHT/BLA	.1112	.1110	.0575	.0566	21.3			

Multi-Conductor Jacket O.D. = .6095 Max .5913 Min
Overall Virgin Dielectric Breakdown Average ~~19.16KV~~ 19.17 KV GRR 5/29/86
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — DM 4-29-86 (Micrometer) — JB R.A.T. 4/29/86 (Dielectric)
Verified By/Date HE 5/29/86 QA Approval/Date GRR 5/29/86
Test Observers RR
Visual Cable Report: OK HE
Anomalies:

All cables meggered greater than 10,000 MΩ
R.A.T. 4/29/86

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 1067
Plant. . . . . = F
Manufacturer . . . . . = BRAND-REX
Contract No. . . . . = 828072
Mark No. . . . . = WVG
Description. . . . . = No 16 12/C
Insulation . . . . . = Shield LOCA
Filler Material. . . . = None

Standards Used = 543211, 543202, 902038, 212506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = 2321

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
12V4 BARE	—	—	.0488	.0476				
1. BLA	.1090	.1090	.0574	.0570	16.6			
2. RED	.1124	.1122	.0573	.0573	20.6			
3. ORG	.1127	.1103	.0580	.0571	18.2			
4. GRN	.1093	.1090	.0571	.0547	20.0			
5. BLU	.1108	.1106	.0579	.0569	19.9			
6. WHT	.1104	.1100	.0590	.0585	17.7			
7. BLA/WHT	.1158	.1126	.0581	.0579	18.0			
8. RED/BLA	.1138	.1117	.0574	.0564	21.6			
9. ORG/BLA	.1112	.1109	.0578	.0566	21.2			
10. GRN/BLA	.1122	.1106	.0572	.0566	17.2			
11. BLU/BLA	.1109	.1108	.0571	.0570	18.1			
12. WHT/BLA	.1119	~~.1108~~ .1111	~~.0571~~ .0568	~~.0570~~ .0476	20.4			

Multi-Conductor Jacket O.D. = ~~Max~~ .5862 Min .6255 MAX
Overall Virgin Dielectric Breakdown Average ~~19.16KV~~ 19.17KV
JMR 5/29/86
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — Dm7 4-29-86 (Micrometer) — JB R.A.T. 4/29/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JMR 5/29/86
Test Observers JR
Visual Cable Report: OK HC
Anomalies:

All cables meggered greater than 10,000MΩ
R.A.T. 4/29/86

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Irradiated ____ Multi-Conductor ✓

Sample No. . . . . = 1067
Plant. . . . . = F
Manufacturer . . . . . = BRAND-REX
Contract No. . . . . = 828072
Mark No. . . . . = WVG
Description. . . . . = No. 16 12/c
Insulation . . . . . = Shield Cable
Filler Material. . . . = None

Standards Used = 243211, 543202, 902038, 212506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A
Wt/Ft (lb). . . . . = .2321

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	12V5 BARE	—	—	.0471	.0470				
1.	BLA	.1095	.1082	.0576	.0572	16.8			
2.	RED	.1125	.1125	.0563	.0556	20.7			
3.	ORG	.1093	.1091	.0577	.0564	20.4			
4.	GRN	.1109	.1100	.0574	.0564	20.8			
5.	BLU	.1109	.1106	.0566	.0553	19.7			
6.	WHT	.1118	.1116	.0575	.0572	18.7			
7.	BLA/WHT	.1145	.1124	.0574	.0553	20.2			
8.	RED/BLA	.1131	.1113	.0574	.0569	21.3			
9.	ORG/BLA	.1125	.1118	.0577	.0576	23.1			
10.	GRN/BLA	.1104	.1103	.0579	.0571	19.5			
11.	BLU/BLA	.1109	.1104	.0572	.0562	20.1			
12.	WHT/BLA	.1109	.1108	.0573	.0565	17.2			

Multi-Conductor Jacket O.D. = .6052 Max .5887 Min
Overall Virgin Dielectric Breakdown Average ~~19.16KV~~ 19.17KV
QAR 5/29/86
Dielectric Test Length = 15 Ft.
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — Am 7 4-29-86 (Micrometer) — JB R.A.T. 4/29/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date QAR 5/29/86
Test Observers AR
Visual Cable Report: OK He
Anomalies:

All cables meggered greater than 10,000 MΩ
R.A.T. 4/29/86

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1067
Plant. . . . . = F
Manufacturer . . . . . = BRAND-REX
Contract No. . . . . = 828072
Mark No. . . . . = WVG
Description. . . . . = 16.16 12/c
Insulation . . . . . = SHIELD LOCK
Filler Material. . . . = NONE

Standards Used = 506325, 543175, 522035, 543211, 543240, 502445, 543202, 905038, 342506
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .2321

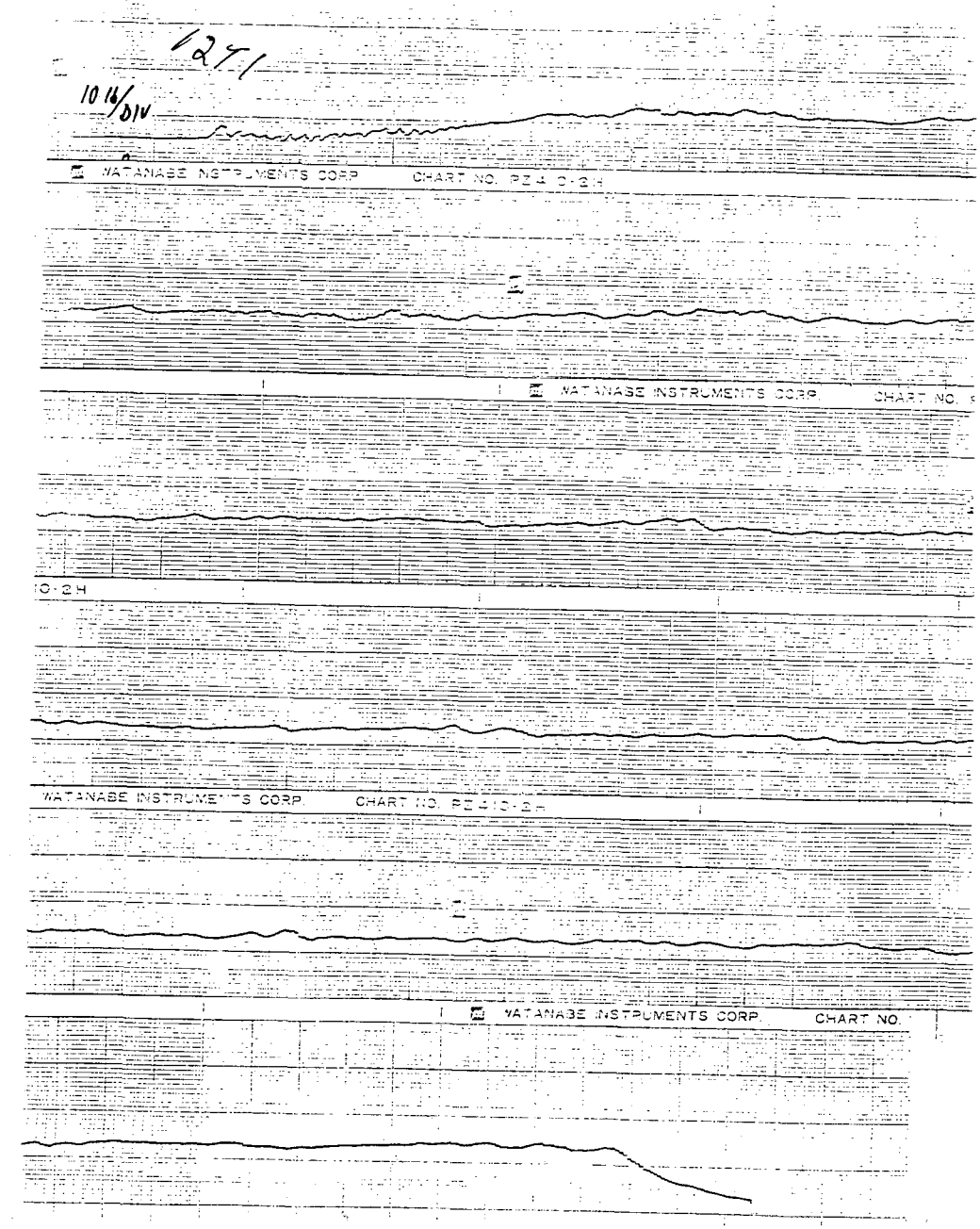
	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
	12T1								
BARE				.0504	.0469				
1.	BLA	.1151	.1118	.0576	.0546	16.6			
2.	RED	.1140	.1104	.0577	.0547	21.8			
3.	ORG	.1183	.1087	.0584	.0579	19.0			
4.	GRN	.1145	.1118	.0573	.0566	20.6			
5.	BLU	.1136	.1108	.0588	.0561	18.4			
6.	WHT	.1128	.1097	.0589	.0572	18.6			
7.	BLA/WHT	.1162	.1122	.0596	.0556	18.1			
8.	RED/BLA	.1142	.1110	.0589	.0554	18.1			
9.	ORG/BLA	.1126	.1112	.0585	.0535	21.1			
10.	GRN/BLA	.1128	.1094	.0592	.0563	18.7			
11.	BLU/BLA	.1112	.1105	.0573	.0549	20.2			
12.	WHT/BLA	.1119	.1108	.0569	.0574	21.4			

Multi-Conductor Jacket O.D. = .16030 Max .5925 Min
Overall Virgin Dielectric Breakdown Average ~~19.16 KV~~ 19.17 KV
Dielectric Test Length = 15 Ft. gsa 5/24/86
Tension (T) = 155 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 346. lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 346 lbs/ft Dm 7 4-28-86

Tested By/Date VEK 4-24-86 (Tension) VWK 4-28-86 (Micrometer) JB (Dielectric) R.A.T. 4/29/86
Verified By/Date He 5/29/86 QA Approval/Date gsa 5/29/86
Test Observers AR
Visual Cable Report: OK NR
Anomalies:

Continuity OK JB

All cables meggered greater than 10,000 MΩ
R.A.T. 4/24/86



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1067
Plant. . . . . = F
Manufacturer . . . . . = BRAND-REX
Contract No. . . . . = 828072
Mark No. . . . . = WV6
Description. . . . . = AWG 12/C
Insulation . . . . . = SHIELD LOCA
Filler Material. . . . = NONE

Standards Used = 506325, 543175, 522035, 543211, 543240, 502448, 543202, 902038, 313506
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .2321

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
12T2 BARE	–	–	.0472	.0465				
1. BLA	.1109	.1091	.0594	.0569	17.6			
2. RED	.1124	.1094	.0573	.0571	21.9			
3. ORG	.1097	.1086	.0581	.0575	20.4			
4. GRN	.1142	.1134	.0568	.0530	17.3			
5. BLU	.1112	.1095	.0581	.0563	19.2			
6. WHT	.1115	.1096	.0591	.0541	19.6			
7. BLA/WHT	.1160	.1125	.0582	.0562	17.8			
8. RED/BLA	.1137	.1114	.0579	.0563	20.7			
9. ORG/BLA	.1115	.1111	.0577	.0541	16.9			
10. GRN/BLA	.1122	.1102	.0574	.0564	20.5			
11. BLU/BLA	.1126	.1107	.0570	.0553	19.2			
12. WHT/BLA	.1117	.1103	.0597	.0560	20.9			

Multi-Conductor Jacket O.D. = .6064 Max .5912 Min
Overall Virgin Dielectric Breakdown Average ~~19.16KV~~ 19.17KV
Dielectric Test Length = 15 Ft.
Tension (T) = 150 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 335 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 335 lbs/ft

Tested By/Date VEK 4-28-86 (Tension) CRT 4-28-86 (Micrometer) JB (Dielectric) R.A.T. 4/24/86
Verified By/Date HE 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers RR
Visual Cable Report: See Sheet on 12T3 – Same note applies (but not to ~~[illegible]~~ 12T1
~~Anomalies:~~

Continuity OK JB
All cables meggered greater than 10,000MΩ R.A.T 4/24/86

400
12T2
11/8/DIV

WATANABE INSTRUMENTS CORP. CHART NO. P
WATANABE INSTRUMENTS CORP. CHART NO. P
WATANABE INSTRUMENTS CORP. CHART NO. P

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1067
Plant. . . . . = F
Manufacturer . . . . . = BRAND-REX
Contract No. . . . . = 838072
Mark No. . . . . = WVG
Description. . . . . = NO 16 12/6
Insulation . . . . . = CHIELD XLPE
Filler Material. . . . = NONE

Standards Used = 506225, 543175, 522035, 543211, 543240, 502445, 543202, 902038, 512506
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1
Wt/Ft (lb). . . . . = .2321

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
12T3 BARE	—	—	.0490	.0471				
1. BLK	.1120	.1082	.0571	.0554	16.2			
2. RED	.1121	.1129	.0572	.0565	21.0			
3. ORG	.1102	.1086	.0590	.0574	20.9			
4. GRN	.1136	.1095	.0566	.0562	18.0			
5. BLU	.1119	.1110	.0576	.0548	19.9			
6. WHT	.1108	.1087	.0574	.0570	18.7			
7. BLK/WHT	.1151	.1120	.0591	.0549	20.0			
8. RED/BLK	.1145	.1110	.0577	.0553	20.2			
9. ORG/BLK	.1111	.1106	.0576	.0564	19.4			
10. GRN/BLK	.1125	.1093	.0623	.0567	17.8			
11. BLU/BLK	.1108	.1106	.0574	.0542	18.7			
12. WHT/BLK	.1116	.1107	.0567	.0555	21.7			

Multi-Conductor Jacket O.D. = .600 /Max .5916 Min
Overall Virgin Dielectric Breakdown Average ~~19.16 KV~~ 19.17 KV RAL 5/24/86
Dielectric Test Length = 15 Ft.
Tension (T) = 178 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 397 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 397 lbs/ft

Tested By/Date YEK 4-28-86 (Tension) DMF 4-28-86 (Micrometer) JB (Dielectric) R.A.I. 4/24/86
Verified By/Date HC 5/29/86 QA Approval/Date JRR 5/29/86
Test Observers RK
Visual Cable Report: Cable ~~was~~ Squeezed & ~~Sheath~~ Insulation
~~Anomalies~~: WAS Rolled up IN one PLACE About 2 Feet IN length

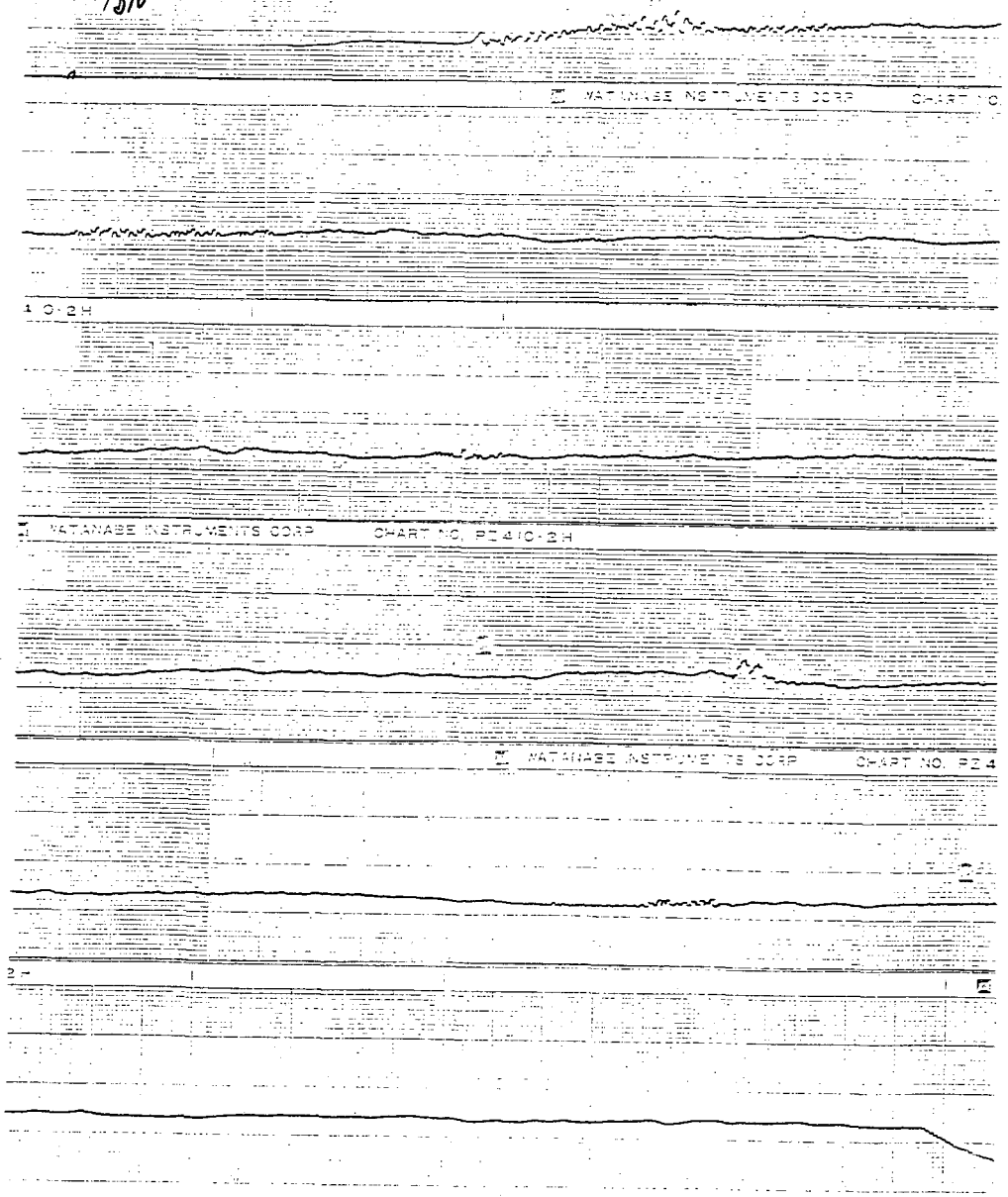
Continuity

All cables Meggered more than 10,000 MΩ R.A.I. 5/24/86

400

12T3

10 lb/DIV



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1067
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 516225, 543175, 522025, 502445, 543202, 502038, 312506, 643211, 543242

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1274 BARE	—	—	.0473	.0469			
1. BLA	.1129	.1091	.0580	.0572	16.8	>10,000 MΩ	Test ok
2. Red	.1139	.1099	.0575	.0571	20.5		
3. ORG	.1092	.1078	.0582	.0578	19.7		
4. GRN	~~.1095~~ .1123	~~.1133~~ .1099	.0575	.0557	19.6		
5. BLU	.1104	.1099	.0573	.0556	22.4		
6. WHT	.1108	.1073	.0573	.0567	18.8		
7. BLA/WHT	.1143	.1120	.0578	.0564	18.6		
8. Red/BLA	.1141	.1116	.0584	.0565	18.5		
9. ORG/BLA	.1116	.1106	.0580	.0574	19.4		
10. GRN/BLA	.1123	.1086	.0570	.0563	20.5		
11. BLU/BLA	.1110	.1103	.0574	.0568	22.0		
12. WHT/BLA	.1112	.1107	.0565	.0565	23.0	R.A.T. 5/1/86	

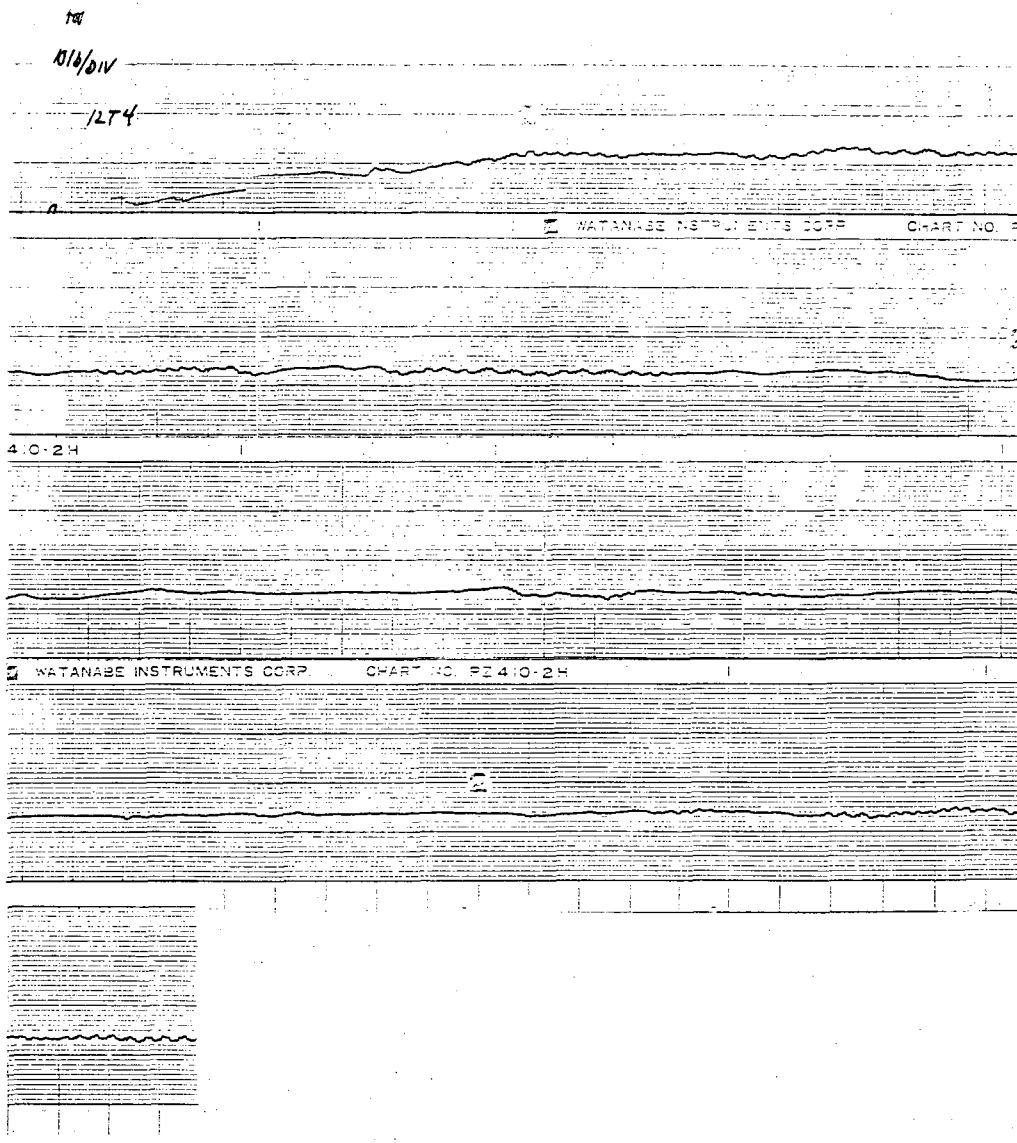
Multi-Conductor Jacket O.D. = .6090 Max .5916 Min
Tension (T) = 148 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 330.43 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 330.43

Tested By/Date VEK 4-30-86 (Tension) | DMZ 5-1-86 (Micrometer) | JB R.A.T. 5/1/86 (Dielectric)
Verified By/Date HC 5/29/86 (Tension) | MZW 5-1-86 (Micrometer QA Approval/Date) | JB 5/29/86 (Dielectric)
Test Observers AA

Visual Cable Report: Nothing abnormal found None
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 1867
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506225, 543175, 522625, 502445, 543202, 902038, 212506, 543211, 543240

Test No. 1275 BARE	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max .0476	Min .0472	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1121	.1089	.0573	.0565	17.7	>10,000 MΩ	Test OK
2. Red	.1141	.1104	.0572	.0529	21.7		
3. ORG	.1111	.1091	.0581	.0576	17.0		
4. GRN	.1134	.1098	.0569	.0560	20.4		
5. BLU	.1109	.1096	.0574	.0569	21.1		
6. WHT	.1106	.1095	.0576	.0572	20.5		
7. BLA/WHT	.1144	.1113	.0578	.0574	19.2		
8. Red/BLA	.1127	.1111	.0577	.0573	20.3		
9. ORG/BLA	.1113	.1101	.0578	.0574	22.4		
10. GRN/BLA	.1126	.1092	.0574	.0564	21.0		
11. BLU/BLA	.1106	.1103	.0576	.0564	20.4		
12. WHT/BLA	.1108	.1101	.0583	.0567	21.7	R.D.T. 5/1/86	

Multi-Conductor Jacket O.D. = .6094 Max .5909 Min
Tension (T) = 148 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 330.43 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 330.43

Tested By/Date VEK 4-30-86 (Tension) | MZ 5-1-86 / NLW 5-1-86 (Micrometer) | JB R.D.T. 5/1/86 (Dielectric)

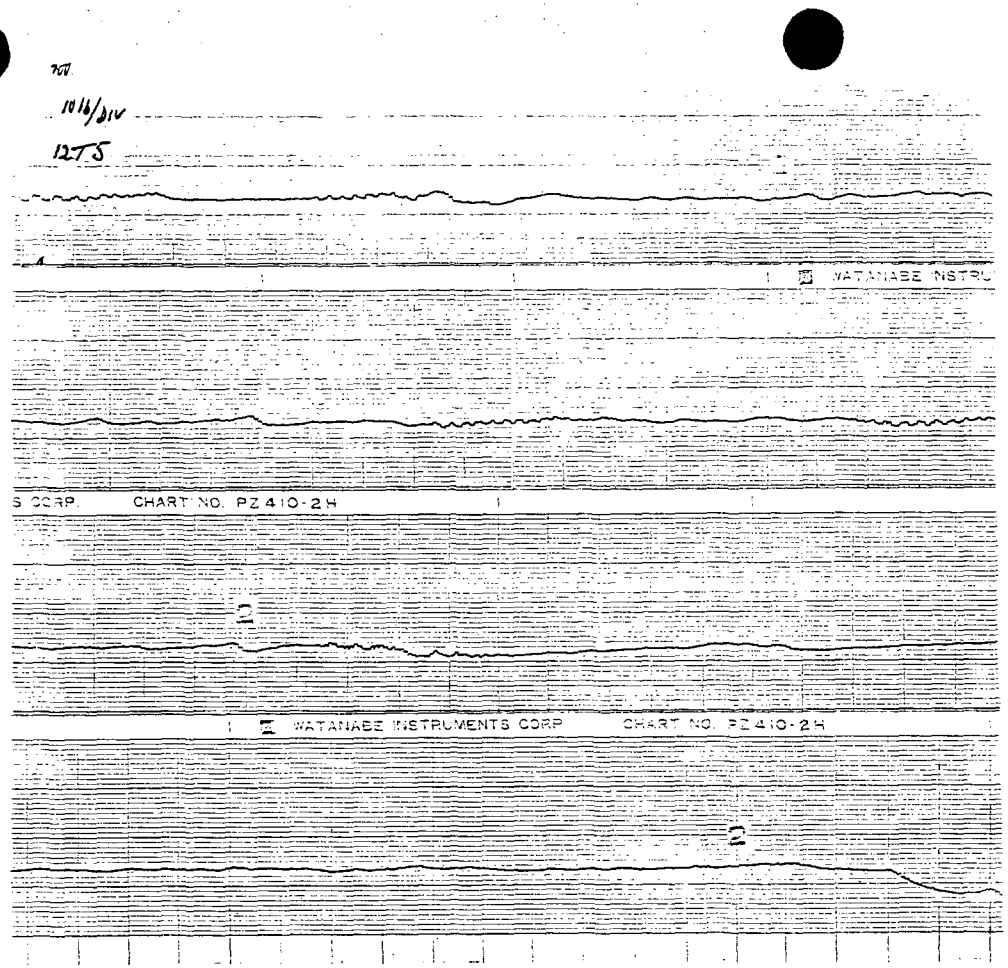
Verified By/Date HC 5/29/86 (Tension) | QA Approval/Date [illegible] 5/29/86 (Dielectric)

Test Observers [illegible]

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 12
Sample No. . . . . = 1067
Description No 16 12/C

Standards Used: 506652, 506326, 522036, 543211, 712504, 502045, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

Test No. 12T6	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1119	.1075 BARE	.0478 .0576	.0472 .0567	14.2	>10,000 MΩ	Test OK
2. RED	.1118	.1101	.0571	.0565	19.3		
3. ORG	.1117	.1104	.0579	.0578	20.5		
4. GRN	.1141	.1107	.0573	.0560	~~[illegible]~~ 19.3		
5. BLU	.1119	.1091	.0572	.0569	~~17.9~~ 19.0		
6. WHT	.1123	.1092	.0576	.0573	~~16.5~~ 17.9		
7. BLA/WHT	.1142	.1127	.0577	.0576	~~30.1~~ 16.5		
8. RED/BLA	.1138	.1099	.0577	.0574	~~20.0~~ 20.1		
9. ORG/BLA	.1114	.1105	.0577	.0575	20.0		
10. GRN/BLA	.1125	.1094	.0582	.0562	21.1		
11. BLU/BLA	.1108	.1104	.0580	.0569	18.6		
12. WHT/BLA	.1106	.1104	.0572	.0567	23.2	R.A.T. 5/13/86	

R.A.T. 5/17/86

Multi-Conductor Jacket O.D. = .6065 Max .5900 Min

SWBP Data

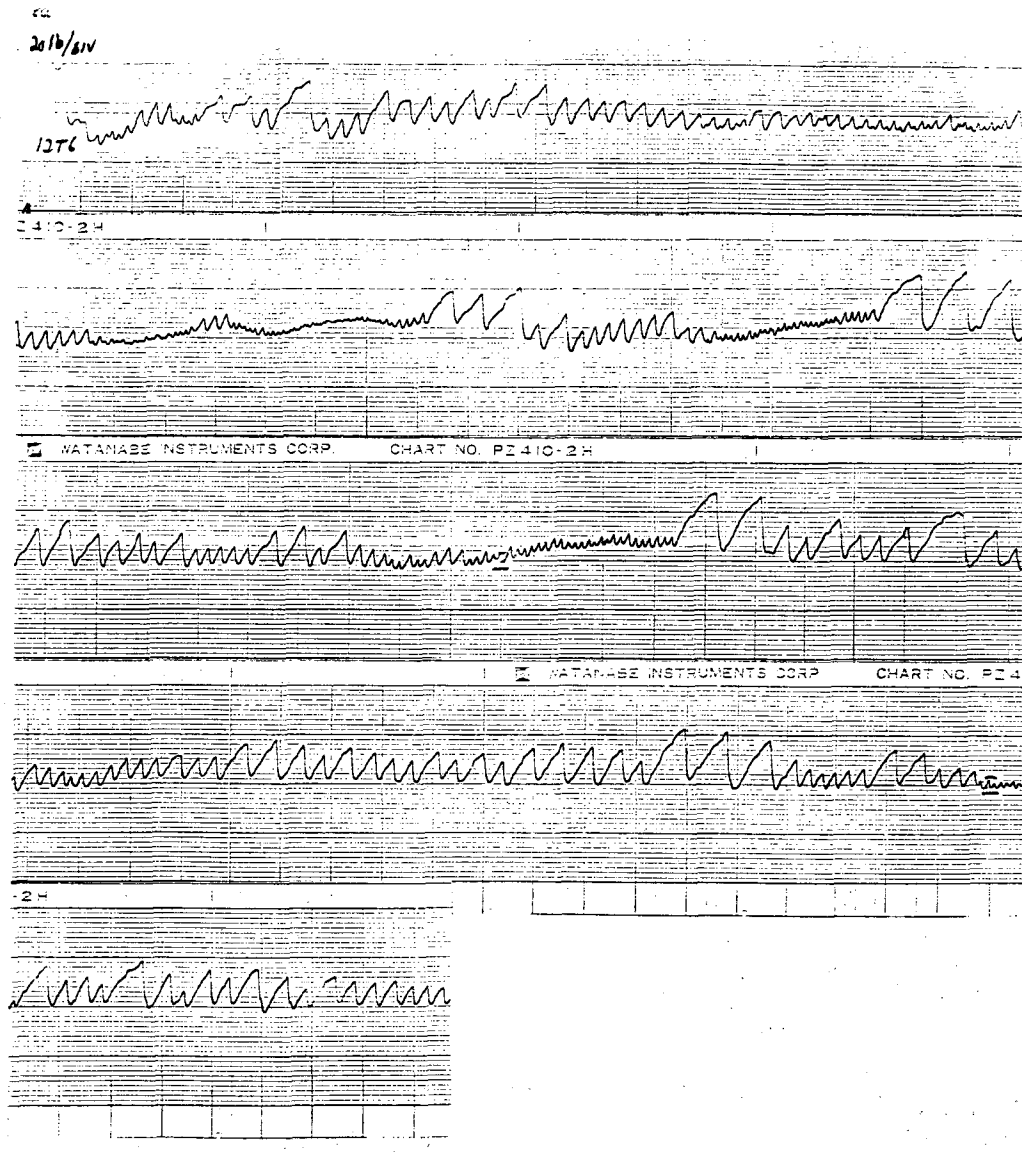
Tension (T) = 670 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1495.87 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1495.87 lbs/ft

Anomalies:

Tested By/Date VEK 5-14-86 Tension; 75-16-86 Micrometer; JB R.A.T. 5/17/86 Dielectric; R.A.T. 5/17/86 Resistance

Verified By/Date He 5/29/86 QA Approval/Date 5/29/86
Test Observers

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 12
Sample No. . . . . = 1067
Description No 16 12/C

Standards Used: 506652 506326 522035 543211, 212504, 502445, 543202, 902028

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

	Test No. 12T7	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
			Bare	.0489	.0470			
1.	BLA	.1116	.1090	.0572	.0563	15.3	>10,000 MΩ	Test OK
2.	RED	.1116	.1103	.0569	.0566	21.4		
3.	ORG	.1113	.1107	.0579	.0575	23.4		
4.	GRN	.1117	.1100	.0568	.0554	20.4		
5.	BLU	.1119	.1102	.0572	.0566	19.9		
6.	WHT	.1104	.1082	.0572	.0569	19.9		
7.	BLA/WHT	.1145	.1124	.0577	.0574	20.4		
8.	RED/BLA	.1137	.1108	.0577	.0575	23.1		
9.	ORG/BLA	.1113	.1098	.0584	.0574	19.7		
10.	GRN/BLA	.1118	.1091	.0571	.0565	19.4		
11.	BLU/BLA	.1110	.1104	.0572	.0568	21.1		
12.	WHT/BLA	.1109	.1102	.0568	.0564	21.2	R.A.T. 5/17/86	

Multi-Conductor Jacket O.D. = .6052 Max .5880 Min

SWBP Data

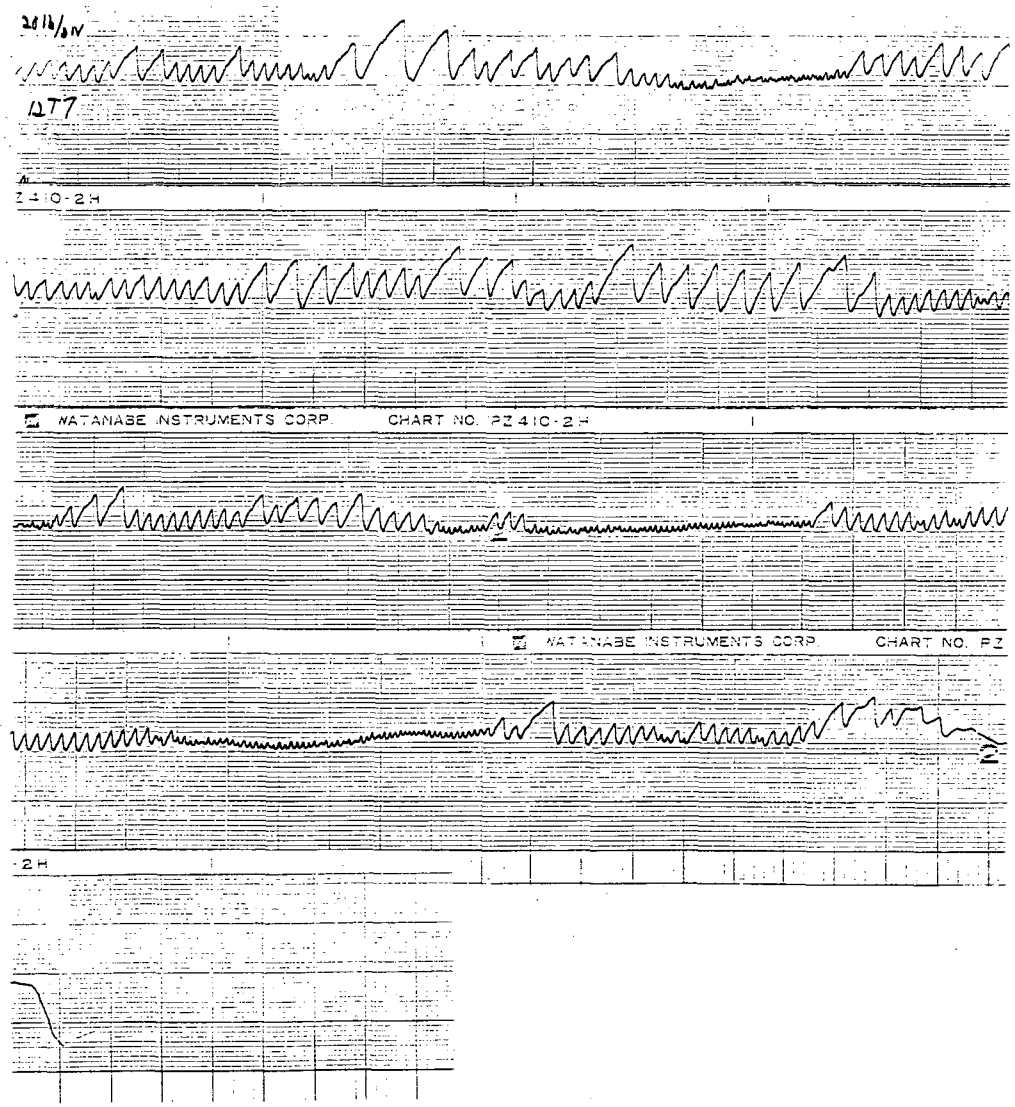
Tension (T) = 660 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1473.54 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1473.54 lbs/ft

Anomalies:

Tested By/Date VCK 5-14-86 (Tension) Dm 7 5-16-86 (Micrometer) JB RAT 5/17/86 (Dielectric) R.A.T. 5/16/86 (Resistance)

Verified By/Date Aa 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers AA

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 12
Sample No. . . . . = 1067
Description No 16 12/C

Standards Used: 506325, 543175, 522025, 543211, 212526, 502445, 543202, 907028

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No. 12T8	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
				BARE .0475	.0469			
1.	BLA	.1125	.1073	.0572	.0570	18.3	>10,000MΩ	Est OK
2.	RED	.1120	.1111	.0576	.0569	20.1		
3.	ORG	.1106	.1094	.0578	.0574	20.5		
4.	GRN	.1138	.1099	.0572	.0561	19.4		
5.	BLU	.1133	.1091	.0573	.0569	20.2		
6.	WHT	.1115	.1080	.0575	.0571	19.9*		
7.	BLA/WHT	.1143	.1127	.0578	.0575	20.3		
8.	RED/BLA	.1141	.1110	.0586	.0573	21.9		
9.	ORG/BLA	.1118	.1106	.0577	.0573	20.2		
10.	GRN/BLA	.1193	.1092	.0573	.0557	21.2		
11.	BLU/BLA	.1106	.1100	.0573	.0565	16.8		
12.	WHT/BLA	.1111	.1105	.0569	.0562	23.6		

Multi-Conductor Jacket O.D. = .6014 Max .5845 Min

SWBP Data

Tension (T) = 600 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1339.58 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1339.58 lbs/ft

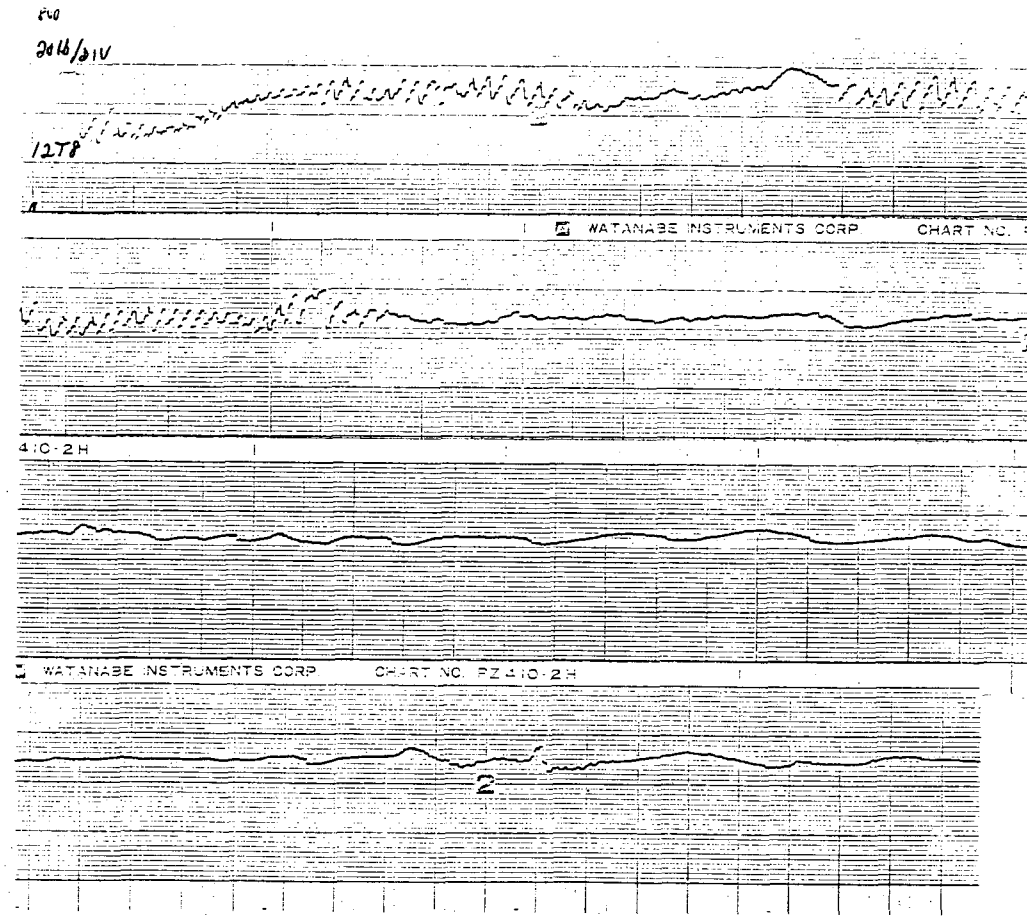
Anomalies: * Failed at water line

Tested By/Date VEK 5-15-86 Tension; DMT 5-16-86 Micrometer; JB R.A.T. 5/16/86 Dielectric; R.A.T. 5/16/86 Resistance

Verified By/Date HC 5/29/86
Test Observers AR

QA Approval/Date NAR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 12
Sample No. . . . . = 1067
Description No 16 n/c

Standards Used: 506325, 543175, 522035, 212501, 502445, 543202, 902038, 543211, 541240

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	12T9			BARE .0473	.0468			
1.	BLA	.1126	.1113	.0577	.0570	17.9	>10,000MΩ	Test OK
2.	RED	.1114	.1100	.0573	.0566	18.8		
3.	ORG	.1121	.1108	.0580	.0573	22.7		
4.	GRN	.1141	.1100	.0569	.0562	20.2		
5.	BLU	.1126	.1091	.0574	.0569	18.5		
6.	WHT	.1114	.1097	.0576	.0571	18.7		
7.	BLA/WHT	.1152	.1124	.0575	.0574	19.1		
8.	RED/BLA	.1146	.1107	.0582	.0573	18.0		
9.	ORG/BLA	.1110	.1109	.0577	.0573	20.7		
10.	GRN/BLA	.1123	.1090	.0591	.0565	19.0		
11.	BLU/BLA	.1109	.1104	.0577	.0568	20.5		
12.	WHT/BLA	.1115	.1101	.0583	.0567	23.8		

Multi-Conductor Jacket O.D. = .6042 Max .5936 Min

SWBP Data

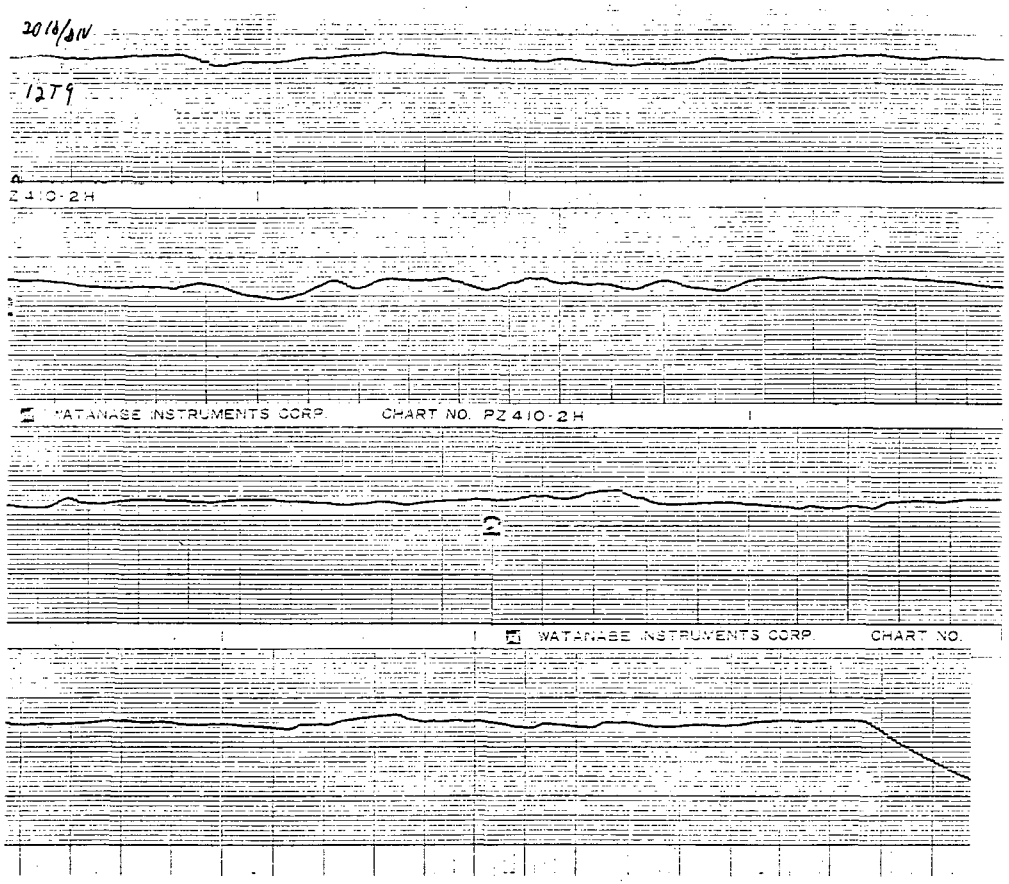
Tension (T) = 550 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1227.95 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1227.95 lbs/ft

Anomalies:

Tested By/Date VEK 5-15-86 Tension; OMZ 5-16-86 Micrometer; JB R.A.T. 5/17/86 Dielectric; R.A.T. 5/17/86 Resistance

Verified By/Date HR 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers AR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 12
Sample No. . . . . = 1067
Description No 16 12/C

Standards Used: 506325, 543175, 522025, 543211, 2N2506, 502445, 543202, 902035.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

Test No. 12T10	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
			BARE .0479	.0471			
1. BLA	.1103	.1073	.0573	.0568	16.9	>10,000MΩ	Est OK
2. RED	.1117	.1094	.0571	.0566	19.7		
3. ORG	.1133	.1097	.0579	.0575	19.4		
4. GRN	.1145	.1090	.0578	.0560	19.9		
5. BLU	.1108	.1102	.0576	.0570	19.9		
6. WHT	.1123	.1092	.0574	.0571	19.5		
7. BLA/WHT	.1147	.1116	.0578	.0571	19.5		
8. RED/BLA	.1147	.1113	.0576	.0568	21.1		
9. ORG/BLA	.1106	.1103	.0575	.0574	20.5		
10. GRN/BLA	.1122	.1093	.0571	.0560	20.4		
11. BLU/BLA	.1106	.1103	.0572	.0565	20.4		
12. WHT/BLA	.1111	.1106	.0568	.0565	20.2		

Multi-Conductor Jacket O.D. = .1606 Max .1575 Min

SWBP Data

Tension (T) = 540 lbs (Max.)
Radius (R) = ~~.4479~~ .4479 ft
T/R = 1205.69 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1205.69 lbs/ft

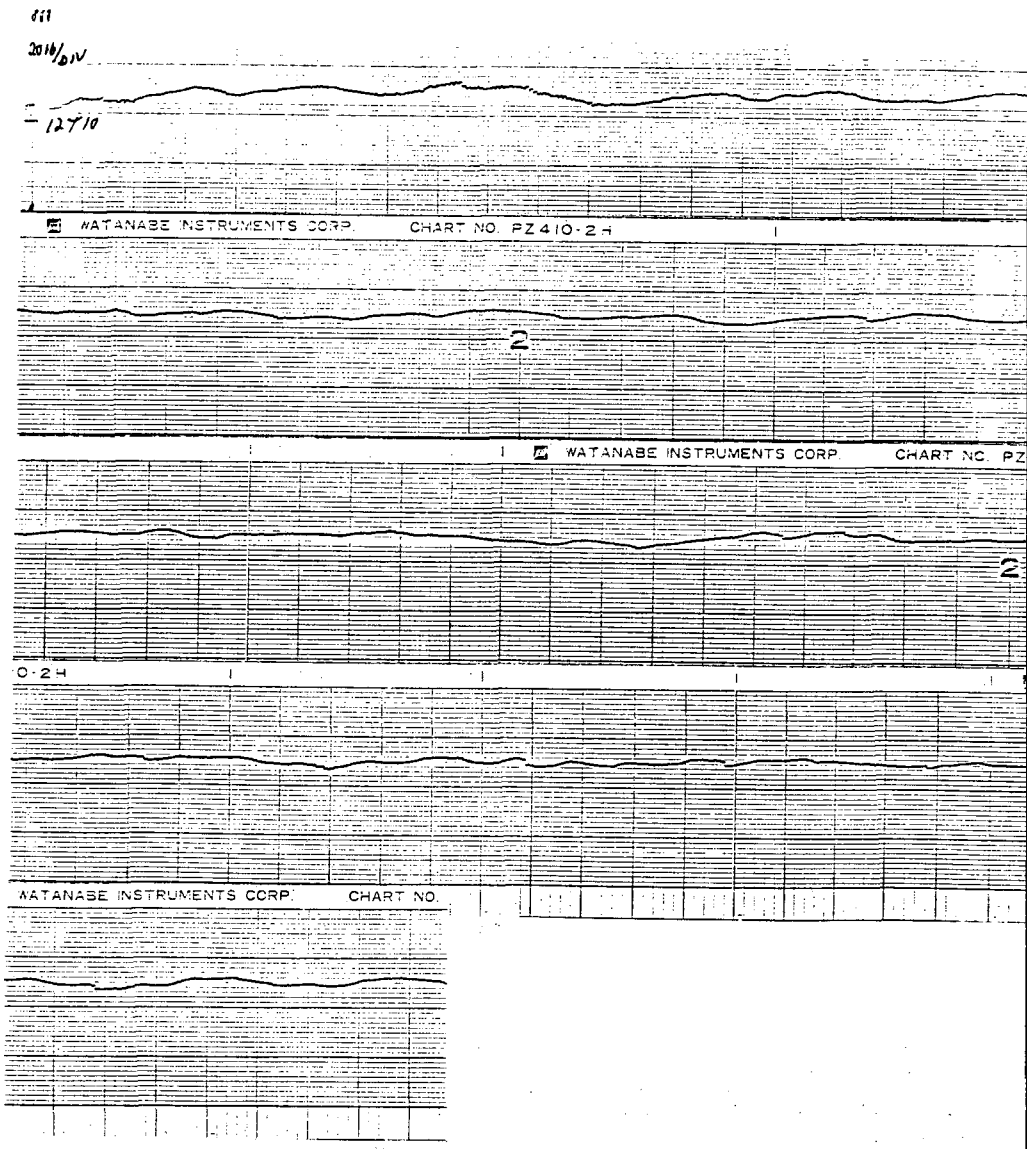
Anomalies: ____

Tested By/Date VEK 5-15-86 Tension; DMF 5-16-86 Micrometer; JB R.A.T. 5/17/86 Dielectric; R.A.T. 5/17/86 Resistance

Verified By/Date HE 5/29/86
Test Observers AK

QA Approval/Date JBR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST FORM

[illegible]in ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 543211, 543240, 902038, 543202, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	13V1						—	Not tested 4/30/86
1.	BLA	.1233	.1224	.0572	.0572	29.1	>10,000 MΩ	~~Test OK~~ 8B
2.	WHT	.1250	.1242	.0573	.0573	20.5	↓	↓
3.	BARE	—	—	.0489	.0489		R.A.T. 4/30/84	
4.								
5.								
6.								
7.								
8.								
[illegible]								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3937 Max .3836 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A (Tension) — MLW 4-29-86 (Micrometer) — JB R.A.T. 4/30/84 (Dielectric)

Verified By/Date He 5/29/86 (Tension) — QA Approval/Date (Micrometer) — JAR 5/29/86 (Dielectric)
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 543211, 543240, 902038, 543202, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	13V2							4/30/86
1.	BLA	.1239	.1229	.0578	.0572	23.2	>10,000MΩ	Not Tested ~~Test OK~~ DB
2.	WHT	.1249	.1246	.0579	.0567	24.8	↓	↓
3.	BARE	—	—	.0490	.0490		R.A.T. 4/30/86	
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3903 Max .3762 Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

	Tension	Micrometer	Dielectric
Tested By/Date	N/A	DM 7 4-29-86	JB R.A.T. 4/30/86
Verified By/Date	He 5/29/86	QA Approval/Date	JAR 5/29/86
Test Observers	AR		

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Begin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA

Standards Used = 543240
543211, 902038,
543202, 212506

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
13V3							4/30/86 Not Tested JB
1. BLA	.1233	.1229	.0573	.0569	27.1	>10,000MΩ	~~Test OK~~
2. WHT	.1242	.1234	.0590	.0589	22.4	↓	↓
3. BARE	—	—	.0492	.0491		R.A.T. 4/30/84	
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3900 Max .3783 Min
Tension (T) = NA lbs (Max.)
Radius (R) = NA ft
T/R = NA lbs/ft
Correction Factor (X) = NA
SWBP = X(T/R) = NA

Tested By/Date N/A | 4-29-86 NJW | JB R.A.T. 4/30/84
Tension | Micrometer | Dielectric

Verified By/Date NC 5/29/86 | QA Approval/Date | 5/29/86
Test Observers JR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA

Standards Used = 543240
543211, 902038, 543202,
212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	13V4							4/30/86
1.	BLK	.1248	.1236	.0583	.0580	26.2	>10000MΩ	Not Tested ~~Test OK~~ JB
2.	WHT	.1260	.1254	.0572	.0571	23.5	↓	↓
3.	BARE	-	-	.0496	.0490		R.A.T. 4/30/84	
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3939 Max .3792 Min
Tension (T) = NA lbs (Max.)
Radius (R) = NA ft
T/R = NA lbs/ft
Correction Factor (X) = NA
SWBP = X(T/R) = NA

	Tension	Micrometer	Dielectric
Tested By/Date	N/A	MLW 4-29-86	JB R.A.T. 4/30/86
Verified By/Date	HC 5/29/86	QA Approval/Date	JAR 5/29/86
Test Observers	JR		

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Pin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = NA
No. Cables in Pull. . . . . = NA

Standards Used = 543240
543211, 902038, 543202,
212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity 4/30/86
	13V5							Not Tested GB
1.	BLA	.1229	.1229	.0600	.0590	27.0	>10,000 MΩ	~~Test~~ OK
2.	WHT	.1281	.1260	.0597	.0578	22.0	↓	↓
3.	BARE	—	—	.0490	.0489		R.A.T. 4/30/86	
4.								
5.								
6.								
7.								
8.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3949 Max .3702 Min
Tension (T) = NA lbs (Max.)
Radius (R) = NA ft
T/R = NA lbs/ft
Correction Factor (X) = NA
SWBP = X(T/R) = NA

Tested By/Date N/A | NZW 4-29-86 | R.A.T. 4/30/86
Tension | Micrometer | Dielectric

Verified By/Date He 5/29/86 | QA Approval/Date 5/29/86
Test Observers RR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	13T1							
1.	BLA	.1250	.1218	.0587	.0571	35.5	>10,000MΩ	Test OK
2.	WHT	.1267	.1234	.0593	.0569	22.7	↓	↓
3.	BARE	—	—	.0512	.0490		R.A.T. 4/30/84	
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3915 Max .3719 Min
Tension (T) = 140 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 312.56 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 312.5 lbs/ft

Tested By/Date VEK 4-28-86 — Tension
Verified By/Date [illegible] 5/29/86
Test Observers [illegible]

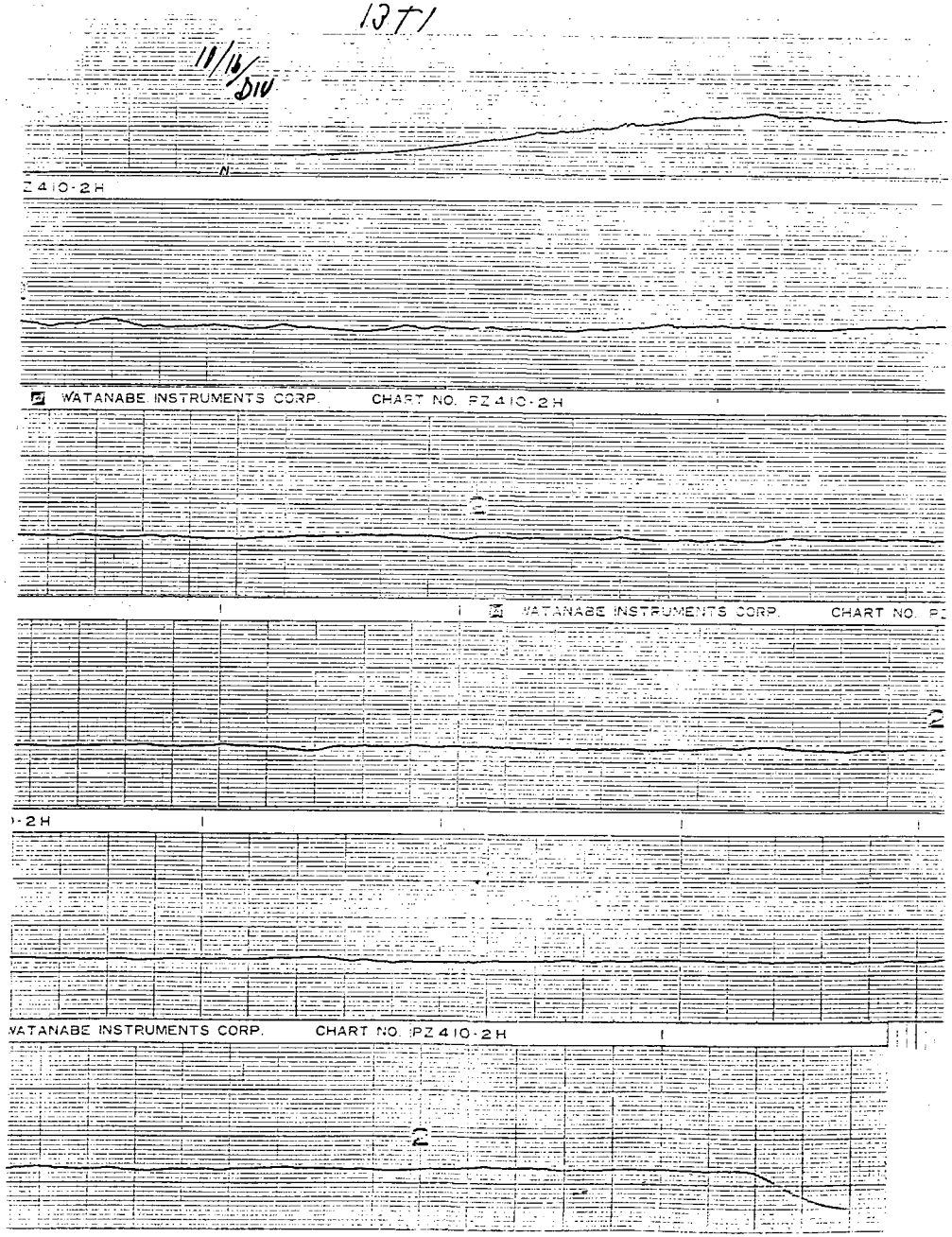
[illegible] 4-29-86 — Micrometer
[illegible] 4-29-86 — QA Approval/Date

[illegible] R.A.T. 4/30/84 — Dielectric
[illegible] 5/29/86

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 212506

	Test No. 1372	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1246	.1232	.0583	.0564	27.5	>10,000 MΩ	Test OK
2.	WHT	.1283	.1225	.0577	.0569	~~26.9~~ 26.9	↓	↓
3.	BARE	—	—	.0494	.0490		R.A.T. 4/30/86	
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

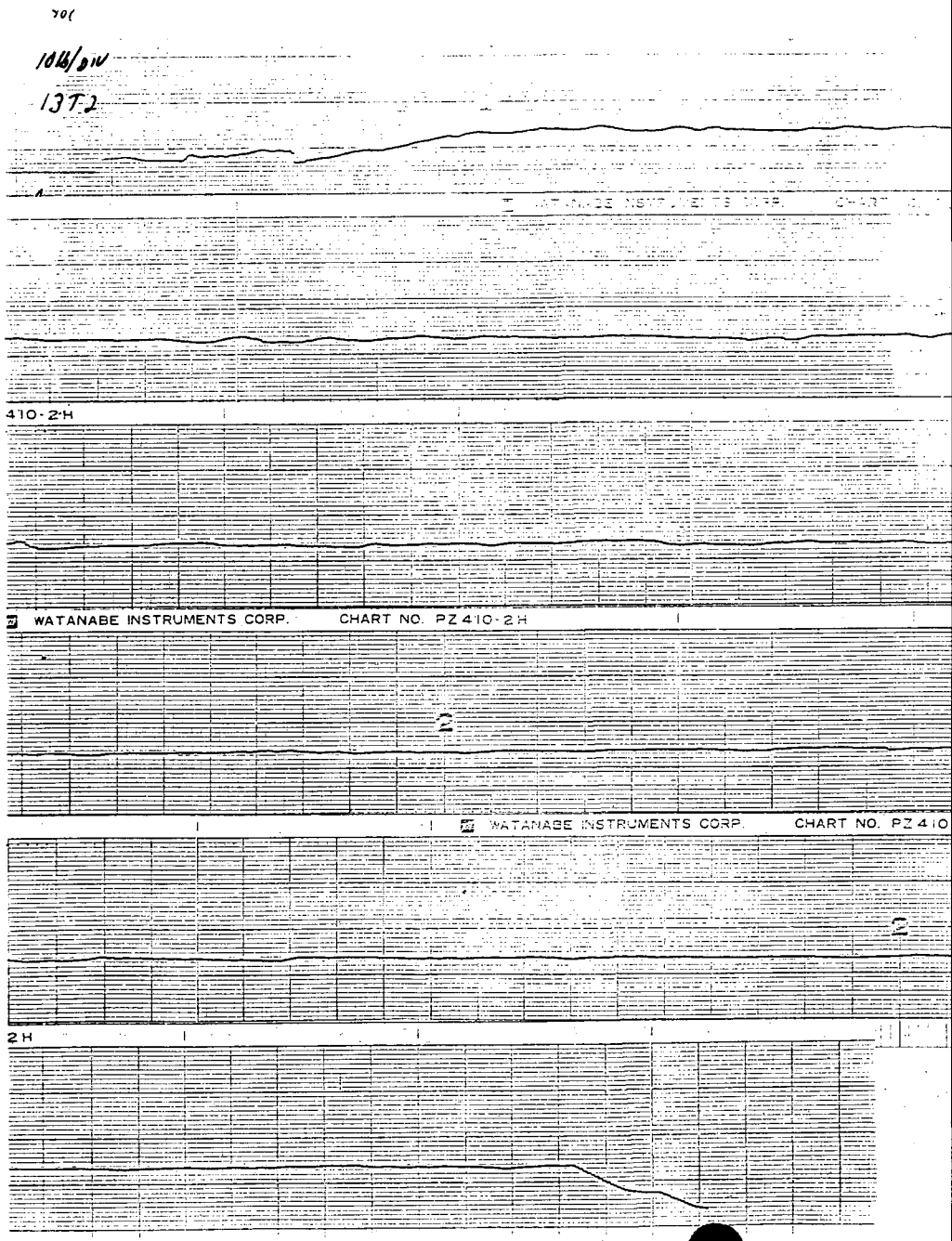
Multi-Conductor Jacket O.D. = .4171 Max .3582 Min
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 323.73 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 323.73 lbs/ft

Tested By/Date VEK 4-29-86 (Tension) MYW 4-29-86 (Micrometer) JB R.A.T. 4/30/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date MR 5/27/86
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 542240, 902038, 543262, 502445, 212506

	Test No. 1373	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1267	.1243	.0568	.0562	27.5	>10,000 MΩ	Test OK
2.	WHT	.1272	.1240	.0576	.0573	23.7	↓	↓
3.	BARE	—	—	.0514	.0494		R.A.T. 4/30/86	
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3874 Max .3802 Min
Tension (T) = 142 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 317.03 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 317.03 lbs/ft

Tested By/Date VER 4-29-86 — Tension — DMT 4-29-86 — Micrometer — NXW 4-29-86 — Dielectric — JB R.A.T. 4/30/86

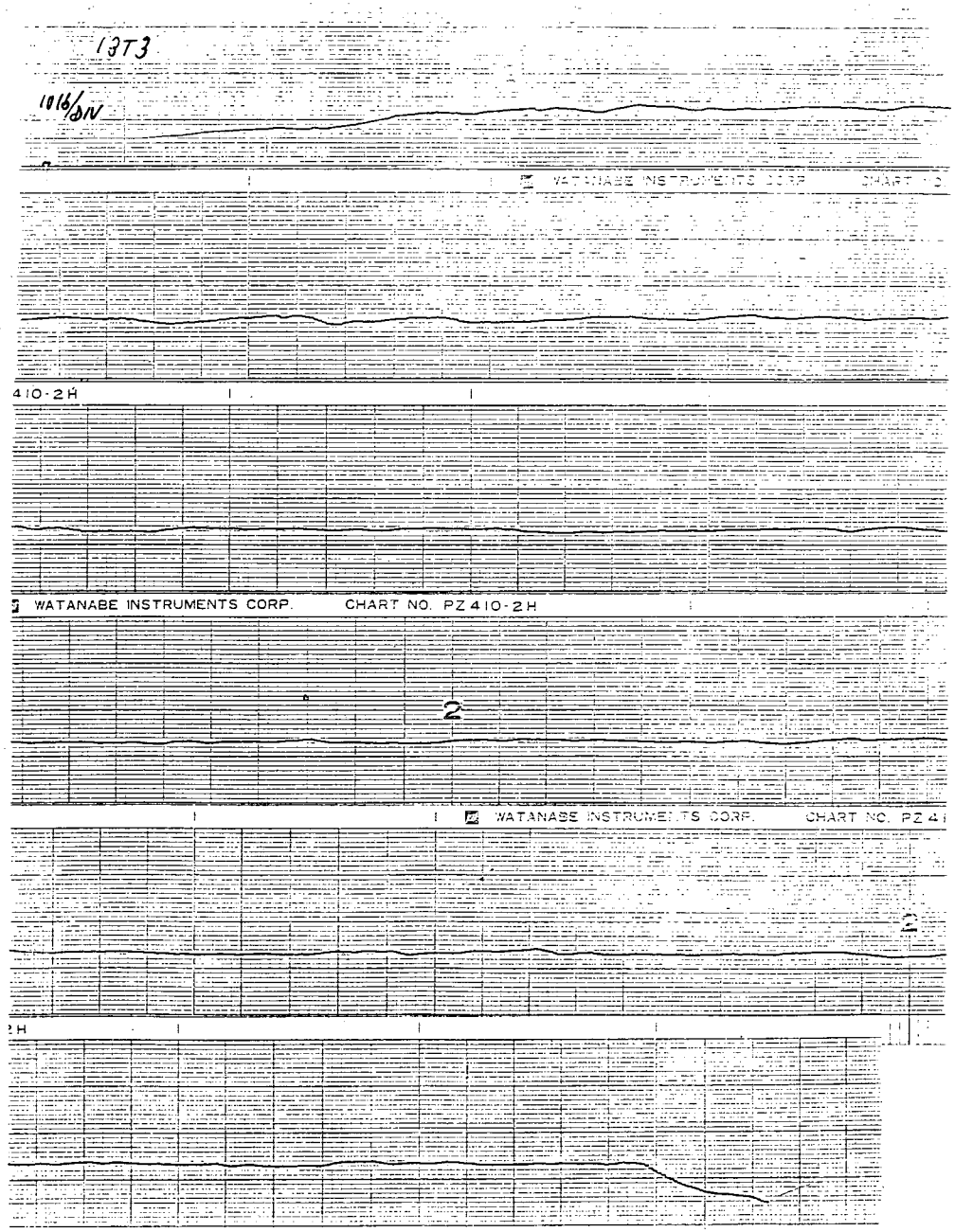
Verified By/Date ~~VER 4-29-86~~ HR 5/29/86 — Tension — QA Approval/Date — Dielectric — 5/29/86

Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522035, 543211, 543240, 902038, 543202, 502445, 312506

Test No. 1274	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1249	.1235	.0576	.0566	27.7	710,000MΩ	Test OK
2. WHT	.1254	.1242	.0579	.0572	22.4	↓	↓
3. BARE	—	—	.0495	.0490		R.A.T. 4/30/86	
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

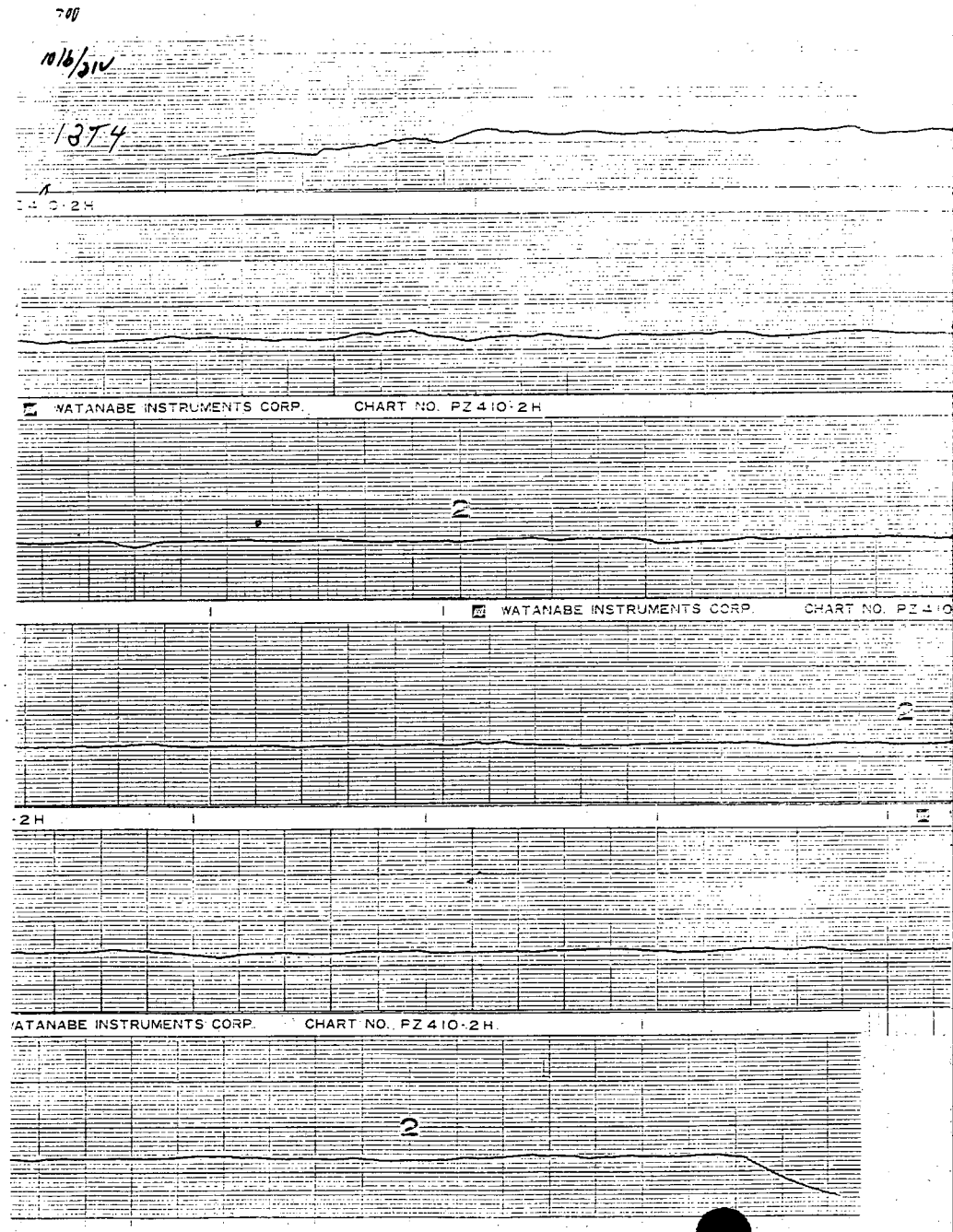
Multi-Conductor Jacket O.D. = .3802 Max .3610 Min
Tension (T) = 145 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 323.73 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 323.73 lbs/ft

Tested By/Date VEK 4-29-86 (Tension) / 10m 7 4-29-86 (Micrometer) / JB R.A.T. 4/30/86 (Dielectric)
Verified By/Date Ae 5/29/86 (Tension) / QA Approval/Date (Micrometer) / [illegible] 5/29/86 (Dielectric)
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ___

Anomalies: ___

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Sample No. . . . . = 1173
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used = 506325, 543175, 522025, 543211, 543240, 902038, 543202, 562445, 212506

Test No. 13T5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.1284	.1241	.0572	.0569	300	>10,000MΩ	Est OK
2. WHT	.1257	.1236	.0518	.0571	26.0	↓	↓
3. BARE	—	—	.0498	.0489		R.A.T. 4/30/86	
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .3880 Max .3592 Min
Tension (T) = 140 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 312.56 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 312.56 lbs/ft

Tested By/Date VEK 4-29-86 (Tension) — mfw 4-30-86 (Micrometer) — JB R.A.T. 4/30/86 (Dielectric)
Verified By/Date He 5/29/86 (Tension) — QA Approval/Date (Micrometer) — Date 5/25/86 (Dielectric)
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2

700

10 16/31V

13T5

2

WATANABE INSTRUMENTS CORP. CHART NO. PZ 410-2H

2

WATANABE INSTRUMENTS CORP. CHART NO. PZ 4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 13
Sample No. . . . . = 1173
Description No 16 2/c

Standards Used: 506325 543175 522035, 543240, 712526, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	13T6							
1.	BLA	.1223	.1212	.0567	.0562	30.6	>10,000 MΩ	Test OK
2.	WHT	.1257	.1230	.0571	.0562	24.1 *	↓	↓
3.	BARE	—	—	.0486	.0470			
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3981 Max .3640 Min

SWBP Data

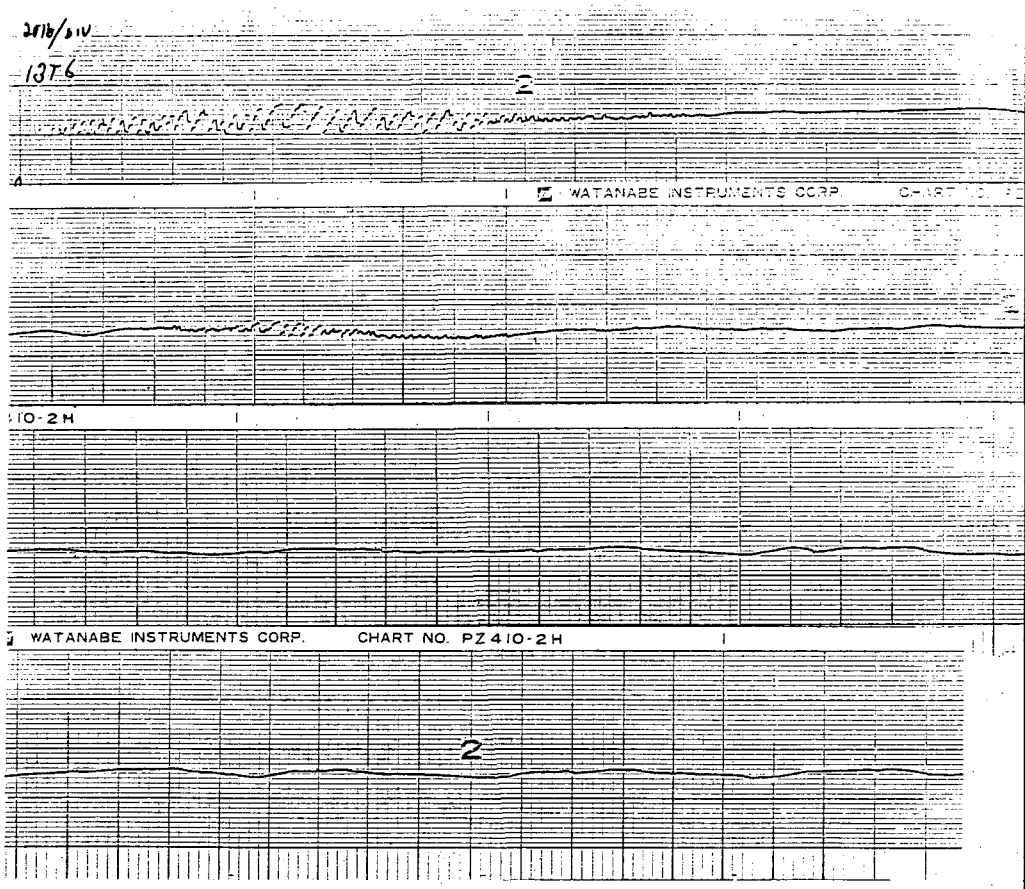
Tension (T) = 335 lbs (Max.)
Radius (R) = .4479 ft
T/R = 747.93 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 747.93 lbs/ft

Anomalies: * Failed at water line

Tested By/Date VEK 5-15-86 (Tension) DMZ 5-19-86 (Micrometer) JB R.A.T. 5/19/86 (Dielectric) R.A.T. 5/19/86 (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JSR 5/29/86
Test Observers BR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 13
Sample No. . . . . = 1173
Description No 16 2/0

Standards Used: 506325, 543175, 522035, 543211, 212506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

	Test No. 13T7	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1262	.1224	.0566	.0579	29.0	>10,000 MΩ	Test OK
2.	WHT	.1260	.1234	.0569	.0564	23.1	↓	↓
3.	BRE	—	—	.0484	.0482			
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3388 Max .3756 Min

SWBP Data

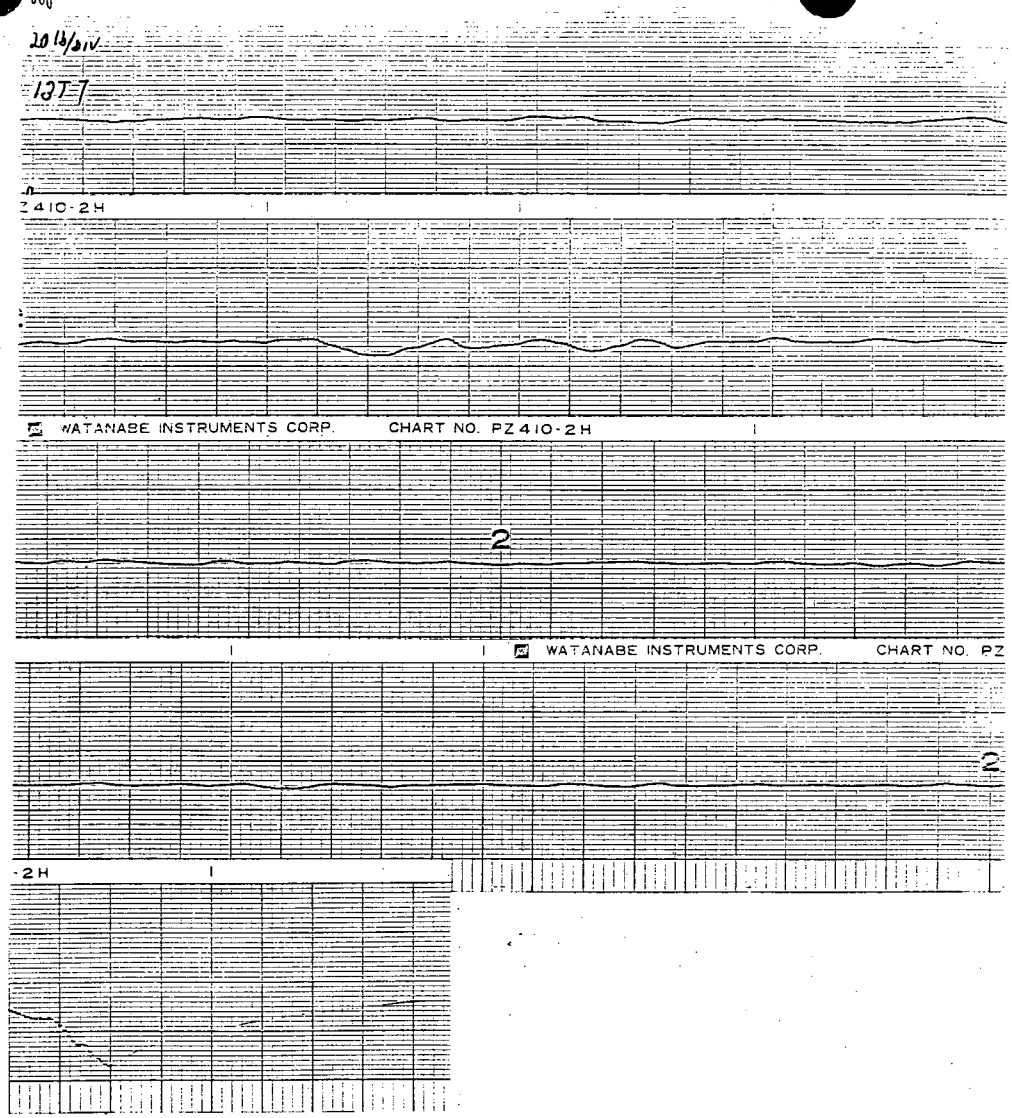
Tension (T) = 320 lbs (Max.)
Radius (R) = .4479 ft
T/R = 714.45 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 714.45 lbs/ft

Anomalies:

Tested By/Date VEK 5-15-86 (Tension) SMT 5-16-86 (Micrometer) JB R.A.T. 5/17/86 (Dielectric) R.A.T. 5/17/86 (Resistance)

Verified By/Date HC 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers AR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 13
Sample No. . . . . = 1173
Description Na 16 2/c

Standards Used: 506335, 543175, 522035, 543211, 812506, 502445, 543202, 502038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

	Test No. 13T8	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1232	.1213	.0566	.0560	25.1	>10,000 MΩ	Test OK
2.	WHT	.1256	.1230	.0562	.0556	24.7	↓	↓
3.	BARE	—	—	.0493	.0477			
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = ~~.3847~~ .3829 Max ~~.3681~~ .3674 Min

SWBP Data

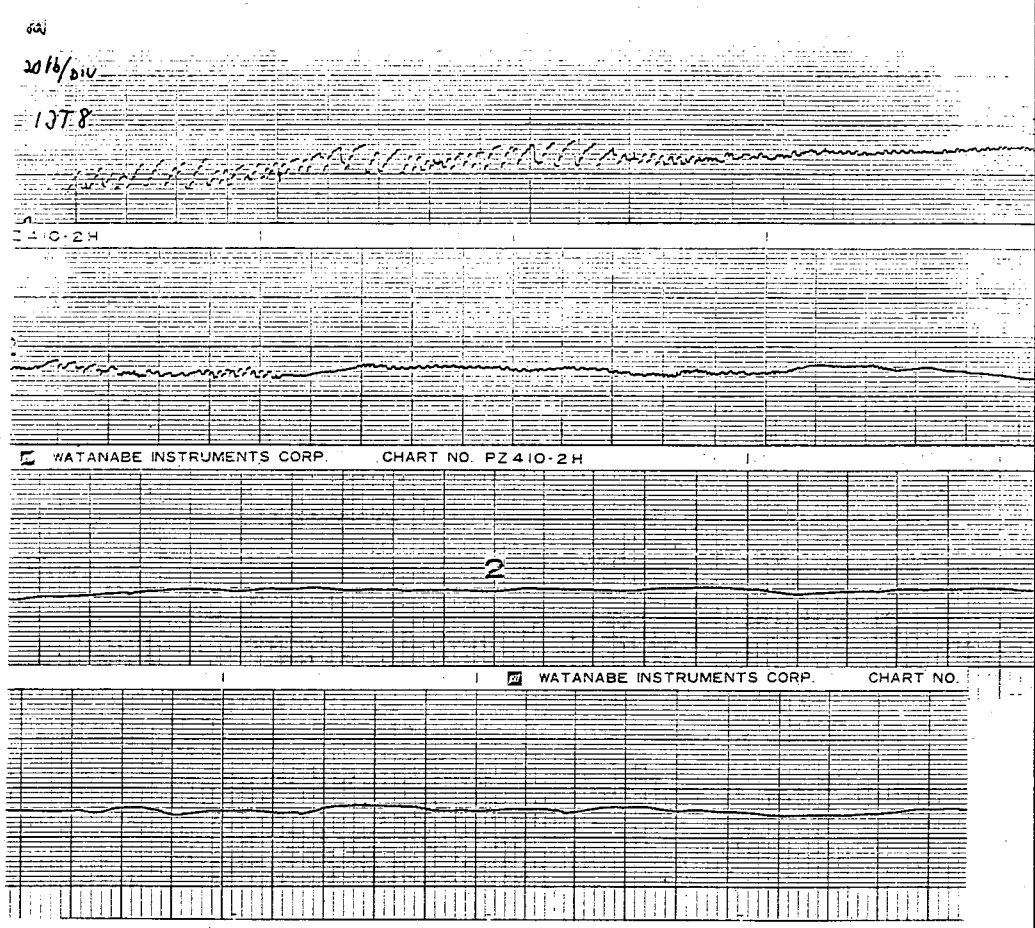
Tension (T) = 345 ~~325~~ lbs (Max.)
Radius (R) = .4479 ft
T/R = 770.26 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 770.26 lbs/ft

Anomalies:

Tested By/Date VEK 5-15-86 Tension; JMT 5-16-86 Micrometer; JB 5/19/86 Dielectric; R.A.T. 5/19/86 Resistance

Verified By/Date HR 5/29/86 QA Approval/Date JRR 5/29/86
Test Observers RR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 13
Sample No. . . . . = 1173
Description No 16 2/C

Standards Used: 506325, 543175, 522035, 543211, 212526, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	~~13T8~~ 13T9							
1.	BLA	.1249	.1226	.0571	.0562	25.5	>10,000MΩ	Est OK
2.	WHT	.1263	.1247	.0574	.0560	24.6	↓	↓
3.	Bare	—	—	.0492	.0479			
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3844 Max .3701 Min

SWBP Data

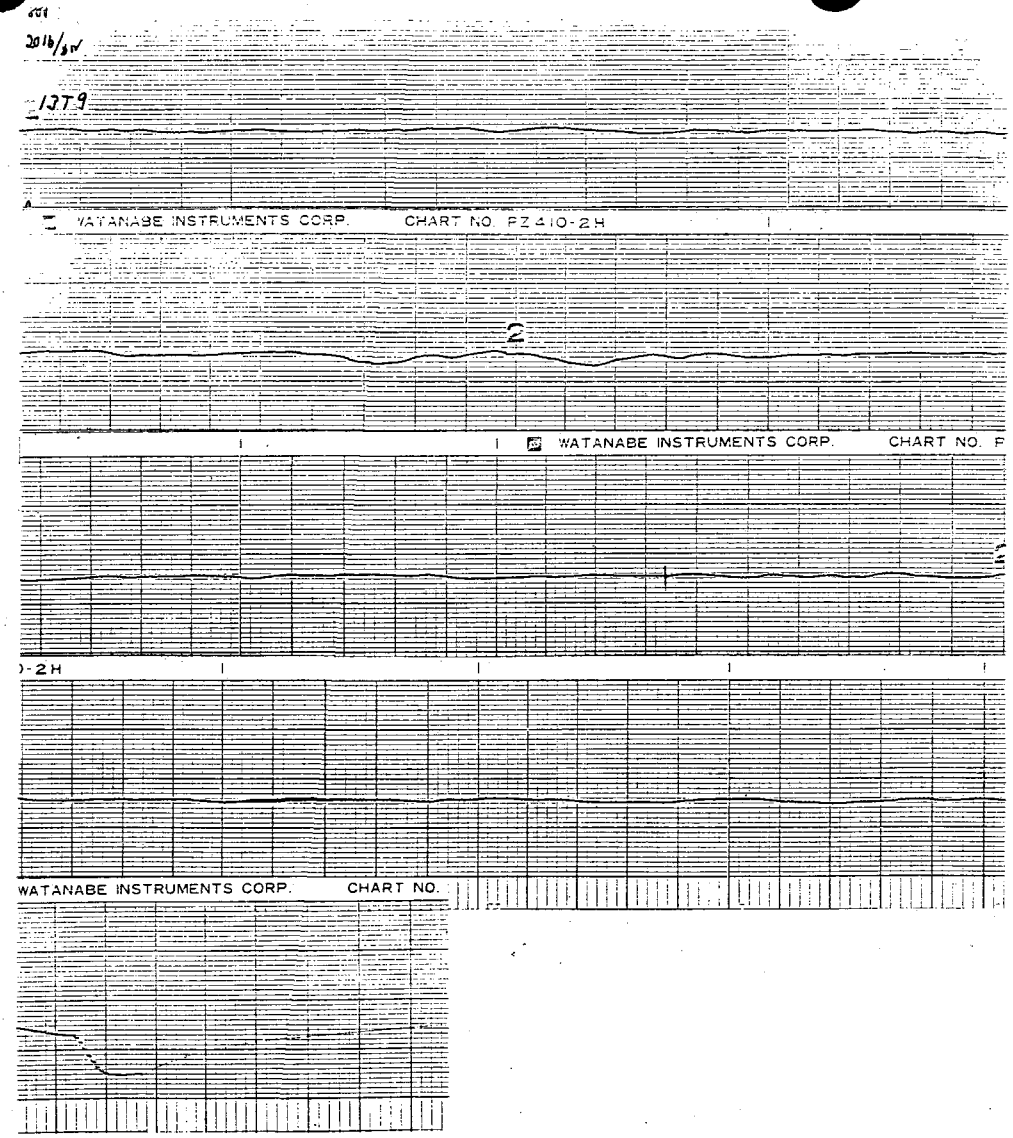
Tension (T) = 325 ~~345~~ lbs (Max.)
Radius (R) = .4479 ft
T/R = 725.61 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 725.61 lbs/ft

Anomalies:

Tested By/Date VEK 5-15-86 (Tension) Omz 5-16-86 (Micrometer) JB R.A.T. 5/19/86 (Dielectric) R.A.T. 5/19/86 (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 13
Sample No. . . . . = 1173
Description No 16 2/C

Standards Used: 506325 543175 522035, 543211, 212504, 502445, 543202, 902038,

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	13T10							
1.	BLA	.1241	.1214	.0573	.0562	28.1	>10,000MΩ	Test OK
2.	WHT	.1243	.1220	.0562	.0550	22.9	↓	↓
3.	BARE	—	—	.4482	.0476			
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .3845 Max .3637 Min

SWBP Data

Tension (T) = 340 lbs (Max.)
Radius (R) = .4479 ft
T/R = 759.10 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 759.10 lbs/ft

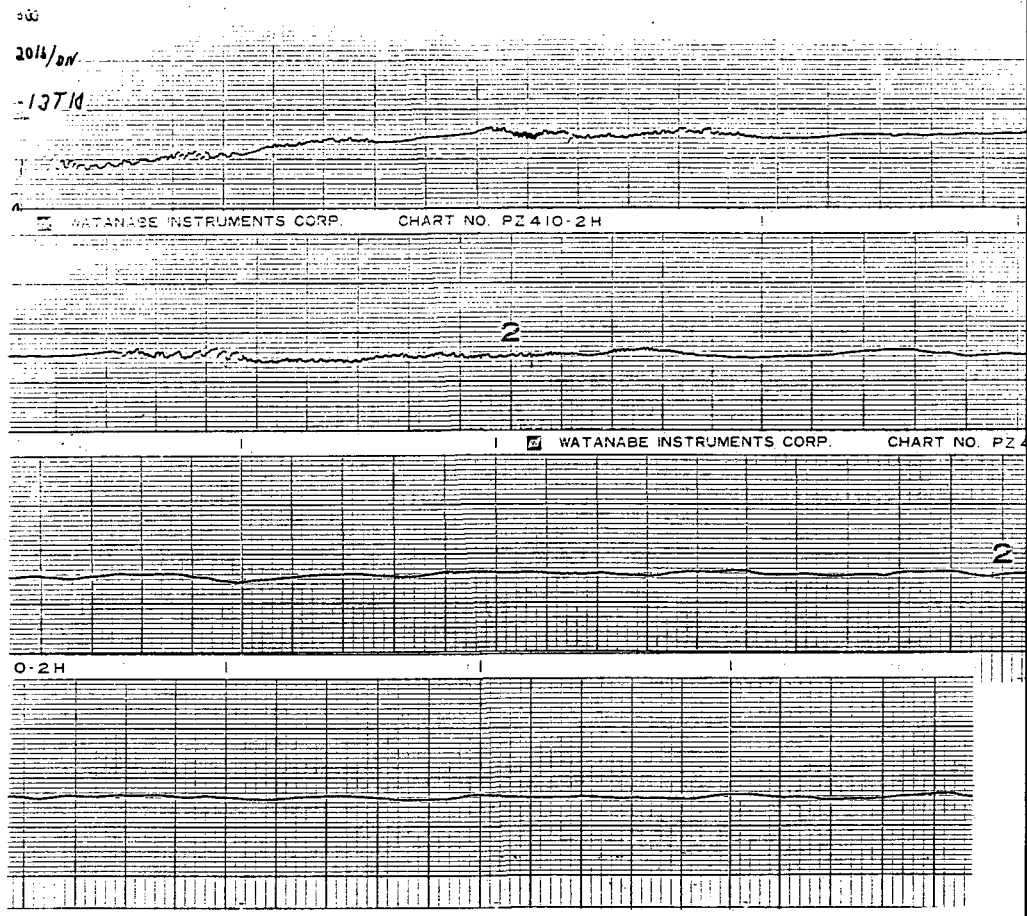
Anomalies:

Tested By/Date VEK 5-15-86 (Tension) DM 5-16-86 (Micrometer) JB B.A.T. 5/19/86 (Dielectric) R.A.T. 5/16/86 (Resistance)

Verified By/Date Ne 5/29/86
Test Observers

QA Approval/Date JBR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ✓
Irradiated ____ Multi-Conductor ____

Sample No. . . . . = 1003
Plant. . . . . = B
Manufacturer . . . . . = ESSEX
Contract No. . . . . = 827249
Mark No. . . . . = WCA-1
Description. . . . . = No. 14 1/c
Insulation . . . . . = PXJ
Filler Material. . . . = NONE

Standards Used = 543211, 543240, 902038, 543202

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5
Wt/Ft (lb). . . . . = .0326

	Test No. 14	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	14V1	.2150	.2065	.0770	.0726	39.9			
2.	14V2	.2121	.2056	.0735	.0728	33.7			
3.	14V3	.2104	.2081	.0731	.0725	34.2			
4.	14V4	.2119	.2054	.0748	.0731	34.7			
5.	14V5	.2178	.2050	.0729	.0725	34.8			
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = N/A Max N/A Min
Overall Virgin Dielectric Breakdown Average 35.46
Dielectric Test Length = 15 Ft.
Tension (T) = NA lbs (Max.)
Radius (R) = NA ft
T/R = NA lbs/ft
Correction Factor (X) = NA
SWBP = X(T/R) = NA

Tested By/Date N/A (Tension) / JWR 4-25-86 (Micrometer) / JB R.A.T 4/25/86 (Dielectric)
Verified By/Date He 5/29/86 QA Approval/Date JWR 5/29/86
Test Observers AR
Visual Cable Report: OK He
Anomalies:

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Sample No. . . . . = 1003
Plant. . . . . = B
Manufacturer . . . . . = ESSEX
Contract No. . . . . = 927249
Mark No. . . . . = WCA-1
Description. . . . . = 16.14 8/6
Insulation . . . . . = PXJ
Filler Material. . . . = NONE

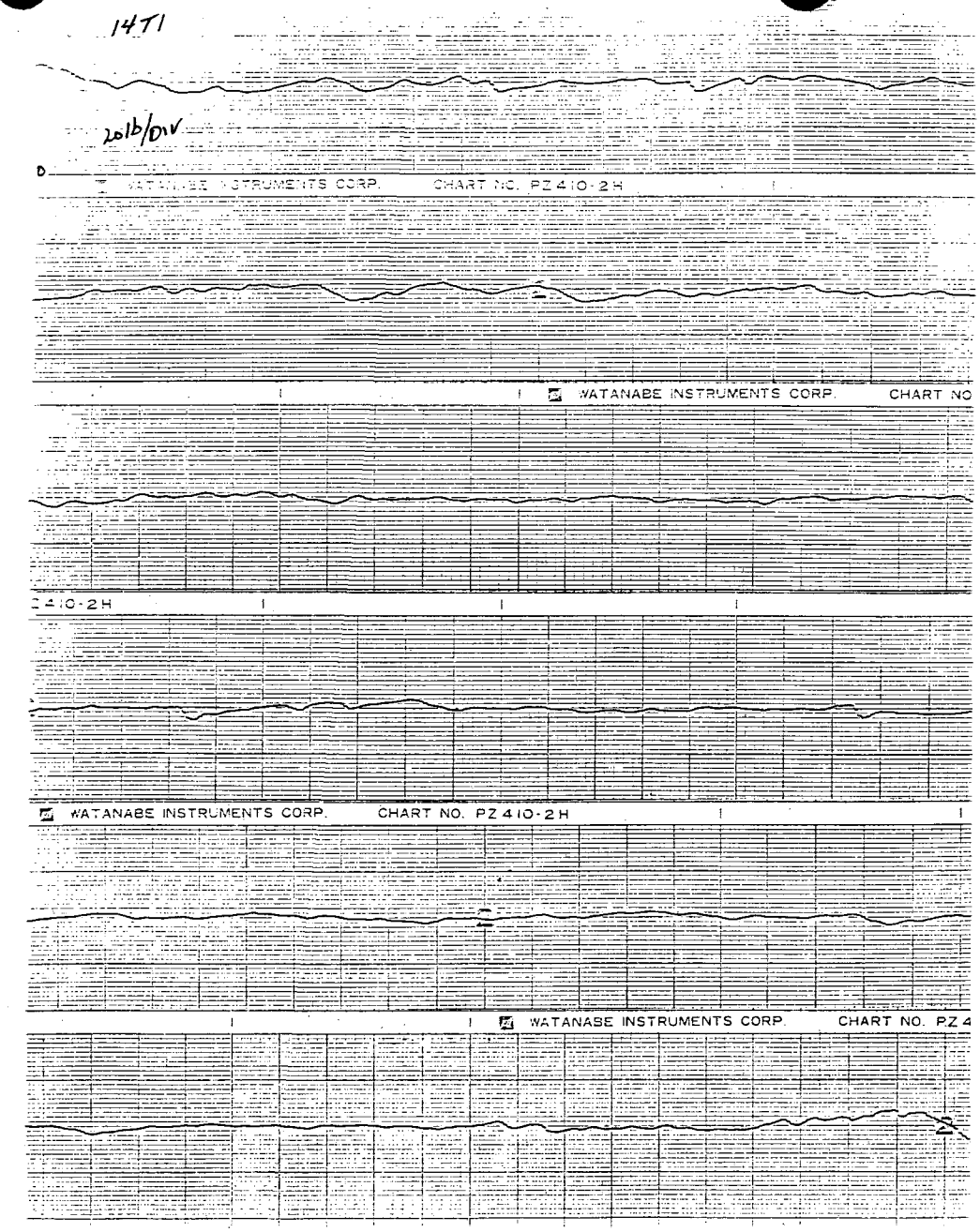
Standards Used = 506325, 543175, 522035, 543211, 543240, 502445, 543202, 962038
Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5
Wt/Ft (lb). . . . . = .0326

	Test No. 14T1-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1.	1	.2093	.2052	.0755	.0718	27.2			
2.	2	.2117	.2027	.0747	.0731	30.6		✓	
3.	3	.2074	.2046	.0732	.0725	30.8		✓	
4.	4	.2076	.2013	.0733	.0725	29.2		✓	
5.	5	.2097	.2018	.0737	.0724	32.0		✓	
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Multi-Conductor Jacket O.D. = N/A Max N/A Min
Overall Virgin Dielectric Breakdown Average 35.46
Dielectric Test Length = 15 Ft.
Tension (T) = 460 lbs (Max.)
Radius (R) = .3542 ft
T/R = 1298.70 lbs/ft
Correction Factor (X) = .54
SWBP = X(T/R) = 701.30 lbs/ft

Tested By/Date VEK 4-25-86 (Tension) — Micrometer 4-25-86 — JB Dielectric — R.A.T. 4/25/86
Verified By/Date 5/29/86 — QA Approval/Date 5/29/86
Test Observers
Visual Cable Report: OK
Anomalies:

Continuity OK JB



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Sample No. . . . . = 1003
Plant. . . . . = B
Manufacturer . . . . . = ESSEX
Contract No. . . . . = 827249
Mark No. . . . . = WCA-1
Description. . . . . = No. 14 1/C
Insulation . . . . . = PXJ
Filler Material. . . . = None

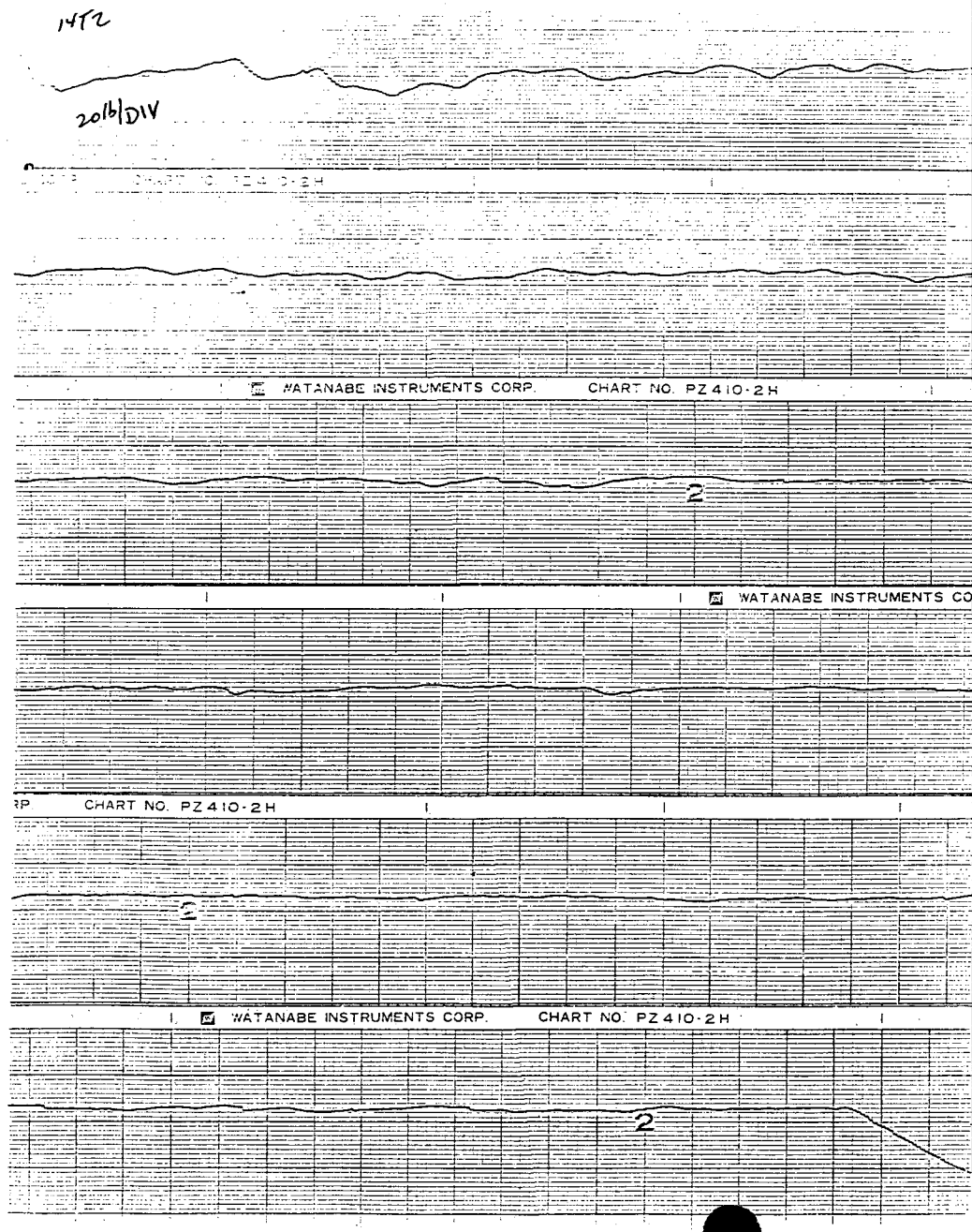
Standards Used = 506335, 543175, 522035, 543211, 543240, 503449, 543202, 502038.
Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5
Wt/Ft (lb). . . . . = .0326

Test No. 14T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	Virgin Breakdown Avg AC KV	Acc.	Unacc.
1. 1	.2084	.2054	.0734	.0720	32.9		✓	
2. 2	.2068	.2026	.0734	.0727	38.0		✓	
3. 3	.2105	.2005	.0736	.0726	35.7		✓	
4. 4	.2051	.2000	.0728	.0724	32.4		✓	
5. 5	.2095	.2028	.0734	.0725	32.2		✓	
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min
Overall Virgin Dielectric Breakdown Average 35.46
Dielectric Test Length = 15 Ft.
Tension (T) = 480 lbs (Max.)
Radius (R) = ~~.3541~~ .3542 ft
T/R = ~~1355.54~~ 1355.17 lbs/ft
Correction Factor (X) = ~~1.7~~ .54
SWBP = X(T/R) = ~~944.88 lbs/ft~~ 731.79 lbs/ft

Tested By/Date VEK 4-25-86 (Tension) / JM7 4-25-86 (Micrometer) / JB (Dielectric) R.A.T. 4/25/86
Verified By/Date HC 5/29/86 QA Approval/Date JMP 5/29/86
Test Observers RR
Visual Cable Report: OK HR
Anomalies:

Continuity OK JB



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ✓ Multi-Conductor ____

Sample No. . . . . = 1003
Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Standards Used = 506325, 543175, 522035, 543211, 543240, 543207, 902038, 215506, 502445

Test No. 14T3-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. -1	.2082	.2004	.0729	.0714	27.3	>10,000 mΩ	Est OK
2. -2	.2097	.1975	.0735	.0715	28.8	↓	↓
3. -3	.2099	.1970	.0732	.0704	37.5		
4. -4	.2080	.2010	.0734	.0719	28.6		
5. -5	.2130	.2025	.0752	.0726	32.7		
6.						R.A.T. 5/5/86	
7.							
8.							
9.							
10.							
11.							
12.							

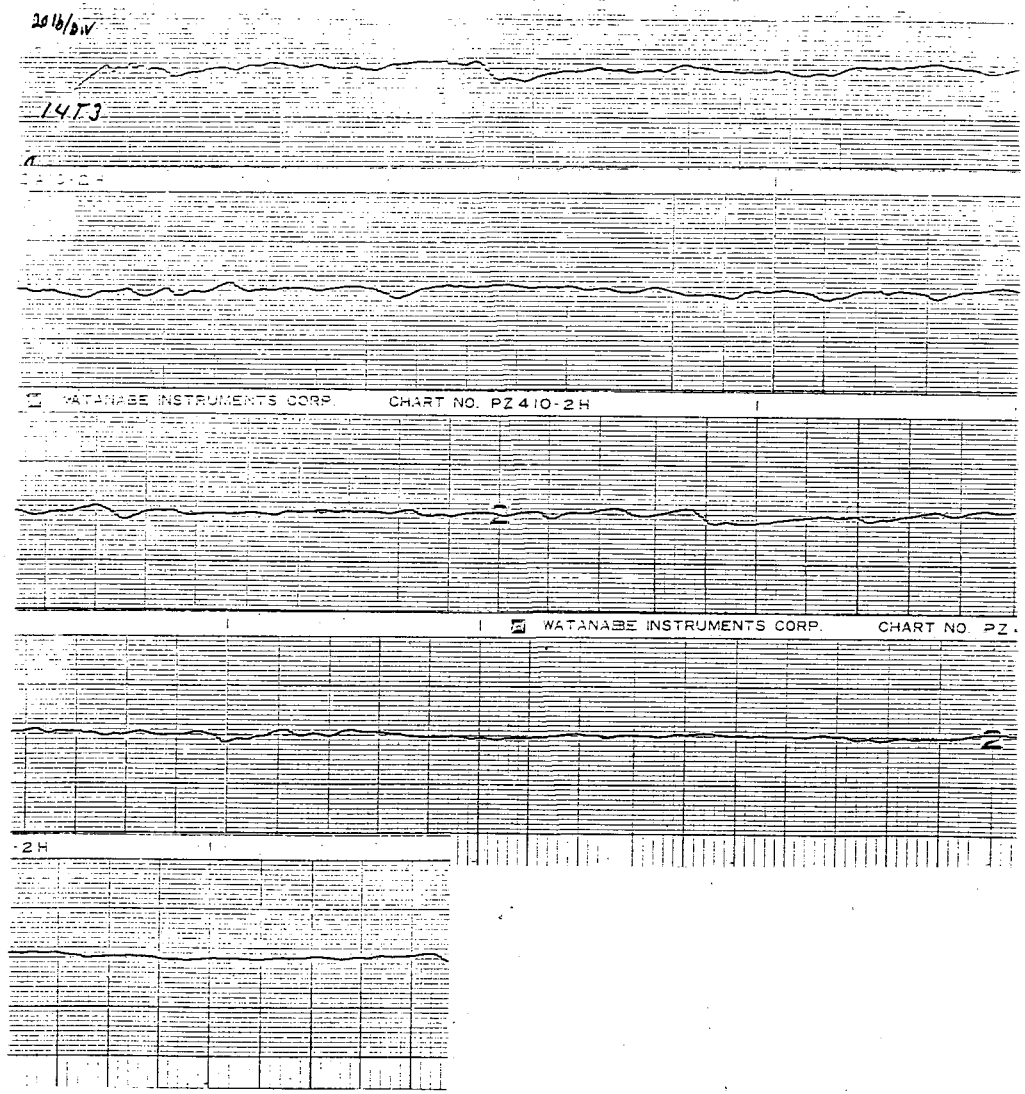
Multi-Conductor Jacket O.D. = N/A Max N/A Min
Tension (T) = 4.70 lbs (Max.)
Radius (R) = .3542 ~~0.3541~~ ft
T/R = 1214.00 ~~1214.34~~ lbs/ft
Correction Factor (X) = ~~0.7~~ .54
SWBP = X(T/R) = 655.56 ~~850.04~~ lbs/ft

Tested By/Date VEK 5-2-86 (Tension) SRH 5-2-86 NKW 5-2-86 (Micrometer) JB R.A.T. 5/5/86 (Dielectric)
Verified By/Date HR 5/29/86 (Tension) QA Approval/Date (Micrometer) [illegible] 5/04/86 (Dielectric)
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ✓ Multi-Conductor ____

Sample No. . . . . = 1003
Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Standards Used = 506325, 543175, 522025, 543211, 543240, 543202, 902038, 212506, 502445

	Test No. 14T4-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	-1	.2072	.1949	.0725	.0721	34.6	>10,000 mΩ	Est OK
2.	-2	.2075	.1995	.0731	.0712	36.9		
3.	-3	.2081	.2015	.0741	.0723	40.6		
4.	-4	.2095	.2022	.0733	.0713	37.9		
5.	-5	.2094	.2033	.0744	.0721	34.1	R.A.T. 5/5/86	
6.								
7.								
8.								
9.								
10.								
11.								
12.								

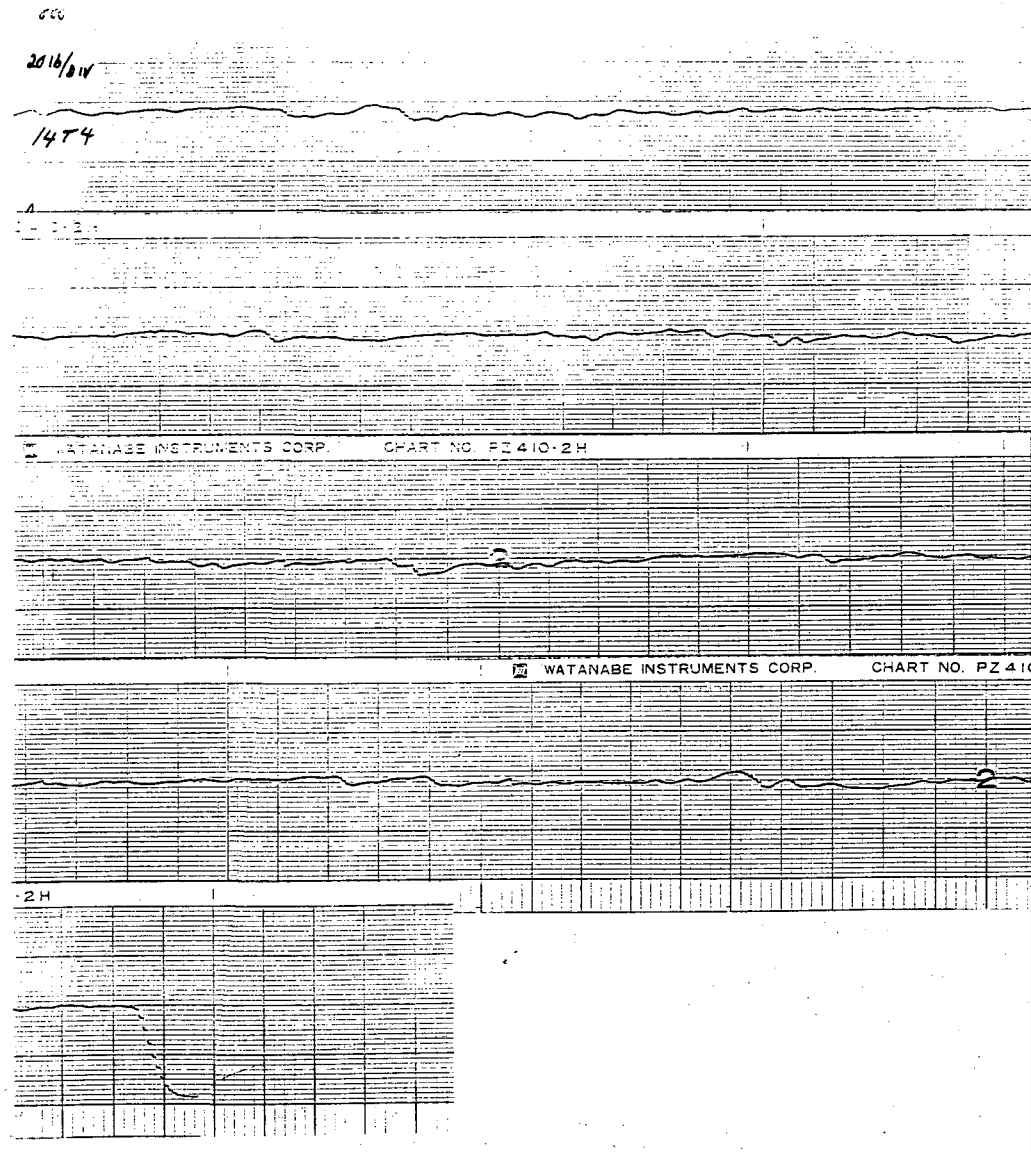
Multi-Conductor Jacket O.D. = n/a Max n/a Min
Tension (T) = 470 lbs (Max.)
Radius (R) = .3542 ~~0.354~~ ft
T/R = 1214.00 ~~1214.34~~ lbs/ft
Correction Factor (X) = ~~0.7~~ .54
SWBP = X(T/R) = ~~850.04 lbs/ft~~ 655.56 lbs/ft

Tested By/Date VEK 5-2-86 (Tension) DRH NEW 5-2-86 (Micrometer) JB R.A.T. 5/5/86 (Dielectric)
Verified By/Date NE 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers DR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ✓ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Sample No. . . . . = 1003
Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Standards Used = 506325, 543175, 522035, 543211, 543240, 543202, 902038, 812506, 502445

Test No. 14T5-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. -1	.2087	.1987	.0726	.0719	33.8	>10,000 MΩ	Test OK
2. -2	.2091	.1983	.0728	.0723	37.9		
3. -3	.2222	.2023	.0734	.0719	31.6		
4. -4	.2095	.2024	.0770	.0718	30.6		
5. -5	.2255	.2017	.0725	.0717	35.9	R.A.C. 5/5/86	
6.							
7.							
8.							
9.							
10.							
11.							
12.							

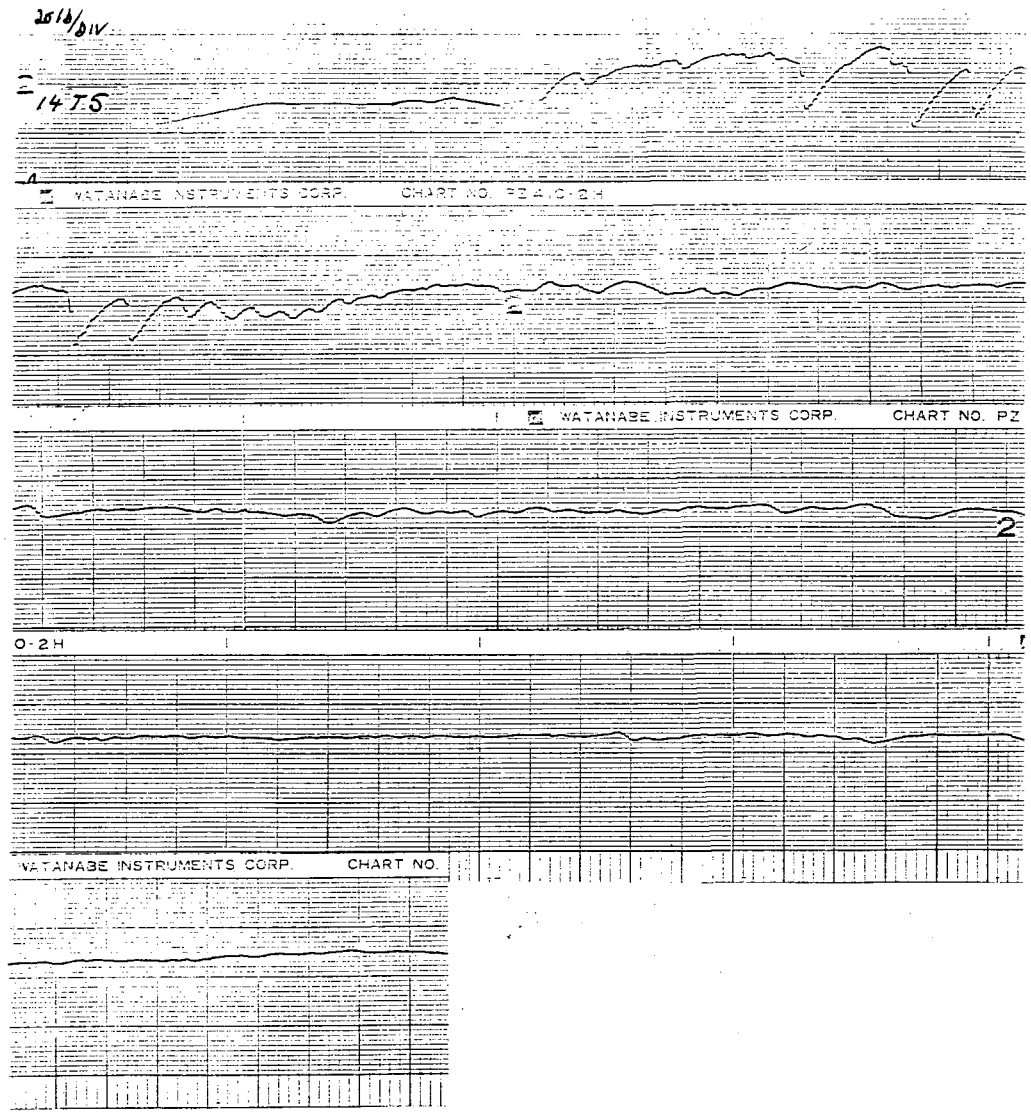
Multi-Conductor Jacket O.D. = N/A Max N/A Min
Tension (T) = 550 lbs (Max.)
Radius (R) = .3542 ft
T/R = 1552.80 lbs/ft
Correction Factor (X) = .54
SWBP = X(T/R) = 838.51

Tested By/Date VEK 5-2-86 (Tension) ORH 5-2-86 (Micrometer) JB R.A.C. 5/5/86 (Dielectric)
Verified By/Date HC 5/29/86 QA Approval/Date JAC 5/29/86
Test Observers JB

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ___

Anomalies: ___

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

[redacted]in ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

Sample No. . . . . = 577
Conduit Size in Test. . . . = ~~3/4"~~ N/A
No. Cables in Pull. . . . . = N/A

Standards Used = 543211, 543202, 902035, 212526

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	15V1	.1084	.1082	.0680	.0679	34.3	>10,000 MΩ	N/A
2.	15V2	.1085	.1054	.0679	.0678	21.4		
3.	15V3	.1071	.1060	.0680	.0678	34.2		
4.	15V4	.1078	.1063	.0682	.0678	41.3		
5.	15V5	.1071	.1059	.0683	.0680	38.6	R.A.T. 5/5/86	✓
6.								
7.								
8.								
[redacted]								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min
Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Tested By/Date N/A — Tension; Dm 7 5-5-86 — Micrometer; JB R.A.T. 5/5/86 — Dielectric
Verified By/Date He 5/29/86 — Tension; QA Approval/Date — Micrometer; MAR 5/29/86 — Dielectric
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

[redacted]

0148E-2

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ Tensioned ✓

1-Conductor ✓ Multi-Conductor ____

Sample No. . . . . = 577
Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Standards Used = 506325, 543175, 522035, 543202, 902038, 212506, ~~902036, 543202~~, 502445, ~~212~~ 543211
5/6/86 JB 5/6/86 JB

Test No. 15T-1	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.1071	.1044	.0675	.0669	33.7	>10,000 MΩ	Test OK
2. 2	.1077	.1042	.0681	.0672	38.5*		
3. 3	.1071	.1042	.0675	.0672	38.5		
4. 4	.1071	.1052	.0677	.0667	31.5		
5. 5	.1070	.1043	.0685	.0670	33.0	R.A.T. 5/5/86	
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min
Tension (T) = 520 lbs (Max.)
Radius (R) = .3542 ~~0.3544~~ ft
T/R = 1468.10 ~~1468.51~~ lbs/ft
Correction Factor (X) = .41 ~~0.704~~ 5/27/86
SWBP = X(T/R) = 601.92 lbs/ft ~~1027.95~~ 5/27/86

Tested By/Date: VEK 5-2-86 (Tension) — Dm 7 5-5-86 (Micrometer) — JB R.A.T. 5/5/86 (Dielectric)
Verified By/Date: Ae 5/29/86 — QA Approval/Date: 5/29/86
Test Observers: AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: * Corona tracking at point of puncture

0148E-2

20 lb/sIV

15T-1

E410-2H

WATANABE INSTRUMENTS CORP. CHART NO. PE410-2H

2

WATANABE INSTRUMENTS CORP. CHART NO. P

2

-2H

SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Sample No. . . . . = 577
Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Standards Used = 506325, 543175, 522035, 543211, 543202, 902038, 212506, 502445

	Test No. 15T-2-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.1071	.1034	.0674	.0676	24.3	>10,000 MΩ	Test ok
2.	2	.1072	.1044	.0675	.0670	24.1		
3.	3	.1076	.1047	.0673	.0671	27.8		
4.	4	.1071	.1048	.0674	.0669	28.3		
5.	5	.1061	.1041	.0676	.0674	34.5		
6.							R.A.T. 5/5/86	
7.								
8.								
9.								
10.								
11.								
12.								

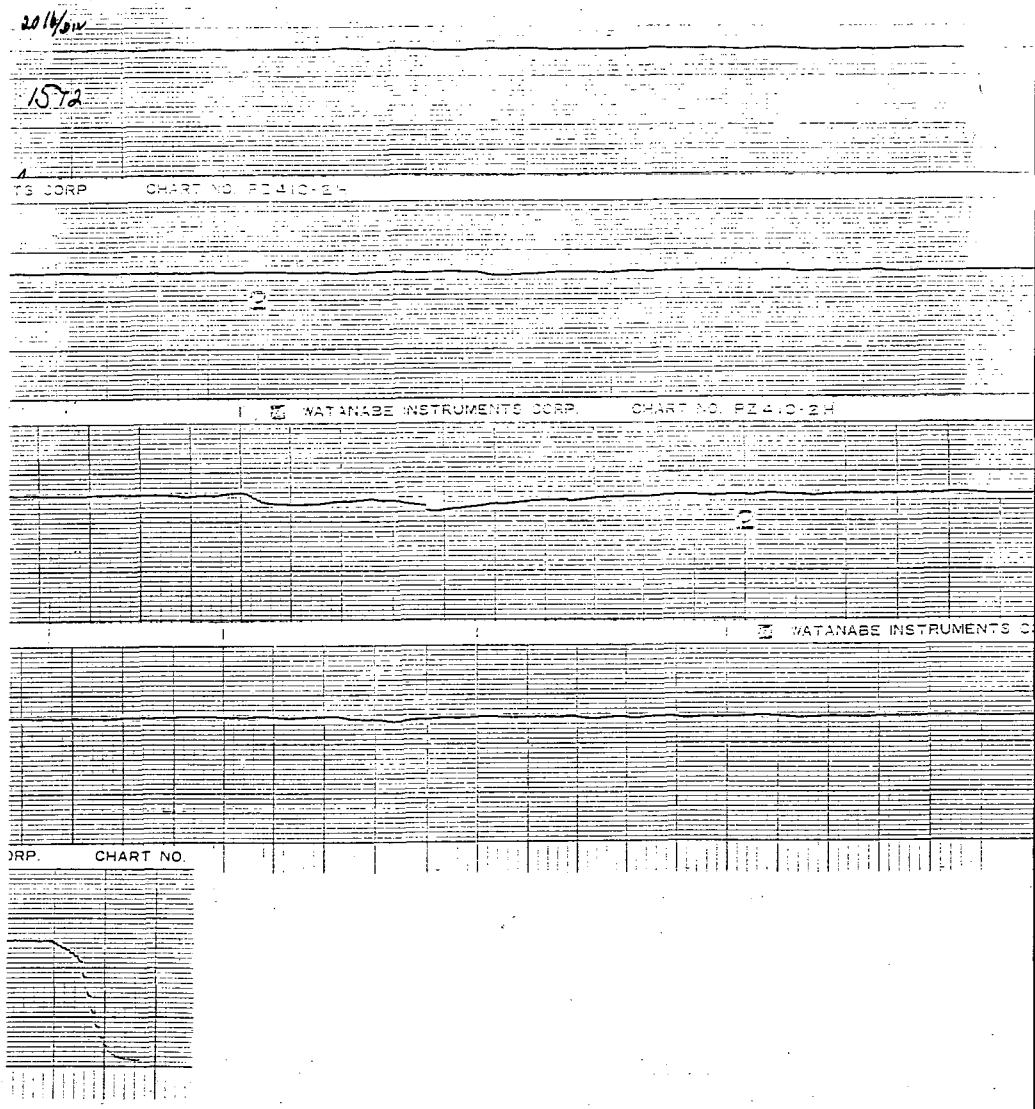
Multi-Conductor Jacket O.D. = N/A Max N/A Min
Tension (T) = 520 lbs (Max.)
Radius (R) = .3542 ~~0.3541~~ ft
T/R = 1468.10 ~~1468.51~~ lbs/ft
Correction Factor (X) = .41 ~~0.9~~
SWBP = X(T/R) = 601.92 ~~1027.95~~ lbs/ft

Tested By/Date VEK 5-2-86 (Tension) JM 7 5-5-86 (Micrometer) JB R.A.T. 5/5/86 (Dielectric)
Verified By/Date HR 5/29/86 QA Approval/Date MSR 5/29/86
Test Observers RK

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Sample No. . . . . = 577
Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Standards Used = 506325, 543175, 522035, 543211, 543202, 903038, 212506, 502445

Test No. 1573—	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.1071	.1043	.0674	.0659	30.6	>10,000 MΩ	Test OK
2. 2	.1070	.1042	.0675	.0672	31.6		
3. 3	.1061	.1037	.0669	.0662	22.7*		
4. 4	.1071	.1045	.0673	.0671	37.0	R.A.T. 5/13/86	
5. 5	.1067	.1043	.0674	.0671	32.7		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

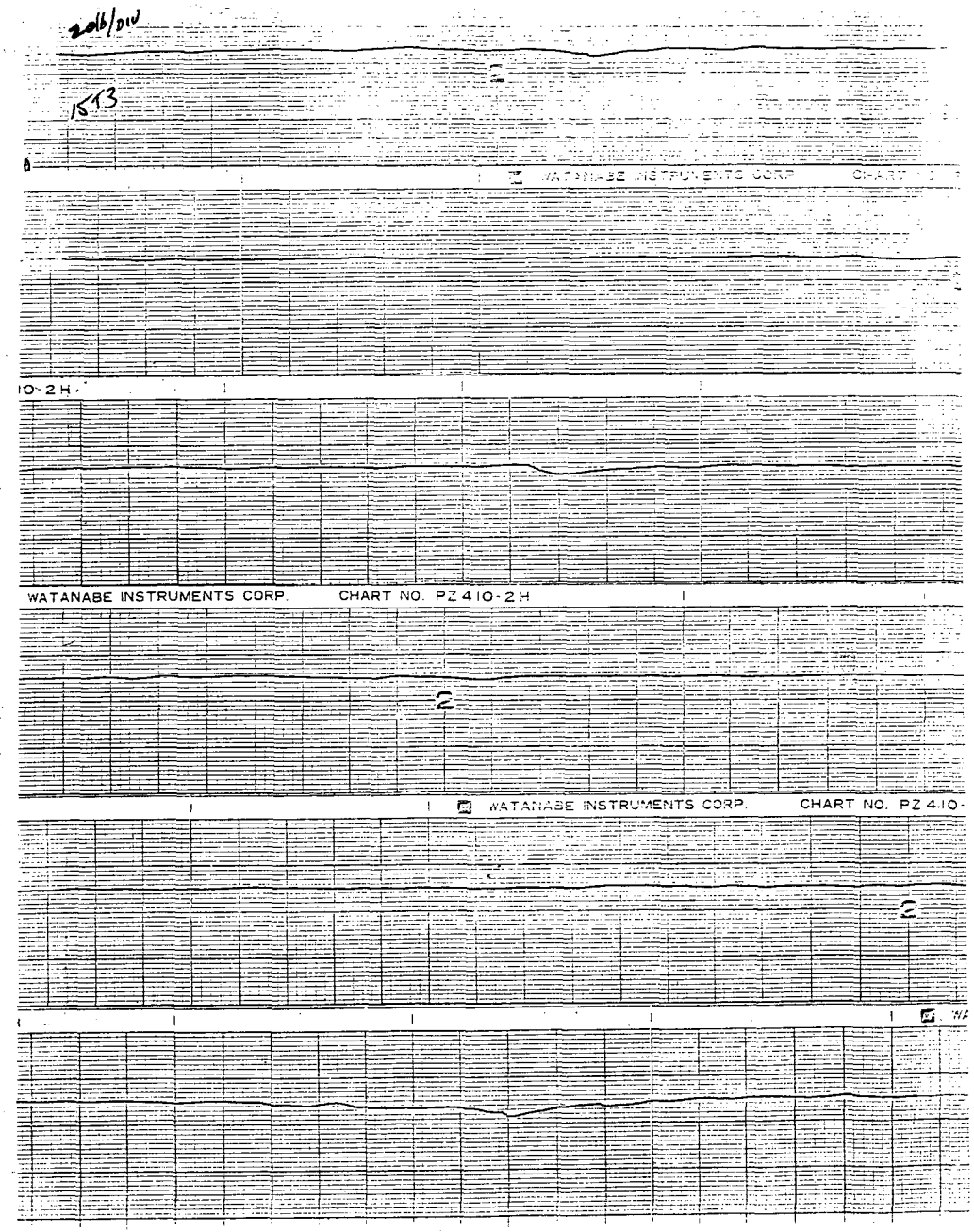
Multi-Conductor Jacket O.D. = N/A Max N/A Min
Tension (T) = 510 lbs (Max.)
Radius (R) = .3542 ~~0.3544~~ ft
T/R = 1439.86 ~~1440.2~~ lbs/ft
Correction Factor (X) = .41 ~~0.7~~
SWBP = X(T/R) = 590.34 lbs/ft ~~1008.18~~

Tested By/Date VEK 5-2-86 (Tension) CM 5-5-86 (Micrometer) JB (Dielectric) RAT. 5/5/86
Verified By/Date 5/29/86 QA Approval/Date 5/29/86
Test Observers

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: * Punctured ≅ 1 inch above water

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST FORM

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Sample No. . . . . = 577
Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Standards Used = 506325 543175 522035 543211, 543202, 902038 212526, 502445

	Test No. 15T4-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.1073	.1051	.0673	.0675	35.7	>10,000 MΩ	Est OK
2.	2	.1086	.1042	.0675	.0671	32.7		
3.	3	.1069	.1044	.0674	.0670	37.2		
4.	4	.1074	.1058	.0679	.0671	36.4		
5.	5	.1096	.1045	.0679	.0674	31.6	R.A.T. 5/5/86	
6.								
7.								
8.								
9.								
10.								
11.								
12.								

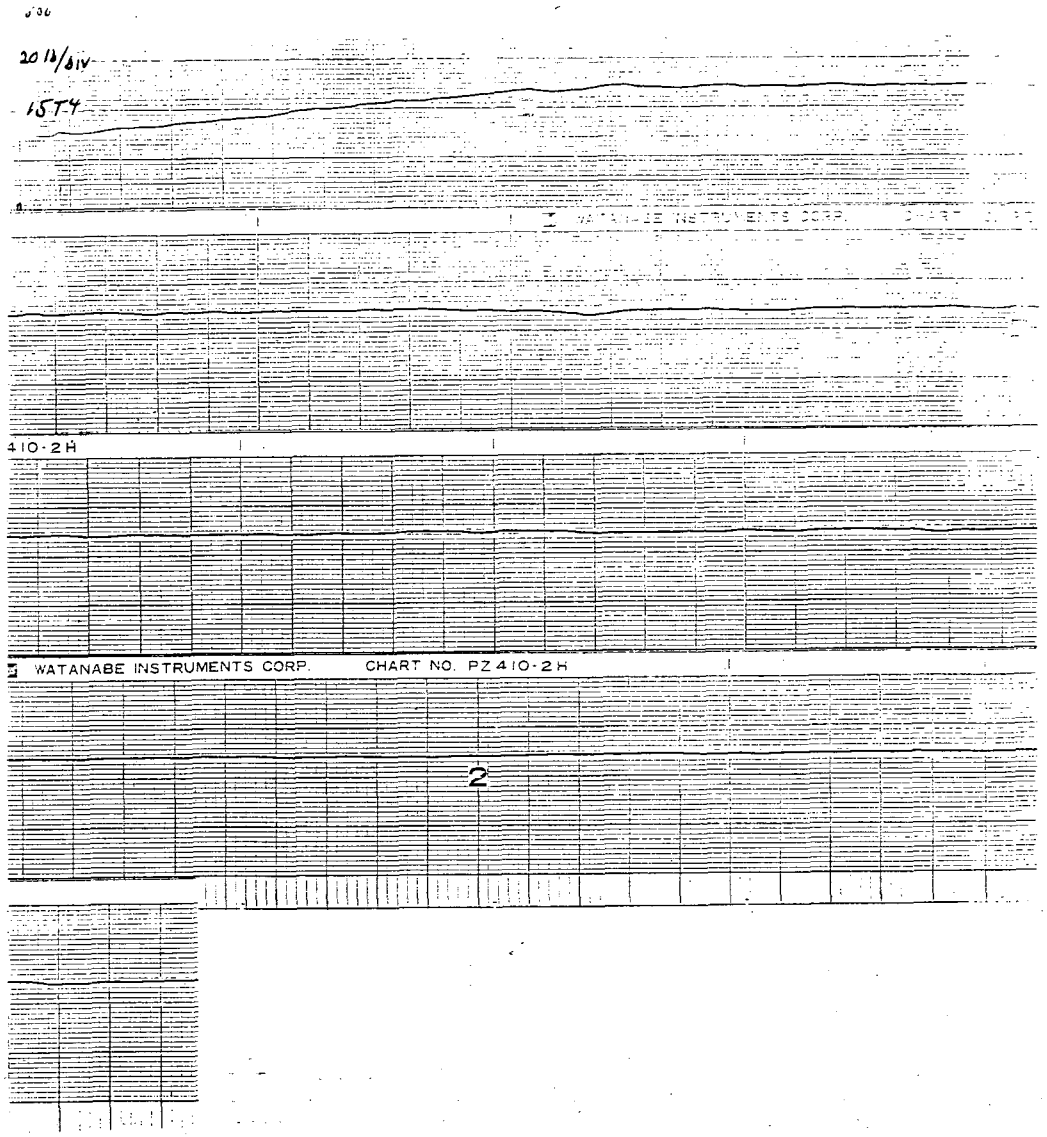
Multi-Conductor Jacket O.D. = N/A Max N/A Min
Tension (T) = 495 lbs (Max.)
Radius (R) = .3542 ~~0.3547~~ 5/24/86 ft
T/R = 1397.52 ~~1399.9~~ 5/24/86 lbs/ft
Correction Factor (X) = .41 ~~0.7~~ 5/24/86
SWBP = X(T/R) = 572.98 ~~978.53~~ 5/24/86 lbs/ft

Tested By/Date VEK 5-5-86 (Tension) — Micrometer: 7 5-5-86 — Dielectric: JB R.A.T. 5/5/86
Verified By/Date HC 5/29/86 — QA Approval/Date: JBR 5/29/86
Test Observers AR

Visual Cable Report: Nothing abnormal found ✓
Cable appeared abnormal in the following ways: ____

Anomalies: ____

0148E-2



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 15
Sample No. . . . . = 577
Description No. 14 1/C

Standards Used: 516325, 543175, 522035, 543211, 543202, 909036, 212506, 502445

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No. 15T5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.1077	.1046	.0681	.0674	33.8	>10,000 MΩ	Test OK
2.	2	.1083	.1042	.0679	.0672	36.8	↓	↓
3.	3	.1079	.1050	.0677	.0673	29.6		
4.	4	.1083	.1045	.0675	.0672	34.4		
5.	5	.1064	.1052	.0677	.0673	40.0		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 495 lbs (Max.)
Radius (R) = .3542 ~~0.354~~ ft
T/R = 1397.52 ~~1397.9~~ lbs/ft
Correction Factor (X) = .41 ~~0.7~~
SWBP = X(T/R) = 572.98 ~~978.53~~ lbs/ft

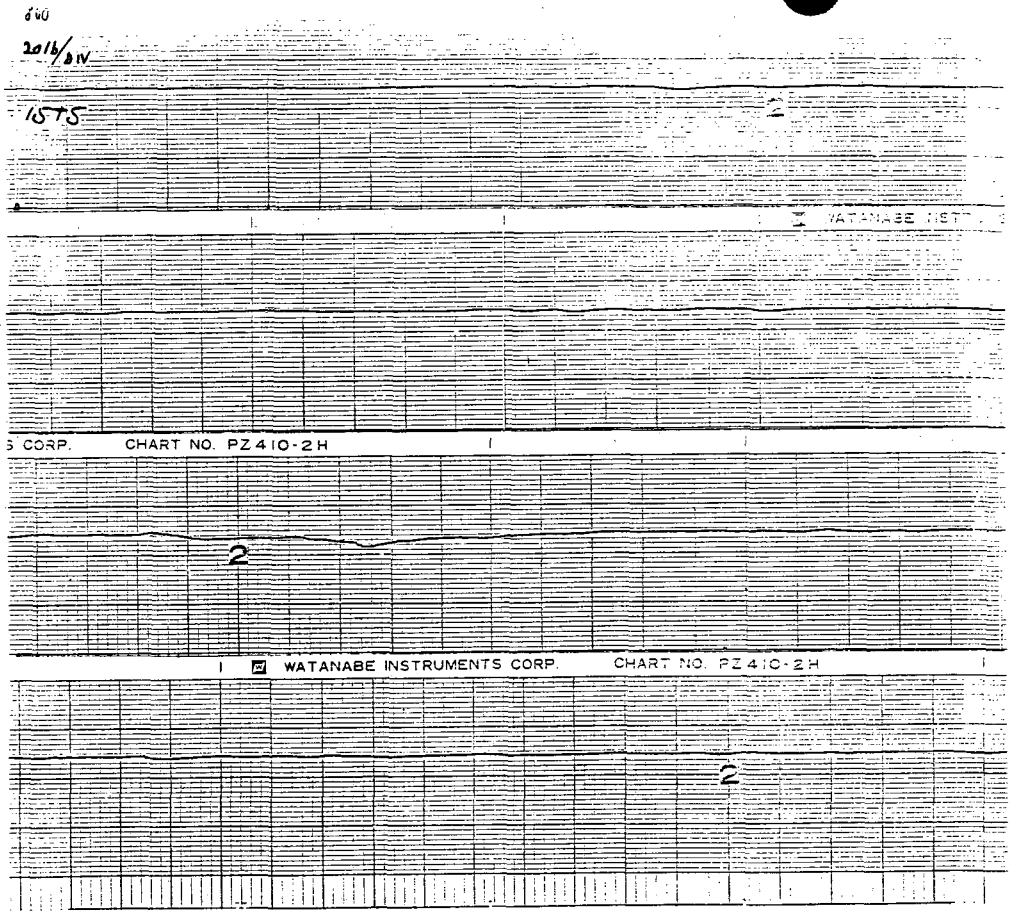
Anomalies:

Tested By/Date VEK 5-5-86 (Tension) DM 7 5-5-86 (Micrometer) JB (Dielectric) RAT 5/5/86 (Resistance) RAT 5/5/86

Verified By/Date NC 5/29/86
Test Observers DD

QA Approval/Date JSR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/c

Standards Used: 543211, 212506, 902038, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	16V1	.3302	.3296	.1855	.1817	36.4	>10,000 MΩ	N/A
2.	16V2	.3262	.3262	.1890	.1811	36.0	↓	↓
3.	16V3	.3287	.3279	.1833	.1813	35.3		
4.	16V4	.3303	.3285	.1856	.1840	38.7		
5.	16V5	.3276	.3246	.1844	.1837	33.5		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension | DM7 5-7-86 Micrometer | JB R.A.T. 5/7/84 Dielectric | R.A.T. 5/7/84 Resistance

Verified By/Date WR 5/29/86 QA Approval/Date [illegible] 5/29/86
Test Observers [illegible]

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/c

Standards Used: 506325 543175 522035 543211, 213506, 502445, 543202, 902038

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	16T1							
1.	1	.3313	.3252	.1861	.1805	34.2	>10,000 MΩ	Test OK
2.	2	.3293	.3235	.1832	.1801	35.4		
3.	3	.3261	.3244	.1853	.1795	32.6		
4.	4	.3275	.3258	.1834	.1795	36.0		
5.	5	.3288	.3246	.1860	.1808	32.5		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = ~~.1460~~ .1440 (VRK 5-7-86) lbs (Max.)
Radius (R) = .6671 ft
T/R = 2158.58 lbs/ft
Correction Factor (X) = .420
SWBP = X(T/R) = 919.20 lbs/ft

Anomalies:

Tested By/Date VRK 5-6-86 Tension; DMZ 5-7-86 Micrometer; JB 5/6/86 Dielectric; RAT 5/6/86 RAT 5/5/86 Resistance

Verified By/Date HL 5/29/86
Test Observers
QA Approval/Date JAR 5/29/86

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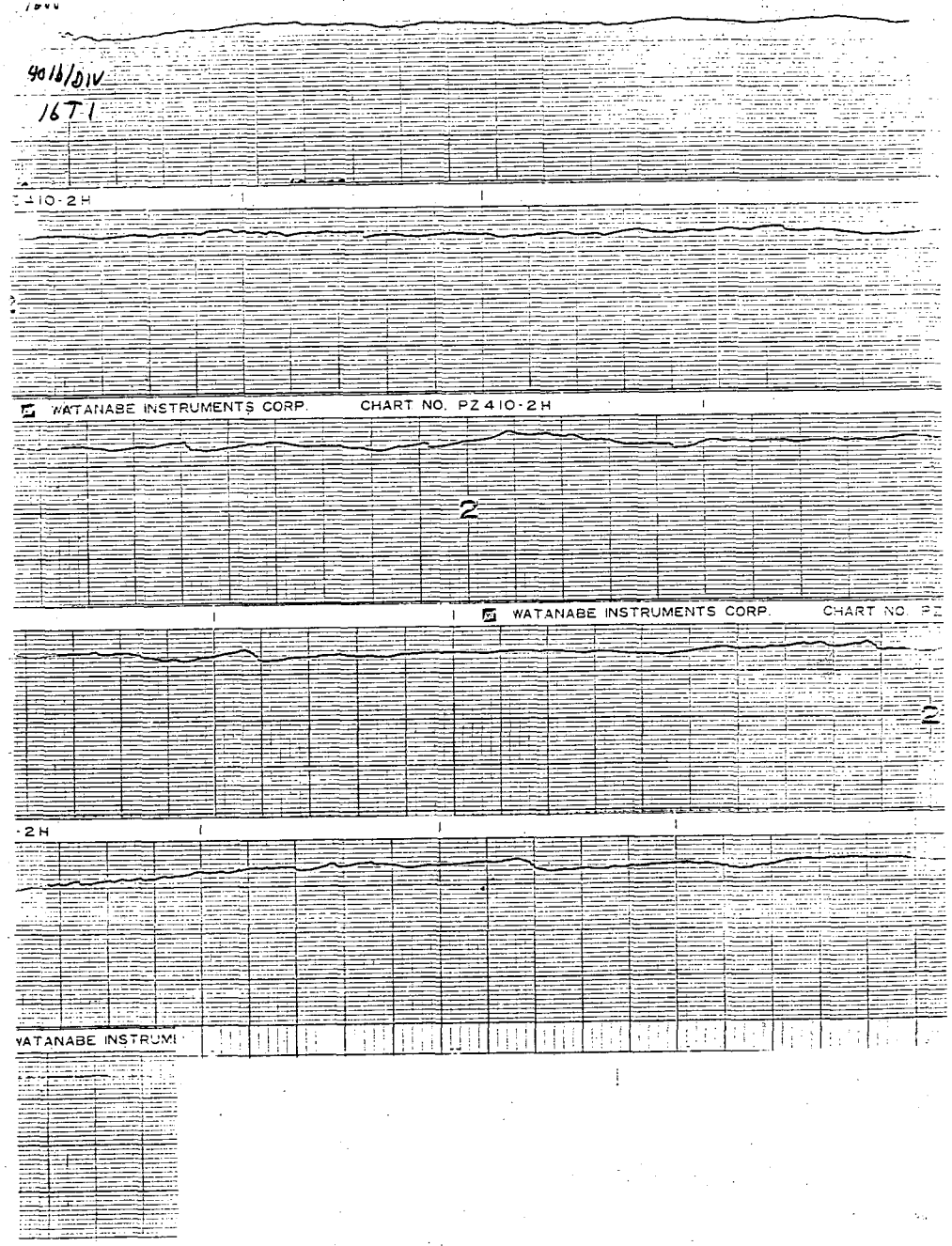

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/C

Standards Used: 506325 543175 522635, 543211, 212526, 502445, 543212, 902038,

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___
Tensioned ✓

1-Conductor ✓
Multi-Conductor ___

Test No. 16T2-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.3303	.3236	.1860	.1806	31.5	>10,000MΩ	Test OK
2. 2	.3329	.3250	.1841	.1803	35.2		
3. 3	.3297	.3239	.1855	.1814	30.5		
4. 4	.3281	.3249	.1873	.1800	34.7		
5. 5	.3283	.3251	.1849	.1819	32.5		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

VEK 5-7-86

Tension (T) = 1440 1460 lbs (Max.)
Radius (R) = .6671 ft
T/R = 2158.60 lbs/ft
Correction Factor (X) = .420
SWBP = X(T/R) = 906.61 lbs/ft

Anomalies:

Tested By/Date VEK 5-6-86 Tension; 5-7-86 Micrometer; JB RAT 5/7/86 Dielectric; RAT 5/8/86 Resistance

Verified By/Date 5/29/86
Test Observers

QA Approval/Date 5/29/86

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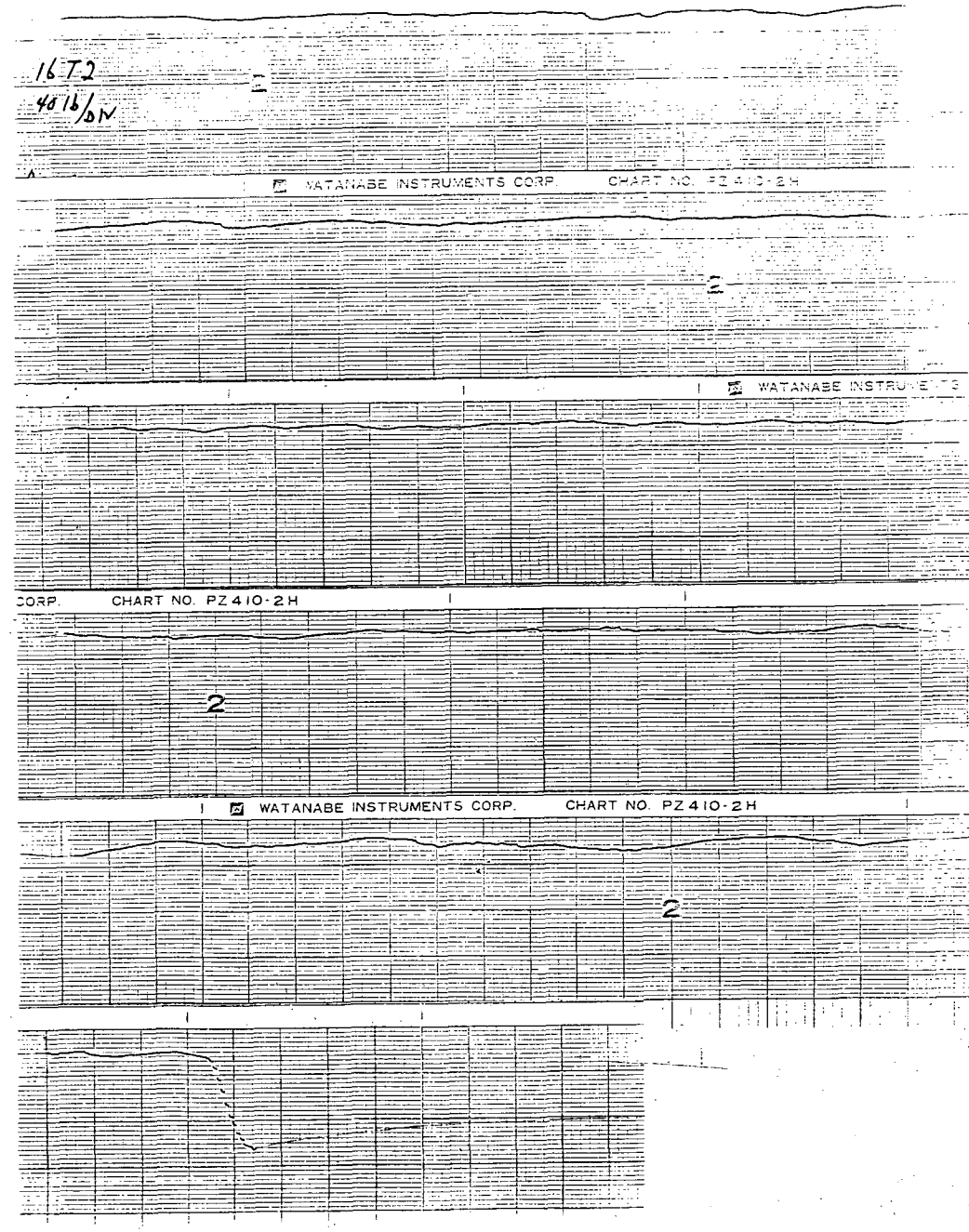

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/6

Standards Used: 506225 543175, 212506, 522035, 543211, 502445, 543202, 902038.

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓

1-Conductor ✓ Multi-Conductor ___

Test No. 16T3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.3350	.3276	.1870	.1791	31.4	>10000 MΩ	Est OK
2. 2	.3261	.3242	.1871	.1784	32.1		
3. 3	.3315	.3258	.1862	.1811	34.1		
4. 4	.3324	.3292	.1854	.1800	33.4		
5. 5	.3315	.3252	.1866	.1811	35.2		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 1920 lbs (Max.)
Radius (R) = .6671 ft
T/R = 2878.13 lbs/ft
Correction Factor (X) = .420
SWBP = X(T/R) = 1208.81 lbs/ft

Anomalies:

Tested By/Date VEK 5-7-86 (Tension) — SMT 5-7-86 (Micrometer) — JB R.A.T. 5/1/86 (Dielectric) — R.A.T. 5/1/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers RR

QA Approval/Date JBR 5/29/86

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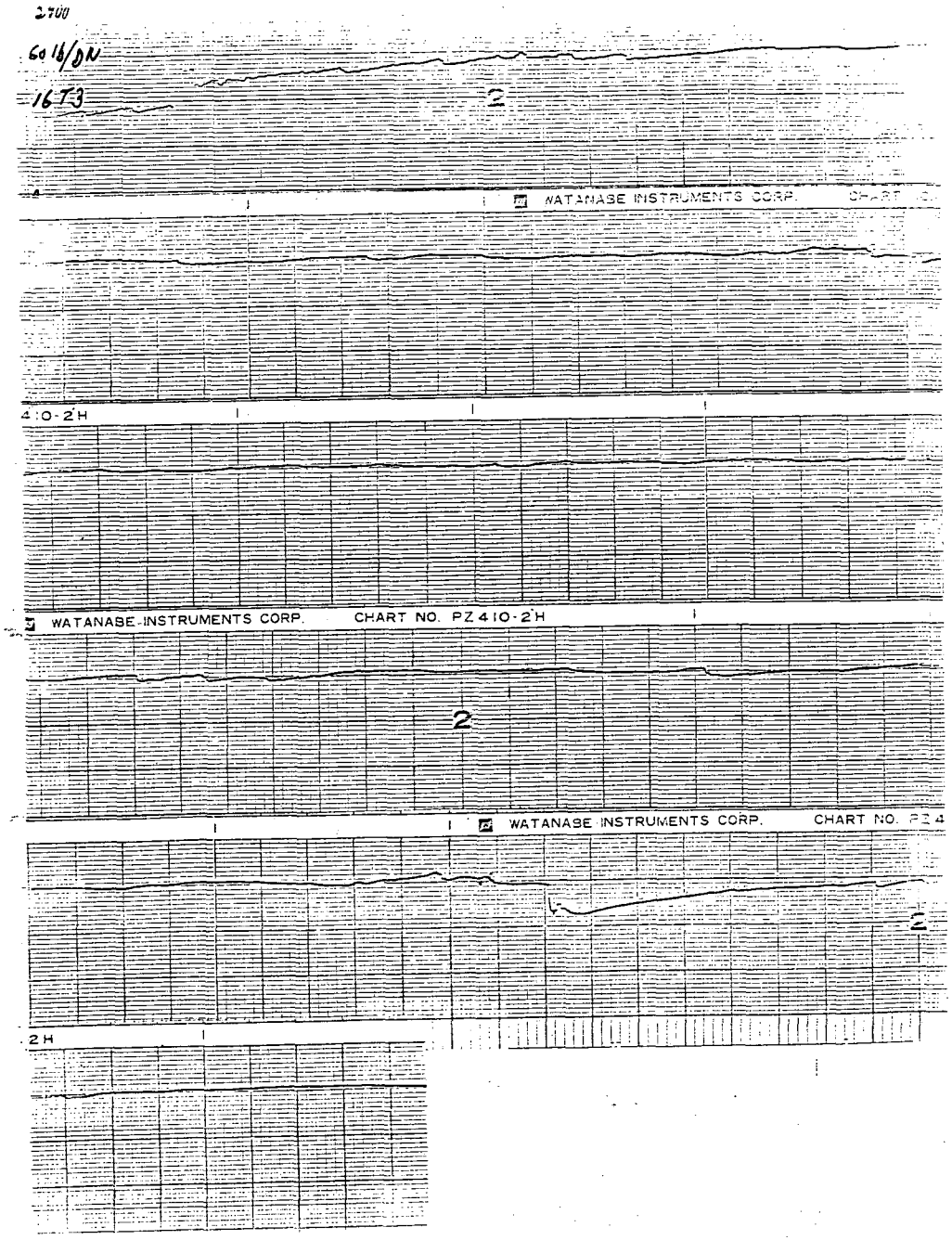

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/C

Standards Used: 506325, 543175, 522035, 543211, 312506, 502445, 543203, 902038

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	16T4-							
1.	1	.3300	.3277	.1863	.1820	34.5	>10,000 mΩ	Estook
2.	2	.3329	.3258	.1847	.1810	30.5	↓	↓
3.	3	.3300	.3256	.1882	.1823	34.0	↓	↓
4.	4	.3326	.3260	.1865	.1805	32.4	↓	↓
5.	5	.3299	.3270	.1859	.1836	35.1		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 1880 lbs (Max.)
Radius (R) = .6671 ft
T/R = 2818.17 lbs/ft
Correction Factor (X) = .420
SWBP = X(T/R) = 1183.63 lbs/ft

Anomalies:

Tested By/Date VEK 5-7-86 (Tension) DM 5.7.86 (Micrometer) JB (Dielectric) R.A.T. 5/7/86 R.A.T. 5/7/86 (Resistance)

Verified By/Date HE 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers AA

0148E-4

2400

16 T4
60 16/1V

WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H

2

WATANABE INSTRUMENTS CORP. CHART NO. PZ410

2

-2H

WATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/C

Standards Used: 506225, 543175, 522035, 543211, 212503, 502445, 543202, 902035

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

	Test No. 16T5-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.3310	.3268	.1884	.1813	35.8	>10,000 MΩ	Test OK
2.	2	.3328	.3278	.1857	.1813	33.1		
3.	3	.3300	.3241	.1923	.1796	33.5		
4.	4	.3304	.3274	.1850	.1810	35.5		
5.	5	.3320	.3287	.1884	.1825	34.1		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = n/a Max n/a Min

SWBP Data

Tension (T) = 1980 lbs (Max.)
Radius (R) = .6671 ft
T/R = 2968.07 lbs/ft
Correction Factor (X) = .420
SWBP = X(T/R) = 1246.59 lbs/ft

Anomalies:

Tested By/Date VEK 5-7-86 (Tension) CMT 5-7-86 (Micrometer) JB R.A.T. 5/5 (Dielectric) / R.A.T. 5/6 (Resistance)

Verified By/Date HC 5/29/86 QA Approval/Date JSR 5/29/86
Test Observers JR

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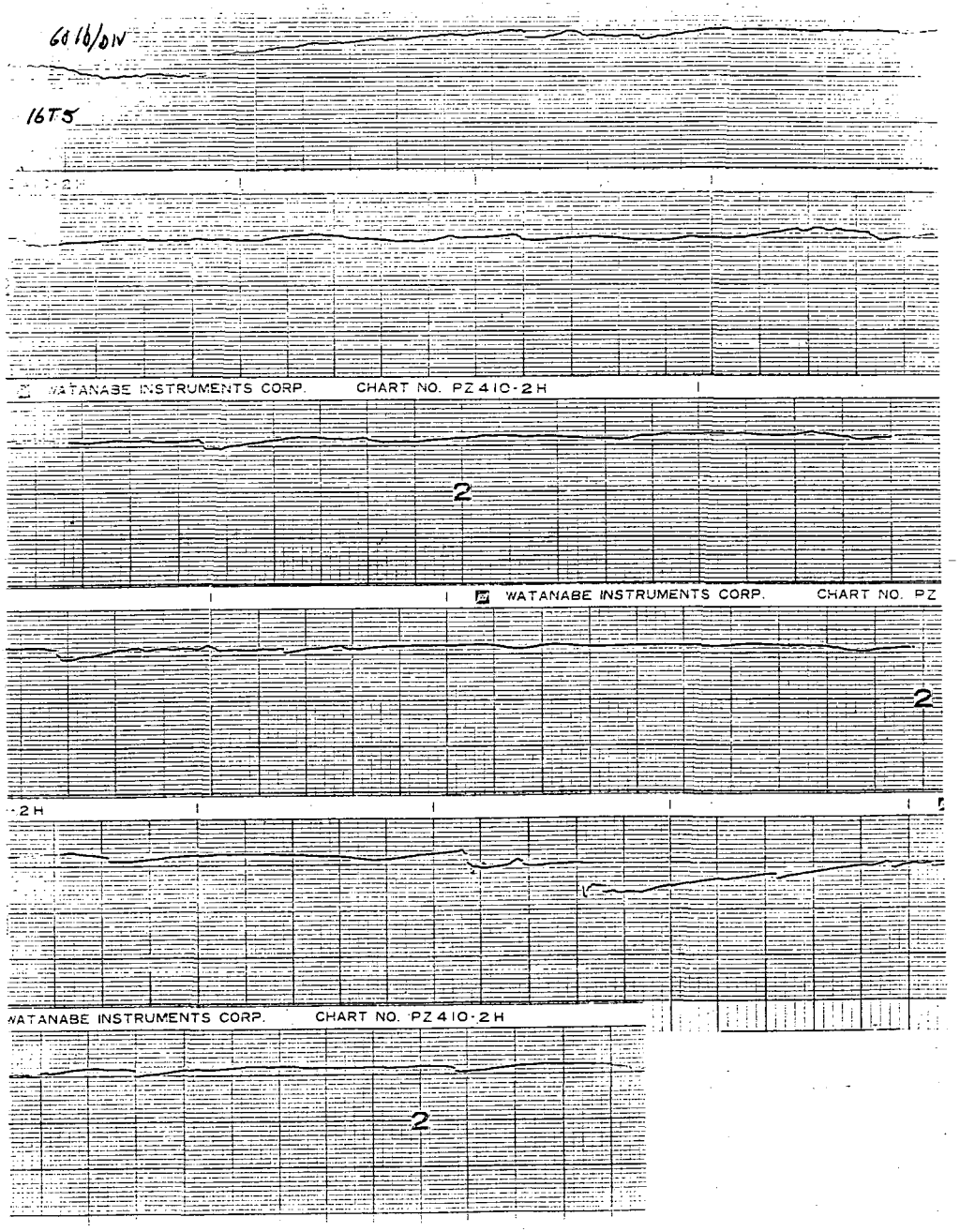

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/C

Standards Used: 506652, 506326, 522035, 543211, 712506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

Test No. 16T6 -	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.3288	.3274	.1854	.1795	39.5	>10,000MΩ	Test ok
2. 2	.3265	.3232	.1845	.1774	37.3		
3. 3	.3266	.3241	.1860	.1820	40.7		
4. 4	.3266	.3241	.1842	.1806	39.5*		
5. 5	.3288	.3252	.1852	.1815	39.9		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2650 lbs (Max.)
Radius (R) = 0.6671 ft
T/R = 3972 lbs/ft
Correction Factor (X) = 0.42
SWBP = X(T/R) = 1668 lbs/ft.

Anomalies: * Fail Hi-pot 1 inch above water line

Tested By/Date VEK 5-21-86 Tension; RMF 5-23-86 Micrometer; VEK R.A.T. Dielectric; R.A.T. 5/25/86 Resistance

Verified By/Date HE 5/29/86
Test Observers RR

QA Approval/Date JRR 5/29/86

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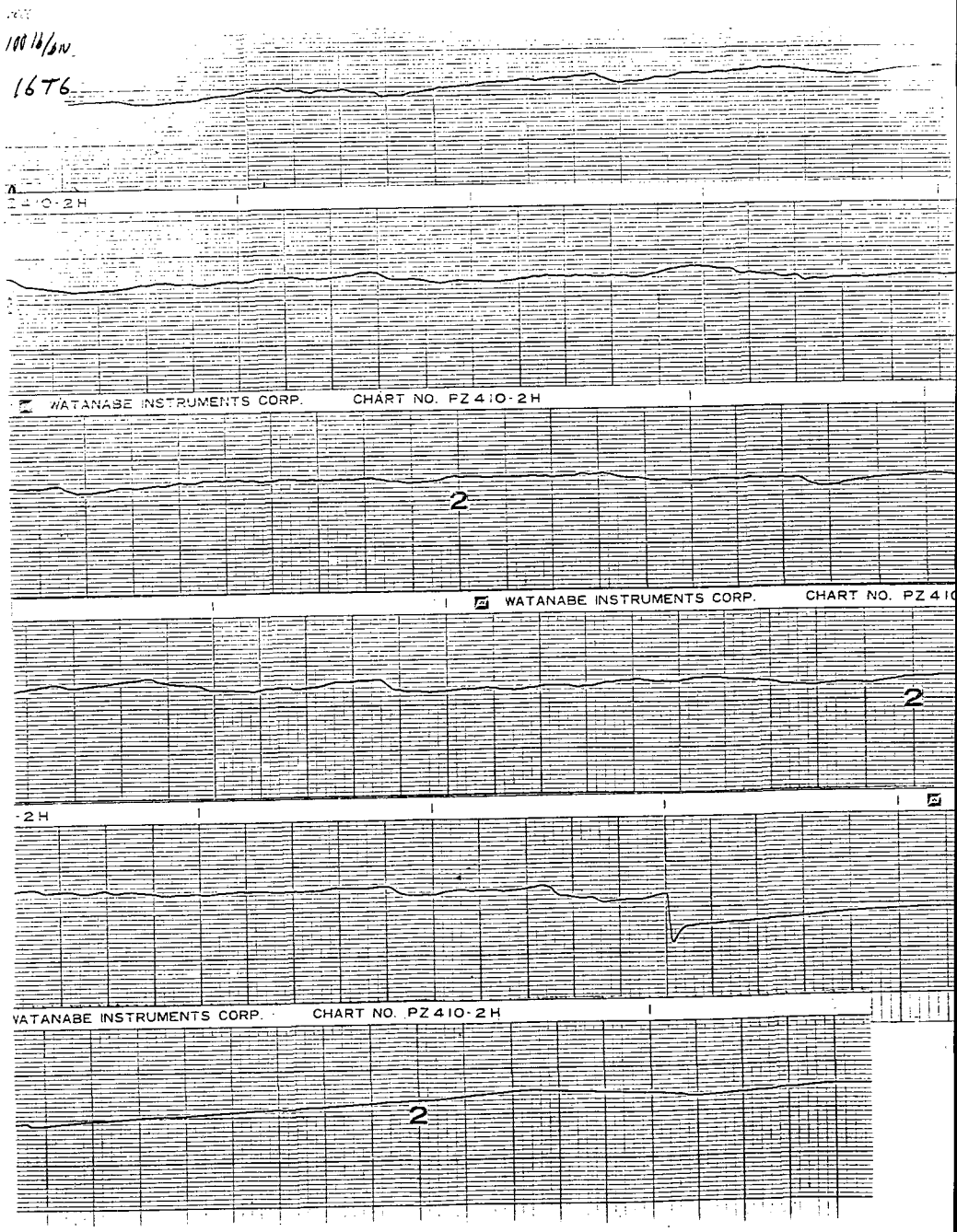

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description #6 1/C

Standards Used: 506652, 506326, 522035, 543211, 212526, 502445, 543202, 902038

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	16T7-							
1.	1	.3293	.3234	.1855	.1822	37.2	>10,000 MΩ	Test OK
2.	2	.3282	.3248	.1859	.1800	37.0		
3.	3	.3278	.3240	.1858	.1804	37.7		
4.	4	.3326	.3258	.1832	.1816	39.4		
5.	5	.3279	.3243	.1856	.1807	42.3		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2550 lbs (Max.)
Radius (R) = 0.6671 ft
T/R = 3823 lbs/ft
Correction Factor (X) = 0.42
SWBP = X(T/R) = 1605 lbs/ft.

Anomalies: ~~*Fail Hi-pot Test 24" Above Water line R.A.T. 5/29/86~~

Tested By/Date VEK 5-21-86 Tension; 5-23-86 Micrometer; VEK R.A.T. Dielectric; R.A.T. 5/29/86 Resistance

Verified By/Date 5/29/86
Test Observers

QA Approval/Date 5/29/86

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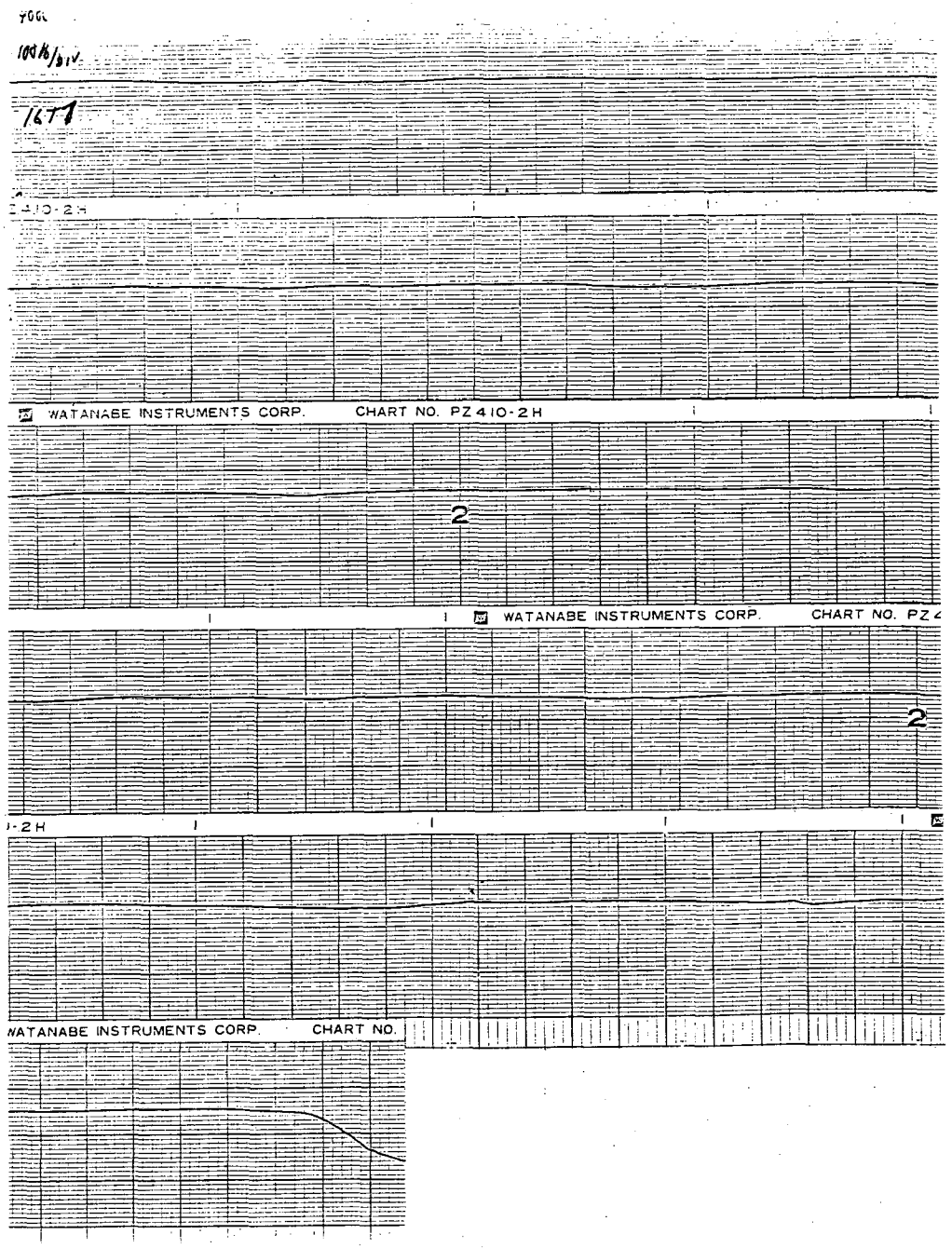


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/C

Standards Used: 506652, 506326, 522035, ~~[illegible]~~ 543211, 212506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
16T8-							
1. 1	.3336	.3256	.1851	.1780	38.0*	>10,000 MΩ	Test ok
2. 2	.3339	.3300	.1849	.1802	40.1		
3. 3	.3336	.3289	.1850	.1805	36.9		
4. 4	.3336	.3289	.1843	.1770	48.6		
5. 5	.3350	.3300	.1848	.1807	38.4		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2650 lbs (Max.)
Radius (R) = 0.6671 ft
T/R = 3972 lbs/ft
Correction Factor (X) = 0.42
SWBP = X(T/R) = 1668 lbs/ft.

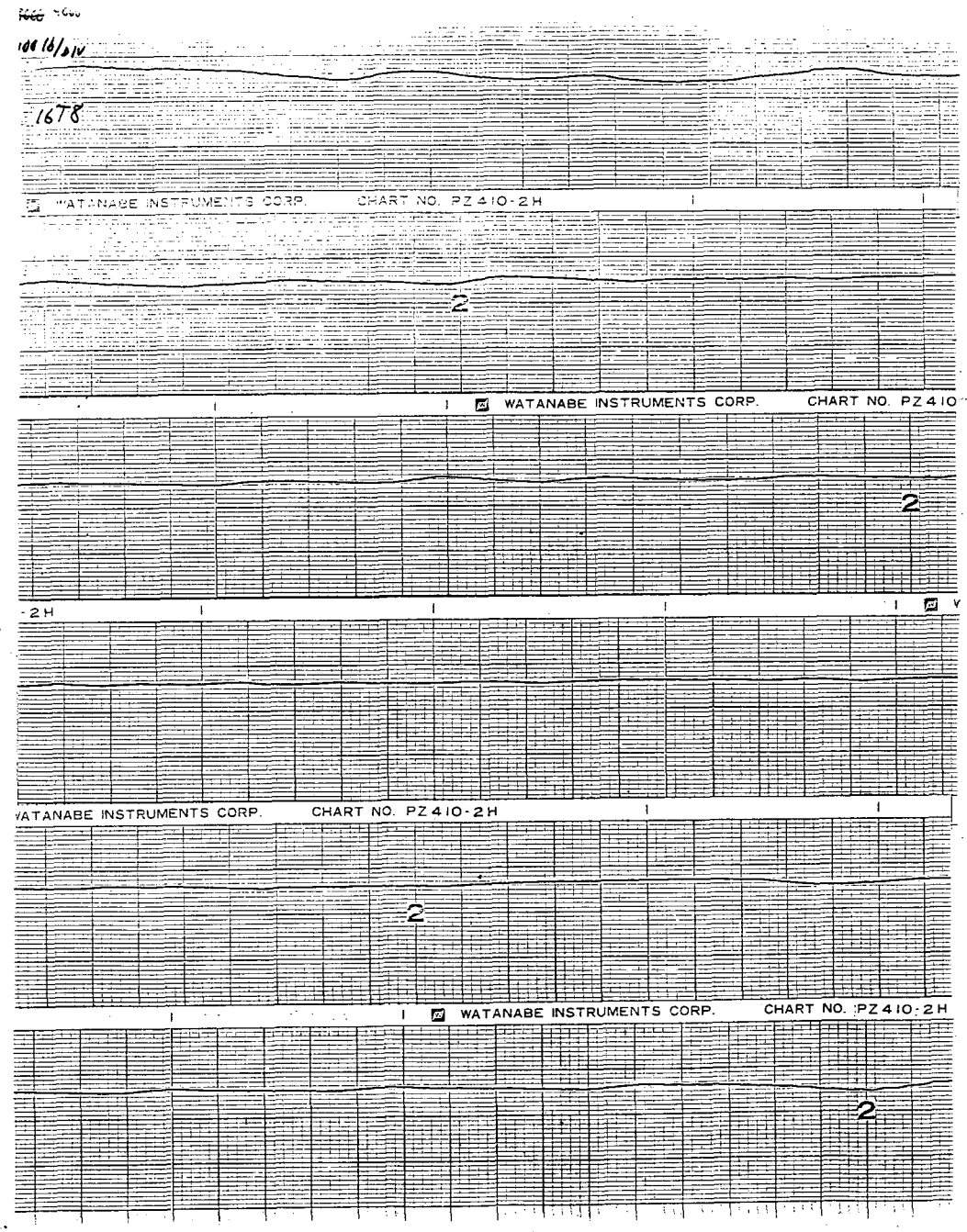
Anomalies: * Failed Hi-Pot Test 2½ inch above water line

Tested By/Date VCK 5-23-86 Tension; Am 7 5-23-86 Micrometer; VCK RAT Dielectric; R.A.T. 5/23/86 Resistance

Verified By/Date HC 5/29/86
Test Observers AR

QA Approval/Date MRC 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/C

Standards Used: 506652, 506326, 522035, 212506, 502445, 543202, 902038, 543211

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	16T9							
1.	1	.3317	.3298	.1850	.1846	~~35.7~~ 36.0 gm 5/23/86	>10,000 MΩ	TEST OK
2.	2	.3317	.3291	.1845	.1802	36.2		
3.	3	.3297	.3275	.1845	.1811	44.9		
4.	4	.3320	.3304	.1823	.1805	36.5		
5.	5	.3355	.3300	.1849	.1805	32.4		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

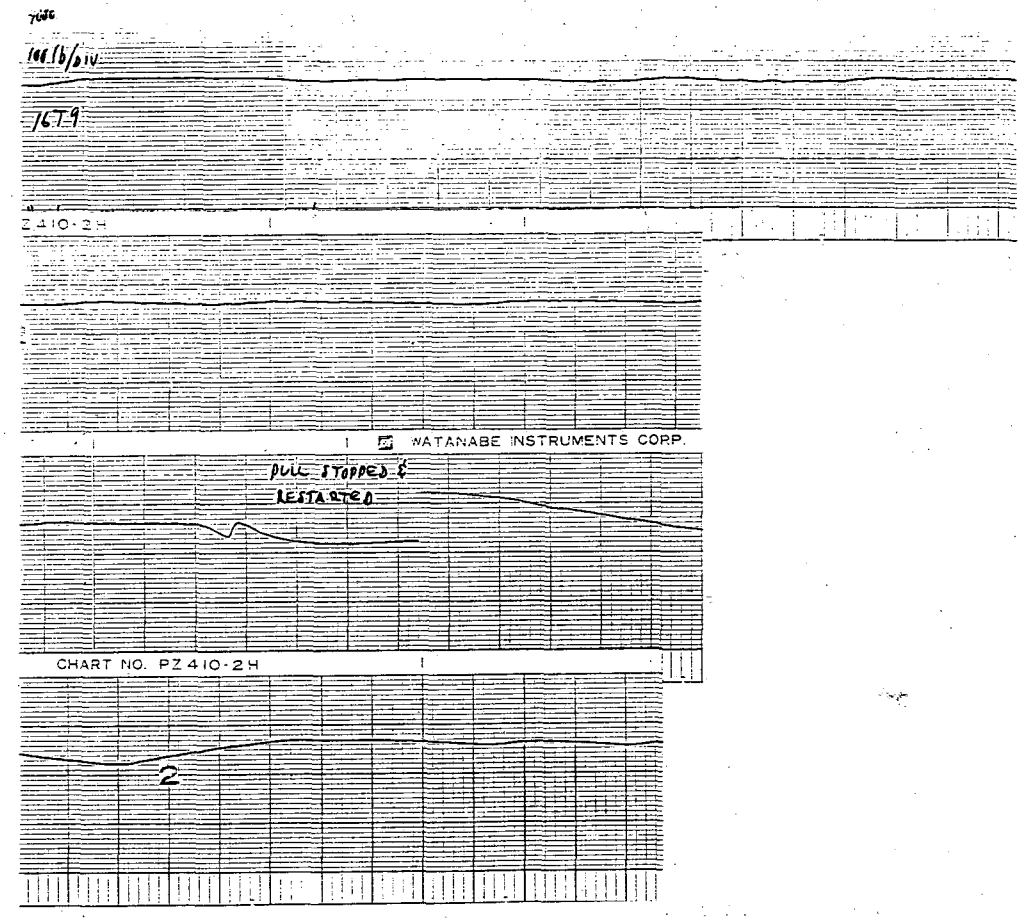
Tension (T) = 3220 lbs (Max.)
Radius (R) = 0.6671 ft
T/R = 4827 lbs/ft
Correction Factor (X) = 0.42
SWBP = X(T/R) = 2027 lbs/ft lbs/ft

Anomalies:

Tested By/Date VEK 5-22-86 Tension | JM 5-23-86 Micrometer | VEK 5-25-86 Dielectric | VEK 5-25-86 Resistance

Verified By/Date HR 5/29/86 QA Approval/Date JSR 5/29/86
Test Observers AR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 16
Sample No. . . . . = 632
Description No 6 1/C

Standards Used: 506652, 506326, 522035, 543211, 212504, 502445, 543202, 902038.

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
16T10-							
1. 1	.3383	.3283	.1853	.1822	34.9	>10,000 MΩ	Test OK
2. 2	.3353	.3282	.1826	.1771	34.1		
3. 3	.3328	.3287	.1840	.1810	~~34.0~~ 34.6		
4. 4	.3331	.3302	.1838	.1772	34.3		
5. 5	.3319	.3286	.1850	.1825	49.8		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2820 lbs (Max.)
Radius (R) = 0.6671 ft
T/R = 4227 lbs/ft
Correction Factor (X) = 0.42
SWBP = X(T/R) = 1775 lbs/ft.

Anomalies:

Tested By/Date VEK 5-23-86 (Tension) — DMF 5-24-86 (Micrometer) — VEK R.A.T. (Dielectric) — R.A.T. 5/29/86 (Resistance)

Verified By/Date [illegible] 5/29/86 QA Approval/Date [illegible] 5/29/86
Test Observers [illegible]

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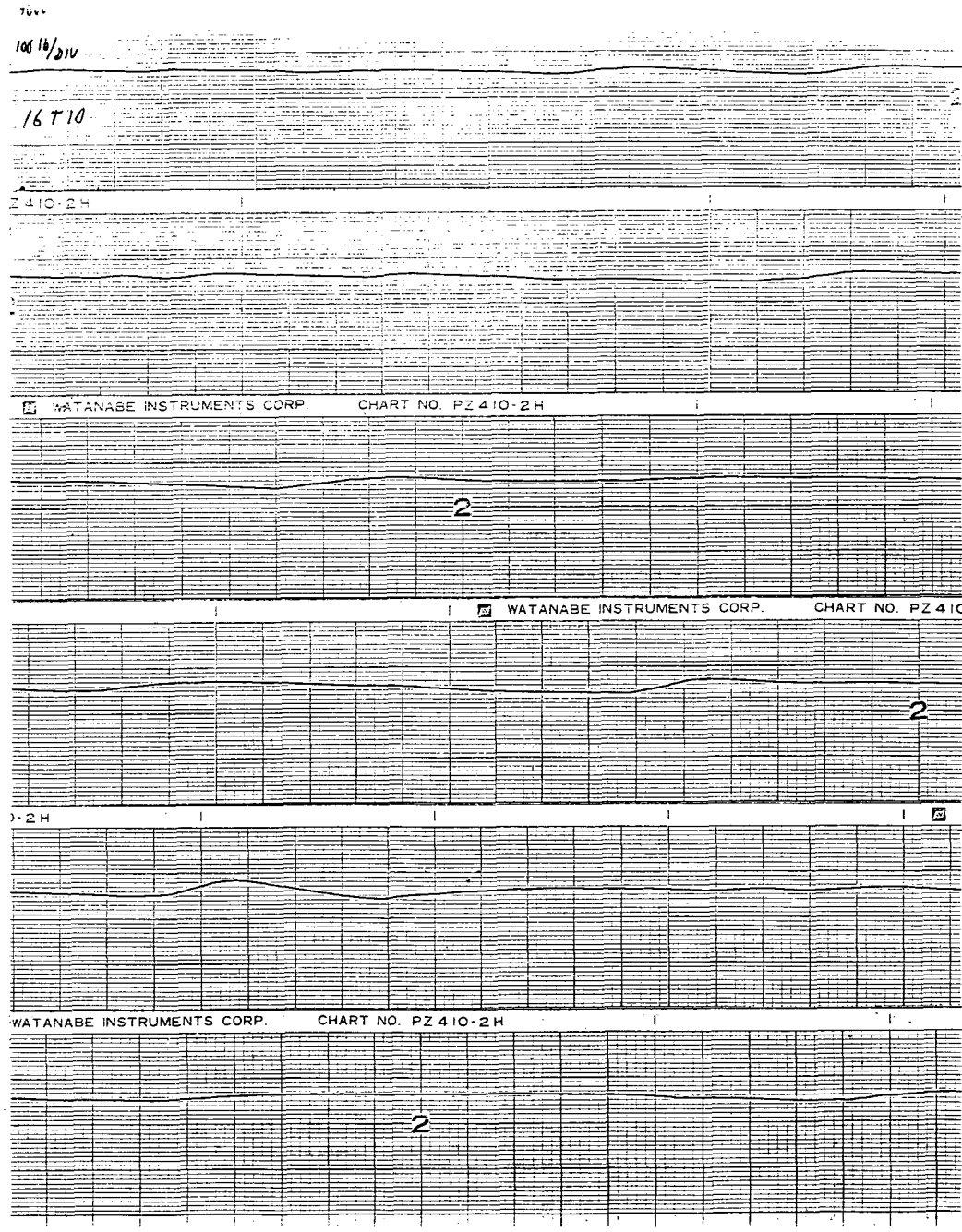

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 17
Sample No. . . . . = 150
Description No 6 1/C

Standards Used: 543211, 212506, 543202, 902638

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned

1-Conductor ✓
Multi-Conductor

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	17V1	.3527	.3519	.1816	.1800	36.6	>10.000 MΩ	✓/K
2.	17V2	.3549	.3523	.1860	.1849	32.5	↓	↓
3.	17V3	.3569	.3555	.1826	.1802	38.0	↓	↓
4.	17V4	.3599	.3549	.1817	.1812	34.1	↓	↓
5.	17V5	.3552	.3532	.1817	.1805	35.1	↓	↓
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies:

Tested By/Date N/A Tension; [illegible] 5-7-86 Micrometer; JB R.A.T. 5/5/86 Dielectric; R.A.T. 5/5/86 Resistance

Verified By/Date HR 5/29/86
Test Observers PAR

QA Approval/Date [illegible] 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 17
Sample No. . . . . = 150
Description No 6 1/C

Standards Used: 506325, 543175, 522035, 543211, 212506, 502445, 543202, 902038

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓

1-Conductor ✓ Multi-Conductor ___

	Test No. 17T1-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.3509	.3470	.1814	.1807	36.3	>10,000 MΩ	Test OK
2.	2	.3540	.3515	.1831	.1809	36.4		
3.	3	.3528	.3486	.1820	.1814	36.3		
4.	4	.3545	.3520	.1812	.1806	39.2		
5.	5	.3556	.3500	.1830	.1817	37.1		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2040 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3058.01 lbs/ft
Correction Factor (X) = .424
SWBP = X(T/R) = 1296.60 lbs/ft

Anomalies:

Tested By/Date VEK 5-7-86 Tension; GMT 5-8-86 Micrometer; JB R.A.T. 5/9/86 Dielectric; R.A.G. 5/9/86 Resistance

Verified By/Date HE 5/29/86
Test Observers AR

QA Approval/Date JRC 5/29/86

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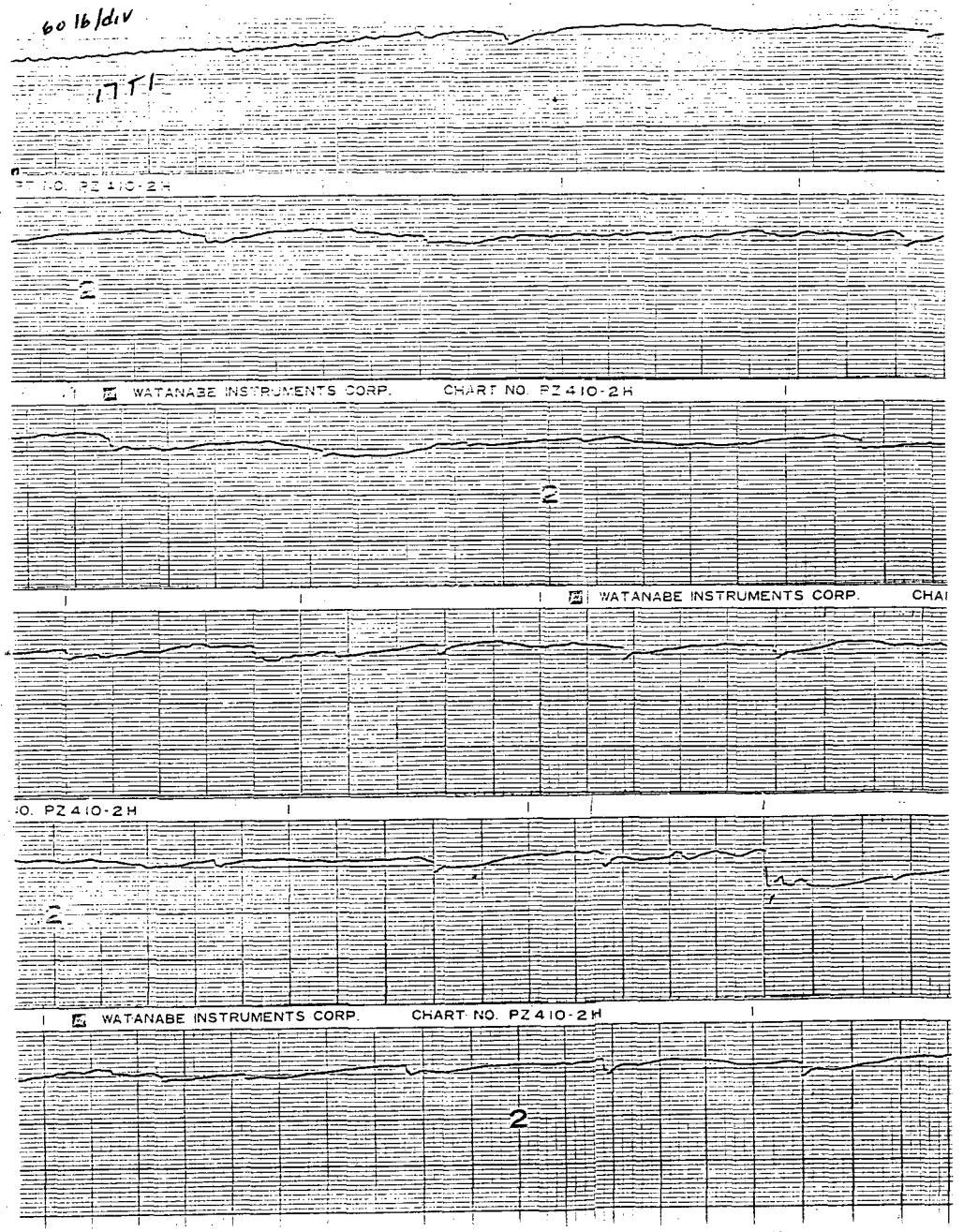

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 17
Sample No. . . . . = 150
Description No 6 1/C

Standards Used: 506325, 543175, 522035, 543211, 212506, 502445, 543202, 902038

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No. 17T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.3513	.3443	.1819	.1801	39.4	>10,000 MΩ	Test OK
2.	2	.3524	.3500	.1837	.1815	34.8	↓	↓
3.	3	.3541	.3514	.1832	.1807	37.8	↓	↓
4.	4	.3532	.3459	.1821	.1804	34.1	↓	↓
5.	5	.3541	.3494	.1847	.1799	35.9	↓	↓
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2060 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3087.99 lbs/ft
Correction Factor (X) = .424
SWBP = X(T/R) = 1309.31 lbs/ft

Anomalies:

Tested By/Date VEK 5-7-86 Tension; OM 5-8-86 Micrometer; JB R.A.T. 5/9/86 Dielectric; R.A.T. 5/6/86 Resistance

Verified By/Date HC 5/29/86
Test Observers JR

QA Approval/Date JRR 5/29/86

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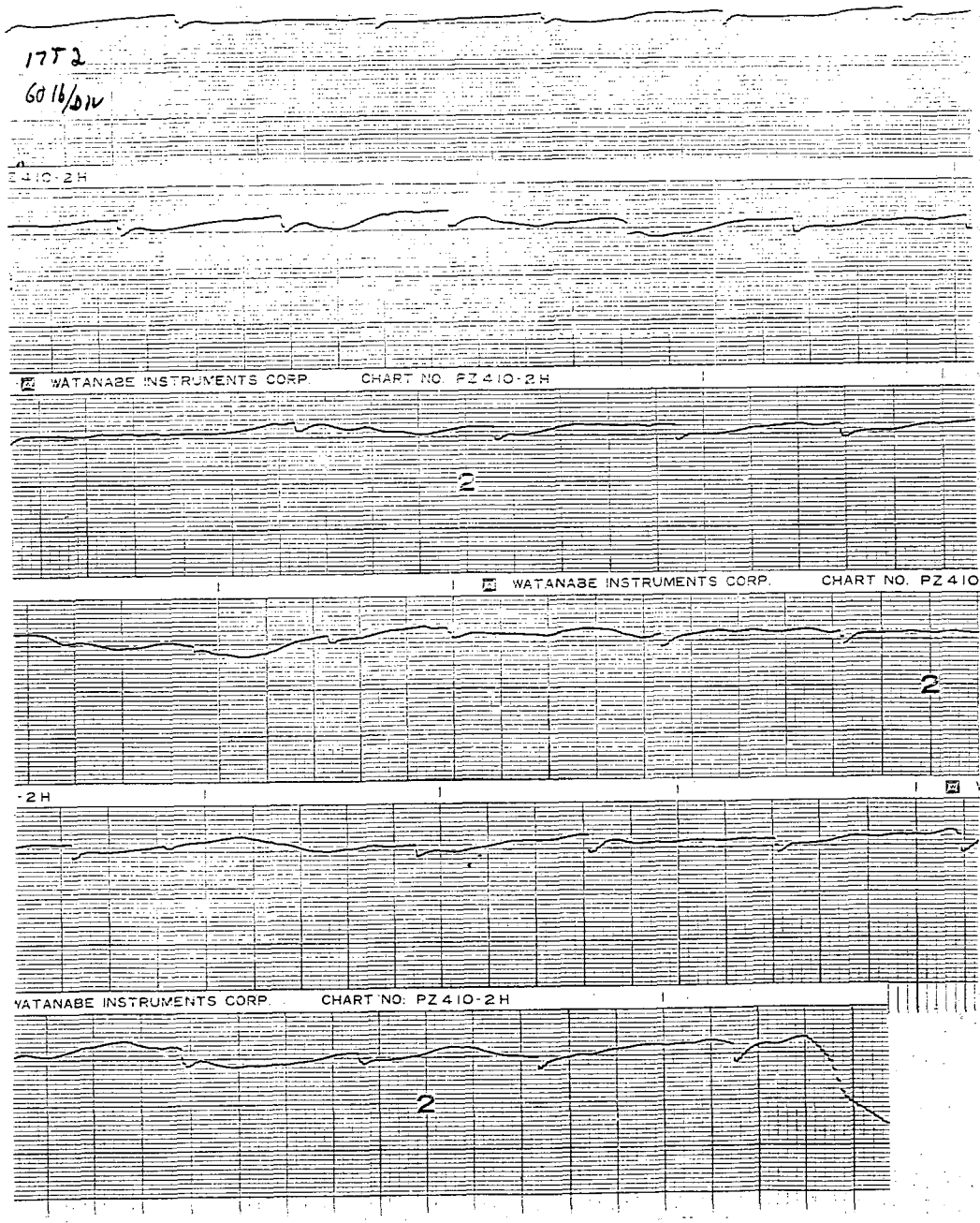

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 17
Sample No. . . . . = 150
Description No 6 1/c

Standards Used: 506325, 543175, 522035, 543211, 212526, 502445, 643307, 902038.

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ✓
Tensioned ✓

1-Conductor ✓
Multi-Conductor

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	17T3 –							
1.	1	.3402	.3384	.1820	.1806	37.2	>10,000 mΩ	Test OK
2.	2	.3497	.3405	.1817	.1795	34.5		
3.	3	.3549	.3469	.1856	.1826	34.5		
4.	4	.3417	.3383	.1831	.1818	32.2		
5.	5	.3422	.3383	.1812	.1806	29.9		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2010 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3013.04 lbs/ft
Correction Factor (X) = .424
SWBP = X(T/R) = 1277.53 lbs/ft

Anomalies:

Tested By/Date VJK 5-7-86 (Tension) SM 7 5-9-86 (Micrometer) JB R.A.T. 5/9/86 (Dielectric) R.A.T. 5/9/86 (Resistance)

Verified By/Date JC 5/29/86
Test Observers RR

QA Approval/Date JSC 5/29/86

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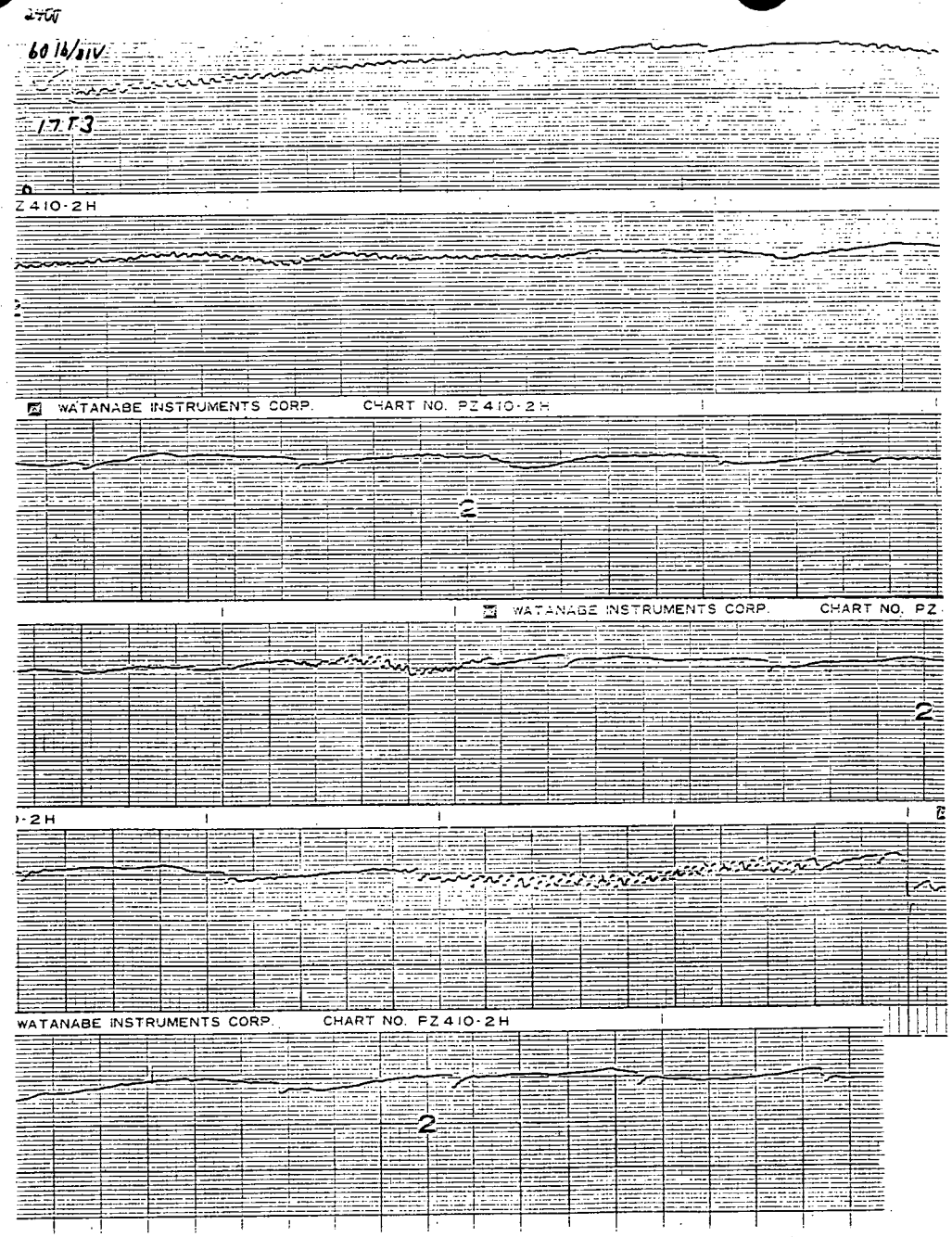

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 17
Sample No. . . . . = 150
Description No 6 1/c

Standards Used: 506325, 543175, 522035, 543211, 212506, 502445, 902038, 543002

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
17T4-							
1. 1	.3432	.3360	.1824	.1806	37.1	>10,000MΩ	Test OK
2. 2	.3412	.3373	.1919	.1800	39.8		
3. 3	.3401	.3382	.1834	.1814	36.3		
4. 4	.3441	.3404	.1845	.1806	34.2		
5. 5	.3421	.3378	.1840	.1808	37.2		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2200 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3297.86 lbs/ft
Correction Factor (X) = .424
SWBP = X(T/R) = 1398.29 lbs/ft

Anomalies:

Tested By/Date VEK 5-8-86 (Tension) | UM 7-5-9-86 (Micrometer) | JB R.A.T. 5/9/86 (Dielectric) | R.A.T. 5/9/86 (Resistance)

Verified By/Date 5/29/86
Test Observers

QA Approval/Date 5/29/86

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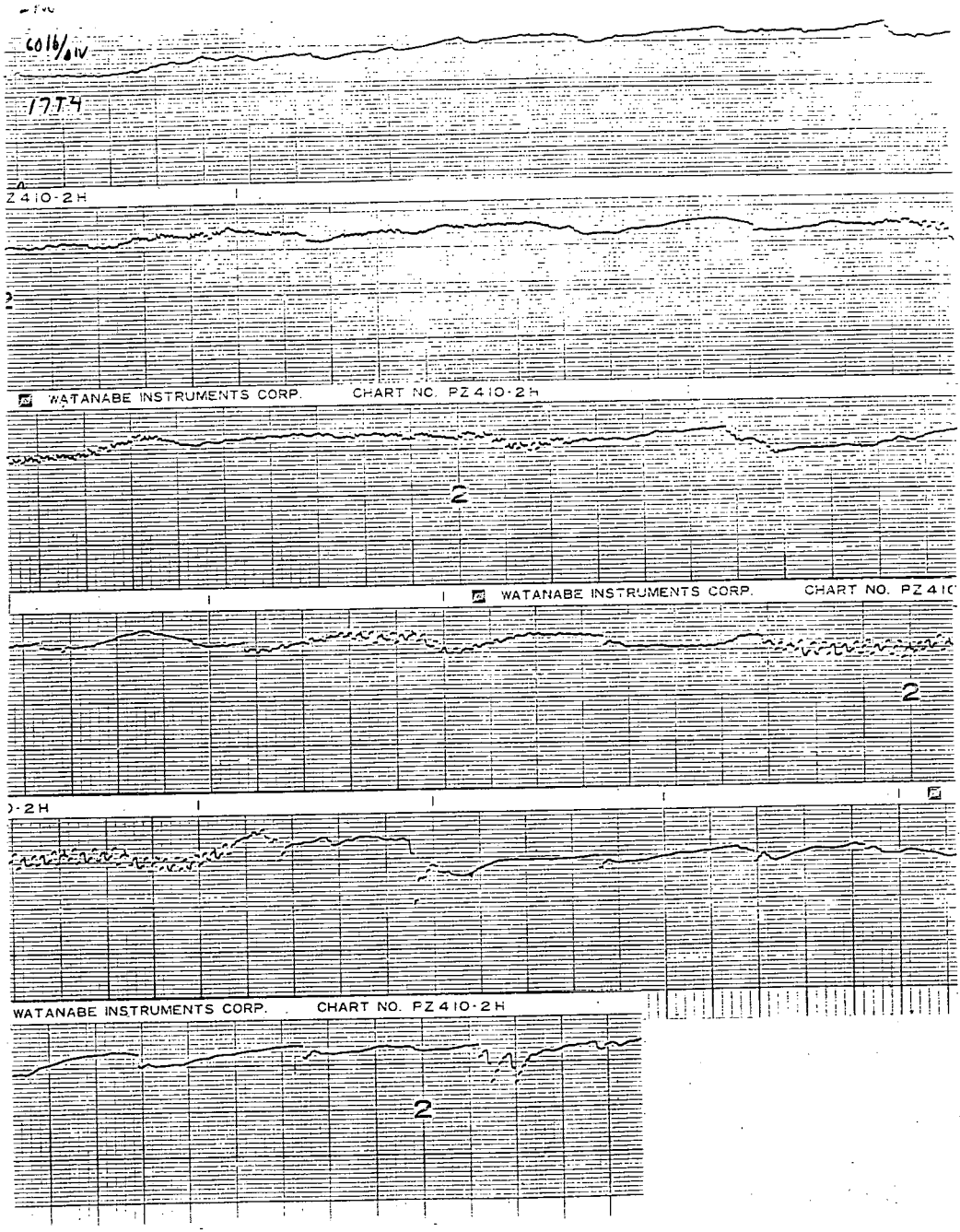

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 17
Sample No. . . . . = 150
Description No 6 1/c

Standards Used: 506225, 543175, 522075, 543211, 213506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___
Tensioned ✓

1-Conductor ✓
Multi-Conductor ___

	Test No. 1775-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.3424	.3393	.1840	.1811	37.6	>10,000MΩ	Test OK
2.	2	.3445	.3371	.1838	.1810	31.6		
3.	3	.3369	.3338	.1840	.1799	37.1		
4.	4	.3397	.3363	.1845	.1759	39.4		
5.	5	.3385	.3354	.1822	.1805	29.5		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2160 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3237.90 lbs/ft
Correction Factor (X) = .424
SWBP = X(T/R) = 1372.27 lbs/ft

Anomalies:

Tested By/Date VEK 5-8-86 Tension — Micrometer 5-9-86 — JB Dielectric — R.A.T. 5/6/86 Resistance — R.A.T. 5/6/86

Verified By/Date WE 5/29/86
Test Observers RAR

QA Approval/Date JRA 5/29/86

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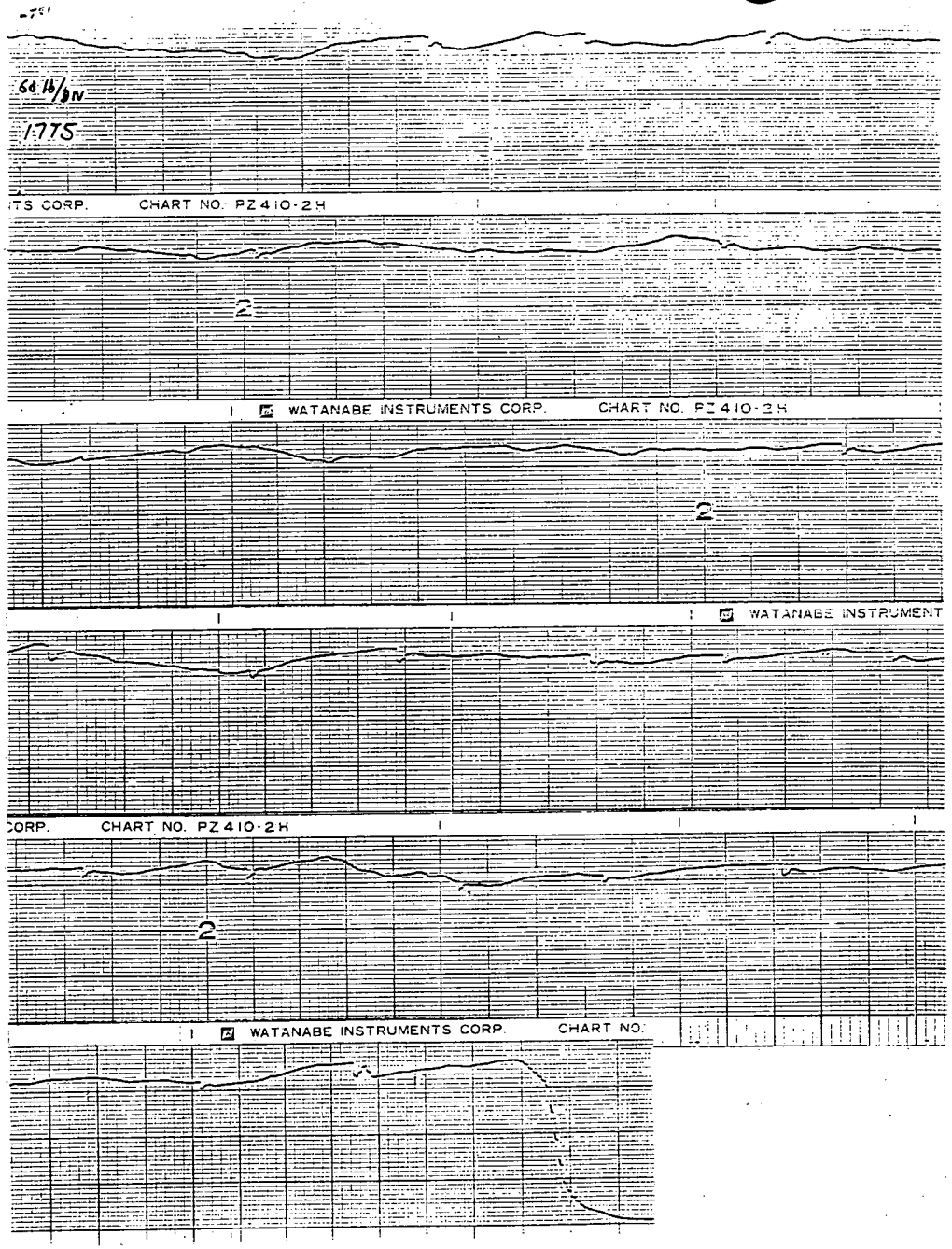


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 18
Sample No. . . . . = 740
Description No 2 1/c

Standards Used: ~~5066~~ 5-9-86 JR
543202, ~~903035~~, 543211, 712506,
R.A.T. 5/7/86,

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	18V1	.4700	.4628	.2948	.2914	43.9	>10,000 MΩ	N/A
2.	18V2	.4675	.4653	.2906	.2900	45.9	↓	↓
3.	18V3	.4717	.4676	.2913	.2889	47.7	↓	↓
4.	18V4	.4694	.4654	.2870	.2794	43.3	↓	↓
5.	18V5	.4741	.4654	.2846	.2824	47.8	↓	↓
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension — DM 7 5-9-86 Micrometer — JB R.A.T. 5/7/86 Dielectric — R.A.T. 5/10/86 Resistance

Verified By/Date HC 5/29/86
Observers RR

QA Approval/Date JSR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 18
Sample No. . . . . = 740
Description No 2 1/C

Standards Used: 506652, 506326, 522035, 543211, 212 506, 502445, 543202, ~~902038~~ JB 5/13/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓

1-Conductor ✓ Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	18T1-	.4721	.4621	.2929	.2813	44.5	>10,000 MΩ	Test OK
2.	1	.4702	.4625	.2938	.2890	45.8	↓	↓
3.	2	.4721	.4656	.2909	.2770	46.6	↓	↓
4.	3	.4712	.4585	.2912	.2830	45.5	↓	↓
5.	4	.4691	.4595	.2884	.2800	38.9		
6.	5							
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

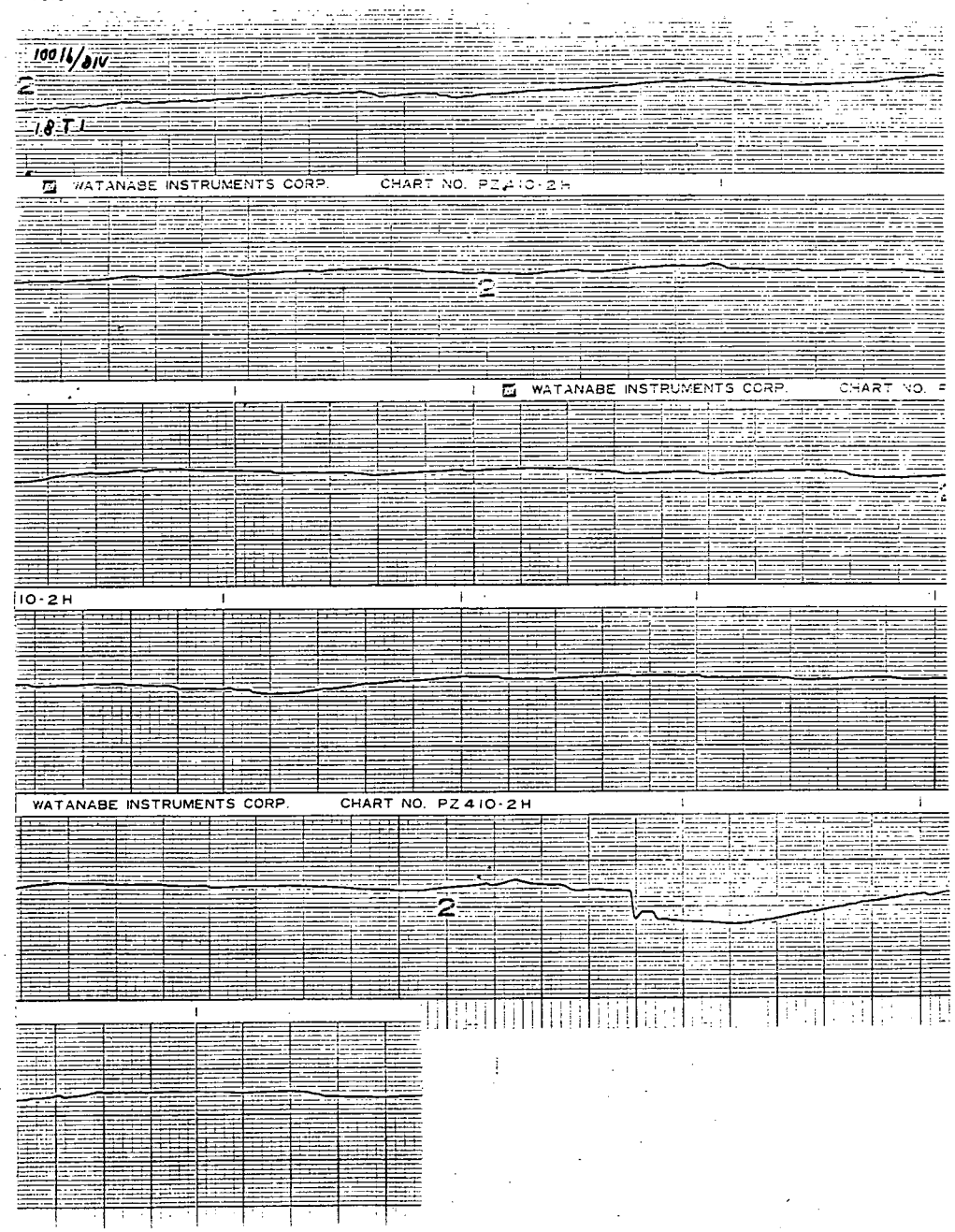
Tension (T) = 2600 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3897.47 lbs/ft
Correction Factor (X) = .474
SWBP = X(T/R) = ~~1652.53~~ 1847.48 lbs/ft

Anomalies:

Tested By/Date VSK 5-9-86 (Tension) — JM 5-9-86 (Micrometer) — JB R.A.T. 5/6/86 (Dielectric) — R.A.T. 5/6/86 (Resistance)

Verified By/Date HC 5/29/86 — QA Approval/Date JAR 5/29/86
Test Observers AR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 18
Sample No. . . . . = 740
Description No 2 1/C

Standards Used: 506652 506326 522035 543214 212506 502445 543203 ~~502055~~ JB 5/13/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No. 18T2-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.4686	.4623	.2894	.2856	46.5	>10,000MΩ	Test OK
2.	2	.4740	.4639	.2955	.2834	46.3		
3.	3	.4755	.4619	.2949	.2867	45.5		
4.	4	.4700	.4604	.2900	.2891	45.3		
5.	5	.4721	.4619	.2971	.2873	44.5		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

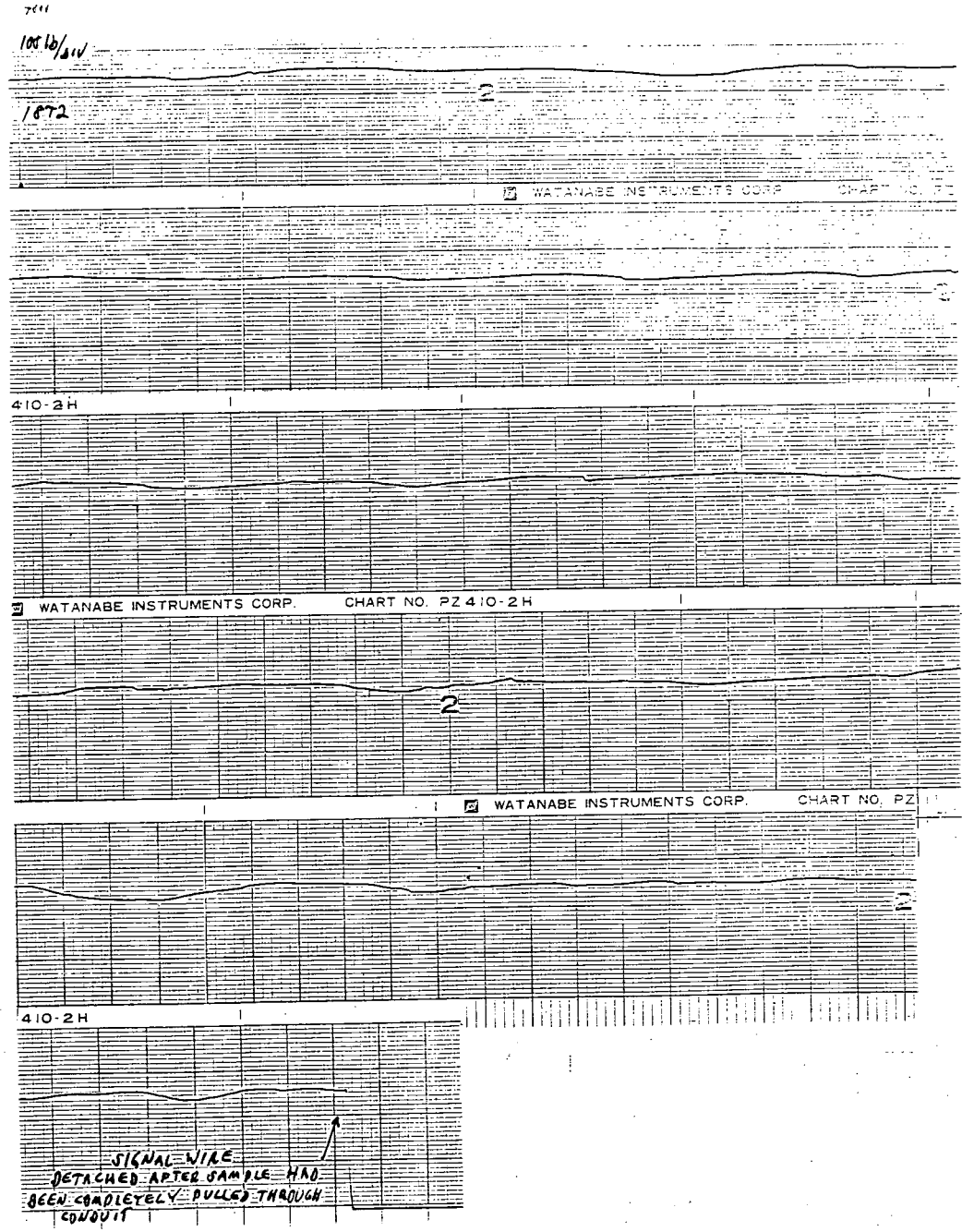
Tension (T) = VEK 5-9-86 ~~2604~~ 2620 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3927.45 lbs/ft
Correction Factor (X) = ~~QAR 5/14/86 .424~~ .474
SWBP = X(T/R) = ~~QAR 5/14/86 1655.24~~ 1861.61 lbs/ft

Anomalies:

Tested By/Date VEK 5-9-86 Tension — JM 7 5-9-86 Micrometer — JB Dielectric — R.A.T. 5/9/86 — R.A.T. 5/9/86 Resistance

Verified By/Date HC 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers JR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 18
Sample No. . . . . = 740
Description No. 2 1/C

Standards Used: 506652, 506326, 522035, 543211, 212506, 582445, 543202, ~~903038~~ JB 5/13/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	18T3-#							
1.	1	.4754	.4647	.2938	.2839	46.3	>10,000MΩ	Test OK
2.	2	.4722	.4596	.2908	.2895	42.8		
3.	3	.4752	.4642	.2912	.2886	43.3		
4.	4	.4734	.4656	.2940	.2814	43.9		
5.	5	.4727	.4679	.2911	.2855	41.5		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = n/a Max n/a Min

SWBP Data

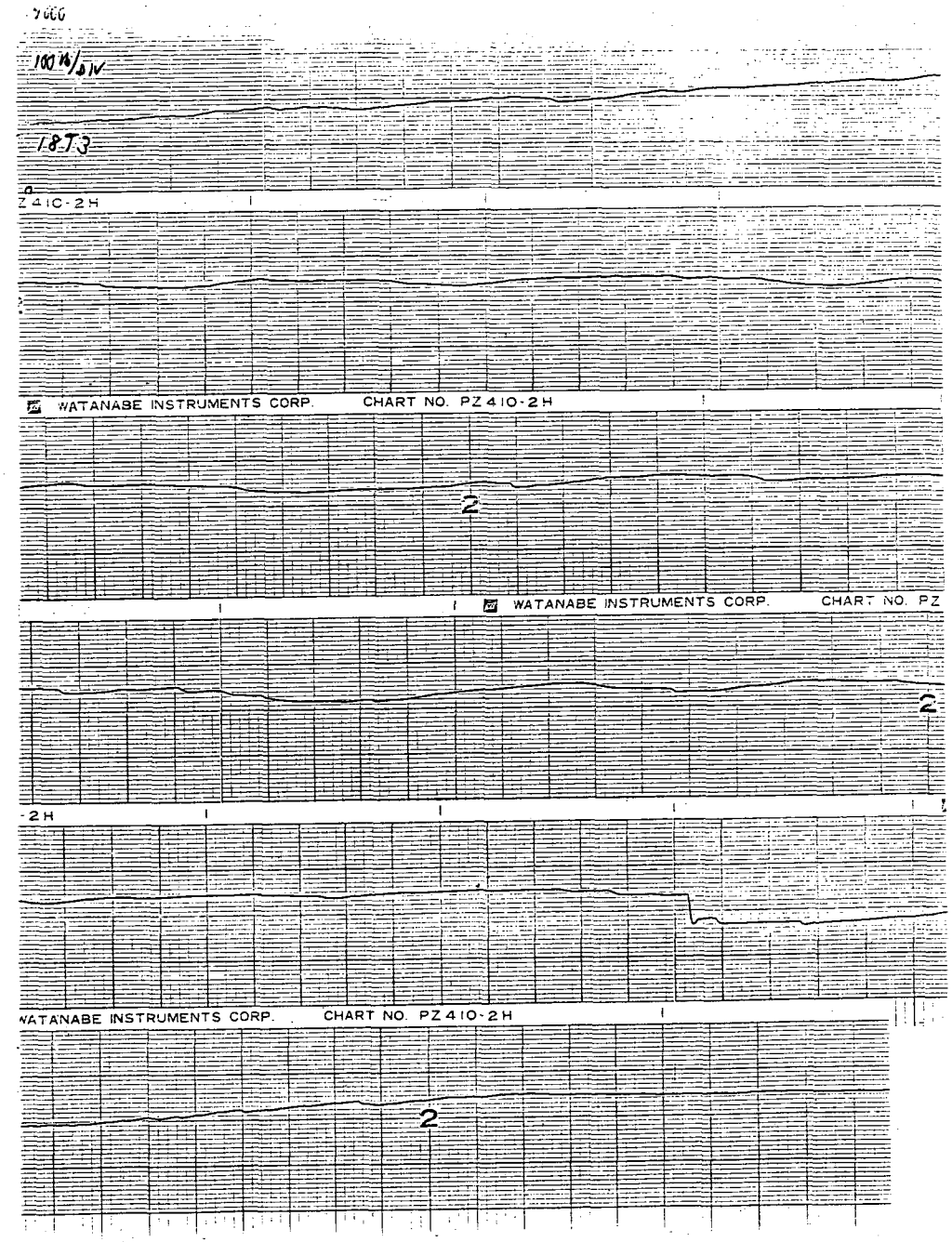
Tension (T) = 2620 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3927.45 lbs/ft
Correction Factor (X) = ~~.0825 .4161 .4727~~ .474
SWBP = X(T/R) = ~~1665.24~~ 1861.61 lbs/ft

Anomalies:

Tested By/Date VEK 5-9-86 Tension — JM 5-9-86 Micrometer — JB 5/13/86 Dielectric — R.A.T. 5/10/86 Resistance

Verified By/Date VK 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers RR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 18
Sample No. . . . . = 740
Description No 2 1/C

Standards Used: 506652, 506326, 522635, 543211, 212504, 502445, 543202, ~~902036~~ JB 5/13/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No. 18T4 –	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.4719	.4626	.2932	.2880	43.6	>10,000MΩ	Test OK
2.	2	.4743	.4651	.2904	.2884	45.7	↓	↓
3.	3	.4785	.4684	.2903	.2895	47.3		
4.	4	.4756	.4639	.2905	.2841	44.3		
5.	5	.4748	.4658	.2905	.2842	43.8		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = n/a Max n/a Min

SWBP Data

Tension (T) = 2600 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3897.47 lbs/ft
Correction Factor (X) = ~~JAR 5/24/86 .424~~ .474
SWBP = X(T/R) = ~~JAR 5/24/86 1653.53~~ 1847.40 lbs/ft

Anomalies:

Tested By/Date VLK 5-9-86 Tension; JM 5-9-86 Micrometer; JB Dielectric; R.A.T. 5/16/86 Resistance

Verified By/Date HR 5/29/86
Test Observers JR

QA Approval/Date JAR 5/29/86

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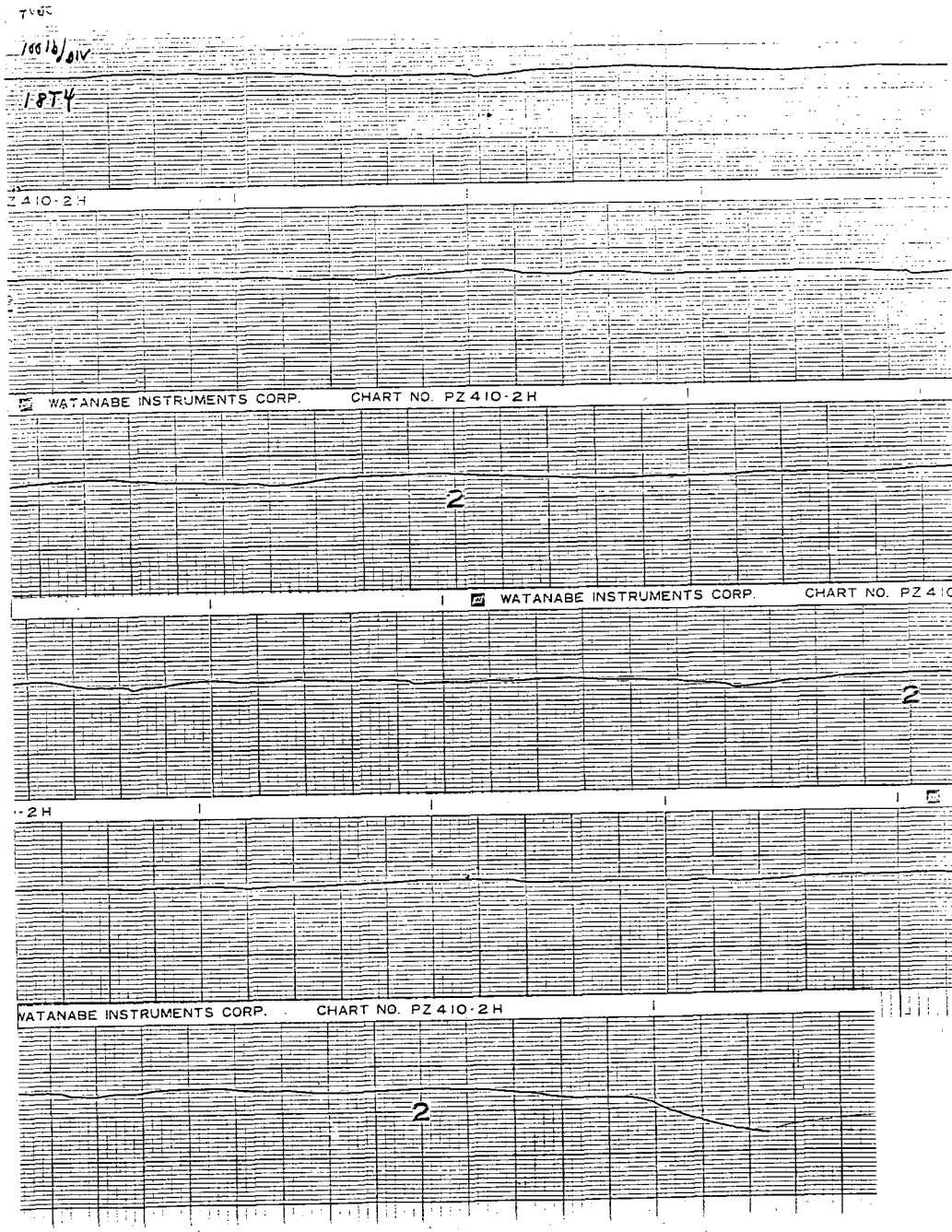

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 18
Sample No. . . . . = 740
Description No 2 1/C

Standards Used: 506652, 506326, 522035, 543211, 512506, 502445, 543202, ~~502035~~ JB 5/13/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No. 18T5-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.4742	.4590	.2945	.2884	34.7	>10,000 MΩ	Est OK
2.	2	.4698	.4652	.2971	.2860	44.5	↓	↓
3.	3	.4731	.4665	.2966	.2889	47.7		
4.	4	.4739	.4642	.2923	.2821	41.4		
5.	5	.4735	.4647	.2988	.2844	46.3		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2590 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3882.48 lbs/ft
Correction Factor (X) = ~~.5 5/24/86~~ ~~.424~~ .474
SWBP = X(T/R) = ~~5/24/86~~ ~~1646.17~~ 1840.29 lbs/ft

Anomalies:

Tested By/Date VEX 5-9-86 Tension; CMZ 5-9-86 Micrometer; JB R.A.T. 5/16/86 Dielectric; R.A.S. 5/16/86 Resistance

Verified By/Date JE 5/29/86 QA Approval/Date JSE 5/29/86
Test Observers JB

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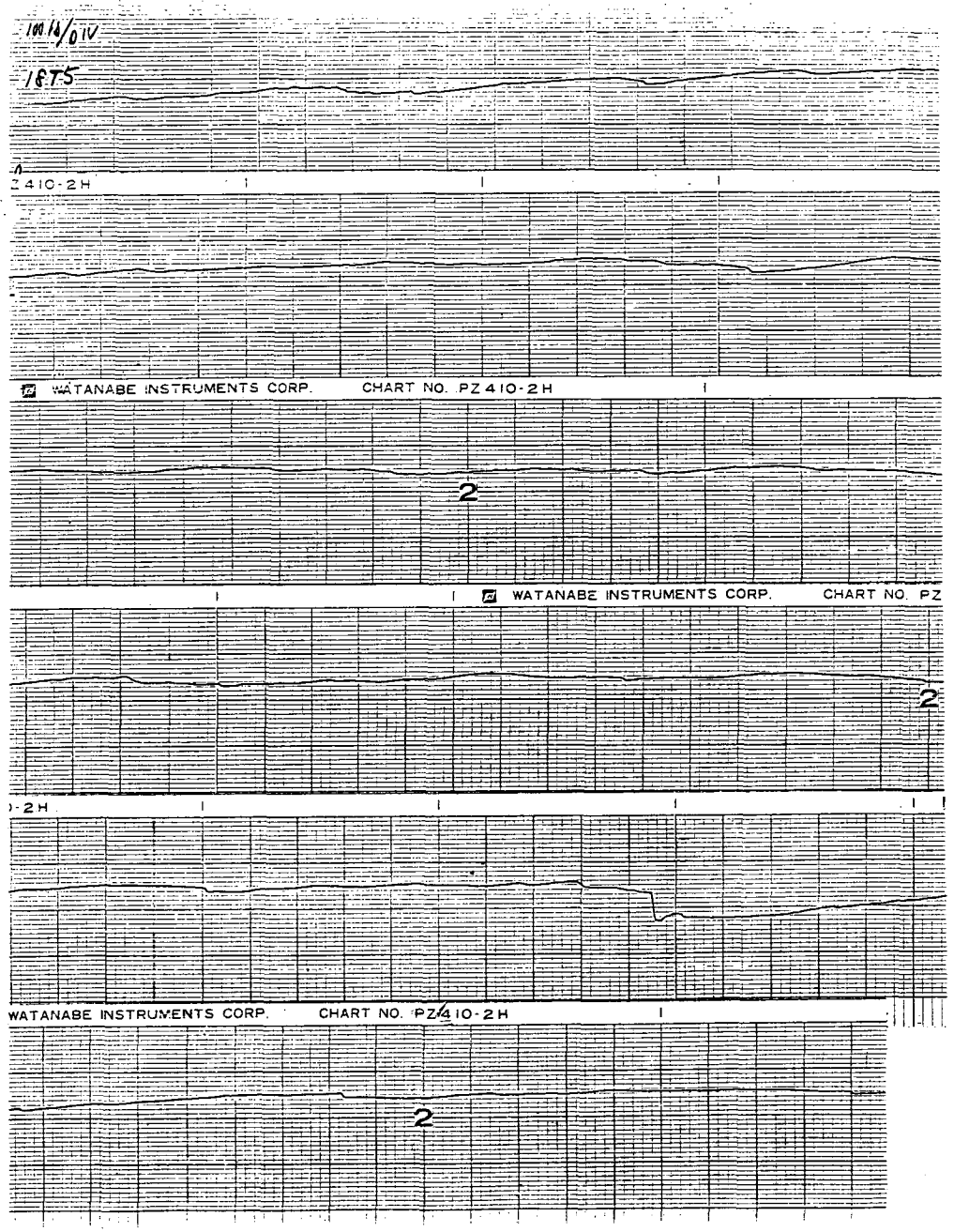


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 19
Sample No. . . . . = 58
Description No 2 1/c

Standards Used: 543211, 212506, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	19V1	.4700	.4669	.2943	.2884	49.5 *	>10,000 MΩ	N/A
2.	19V2	.4713	.4689	.2891	.2890	43.7	↓	↓
3.	19V3	.4686	.4667	.2906	.2884	52.5 **		
4.	19V4	.4695	.4647	.2891	.2879	~~37.5~~ 45.9		
5.	19V5	.4667	.4632	.2890	.2887	37.5		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: * Failed at an indentation in insulation
** Failed several inches above water

Tested By/Date N/A Tension | DMZ 5-12-86 Micrometer | JB R.A.T. 5/13/84 Dielectric | R.A.T. 5/13/84 Resistance

Verified By/Date He 5/29/86
Observers BR

QA Approval/Date JBR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 19
Sample No. . . . . = 58
Description No 2 1/c

Standards Used: 506652, 506326, 522035, 543211, 212506, 502445, 543202, ~~[illegible]~~ JB 5/15/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No. 1971-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.4714	.4676	.2887	.2883	~~30~~, 5379	>10,000 MΩ	Test OK
2.	2	.4493	.4432	.2888	.2878	~~32~~ 46.2*		
3.	3	.4664	.4654	.2991	.2885	~~31~~ 29.8		
4.	4	.4474	.4428	.2893	.2805	~~30~~ 46		
5.	5	.4721	.4679	.2961	.2893	~~30.3~~ 32.9		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2700 lbs (Max.)
Radius (R) = .6671 ft
T/R = 4047.37 lbs/ft
Correction Factor (X) = .473
SWBP = X(T/R) = 1914.41 lbs/ft

JB 5/15/86

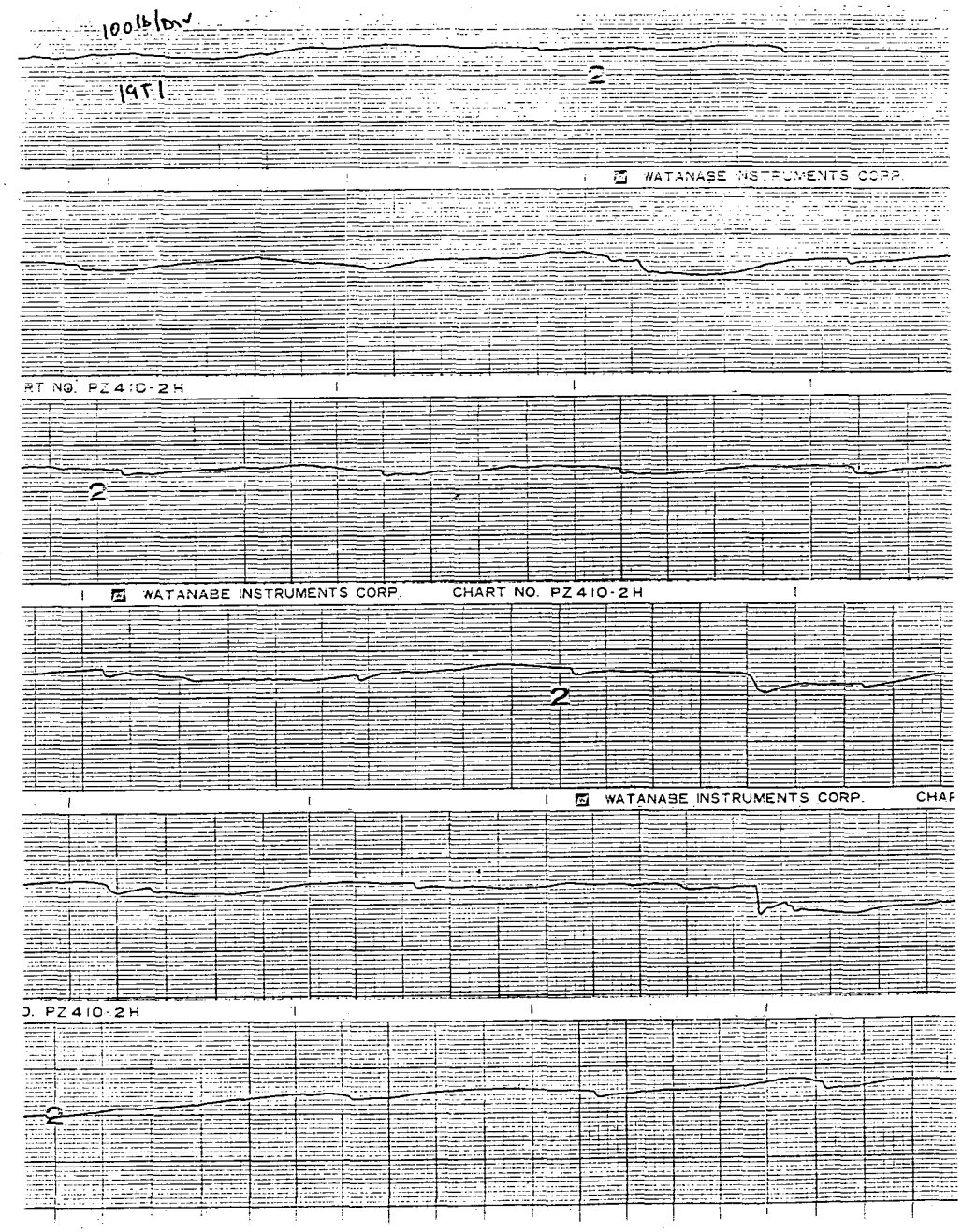
Anomalies: ~~* Failed ≈ 4 inches above water line Excessive burning~~
* Failed at rough place on insulation

Tested By/Date VEK 5-10-86 (Tension) DMZ 5-12-86 (Micrometer) JB R.O.T. 5/15/86 (Dielectric) R.O.T. 5/15/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers BR

QA Approval/Date [illegible] 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 19
Sample No. . . . . = 58
Description No 2 1/C

Standards Used: 506652, 506326, 522035, 543211, 212506, 502445, 543202,

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓

1-Conductor ✓ Multi-Conductor ___

	Test No. 19T2-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.4509	.4429	.2905	.2873	43.8	>10,000 MΩ	Test OK
2.	2	.4753	.4674	.2931	.2858	42.7	↓	↓
3.	3	.4778	.4647	.2932	.2896	33.4	↓	↓
4.	4	.4463	.4426	.2906	.2784	42.3	↓	↓
5.	5	.4714	.4649	.2936	.2900	38.5		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2760 lbs (Max.)
Radius (R) = .6671 ft
T/R = 4137.31 lbs/ft
Correction Factor (X) = .473
SWBP = X(T/R) = 1956.95 lbs/ft

Anomalies:

Tested By/Date VEK 5-6-86 (Tension) Jm 7 5-13-86 (Micrometer) JB R.A.T. 5/6/86 (Dielectric) R.A.T. 5/6/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers RA

QA Approval/Date MSR 5/29/86

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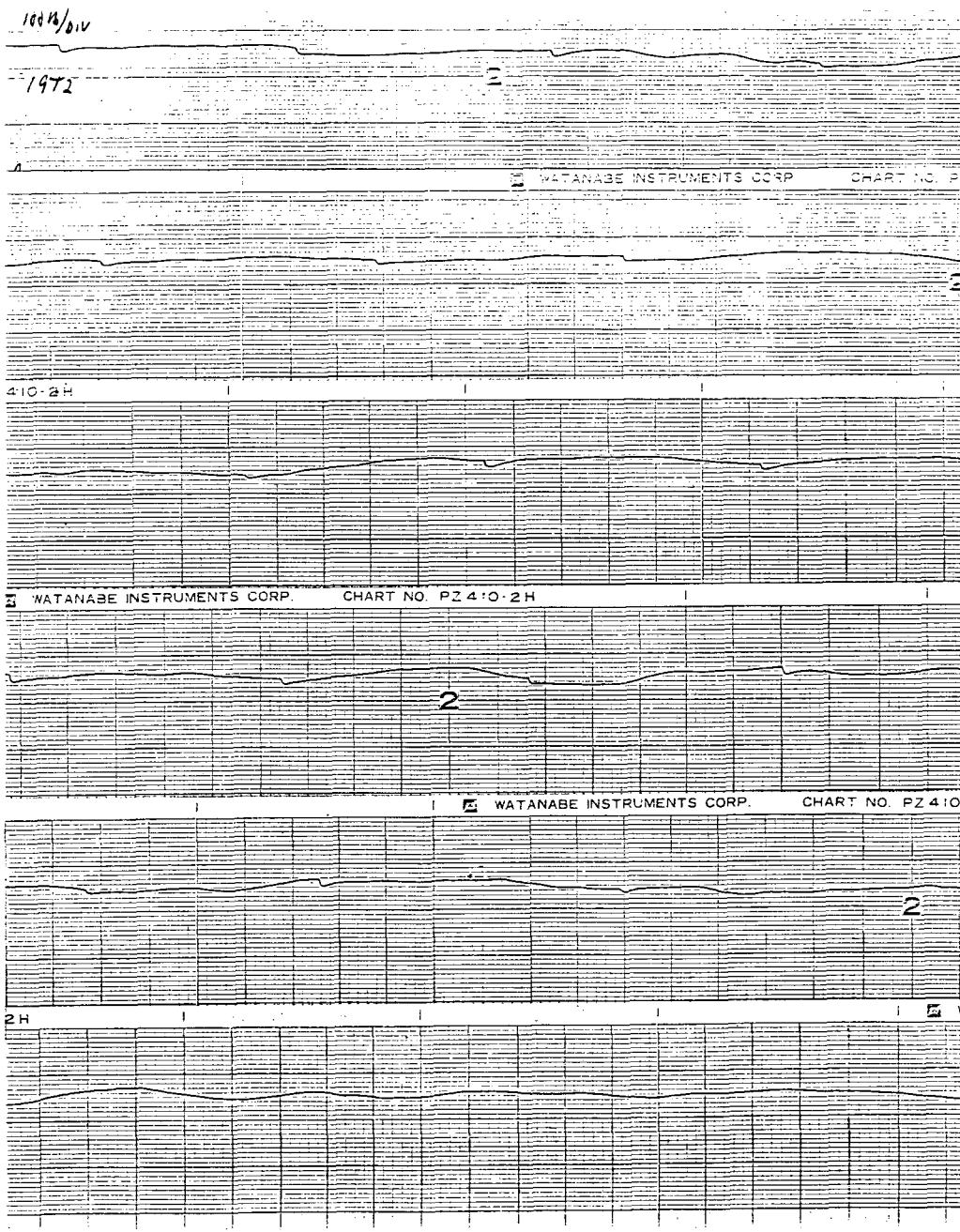


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 19
Sample No. . . . . = 58
Description No 2 1/C

Standards Used: 506652, 506326, 522035, 543211, 212506, 502445, 543202, ~~502076~~, R.A.T. 5/15/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin
Tensioned ✓

1-Conductor ✓
Multi-Conductor

Test No. 1973 -	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.4540	.4452	.2907	.2790	39.3	>10,000MΩ	Test OK
2. 2	.4459	.4434	.2903	.2835	35.8	↓	↓
3. 3	.4494	.4456	.2900	.2809	34.4	↓	↓
4. 4	.4510	.4469	.2910	.2884	38.7	↓	↓
5. 5	.4467	.4436	.2912	.2867	39.9		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2710 lbs (Max.)
Radius (R) = .6671 ft
T/R = 4062.36 lbs/ft
Correction Factor (X) = .473
SWBP = X(T/R) = 1921.50 lbs/ft

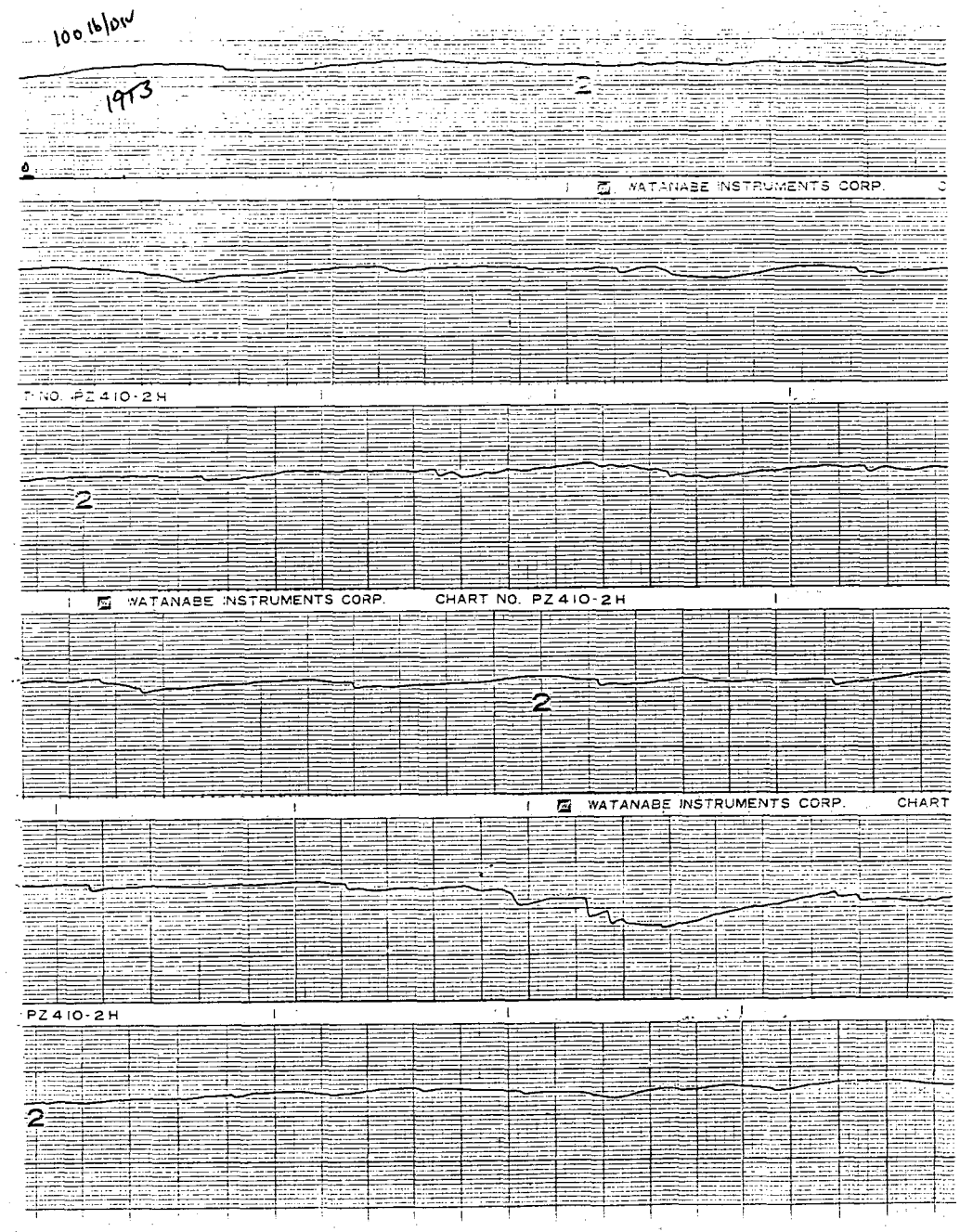
Anomalies:

Tested By/Date VZK 5-10-86 Tension | DMT 5-13-86 Micrometer | JOB R.A.T. 5/15/86 Dielectric | R.A.T. 5/15/86 Resistance

Verified By/Date HE 5/29/86
Test Observers HA

QA Approval/Date MAR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 19
Sample No. . . . . = 58
Description No 2 1/C

Standards Used: 506652, 506326, 522035, 543211, 212526, 502445, 543212, 402858. R.A.T. 5/15/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Test No. 19T4-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.4467	.4441	.2900	~~.2870~~ 2870	47.2	>10,000 MΩ	Est OK
2. 2	.4466	.4423	.2913	.2803	48.3		
3. 3	.4500	.4460	.2884	.2860	37.8		
4. 4	.4500	.4433	.2886	.2800	45.9		
5. 5	.4486	.4442	.2880	.2828	41.3		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

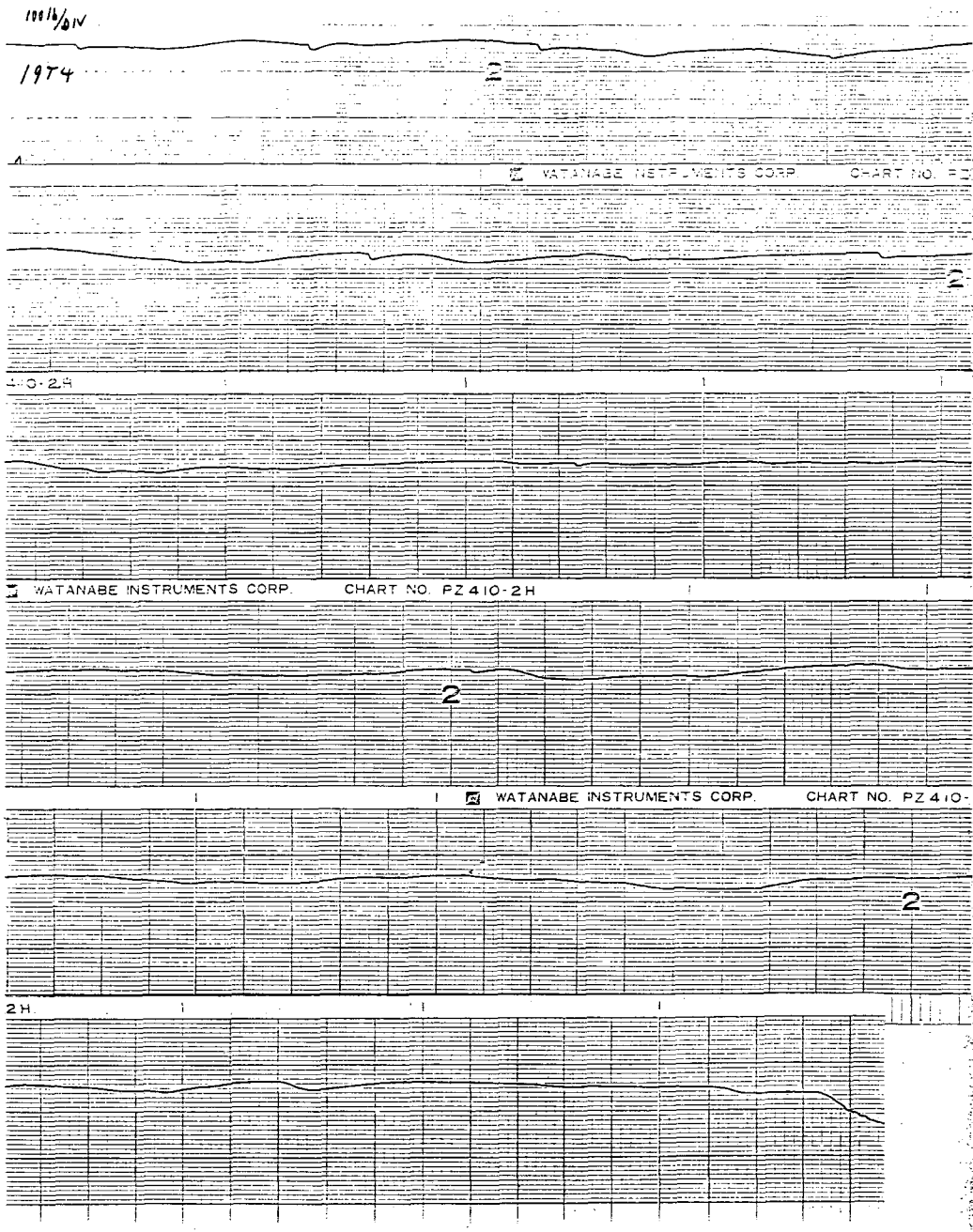
Tension (T) = 2700 lbs (Max.)
Radius (R) = .6671 ft
T/R = 4047.37 lbs/ft
Correction Factor (X) = .473
SWBP = X(T/R) = 1914.41 lbs/ft

Anomalies:

Tested By/Date VCK 5-10-86 (Tension) DMT 5-13-86 (Micrometer) JB RAT 5/15/86 (Dielectric) R.A.T. 5/15/86 (Resistance)

Verified By/Date HE 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers RR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 19
Sample No. . . . . = 58
Description No 2 1/C

Standards Used: 506652, 506326, 522035, 543211, 312506, 502445, 543202, ~~902035~~ R.A.T. 5/14/84

Conduit Size in Test. . . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1975							
1. 1	.4509	.4424	.3003	.2864	38.1	>10,000 MΩ	Test OK
2. 2	.4511	.4460	.2885	.2857	35.7		
3. 3	.4494	.4449	.2924	.2861	36.7		
4. 4	.4480	.4442	.2891	.2873	39.6		
5. 5	.4497	.4455	.2901	.2850	38.3		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2650 lbs (Max.)
Radius (R) = 1.6671 ft
T/R = 3972.42 lbs/ft
Correction Factor (X) = .473
SWBP = X(T/R) = 1878.95 lbs/ft

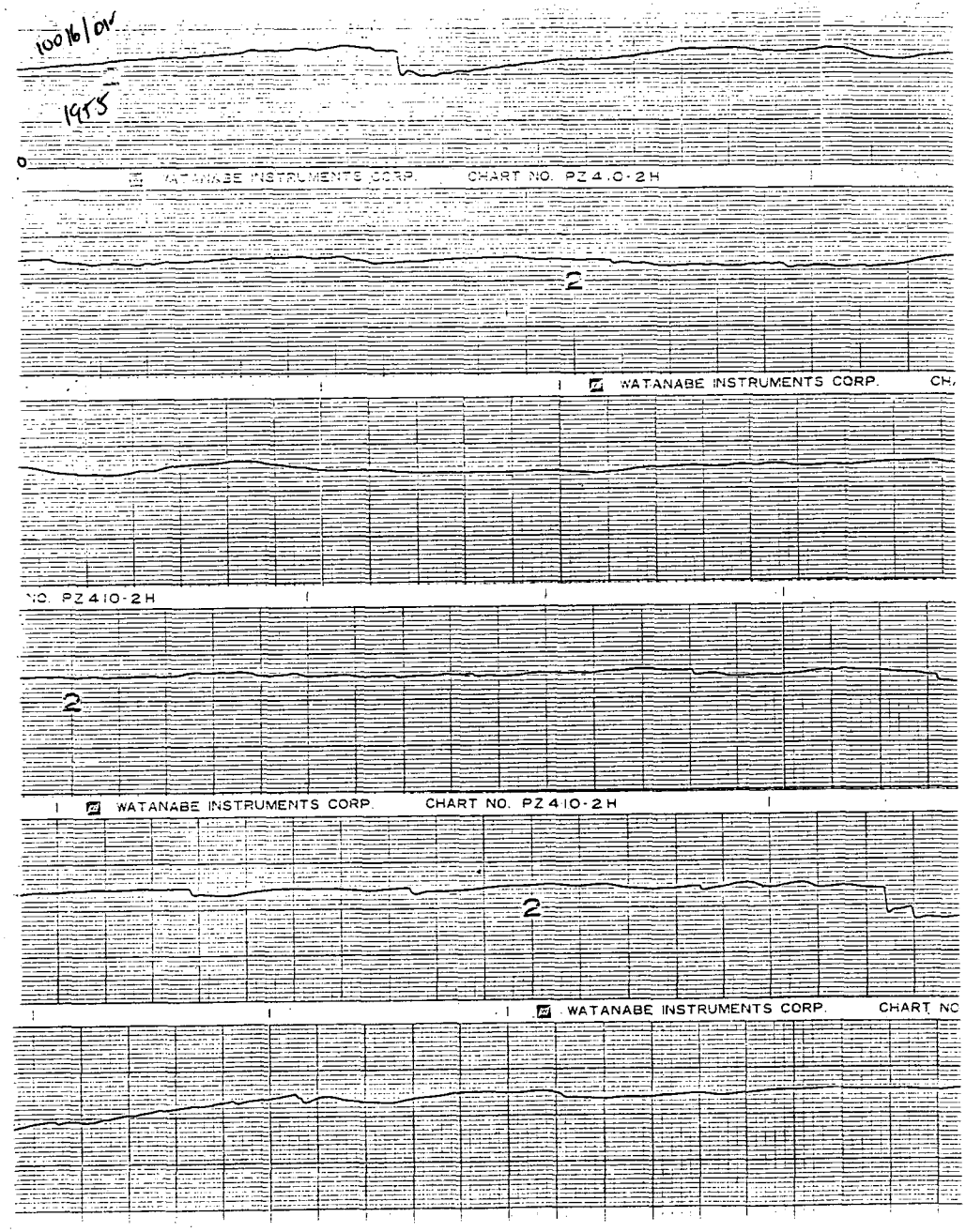
Anomalies:

Tested By/Date VZK 5-10-86 (Tension) — JM7 5-13-86 (Micrometer) — JB R.A.T. 5/14/84 (Dielectric) — R.A.T. 5/14/84 (Resistance)

Verified By/Date HE 5/29/86
Test Observers RA

QA Approval/Date JBR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 20
Sample No. . . . . = 1114
Description No 2 1/c

Standards Used: 543211 212506, 543202, ~~902035~~, R.A.T. 5/12/86

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	20V1	.4219	.4210	.2891	.2860	33.6	>10,000 MΩ	N/A
2.	20V2	.4300	.4285	.2952	.2887	35.5	↓	↓
3.	20V3	.4146	.4116	.2897	.2890	29.6		
4.	20V4	.4282	.4230	.2897	.2890	39.6		
5.	20V5	.4241	.4219	.2895	.2862	33.5		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension | [illegible] 5-9-86 Micrometer | JB R.A.T. 5/12/86 Dielectric | R.A.T. 5/10/86 Resistance

Verified By/Date [illegible] 5/29/86 QA Approval/Date MR 5/29/86
Observers [illegible]

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 20 ~~19~~ VEK
Sample No. . . . . = VEK ~~58~~ 1114
Description No 2 1/C

Standards Used: 506652, 506326, 522025, 543211, 213506, 502445, 543203, ~~502025~~, R.A.T. 5/15/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

Test No. 20T1- VEK ~~1911~~	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.4277	.4168	.2884	.2829	30.5	>10,000MΩ	Est ok
2. 2	.4259	.4157	.2971	.2884	32.6		
3. 3	.4309	.4227	.2917	.2859	31.9		
4. 4	.4277	.4258	.2871	.2802	38.5*		
5. 5	.4297	.4199	.2884	.2853	30.3		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

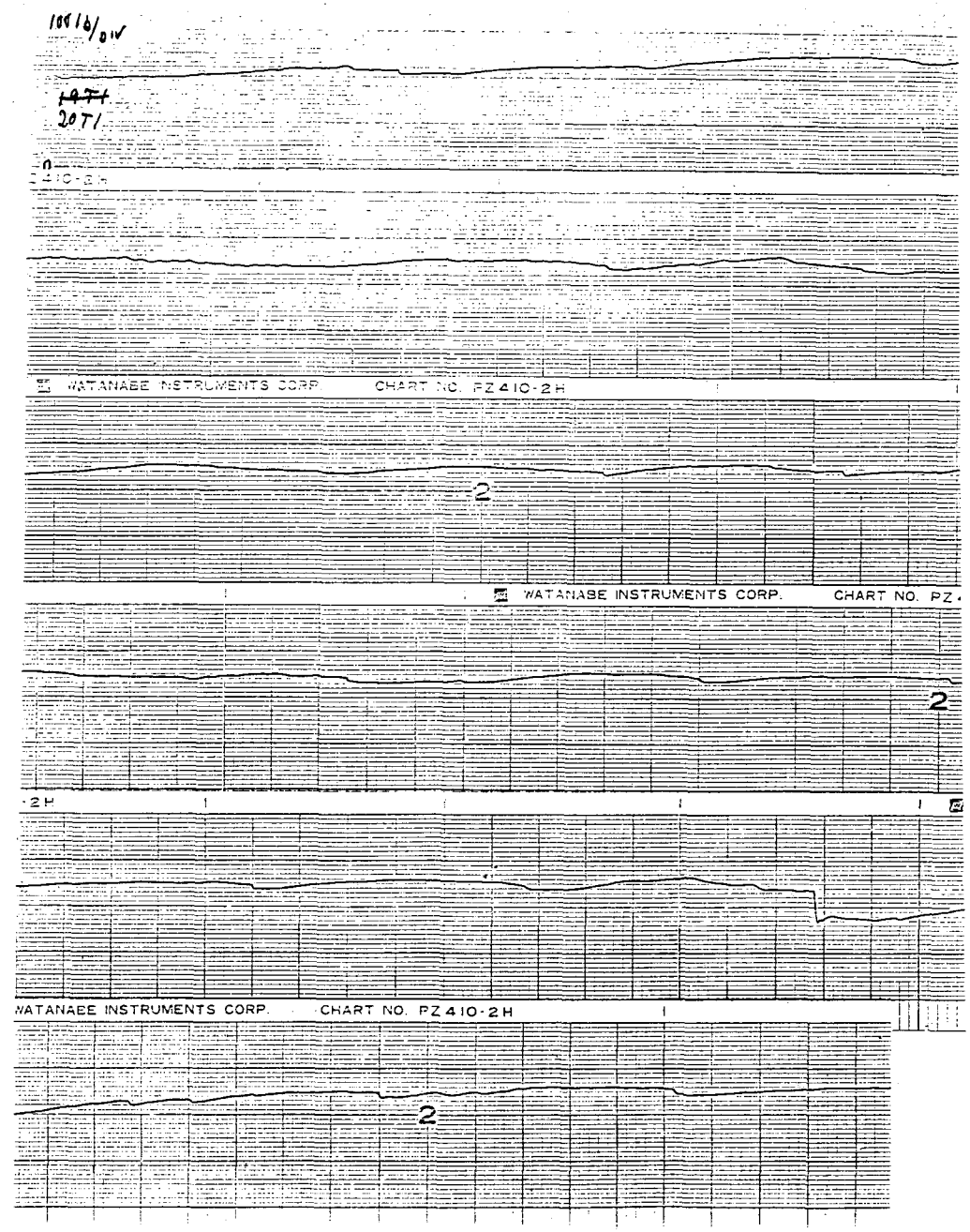
Tension (T) = 2640 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3957.43 lbs/ft
Correction Factor (X) = .437
SWBP = X(T/R) = 1729.40 lbs/ft

Anomalies: * Failed ≅ 4 inches above waterline - Excessive burning

Tested By/Date VEK 5-9-86 Tension; Dm7 5-12-86 Micrometer; JB R.A.T. 5/15/86 Dielectric; R.A.T. 5/15/86 Resistance

Verified By/Date AC 5/29/86
Test Observers AR
QA Approval/Date JBR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. VEK ~~19~~ 20
Sample No. . . . . = VEK ~~58 1114~~
Description No 2 1/C

Standards Used: 506652, 506326, 522035, 543211, 212506, 524145, 543202, ~~902078~~, R.A.T. 5/15/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Test No. VEK ~~19T2~~ 20T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.4296	.4209	.2895	.2819	39.7 *	>10,000 MΩ	Test OK
2. 2	.4301	.4176	.2915	.2803	29.8 **	↓	↓
3. 3	.4310	.4214	.2947	.2813	40.6	↓	↓
4. 4	.4205	.4115	.2924	.2869	35.1 **	↓	↓
5. 5	.4316	.4236	.2904	.2870	40.4	↓	↓
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2660 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3987.41 lbs/ft
Correction Factor (X) = .437
SWBP = X(T/R) = 1742.50 lbs/ft

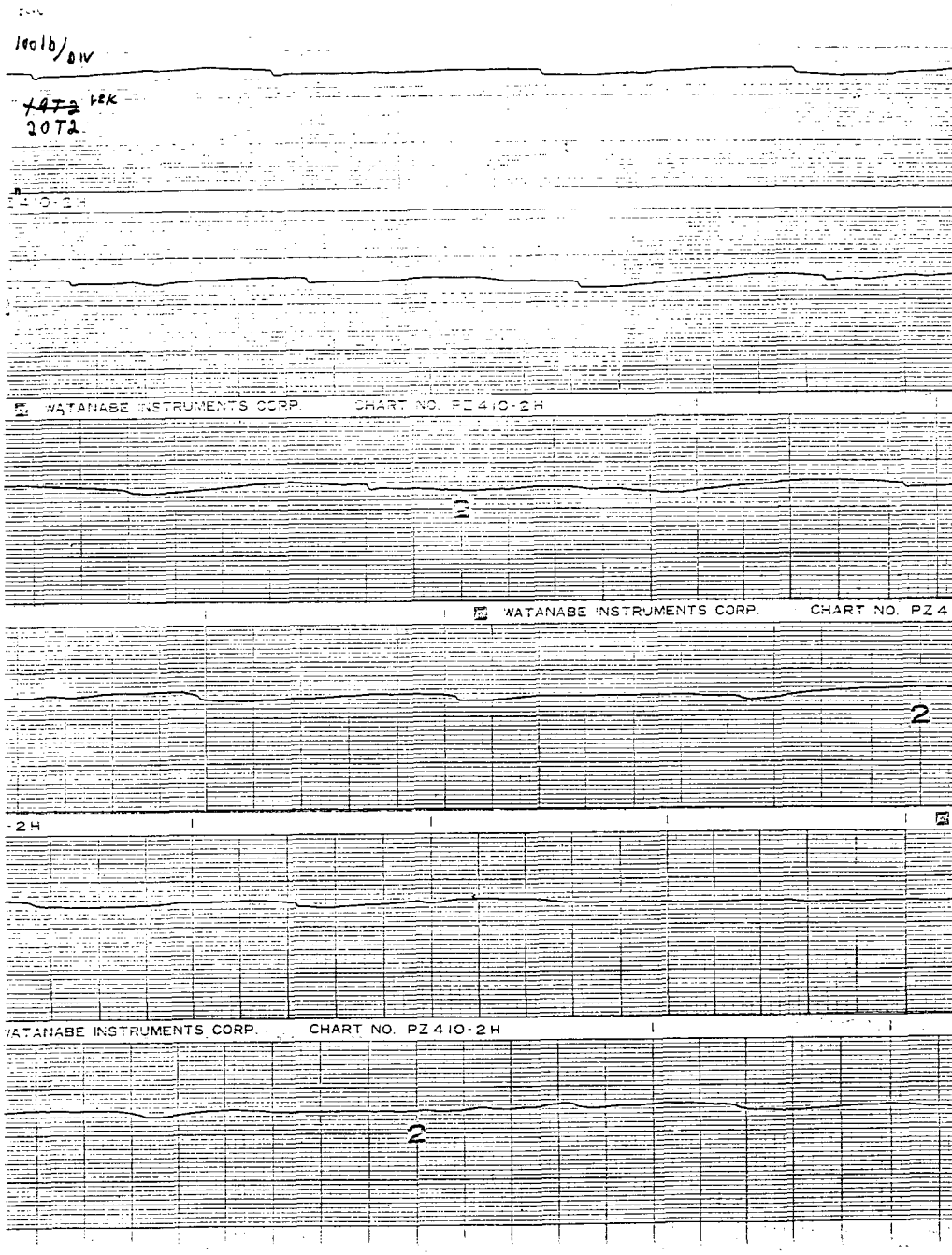
Anomalies: * Failed at water line and at a seam indentation
** Failed at seam

Tested By/Date VEK 5-9-86 (Tension) DMT 5-12-86 (Micrometer) JB R.A.T. 5/15/86 (Dielectric) R.A.T. 5/15/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers PR

QA Approval/Date MR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. ~~19~~ 20 VEK 1114
Sample No. . . . . = ~~58~~ VEK
Description No 2 1/C

Standards Used: 506652, 506726, 522035, 543211, 212516, 502445, 543202

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No. 20T3 – VEK ~~1973~~	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.4204	.4098	.2926	.2752	33.8	>10,000 MΩ	Test OK
2.	2	.4196	.4178	.2856	.2772	34.4		
3.	3	.4165	.4068	.2938	.2865	38.0		
4.	4	.4275	.4176	.2911	.2800	34.9		
5.	5	.4207	.4094	.2873	.2800	30.5		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = n/a Max n/a Min

SWBP Data

Tension (T) = 2620 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3927.45 lbs/ft
Correction Factor (X) = .437
SWBP = X(T/R) = 1716.29 lbs/ft

Anomalies:

Tested By/Date VEK 5-10-86 (Tension) Dmi 7 5-12-86 (Micrometer) JB (Dielectric) R.A.T. 5/15/86 R.A.T. 5/15/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers DR

QA Approval/Date JSC 5/29/86

0148E-4

7066

100 ft/div

~~1973~~ VEK
20T3

WATANABE INSTRUMENTS CORP. CHART NO.

4:0-2H

WATANABE INSTRUMENTS CORP. CHART NO. PZ 4:0-2H

2

WATANABE INSTRUMENTS CORP. CHART NO. PZ 4

2H

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. VCK ~~14~~ 20
Sample No. . . . . = ~~58~~ VCK 1114
Description No 2 1/C

Standards Used: 506652, 506326, 522075, ~~543222~~ 543211, 212506, 502445, 543202, ~~542226~~, R.A.T. 5/15/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

Test No. 20T4 - VCK ~~19T4~~	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.4207	.4155	.2905	.2851	35.7	>10,000MΩ	Test OK
2. 2	.4147	.4090	.2927	.2823	32.7*		
3. 3	.4154	.4060	.2929	.2777	32.5		
4. 4	.4285	.4196	.2873	.2821	35.8		
5. 5	.4174	.4059	.2837	.2863	35.2		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

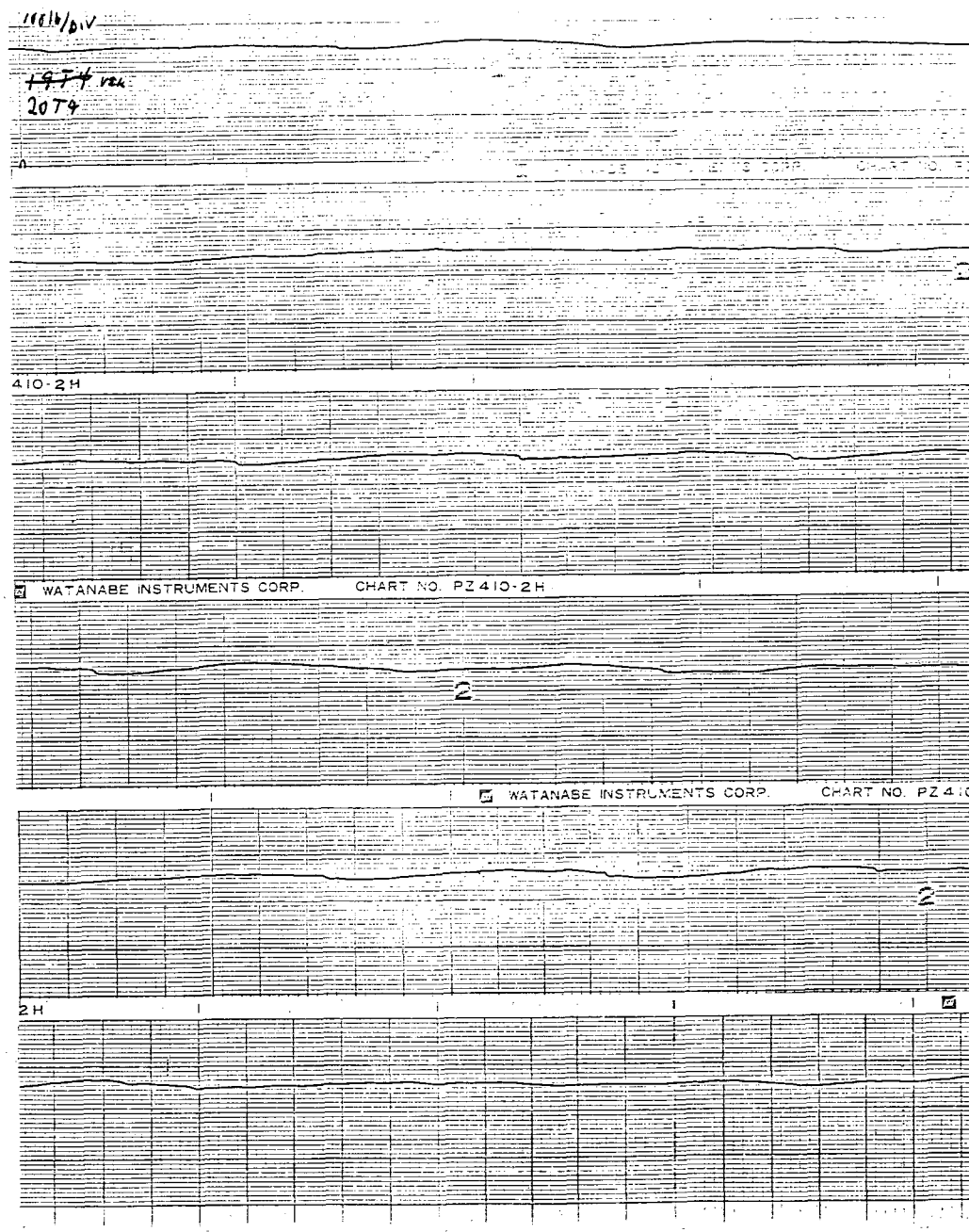
Tension (T) = 2700 lbs (Max.)
Radius (R) = .6671 ft
T/R = 4047.37 lbs/ft
Correction Factor (X) = .437
SWBP = X(T/R) = 1768.70 lbs/ft

Anomalies: * Failed ≅ 2 inches above water

Tested By/Date VCK 5-10-86 (Tension) — Um 7 5-12-86 (Micrometer) — JB R.A.T. 5/15/86 R.A.T. 5/15/86 (Dielectric / Resistance)

Verified By/Date He 5/29/86 QA Approval/Date JRR 5/29/86
Test Observers RR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. ~~19~~ 20 VEK 1114
Sample No. . . . . = ~~58~~ 58 VEK
Description No 2 1/c

Standards Used: 506652 506326 522035, 543211, 212586, 502445, 543202

Conduit ~~Size~~ in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No. 2075 ~~1975~~ VEK	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.4322	.4194	.2918	.2853	38.4	>10,000mΩ	Est OK
2.	2	.4212	.4121	.2893	.2853	34.2		
3.	3	.4322	.4263	.2913	.2859	30.7		
4.	4	.4303	.4164	.2902	.2866	24.9		
5.	5	.4215	.4083	.2991	.2870	35.8		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = n/a Max n/a Min

SWBP Data

Tension (T) = 2600 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3897.47 lbs/ft
Correction Factor (X) = .437
SWBP = X(T/R) = 1703.19 lbs/ft

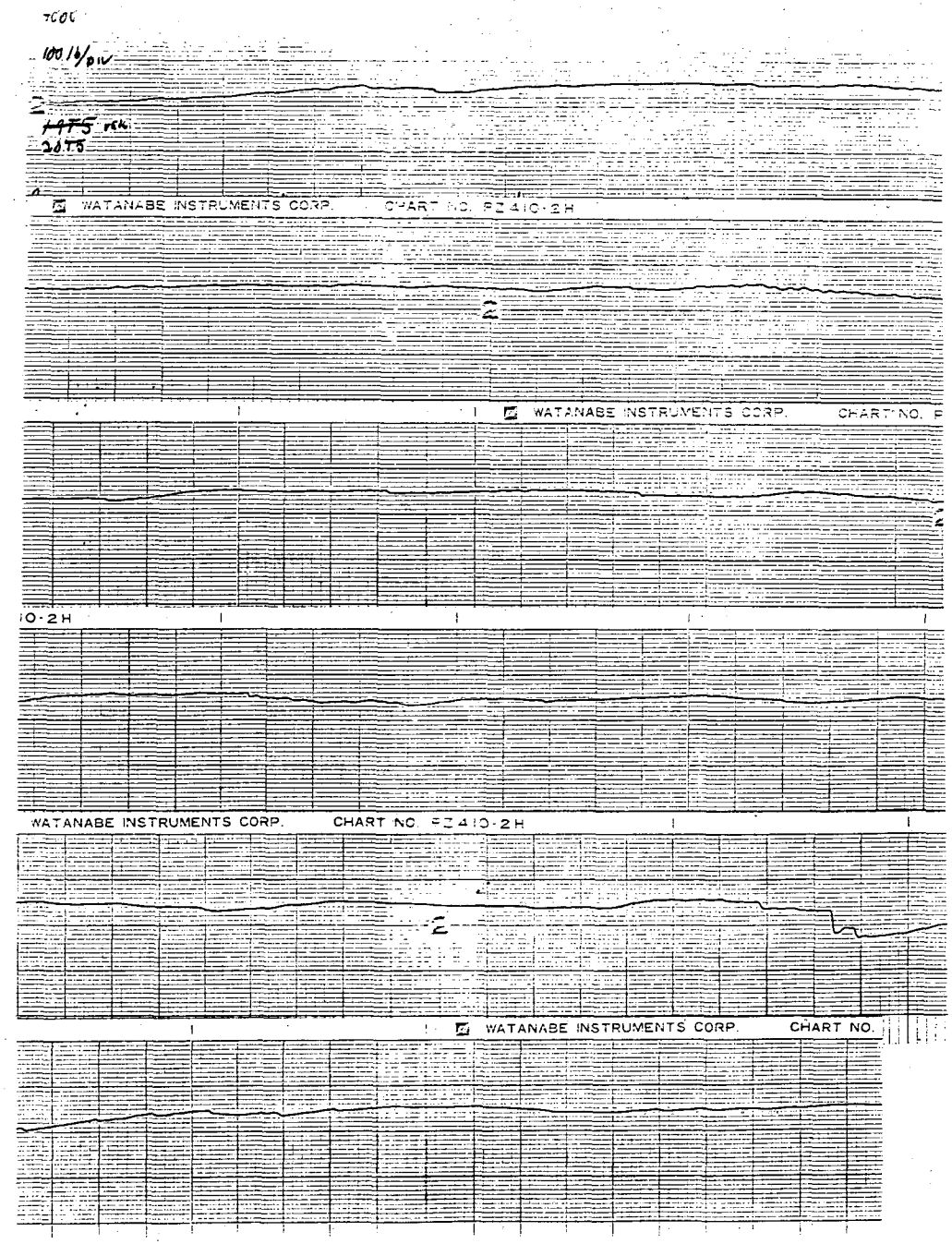
Anomalies:

Tested By/Date VEK 5-16-86 Tension; 5-12-86 Micrometer; R.A.T. 5/16/86 Dielectric; R.A.T. 5/16/86 Resistance

Verified By/Date 5/29/86
Test Observers

QA Approval/Date 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 21
Sample No. . . . . = 1046
Description No 6 1/c

Standards Used: 543211, 212506, 543202,

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ✓
Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	21V1	.3732	.3704	.1806	.1803	35.5	>10,000MΩ	N/A
2.	21V2	.3729	.3703	.1842	.1819	34.1	↓	↓
3.	21V3	.3717	.3715	.1800	.1797	35.5		
4.	21V4	.3740	.3669	.1834	.1814	37.3		
5.	21V5	.3703	.3659	.1828	.1803	37.6		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies:

Tested By/Date N/A Tension | [illegible] 5-13-86 Micrometer | JB R.A.T. 5/14/86 Dielectric | R.A.T. 5/15/86 Resistance

Verified By/Date [illegible] 5/29/86
Observers [illegible]

QA Approval/Date [illegible] 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 21
Sample No. . . . . = 1046
Description No 6 1/C

Standards Used: 506652, 506326, 522035, 543211, 212554, 502445, 543203.

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

Test No. 21T1-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.3717	.3624	.1833	.1782	35.5	>10,000MΩ	Test OK
2. 2	.3714	.3676	.1856	.1792	37.3	↓	↓
3. 3	.3702	.3654	.1848	.1801	40.6		
4. 4	.3721	.3696	.1855	.1795	35.7		
5. 5	.3736	.3634	.1824	.1804	42.7		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2100 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3147.95 lbs/ft
Correction Factor (X) = .427
SWBP = X(T/R) = 1344.18 lbs/ft

Anomalies:

Tested By/Date VSK 5-12-86 Tension; Micrometer 5-13-86; JB R.A.T. 5/15/86 Dielectric; R.A.T. 5/15/86 Resistance

Verified By/Date HG 5/29/86
Test Observers

QA Approval/Date JSR 5/29/86

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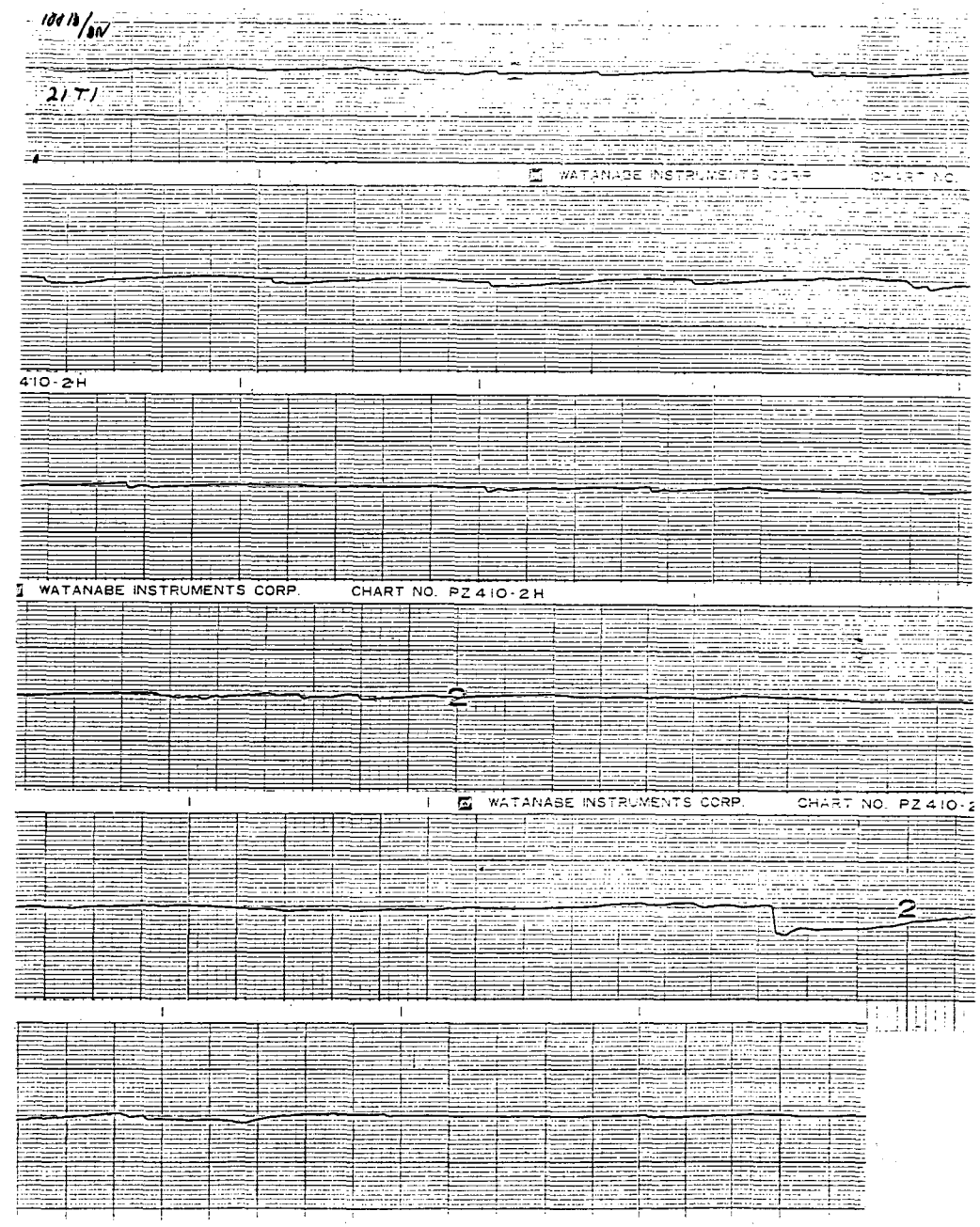


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 21
Sample No. . . . . = 1046
Description No 6 1/c

Standards Used: 506652, 506326, 522035, 543211, 212506, 502445, 543202, 902038, 510164

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No. 21 T2-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.3740	.3624	.1819	.1802	41.8	>10,000 MΩ	Test OK
2.	2	.3730	.3647	.1843	.1774	41.7	↓	↓
3.	3	.3732	.3645	.1807	.1789	35.5	↓	↓
4.	4	.3723	.3625	.1834	.1804	36.7	↓	↓
5.	5	.3723	.3685	.1834	.1792	45.9	↓	↓
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

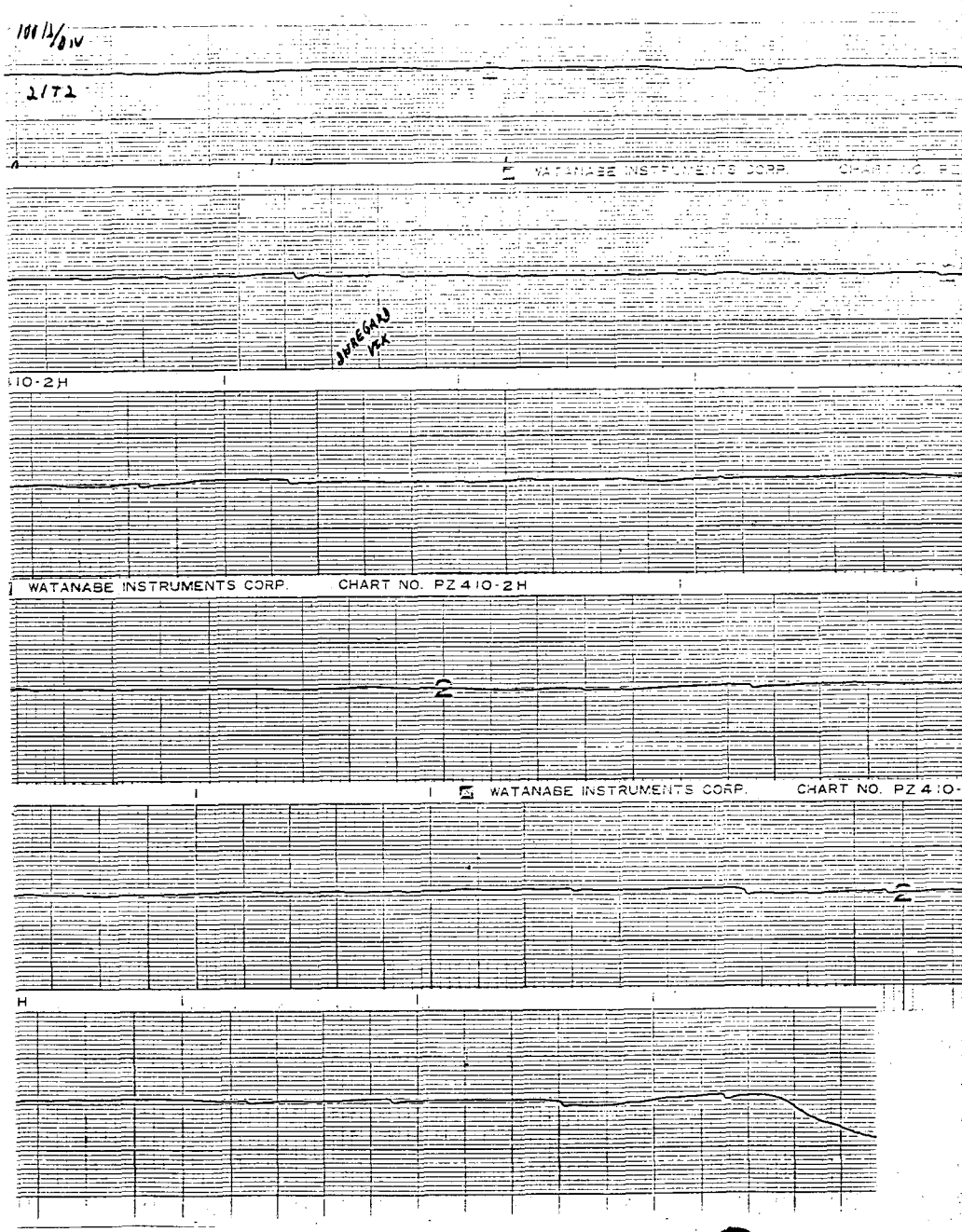
Tension (T) = 2140 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3207.91 lbs/ft
Correction Factor (X) = .427
SWBP = X(T/R) = 1369.78 lbs/ft

Anomalies: ____

Tested By/Date VEK 5-12-86 (Tension) Dm 7 5-13-86 (Micrometer) JB (Dielectric) R.A.T. 5/14/86 R.A.T. 5/14/86 (Resistance)

Verified By/Date HC 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers PAR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 21
Sample No. . . . . = 1046
Description No 6 1/C

Standards Used: 506652 506326 522035 543211 212506, 502445, 543203, ~~503038~~ JB 5/16/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓

1-Conductor ✓ Multi-Conductor ___

Test No. 21T3-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.3770	.3586	.1810	.1789	35.5	>10,000 MΩ	Test OK
2. 2	.3725	.3643	.1830	.1806	39.9		
3. 3	.3728	.3689	.1819	.1787	44.3		
4. 4	.3703	.3665	.1808	.1790	32.3		
5. 5	.3734	.3708	.1823	.1792	29.7		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

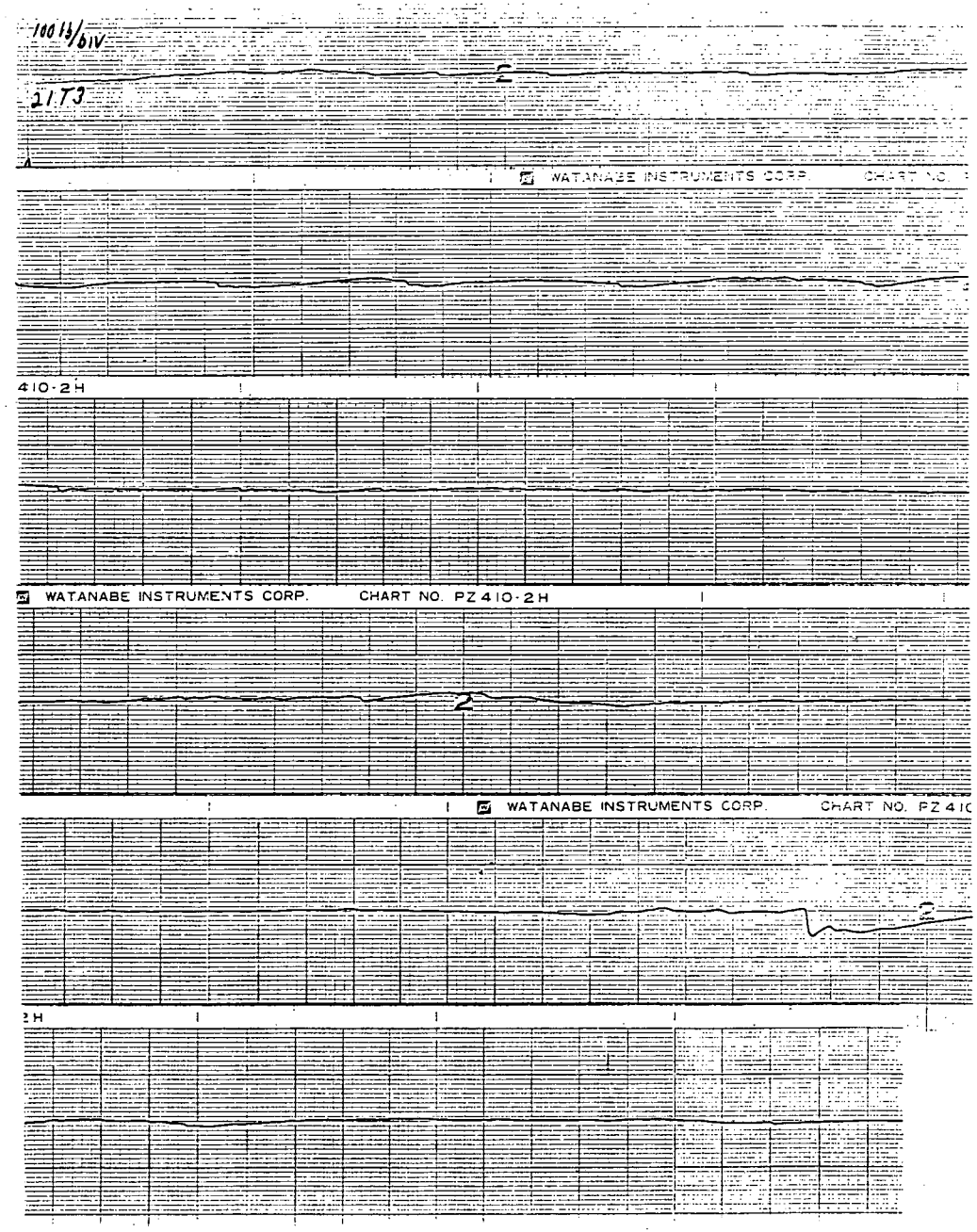
Tension (T) = 2180 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3267.88 lbs/ft
Correction Factor (X) = .427
SWBP = X(T/R) = 1395.38 lbs/ft

Anomalies:

Tested By/Date VEK 5-12-86 (Tension) — CMF 5-13-86 (Micrometer) — JB R.A.T. 5/14/86 (Dielectric & Resistance) — R.A.T. 5/15/86

Verified By/Date HK 5/29/86 QA Approval/Date JRL 5/29/86
Test Observers AR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 21
Sample No. . . . . = 1046
Description No 6 1/c

Standards Used: 506652, 506326, 522035, 543211, 212526, 502445, 543202, 903038 5/14/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
21T4-							
1. 1	.3722 ~~.3687~~	.3687	.1857	.1792	37.8	>10,000 MΩ	Test OK
2. 2	.3704	.3675	.1815	.1799	33.5	↓	↓
3. 3	.3749	.3632	.1803	.1797	43.8	↓	↓
4. 4	.3740	.3695	.1827	.1790	38.8	↓	↓
5. 5	.3720	.3643	.1823	.1800	41.5	↓	↓
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2100 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3147.95 lbs/ft
Correction Factor (X) = .427
SWBP = X(T/R) = 1344.18 lbs/ft

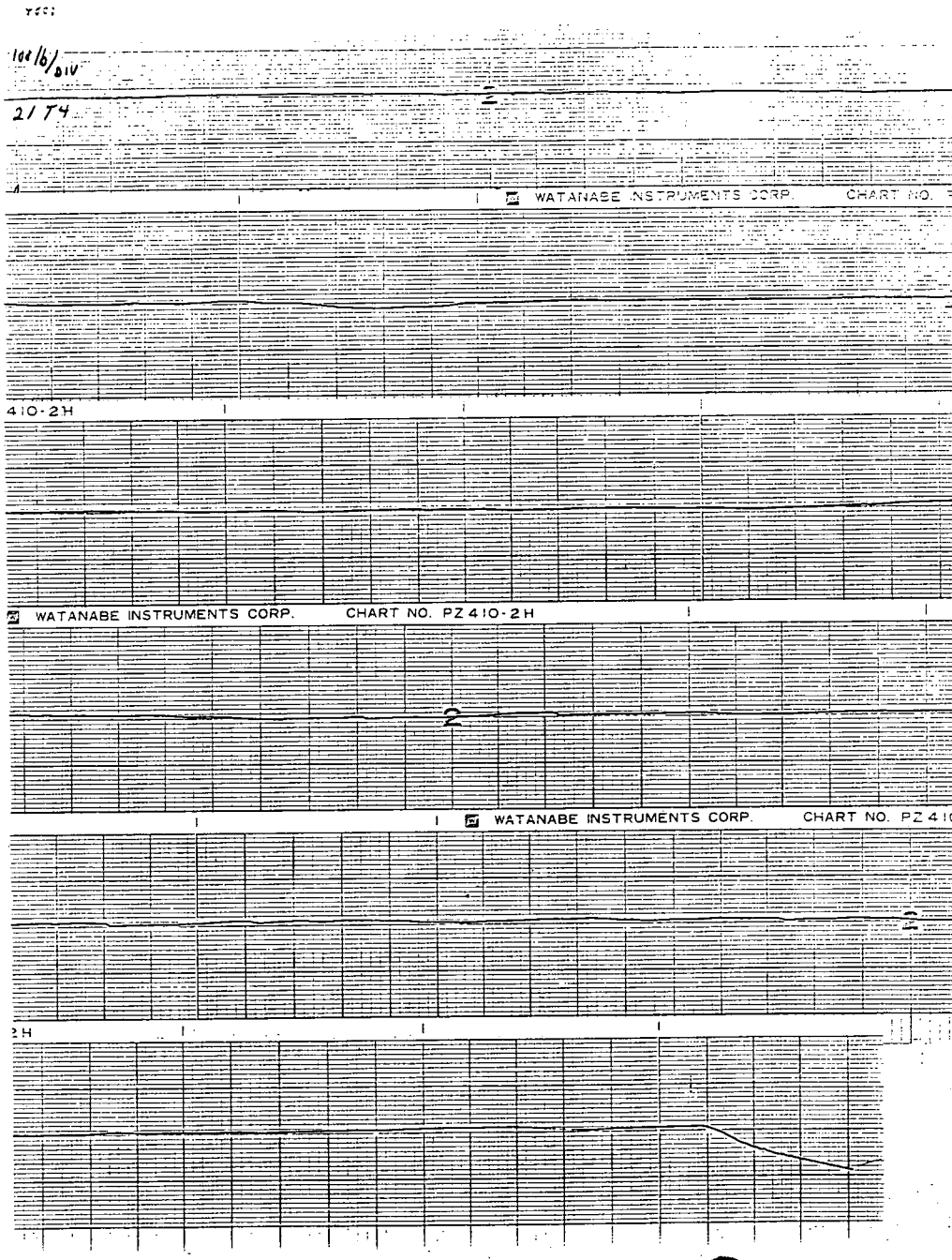
Anomalies:

Tested By/Date VSR 5-12-86 Tension — Sm 7 5-13-86 Micrometer — JB R.A.T. 5/14/86 Dielectric — R.A.T. 5/14/86 Resistance

Verified By/Date HE 5/29/86
Test Observers RA

QA Approval/Date JSR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 21
Sample No. . . . . = 1046
Description No 6 1/C

Standards Used: ~~506652~~, ~~506326~~ 506325, 593175, 522035, 543211, 212506, 502445, 543202.

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	21T5							
1.	1	.3698	.3640	.1814	.1795	44.5	>10,000MΩ	Test OK
2.	2	.3700	.3624	.1833	.1804	38.9		
3.	3	.3751	.3654	.1882	.1793	42.8		
4.	4	.3704	.3669	.1831	.1802	44.9		
5.	5	.3730	.3666	.1830	.1802	39.9		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2200 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3297.86 lbs/ft
Correction Factor (X) = .427
SWBP = X(T/R) = 1408.13 lbs/ft

Anomalies: CHART RECORDING SHOWS WHERE SAMPLE CABLE BROKE AT ATTACHMENT TO PULL CABLE. CABLES WERE REATTACHED AND PULL CONTINUED.

Tested By/Date VZK 5-12-86 (Tension) DMZ 5-13-86 (Micrometer) JB R.A.T. 5/14/86 (Dielectric) R.A.T. 5/14/86 (Resistance)

Verified By/Date HR 5/29/86
Test Observers PR

QA Approval/Date JGR 5/29/86

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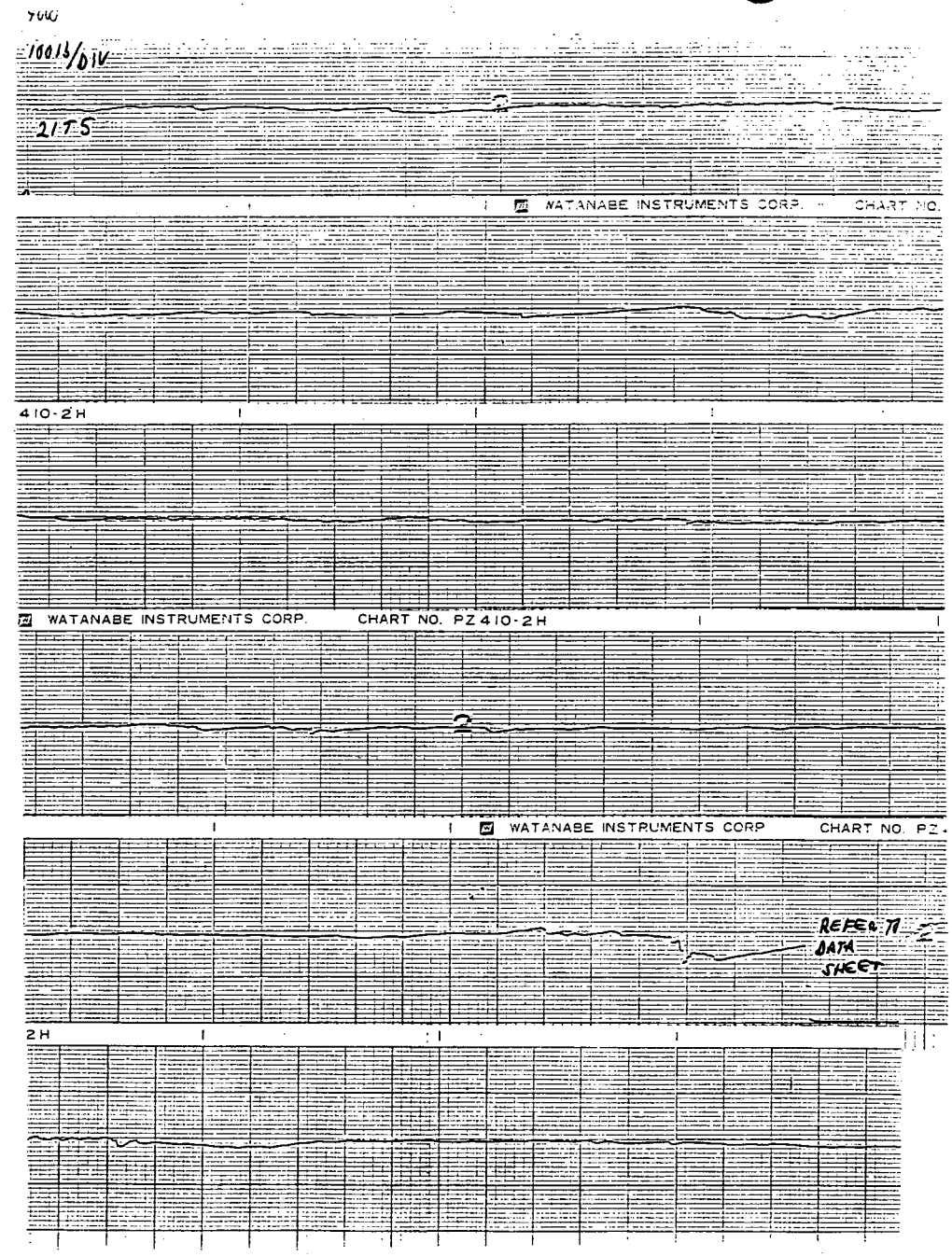


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 22
Sample No. . . . . = 1108
Description No 4 1/c

Standards Used: 543211, 212506, 543202,

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	22V1	.3937	.3902	.2323	.2280	55.7	>10,000mΩ	N/A
2.	22V2	.4005	.4002	.2317	.2312	48.7		
3.	22V3	.3947	.3939	.2310	.2238	57.6 *		
4.	22V4	.3951	.3940	.2310	.2265	54.3 **		
5.	22V5	.3954	.3933	.2331	.2306	34.6		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: * Two (2) puncture holes ≅ 1 inch apart
** Failed ≅ 4 inches above water

Tested By/Date N/A Tension — Micrometer 5-13-86 — Dielectric JB R.A.T. 5/16/86 — Resistance R.A.T. 5/16/86

Verified By/Date HE 5/29/86 QA Approval/Date JBR 5/29/86
Observers RR

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 22
Sample No. . . . . = 1108
Description No 4 1/c

Standards Used: 506326, 543175, 522035, 543211, 912506, 502445, 542202, ~~962858~~ R.A.T. 5/14/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

	Test No. 22T1-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.3935	.3914	.2319	.2301	48.8	>10,000 MΩ	Test OK
2.	2	.3918	.3903	.2346	.2332	53.6		
3.	3	.3971	.3907	.2354	.2273	52.7 *		
4.	4	.3975	.3914	.2351	.2241	55.7		
5.	5	.3937	.3898	.2325	.2277	50.0		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

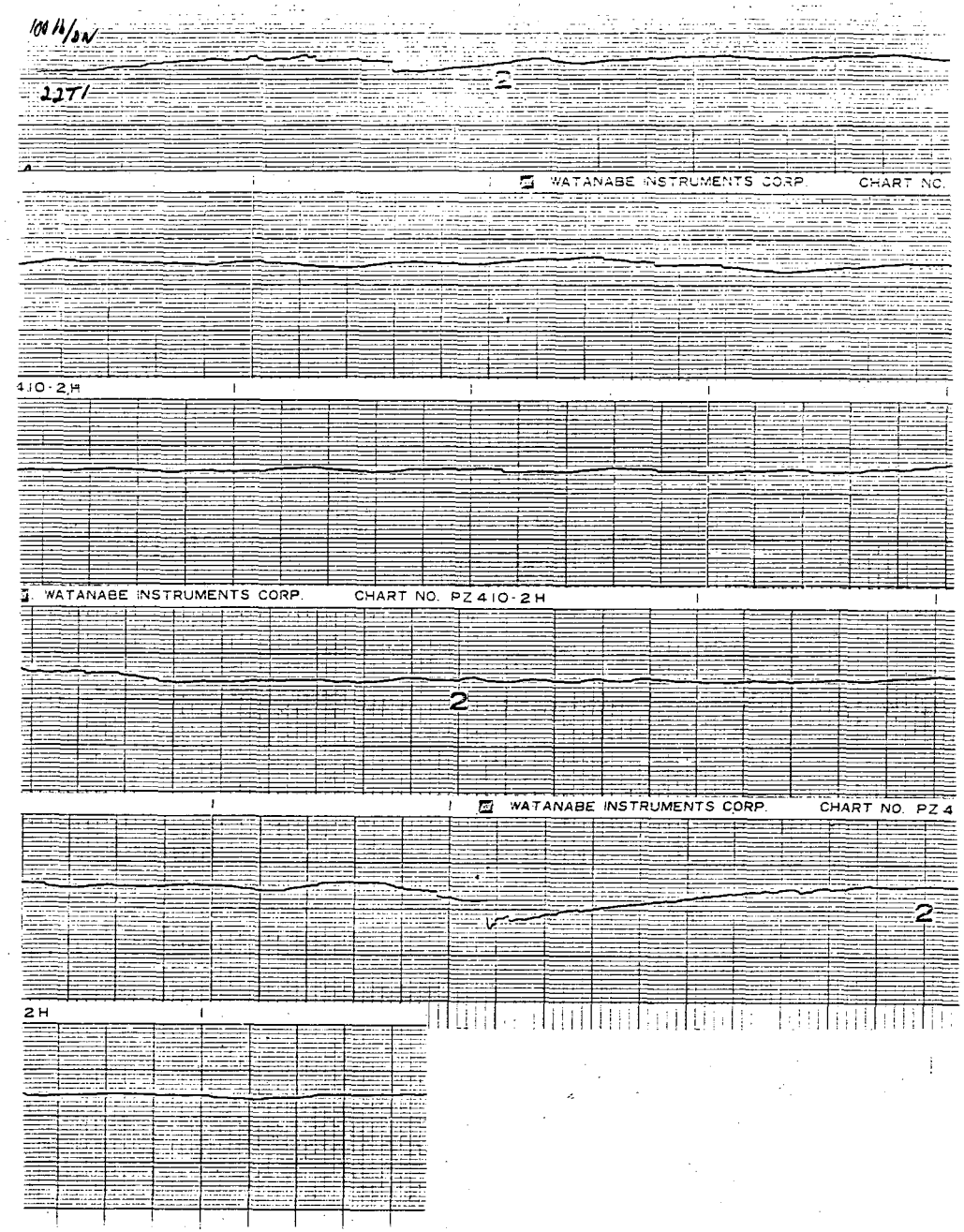
Tension (T) = 2650 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3972.42 lbs/ft
Correction Factor (X) = .431
SWBP = X(T/R) = 1712.11 lbs/ft

Anomalies: * Failed at an indentation in insulation

Tested By/Date VEK 5-13-86 (Tension) — Jm? 5-13-86 (Micrometer) — JB R.A.T. 5/14/86 (Dielectric) — R.A.T. 5/14/86 (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JBR 5/27/86
Test Observers HR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 22
Sample No. . . . . = 1108
Description No 4 1/c

Standards Used: 506326, 543175, 522625, 543211, 212526, 502445, 543202, 902038 R.A.T. 5/13/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____
Tensioned ✓

1-Conductor ✓
Multi-Conductor ____

	Test No. 22T2 -	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.3928	.3910	.2330	.2262	47.5	>10,000MΩ	Test OK
2.	2	.3922	.3888	.2355	.2299	52.6	↓	↓
3.	3	.3882	.3872	.2293	.2251	49.6	↓	↓
4.	4	.3951	.3925	.2350	.2310	50.6	↓	↓
5.	5	.3957	.3925	.2308	.2252	38.9	↓	↓
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2560 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3837.51 lbs/ft
Correction Factor (X) = .431
SWBP = X(T/R) = 1653.96 lbs/ft

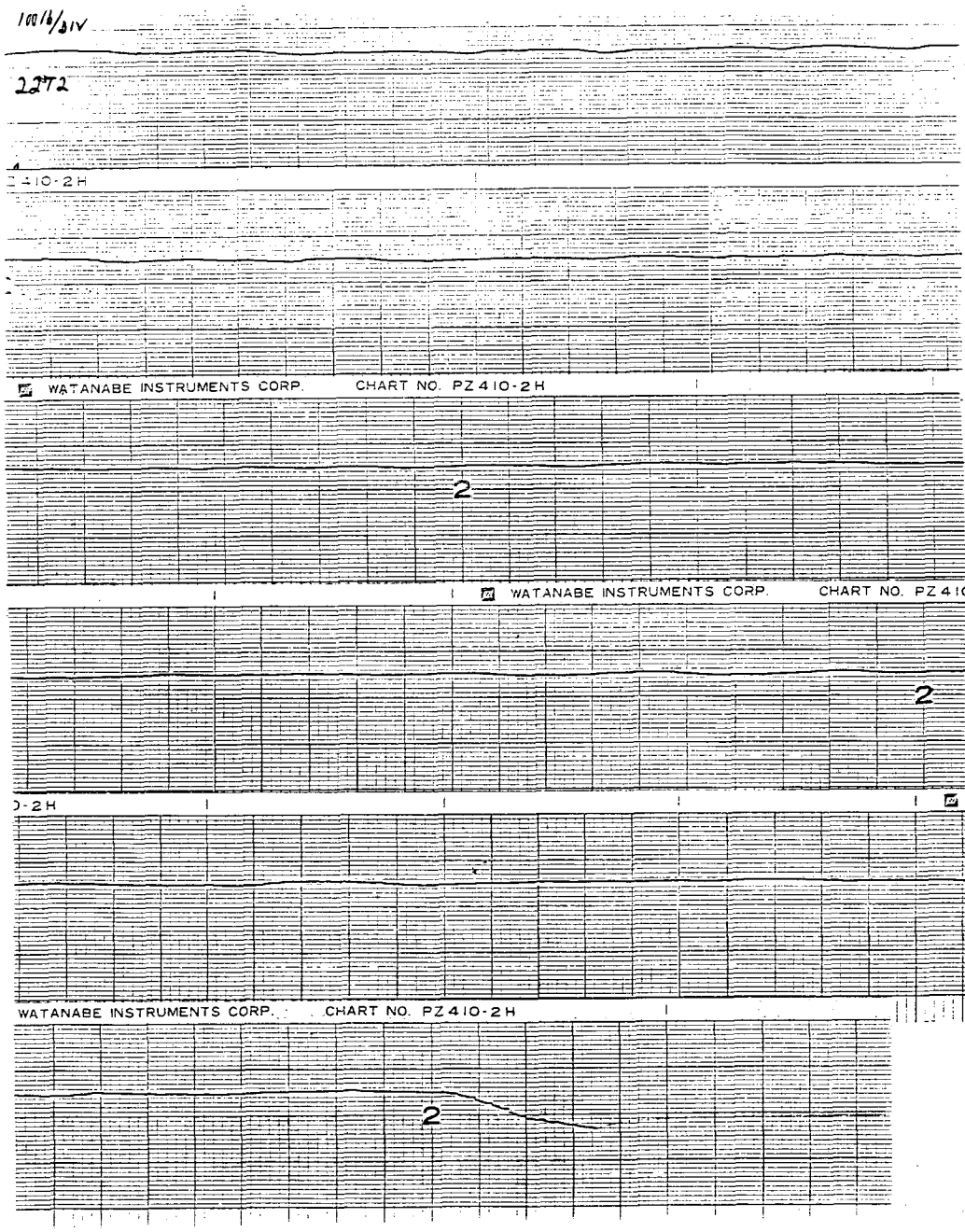
Anomalies: ____

Tested By/Date VEK 5-13-86 (Tension) — 5-13-86 (Micrometer) — R.A.T. 5/13/86 (Dielectric) — R.A.T. 5/13/86 (Resistance)

Verified By/Date 5/29/86
Test Observers

QA Approval/Date 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 22
Sample No. . . . . = 1108
Description No 4 1/c

Standards Used: 506326, 543175, 522035, 543211, 212506, 502445, 543202, 902038, 212506, 502445, 543202, ~~902038~~ 5/14/86

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____
Tensioned ✓

1-Conductor ✓
Multi-Conductor ____

	Test No. 22T3 –	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.3994	.3952	.2328	.2307	48.4	>10,000 mΩ	Test OK
2.	2	.3991	.3918	.2391	.2300	49.0		
3.	3	.3950	.3919	.2314	.2291	49.5 *		
4.	4	.3937	.3896	.2397	.2281	41.5 **		
5.	5	.3958	.3825	.2315	.2284	43.9		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2780 lbs (Max.)
Radius (R) = .6671 ft
T/R = 4167.29 lbs/ft
Correction Factor (X) = .431
SWBP = X(T/R) = 1796.10 lbs/ft

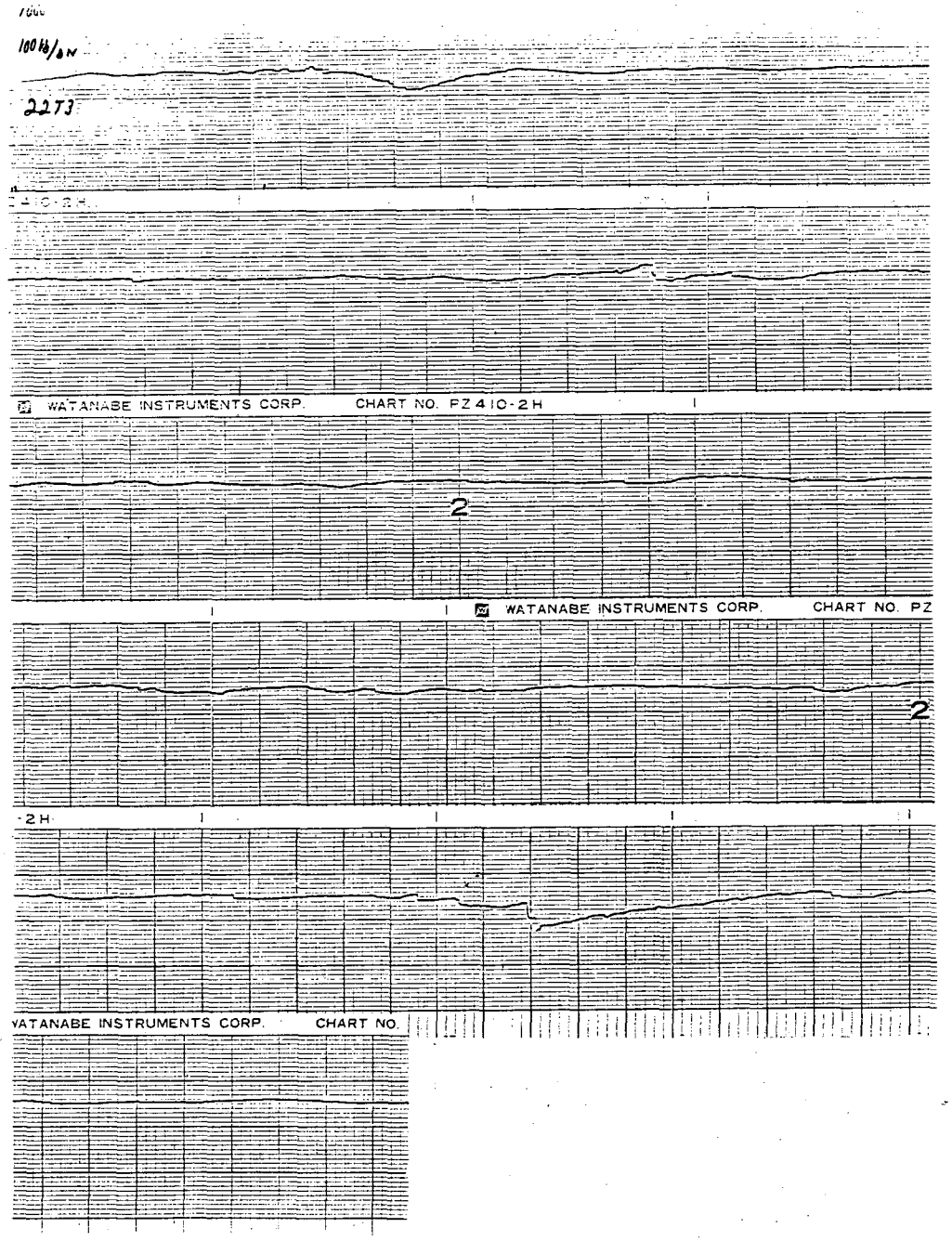
Anomalies: * Failed at rough place on surface of insulation
** Failed in a "pronounced seam that ran entire length of sample

Tested By/Date VEX 5-13-86 (Tension) Am7 5-13-86 (Micrometer) JB RAT. 5/14/86 (Dielectric) R.A.T. 5/14/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers HC

QA Approval/Date JKC 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

LSB Control No. 22
ample No. . . . . = 1108
escription No 4 1/c

Standards Used: 506326, 543175, 522035, 543211, 212506, 502445, 543202, ~~902035~~, R.A.T. 5/15/86

onduit Size in Test. . . . = 2"
o. Cables in Pull. . . . . = 5

Virgin ____
Tensioned ✓

1-Conductor ✓
Multi-Conductor ____

Test No. 22T4-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.3947	.3916	.2341	.2266	49.5	>10,000MΩ	Test OK
2. 2	.3959	.3924	.2337	.2246	50.3		
3. 3	.3959	.3921	.2310	.2215	53.8		
4. 4	.3953	.3893	.2360	.2297	47.9		
5. 5	.3919	.3892	.2337	.2303	49.4		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 2640 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3957.43 lbs/ft
Correction Factor (X) = .431
SWBP = X(T/R) = 1705.65 lbs/ft

Anomalies:

Tested By/Date VEK 5-13-86 (Tension) — 5-14-86 (Micrometer) — JB RAT. 5/15/86 (Dielectric) — R.A.T. 5/15/86 (Resistance)

Verified By/Date He 5/29/86
Test Observers

QA Approval/Date JGR 5/29/86

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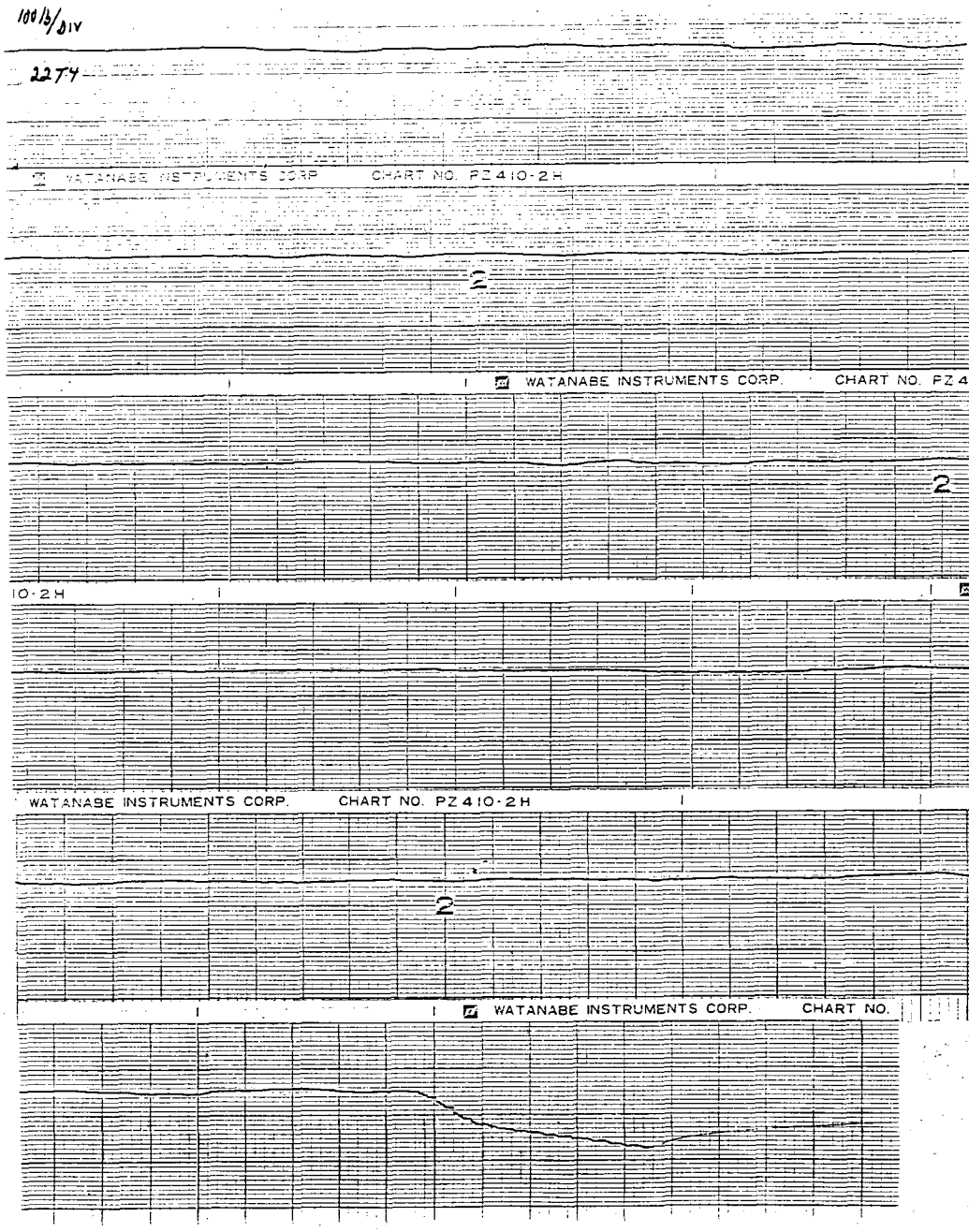

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 22
Sample No. . . . . = 1108
Description No 4 1/c

Standards Used: 506326, 543175, 522035, 543211, 212506, 502445, 543292

Conduit Size in Test. . . . = 2"
No. Cables in Pull. . . . . = 5

Virgin ____
Tensioned ✓

1-Conductor ✓
Multi-Conductor ____

	Test No. 2275-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.3940	.3941	.241	.2326	50.5	>10,000 MΩ	Test OK
2.	2	.3953	.3923	.2307	.2274	54.7		
3.	3	.4002	.3933	.2407	.2298	51.3		
4.	4	.3950	.3915	.2307	.2227	50.2		
5.	5	.3941	.3898	.2314	.2237	51.8		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP. Data

Tension (T) = 2600 lbs (Max.)
Radius (R) = .6671 ft
T/R = 3897.47 lbs/ft
Correction Factor (X) = .431
SWBP = X(T/R) = 1679.81 lbs/ft

Anomalies:

Tested By/Date VEK 5-13-86 Tension; 4217 5-13-86 Micrometer; JB R.O.T. 5/14/86 Dielectric; R.O.T. 5/14/86 Resistance

Verified By/Date HE 5/29/86
Test Observers AR

QA Approval/Date JSR 5/29/86

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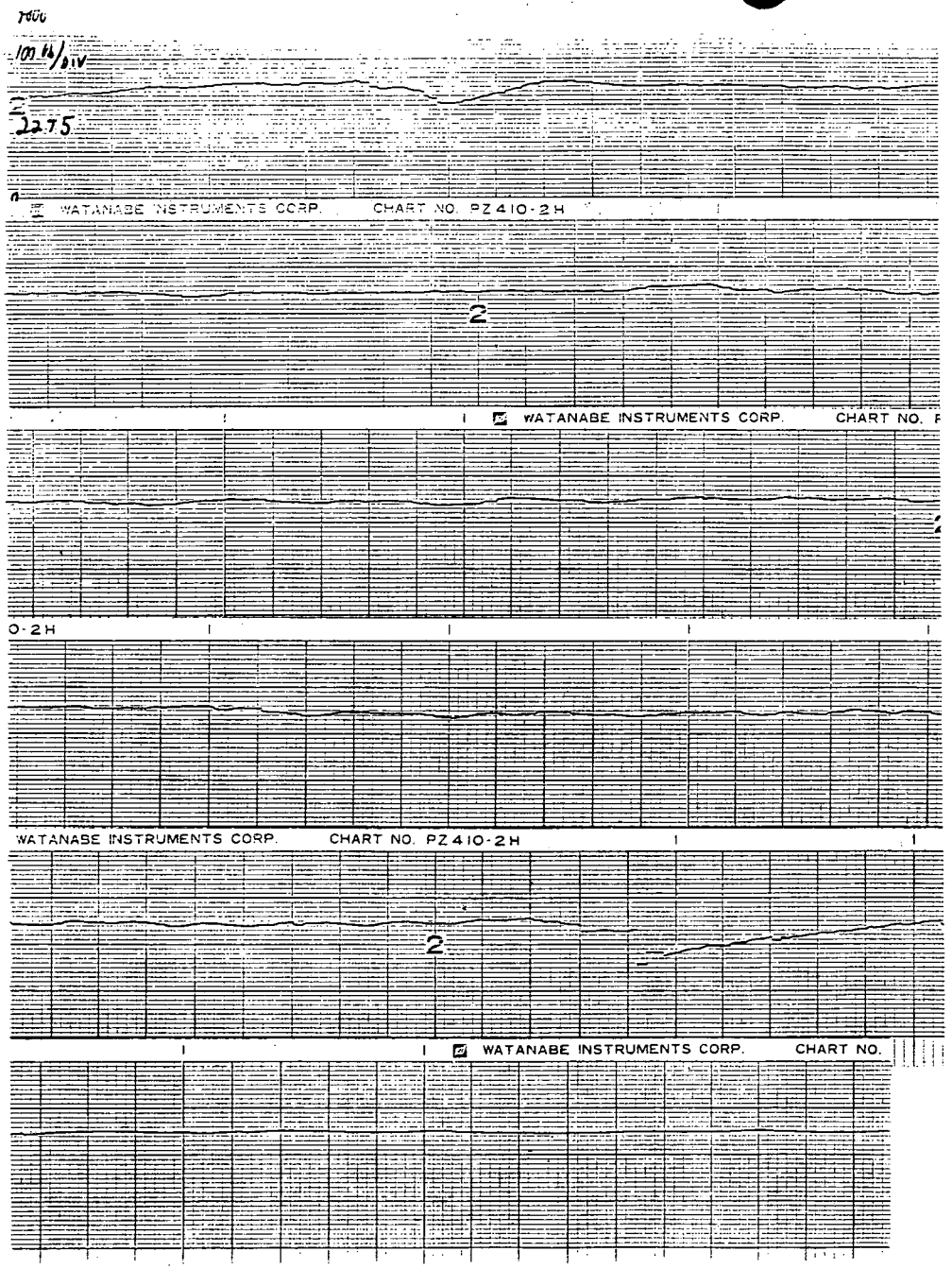


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description No 12 7/c

Standards Used: 543211, 212506, 543202, 902038.

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

Test No. 23V1		Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.2034	.2032	.0932	.0930	23.6	>10,000 MΩ	N/A
2.	RED	.2014	.2008	.0932	.0923	7.3*	↓	↓
3.	YEL	.2112	.2084	.0928	.0926	23.9		
4.	GRN	.2033	.2023	.0925	.0924	24.0		
5.	BLU	.2049	.2004	.0921	.0912	20.9 **		
6.	WHT	.2040	.1975	.0930	.0921	15.9 ***		
7.	WHT/BLA	.1977	.1962	.0904	.0901	24.1		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = ~~N/A~~ Max ~~N/A~~ Min
.6877 (07) .6423 (07)

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: * Suspect nick lifted out of water - went to 25.8
** Known nick held out of water - Failed at suspect nick
*** Suspect nick lifted out of water - went to 23.7

Tested By/Date N/A (Tension) JM 5-6-86 (Micrometer) JB R.A.T. (Dielectric) R.A.T. 5/7/86 (Resistance)

Verified By/Date HE 5/29/86
Test Observers RR

QA Approval/Date JSR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description No 12 7/c

Standards Used: 543211, 212506, 543202, 902038, ~~912504~~, 543202, ~~902038~~ JB 5/27/86

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 23V2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.2023	.2010	.0951	.0931	18.2	>10,000MΩ	N/A
2.	RED	.2065	.2049	.0926	.0922	22.7	↓	↓
3.	YEL	.2165	.2054	.0929	.0923	22.7	↓	↓
4.	GRN	.2066	.2036	.0930	.0922	28.4	↓	↓
5.	BLU	.2077	.2004	.0918	.0916	21.4	↓	↓
6.	WHT	.2022	.1973	.0928	.0923	28.2	↓	↓
7.	WHT/BLA	.2013	.2002	.0904	.0901	24.8	↓	↓
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6768 Max .6500 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension — DM 7 5-7-86 Micrometer — JB R.A.T. 5/5 R.A.T. R.A.T. 5/5 Dielectric Resistance

Verified By/Date He 5/29/86
Test Observers RR

QA Approval/Date JAR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description No 12 7/c

Standards Used: 543211, 212506, 543202, 902038.

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 23V3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.2065	.2024	.0922	.0919	27.6	>10,000MΩ	N/A
2.	RED	.2009	.1995	.0922	.0918	12.8		
3.	YEL	.2097	.2071	.0926	.0923	20.6		
4.	GRN	.2016	.2010	.0923	.0921	21.0		
5.	BLU	.2046	.2031	.0941	.0936	17.4		
6.	WHT	.2015	.1994	.0925	.0923	26.2		
7.	WHT/BLA	.2023	.1973	.0902	.0901	17.9		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6786 Max .6581 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension | Dm7 5-8-86 Micrometer | JB R.A.T. 5/9/86 Dielectric | R.A.T. 5/9/86 Resistance

Verified By/Date NC 5/29/86
Test Observers RR

QA Approval/Date JBR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description No 12 7/c

Standards Used: 543211, 902038, 543202, 212506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 23V4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.2056	.2000	.0932	.0926	29.4	10,000 mΩ	N/A
2.	RED	.1999	.1991	.0935	.0924	28.2		
3.	YEL	.2179	.1982	.0937	.0927	17.7		
4.	GRN	.2056	.2049	.0929	.0926	17.6		
5.	BLU	.2028	.1974	.0917	.0916	24.0		
6.	WHT	.2020	.1990	.0923	.0919	25.1		
7.	WHT/BLA	.2023	.1992	.0903	.0899	23.4		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6837 Max .6436 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies:

Tested By/Date N/A Tension — Micrometer — JB R.A.T. 5/9/86 Dielectric — R.A.T. 5/9/86 Resistance

Verified By/Date 5/29/86
Test Observers

QA Approval/Date 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description No 12 7/c

Standards Used: 543211, 712506, 543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	23U5							
1.	BLA	.2052	.2021	.0932	.0931	21.4 ~~10,000mΩ~~	>10,000 mΩ	N/A
2.	RED	.2100	.2097	.0928	.0919	24.5		
3.	YEL	.2157	.2147	.0930	.0928	18.9		
4.	GRN	.2040	.1995	.0924	.0922	22.7		
5.	BLU	.2080	.2079	.0919	.0916	19.5		
6.	WHT	.2050	.2002	.0926	.0921	26.3		
7.	WHT/BLA	.2024	.2005	.0905	.0902	22.5		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6863 Max .6521 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension | DMZ 5-8-86 Micrometer | JB R.A.T. 5/9/86 Dielectric | R.A.T. 5/9/86 Resistance

Verified By/Date HC 5/29/86 QA Approval/Date JOR 5/29/86
Witnessed Observers AR

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description No. 12 7/C

Standards Used: 506325, 543175, 522035, 543211, 212526, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

	Test No. 23T1	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.2019	.1960	.0935	.0920	24.1	>10,000 MΩ	Test OK
2.	RED	.2000	.1985	.0926	.0922	29.6		
3.	YEL	.2176	.2034	.0940	.0924	20.5		
4.	GRN	.2019	.1978	.0927	.0921	24.5		
5.	BLU	.2012	.1981	.0924	.0918	20.3		
6.	WHT	.1989	.1951	.0936	.0918	19.6		
7.	WHT/BLA	.2008	.1960	.0925	.0903	24.7		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6749 Max .6487 Min

SWBP Data

Tension (T) = 695 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1551.69 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1551.69 lbs/ft

Anomalies:

Tested By/Date VEK 5-6-86 (Tension) Dm 7 5-9-86 (Micrometer) JB 5/9/86 (Dielectric) R.A.T. 5/9/86 (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers JR

0148E-4

204/DIV

23T1

WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H

2

WATANABE INSTRUMENTS CORP. CHART NO. PZ

2

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description No. 12 7/C

Standards Used: 506225 542175 522035 543211, 212506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___
Tensioned ✓

1-Conductor ___
Multi-Conductor ✓

	Test No. 23T2 –	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.2055	.1970	.0930	.0921	26.1	>10,000 MΩ	Est OK
2.	RED	.2122	.1967	.0924	.0923	29		
3.	YEL	.2086	.2064	.0925	.0924	16.3		
4.	GRN	.2050	.2052	.0924	.0924	24.8		
5.	BLU	.2024	.1954	.0917	.0913	21.9		
6.	WHT	.2023	.1956	.0930	.0920	26.1		✓
7.	WHT/BLA	.1988	.1950	.0905	.0900	24.5		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6700 Max .6452 Min

SWBP Data

Tension (T) = 690 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1540.52 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1540.52 lbs/ft

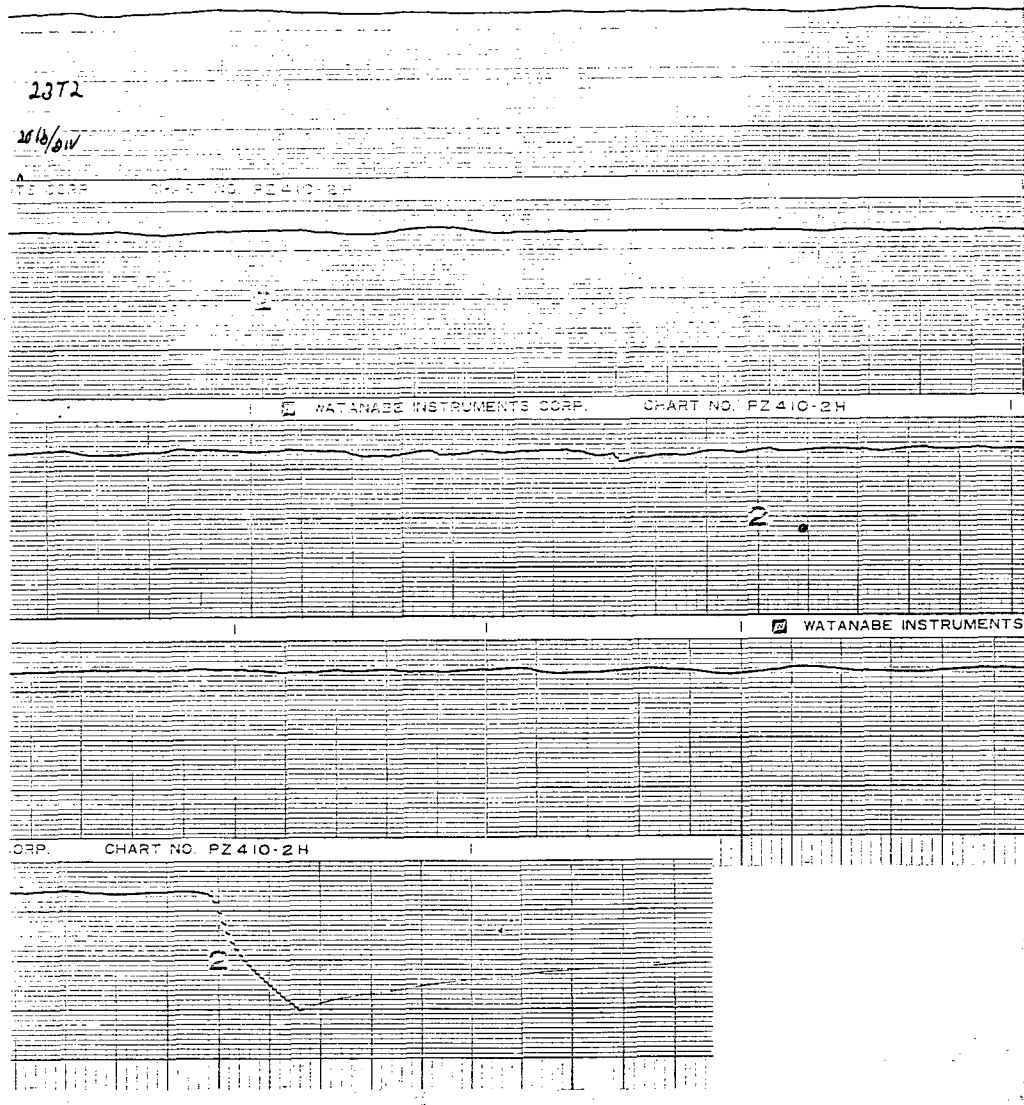
Anomalies:

Tested By/Date 5-6-86 VER (Tension) | 5-9-86 (Micrometer) | R.A.T. 5/9/86 (Dielectric) | R.A.T. 5/9/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers AR

QA Approval/Date JSC 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description No. 12 7/6

Standards Used: 506325 543175 522035, 543211, 212506, 502445, 543202, ~~902038~~ R.A.T. 5/19/86

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No. 23T3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.2034	.1985	.0929	.0923	26.7	>10,000 MΩ	Test OK
2.	RED	.2059	.1994	.0930	.0922	13.3 *		
3.	YEL	.2165	.2064	.0929	.0919	19.1 **		
4.	GRN	.2039	.1999	.0927	.0923	24.8		
5.	BLU	.2058	.2000	.0923	.0913	17.2		
6.	WHT	.2026	.1975	.0928	.0924	16.5		
7.	WHT/BLA	.2027	.1990	.0901	.0903	16.5 ***		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6836 Max .6384 Min

SWBP Data

Tension (T) = 716 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1585.18 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1585.18 lbs/FT

Anomalies: Cable was nicked by stapler. Red wire - 4'6" from end. also a smaller nick 4'11" from same end on yellow wire. RAT

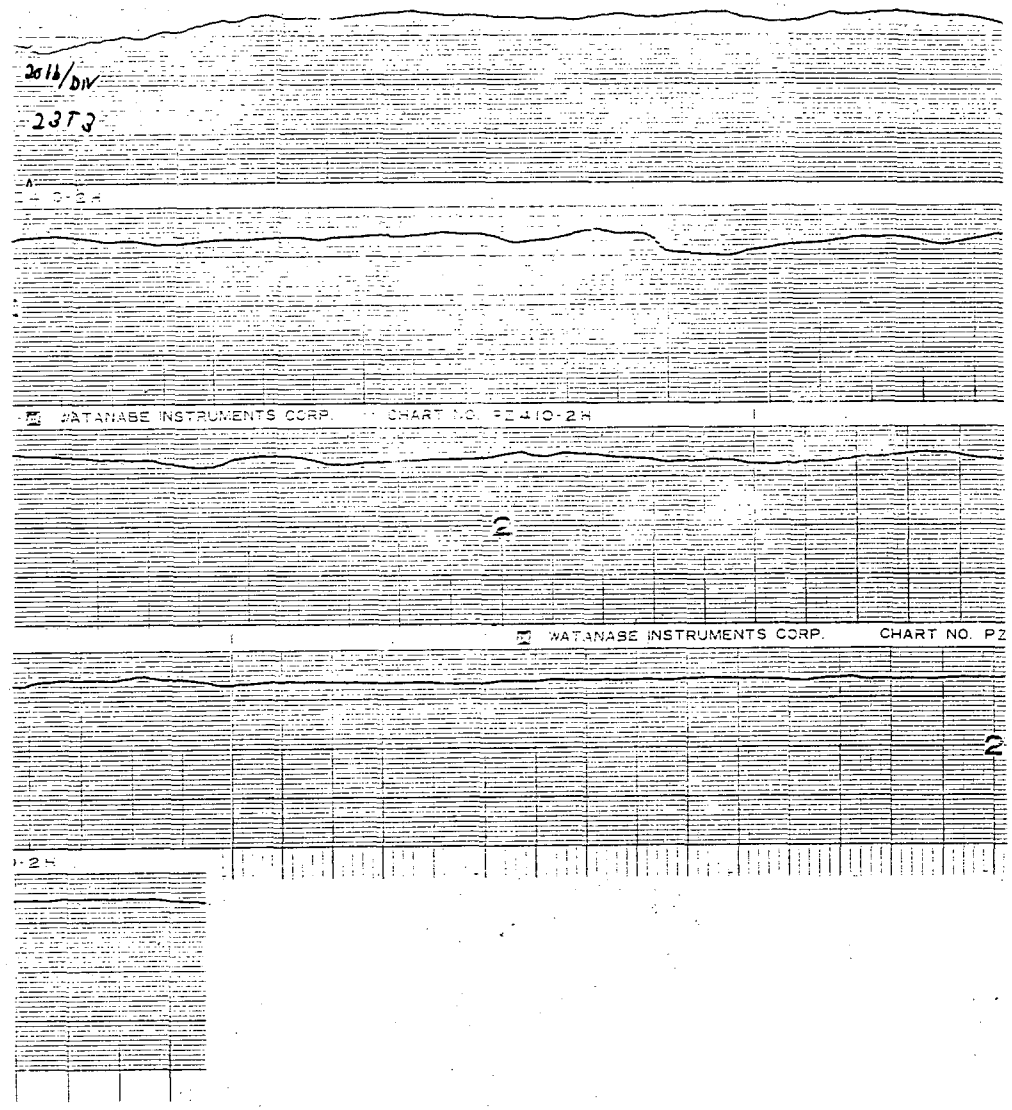
Tested By/Date VEK 5-6-86 Tension; Jm 7 5-12-86 Micrometer; RAT 5/12/86 Dielectric; RAT 5/12/86 Resistance

Verified By/Date He 5/29/86
Test Observers AR

QA Approval/Date JAR 5/29/86

0148E-4

* Known nick held out of water - failed at another nick
** Known nick held out of water
*** Possible nick failure



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description Na. 12 7/C

Standards Used: 506325 543175 522036 543211, 212506, 502445, 543202, 902038,

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ 1-Conductor ___
Tensioned ✓ Multi-Conductor ✓

Test No. 23T4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLA	.2015	.2000	.0943	.0925	25.2	>10,000MΩ	Test OK
2. RED	.2053	.1997	.0928	.0923	21.5		
3. YEL	.2098	.2064	.0924	.0918	24.6		
4. GRN	.2040	.2003	.0930	.0924	23.9		
5. BLU	.2054	.1972	.0919	.0917	18.0		
6. WHT	.2047	.1948	.0927	.0922	29.0		
7. WHT/BLA	.2050	.1978	.0912	.0899	21.6		
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .6791 Max .6476 Min

SWBP Data

Tension (T) = 705 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1574.01 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1574.01 lbs/ft

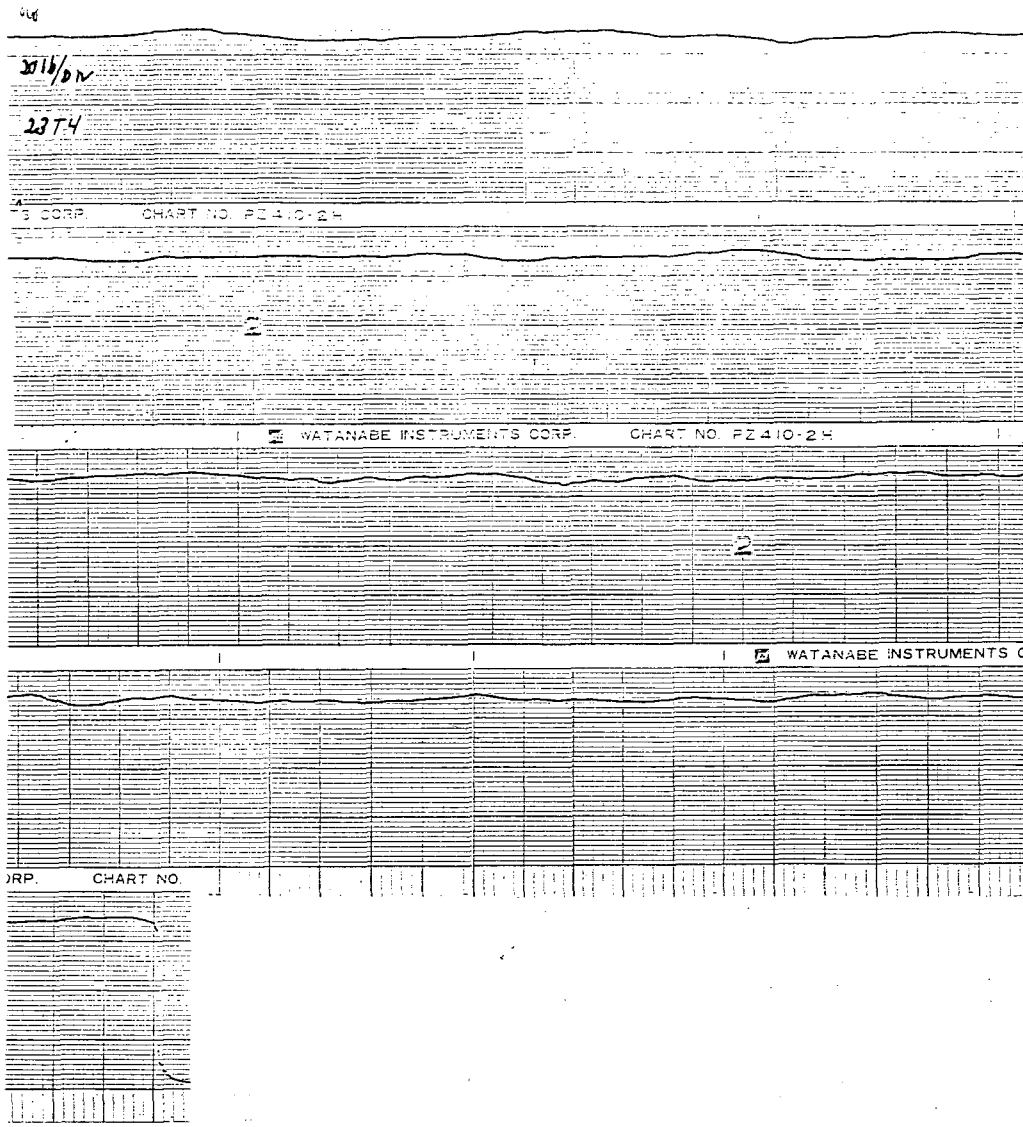
Anomalies:

Tested By/Date VEH 5-6-86 (Tension) Dm 7 5-12-86 (Micrometer) RAT 5/7/86 (Dielectric) RAT 5/7/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers AA

QA Approval/Date 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 23
Sample No. . . . . = 502
Description No 12 7/c

Standards Used: 506225, 543175, 521025, 543211, 212506, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____ Tensioned ✓

1-Conductor ____ Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	23T5							
1.	BLA	.2024	.1966	.0928	.0921	28.6	>10,000MΩ	Test OK
2.	RED	.2052	.1957	.0931	.0919	24.7		
3.	YEL	.2110	.2066	.0926	.0922	24.4		
4.	GRN	.2066	.1958	.0928	.0922	20.8		
5.	BLU	.2022	.2006	.0918	.0916	18.2		
6.	WHT	.2026	.1977	.0924	.0920	27.8		
7.	WHT/BLA	.1996	.1945	.0901	.0897	26.4		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6717 Max .6475 Min

SWBP Data

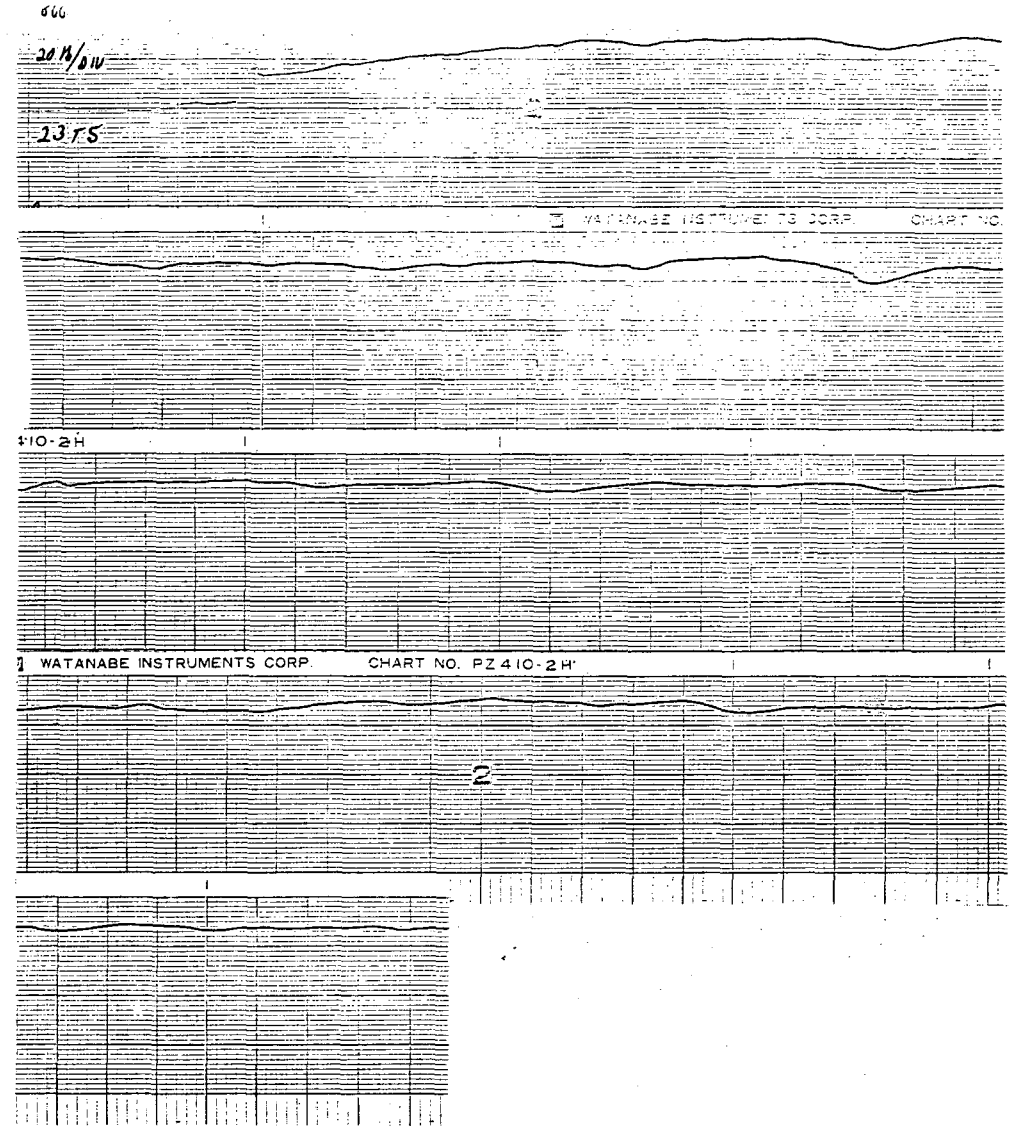
Tension (T) = 710 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1585.18 lbs/ft
Correction Factor (X) = 1
SWBP = X(T/R) = 1585.18 lbs/ft

Anomalies:

Tested By/Date VEK 5-6-86 (Tension) CM 7 5-9-86 (Micrometer) JB (Dielectric) R.A.T. 5/8/86 R.A.T. 5/10/86 (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JGL 5/29/86
Test Observers RA

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description No 14 1/C

Standards Used: 543211, 543202, 902038, 212506.

Conduit Size in Test. . . . = ~~24"~~ N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	24V1	.2716	.2505	.0729	.0727	24.4	>1,000MΩ	N/A
2.	24V2	.2643	.2484	.0731	.0726	22.8	↓	↓
3.	24V3	.2560	.2532	.0726	.0726	20.4	↓	↓
4.	24V4	.2633	.2530	.0727	.0727	23.8	↓	↓
5.	24V5	.2489	.2450	.0752	.0738	16.9	>2,000MΩ	↓
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension | DM 5-5-86 Micrometer | G.B. Dielectric | RAT 5/6/86 R.A.T. 5/6/86 Resistance

Verified By/Date HR 5/29/86 QA Approval/Date JBR 5/29/86
Wit Observers AR

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description N/A 14 1/C

Standards Used: 506325, 583175, 522035, 543211, 543202, 902038, 212504, 502445

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Test No. 24T1 -	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.2422	.2388	.0726	.0715	27.5	>500 MΩ	Est OK
2. 2	.2450	.2445	.0719	.0713	30.4	↓	↓
3. 3	.2478	.2425	.0720	.0714	27.5	↓	↓
4. 4	.2408	.2391	.0723	.0715	25.4	<2000 MΩ	✓
5. 5	.2406	.2355	.0721	.0711	24.0		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 500 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1116.32 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 536.95 lbs/ft

Anomalies:

Tested By/Date VER 5-5-86 (Tension) Om7 5-5-86 (Micrometer) JB (Dielectric) R.A.T. 5/4/86 R.A.T. 5/4/86 (Resistance)

Verified By/Date HE 5/29/86 QA Approval/Date [illegible] 5/29/86
Test Observers JR

0148E-4

24T1
2410/01V

Z410-2H

WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H

2

WATANABE INSTRUMENTS CORP. CHART NO. PZ

2

-2H

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description N1 14 1/C

Standards Used: 506225, 543175, 522035, 543211, 543203, 902038, 212586, 502445

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	24T2-							
1.	1	.2517	.2367	.0721	.0712	23.7	>500MΩ	Test OK
2.	2	.2546	.2371	.0743	.0721	28.8	↓	↓
3.	3	.2513	.2351	.0727	.0725	19.7	↓	↓
4.	4	.2464	.2324	.0717	.0710	29.3	↓	↓
5.	5	.2437	.2338	.0730	.0718	21.3	<2000MΩ	
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

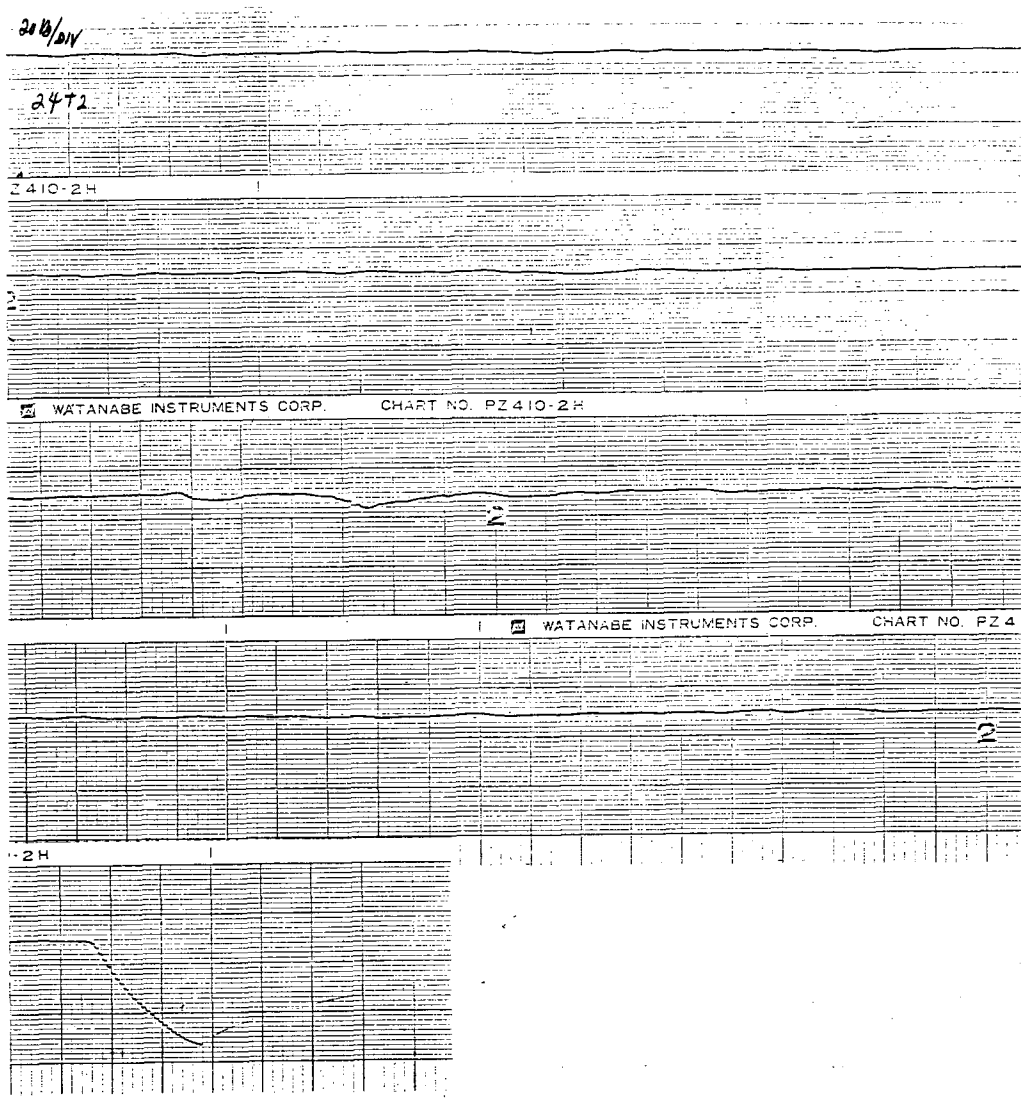
Tension (T) = 505 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1127.48 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 542.32 lbs/ft

Anomalies:

Tested By/Date VEK 5-5-86 Tension; DZ 5-5-86 Micrometer; JB R.A.T. 5/6 Dielectric; R.A.T. 5/6/86 Resistance

Verified By/Date HS 5/29/86 QA Approval/Date JRR 5/29/86
Test Observers RR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description No 14 1/c

Standards Used: 506325, 543175, 522035, 543211, 543202, 902038, 212506, 502445

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ___
Tensioned ✓

1-Conductor ✓
Multi-Conductor ___

Test No. 24T3-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.2423	.2330	.0721	.0706	28.7	>500m Ω	Test OK
2. 2	.2442	.2347	.0714	.0708	26.8		
3. 3	.2448	.2340	.0712	.0710	28.4		
4. 4	.2505	.2370	.0730	.0711	27.4		
5. 5	.2431	.2301	.0716	.0710	27.5	<2000m Ω	
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 565 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1261.44 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 606.75 lbs/ft

Anomalies:

Tested By/Date WEA 5-5-86 (Tension) JM 5-5-86 (Micrometer) JB (Dielectric) R.N.T. 5/ 86 R.N.T. 5/5/86 (Resistance)

Verified By/Date HE 5/29/86
Test Observers HR

QA Approval/Date JRR 5/29/86

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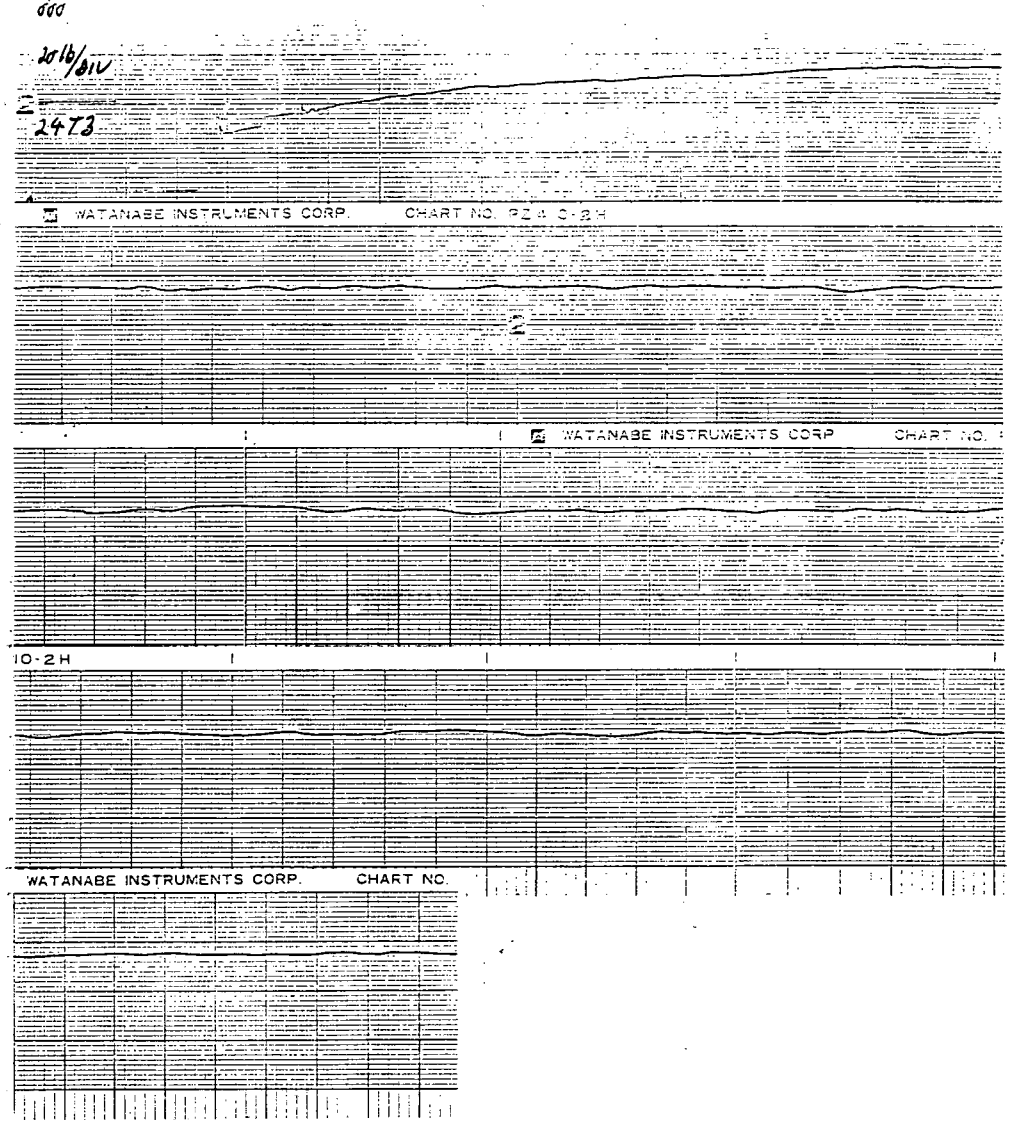

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description No 14 1/c

Standards Used: 506325, 543175, 522035, 543211, 543202, 902038, 212506, 502445

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

	Test No. 2474-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.2428	.2326	.0720	.0710	21.5	>500 MΩ	Test OK
2.	2	.2543	.2321	.0724	.0708	25.2		
3.	3	.2482	.2338	.0767	.0717	28.7		
4.	4	.2545	.2500	.0724	.0711	22.5		
5.	5	.2558	.2367	.0720	.0712	22.4	<2000 MΩ	
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 560 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1250.28 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 601.38 lbs/ft

Anomalies:

Tested By/Date VEK 5-5-86 (Tension) — Jm 7 5-5-86 (Micrometer) — JB (Dielectric) — R.A.T. 5/6/86 (Resistance) — R.A.T. 5/6/86

Verified By/Date HR 5/29/86 — QA Approval/Date JM 5/29/86
Test Observers RR

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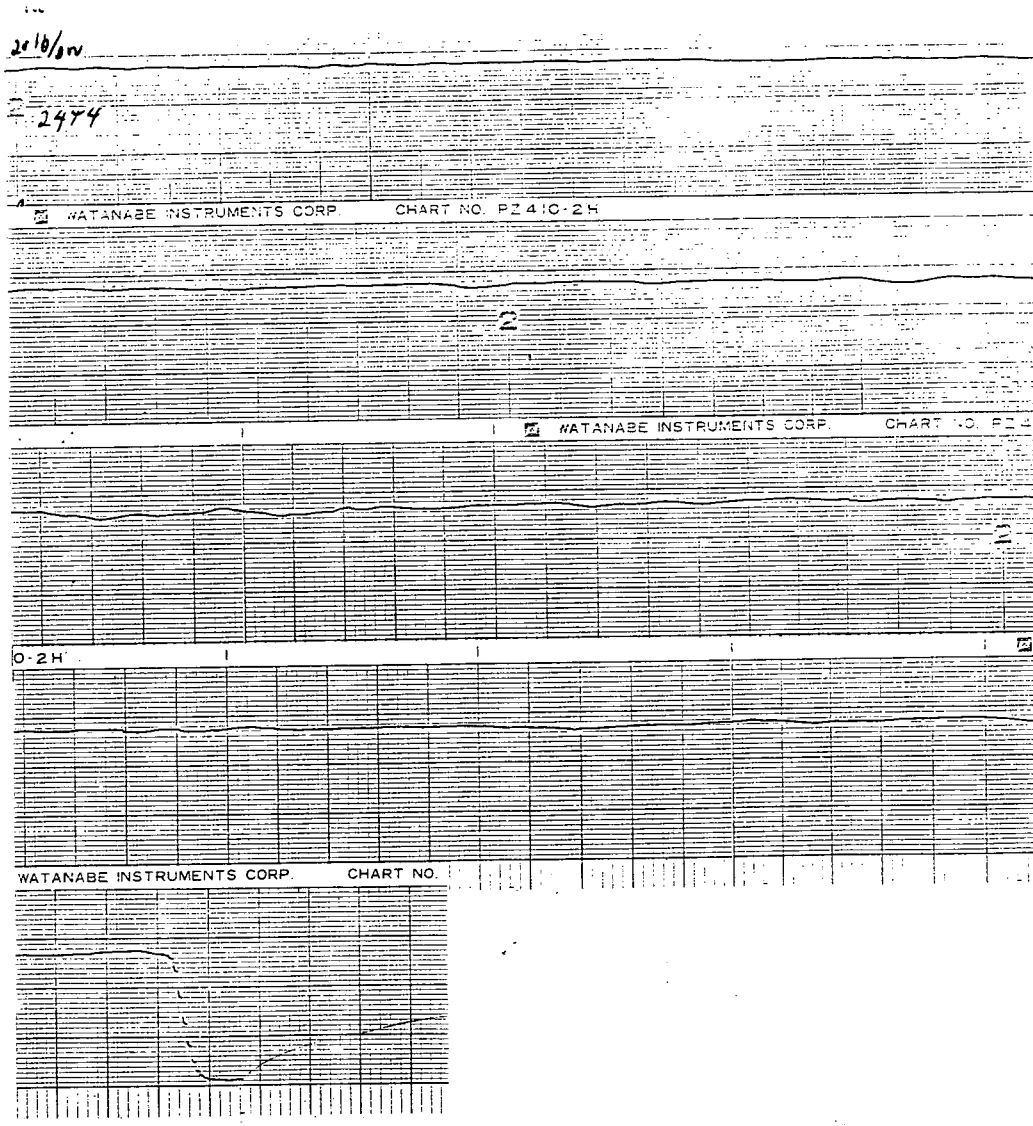


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description No 14 1/C

Standards Used: 506,325 543175 522035 543211, 543202, 902038, 212506, 502445

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓

1-Conductor ✓ Multi-Conductor ___

	Test No. 24T5-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.2345	.2345	.0700	.0696	31.1	>500 MΩ	Test OK
2.	2	.2419	.2278	.0708	.0700	30.4	↓	↓
3.	3	.2441	.2341	.0717	.0702	33.7	↓	↓
4.	4	.2400	.2261	.0700	.0699	32.6	↓	↓
5.	5	.2450	.2357	.0704	.0704	32.4	<2000 MΩ	
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = n/a Max n/a Min

SWBP Data

Tension (T) = 630 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1406.56 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 676.56 lbs/ft

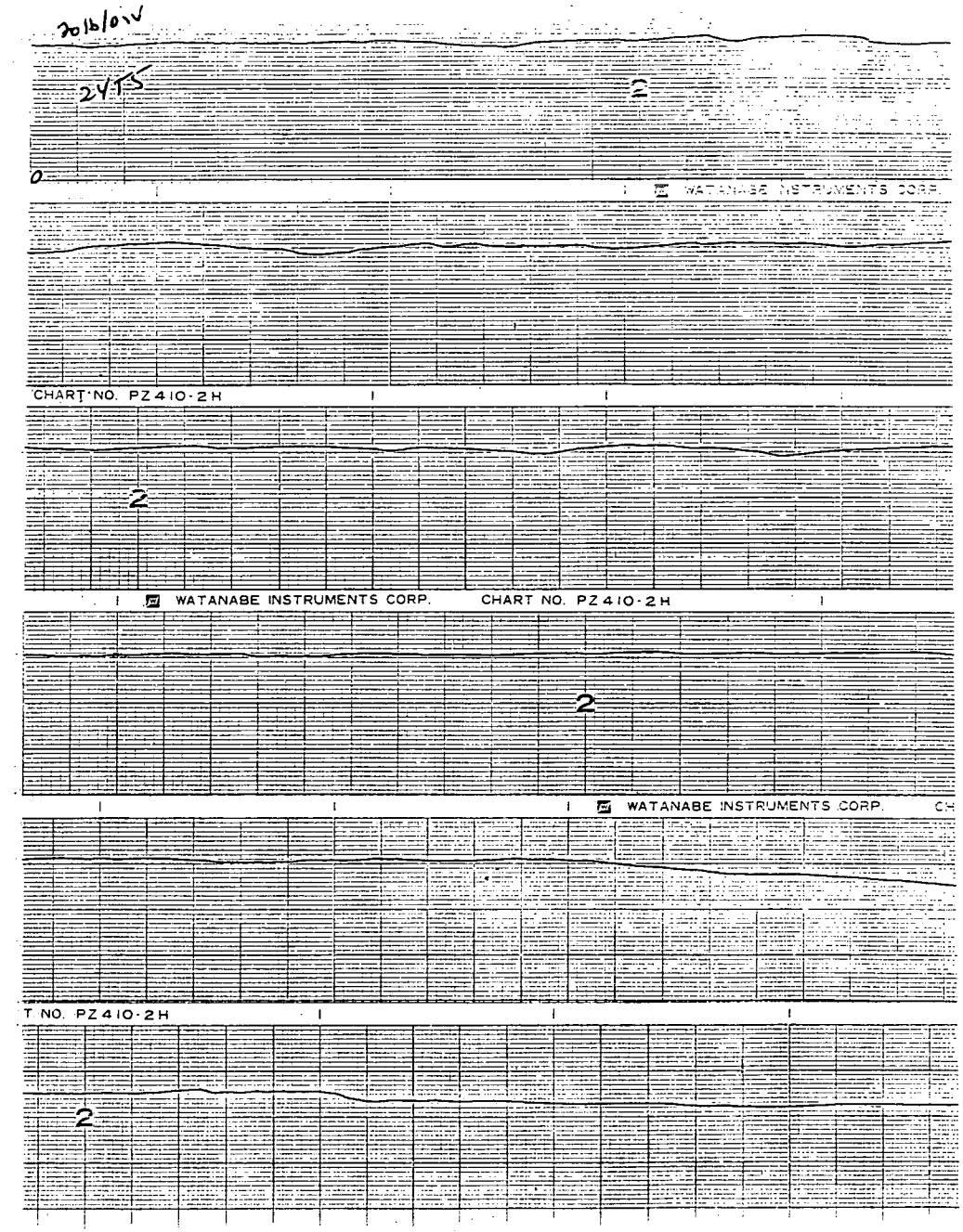
Anomalies:

Tested By/Date VEK 5-5-86 (Tension) DMZ 5-6-86 (Micrometer) JB 5/5/86 (Dielectric) R.A.T. 5/5/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers HR

QA Approval/Date JAR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description No 14 1/C

Standards Used: 506225, 543175, 522035, 543211, 712506, 502445, 543202, 902058.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	2476-							
1.	1	.2285	.2181	.0695	.0687	29.9	>500 MΩ	Test OK
2.	2	.2315	.2170	.0690	.0687	31.8	<1000 MΩ	
3.	3	.2357	.2230	.0692	.0685	30.5		
4.	4	.2292	.2217	.0693	.0687	31.5		
5.	5	.2283	.2140	.0691	.0684	31.9		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 750 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1674.48 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 805.43 lbs/ft

Anomalies:

Tested By/Date VEK 5-16-86 (Tension) / [illegible] 5-16-86 (Micrometer) / JB R.A.T. 5/19/86 (Dielectric) / R.A.T. 5/19/86 (Resistance)

Verified By/Date He 5/29/86
Test Observers [illegible]

QA Approval/Date [illegible] 5/29/86

0148E-4

4016/DIV

2476

WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H

WATANABE INSTRUMENTS CORP. CHART NO. PZ4

0-2H

WATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description M 14 1/C

Standards Used: 506225, 543175, 522035, 543211, 212506, 502445, 543202, 502038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Test No. 2477-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.2339	.2180	.0693	.0717	29.9	>500 MΩ	Est OK
2. 2	.2320	.2236	.0691	.0704	34.6	↓	↓
3. 3	.2308	.2273	.0686	.0700	34.3	>1000 MΩ	
4. 4	.2344	.2262	.0698	.0713	26.1	>1000 MΩ	
5. 5	.2309	.2223	.0669	.0709	32.2	>500 MΩ (>1000 MΩ)	
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

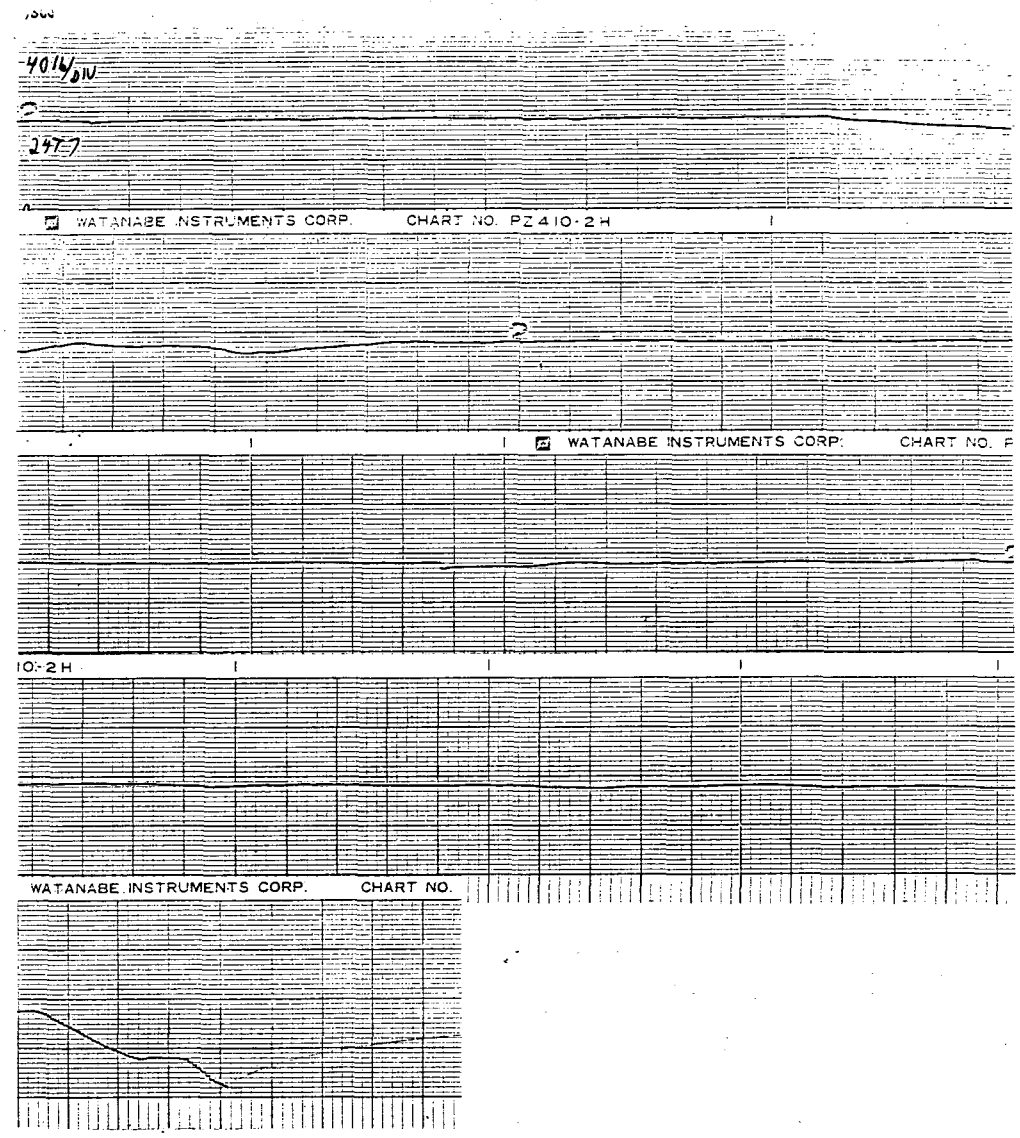
Tension (T) = 750 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1674.48 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 805.43 lbs/ft

Anomalies:

Tested By/Date VEK 5-16-86 (Tension) Pat Z 5-16-86 (Micrometer) SB R.A.T. 5/19/86 (Dielectric) R.A.T. 5/19/86 (Resistance)

Verified By/Date HE 5/29/86 QA Approval/Date JRC 5/29/86
Test Observers AR

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description No 14 1/C

Standards Used: 506325 543175 522035 543211, 312506, 502445, 543202, 902035

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

	Test No. 24T8-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.2318	.2235	.0700	.0686	32.2	>500MΩ<1000MΩ	Test 1 OK
2.	2	.2267	.2182	.0690	.0667	33.1	>1000MΩ	
3.	3	.2326	.2217	.0691	.0676	29.2	↓	
4.	4	.2262	.2214	.0688	.0685	20.8	<200MΩ	
5.	5	.2347	.2261	.0689	.0682	28.0	>500MΩ<1000MΩ	
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

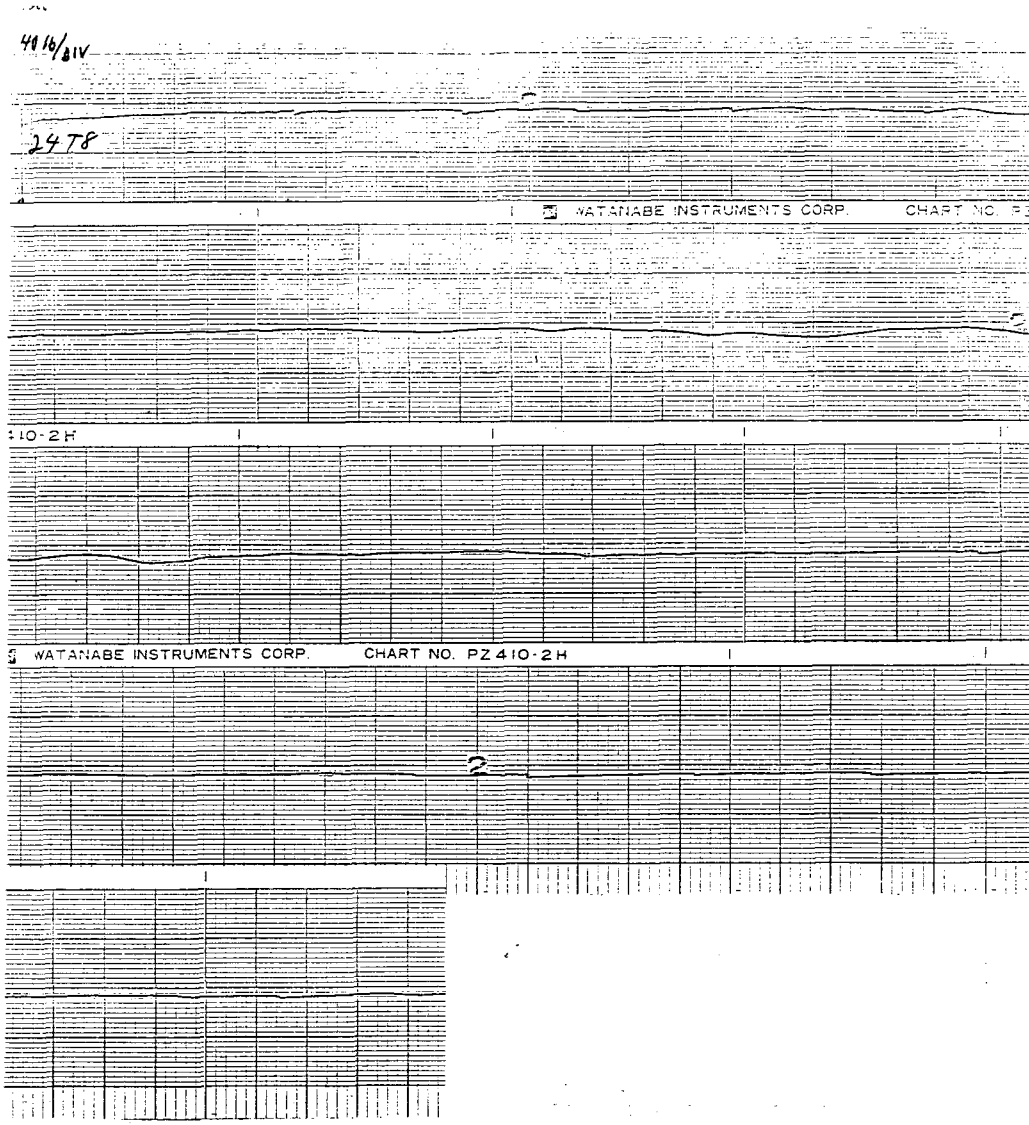
Tension (T) = 765 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1707.97 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 821.53 lbs/ft

Anomalies:

Tested By/Date VCK 5-16-86 (Tension) DWF 5-16-86 (Micrometer) JB R.A.T. 5/19/86 (Dielectric) R.A.T. 5/19/86 (Resistance)

Verified By/Date HC 5/29/86 QA Approval/Date JSR 5/29/86
Test Observers

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description No 14 1/6

Standards Used: 506325 543175 522035, 543211, 212506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ___
Tensioned ✓

1-Conductor ✓
Multi-Conductor ___

Test No. 2479 -	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.2369	.2265	.0707	.0640	32.9	>500MΩ/1000MΩ	Test OK
2. 2	.2360	.2230	.0702	.0687	25.8	>500MΩ/1000MΩ	↓
3. 3	.2377	.2288	.0704	.0685	28.3	↓	↓
4. 4	.2411	.2244	.0710	.0684	29.9	↓	↓
5. 5	.2394	.2206	.0707	.0691	29.7	↓	↓
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 805 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1797.28 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 864.49 lbs/ft

Anomalies:

Tested By/Date VER 5-16-86 (Tension) CDM 5-16-86 (Micrometer) JB R.A.T. 5/16/86 (Dielectric) R.A.T. 5/16/86 (Resistance)

Verified By/Date HC 5/29/86
Test Observers RAT

QA Approval/Date JAR 5/29/86

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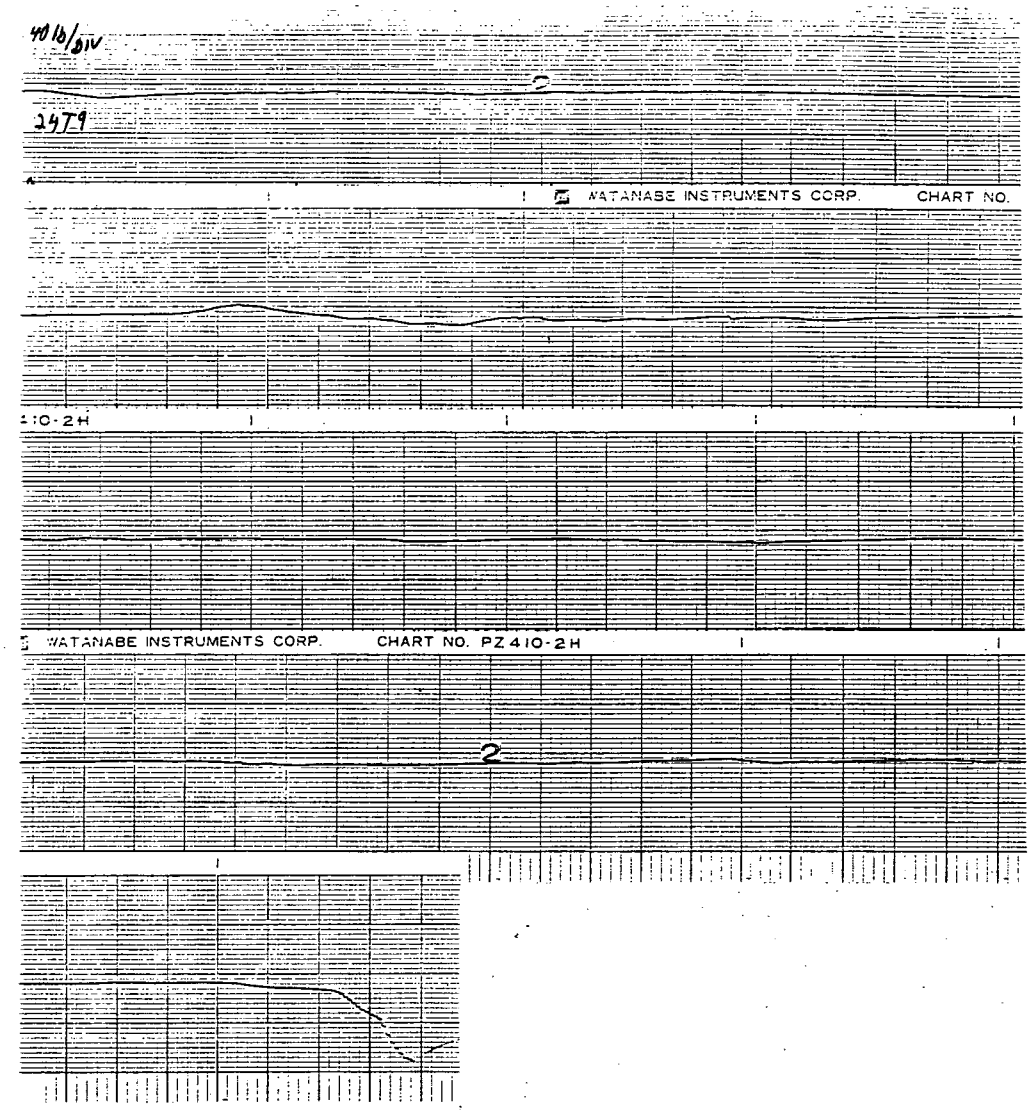


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 24
Sample No. . . . . = 26
Description No 14 1/C

Standards Used: 506225, 543175, 522035, 543211, 312506, 502445, 543202, 902038

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 5

Virgin ___ Tensioned ✓
1-Conductor ✓ Multi-Conductor ___

Test No. 24T10-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.2320	.2247	.0682	.0658	36.7	>1000 MΩ	Est OK
2. 2	.2304	.2203	.0659	.0687	28.3		
3. 3	.2281	.2234	.0694	.0682	26.8		
4. 4	.2323	.2218	.0693	.0685	26.2		
5. 5	.2321	.2159	.0689	.0681	32.1	<1000 MΩ	
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 765 lbs (Max.)
Radius (R) = .4479 ft
T/R = 1707.97 lbs/ft
Correction Factor (X) = .481
SWBP = X(T/R) = 821.53 lbs/ft

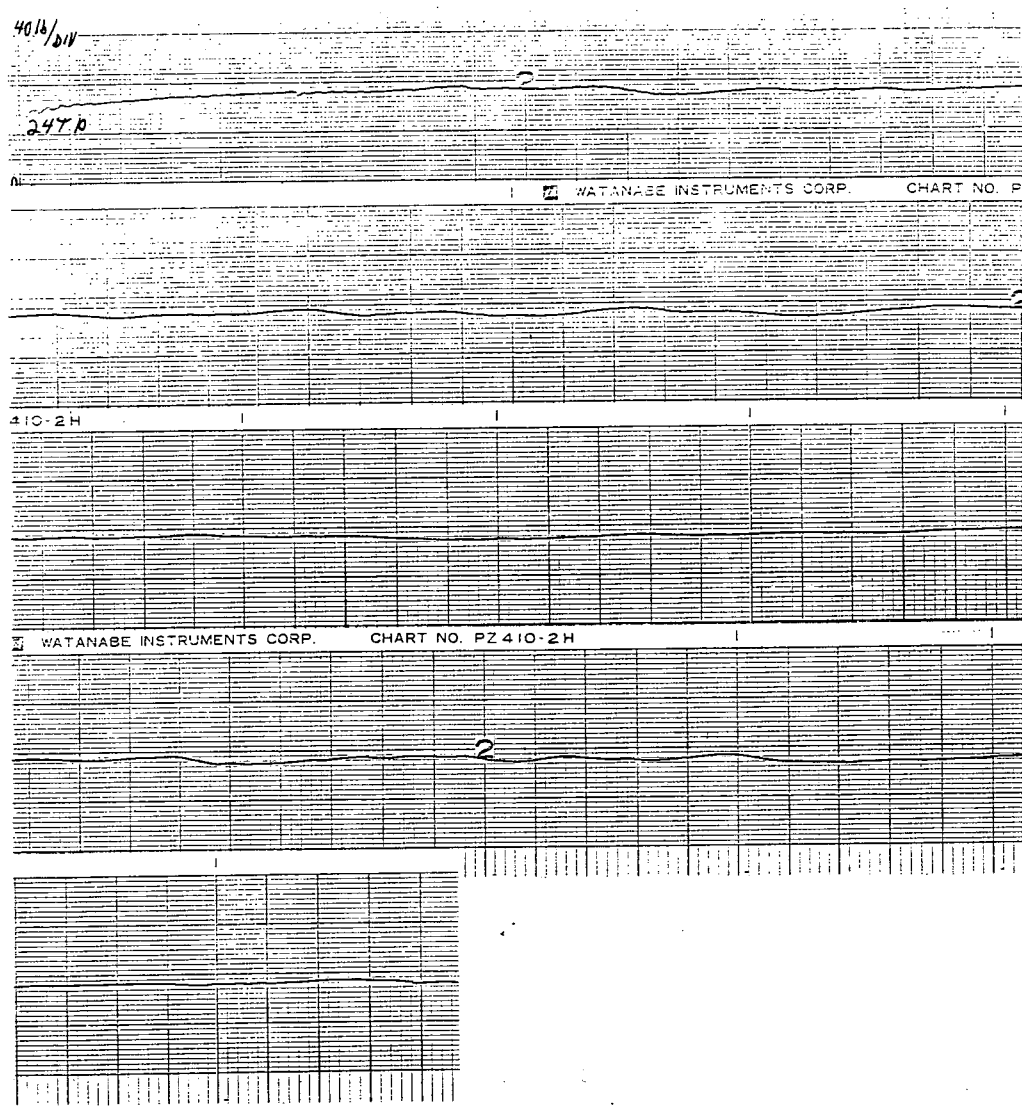
Anomalies:

Tested By/Date VER 5-16-86 (Tension) DM 5-16-86 (Micrometer) JB R.A.T. 5/16/86 (Dielectric) R.A.T. 5/16/86 (Resistance)

Verified By/Date Ne 5/29/86
Test Observers RR

QA Approval/Date MRR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 25
Sample No. . . . . = 440
Description No 14 1/c

Standards Used: 543211, 543202, 902038, 917504

Conduit Size in Test. . . . = ~~VSK 3/4"~~ N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	25V1	.1728	.1726	.0740	.0721	42.3	>10,000 MΩ	N/A
2.	25V2	.1724	.1721	.0731	.0729	40.1	↓	↓
3.	25V3	.1722	.1715	.0740	.0734	36.6	↓	↓
4.	25V4	.1728	.1717	.0733	.0730	48.8	↓	↓
5.	25V5	.1720	.1718	.0732	.0728	38.4		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension | Dm 7 5-5-86 Micrometer | JB Dielectric | R.A.T. 5/7/86 R.A.T. 5/8/86 Resistance

Verified By/Date He 5/29/86
Test Observers JA

QA Approval/Date JRR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 25
Sample No. . . . . = 440
Description No 14 1/C

Standards Used: 506325, 543175, 522035, 543211, 543202, 902038, 213506, 502445

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Virgin ___
Tensioned ✓

1-Conductor ✓
Multi-Conductor ___

	Test No. 25T1 -	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	.1718	.1707	.0725	.0718	38.6	>10,000MΩ	Test OK
2.	2	.1722	.1714	.0733	.0724	44.5		
3.	3	.1723	.1717	.0727	.0720	41.2		
4.	4	.1719	.1712	.0724	.0706	40.2		
5.	5	.1713	.1704	.0730	.0706	36.1		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 510 lbs (Max.)
Radius (R) = .3542 ft
T/R = 1439.86 lbs/ft
Correction Factor (X) = .43
SWBP = X(T/R) = 619.14 lbs/ft

Anomalies:

Tested By/Date VZX 5-5-86 (Tension) DMZ 5-5-86 (Micrometer) JB R.A.T. 5/5 (Dielectric) R.A.T. 5/5/86 (Resistance)

Verified By/Date HR 5/29/86
Test Observers

QA Approval/Date MR 5/29/86

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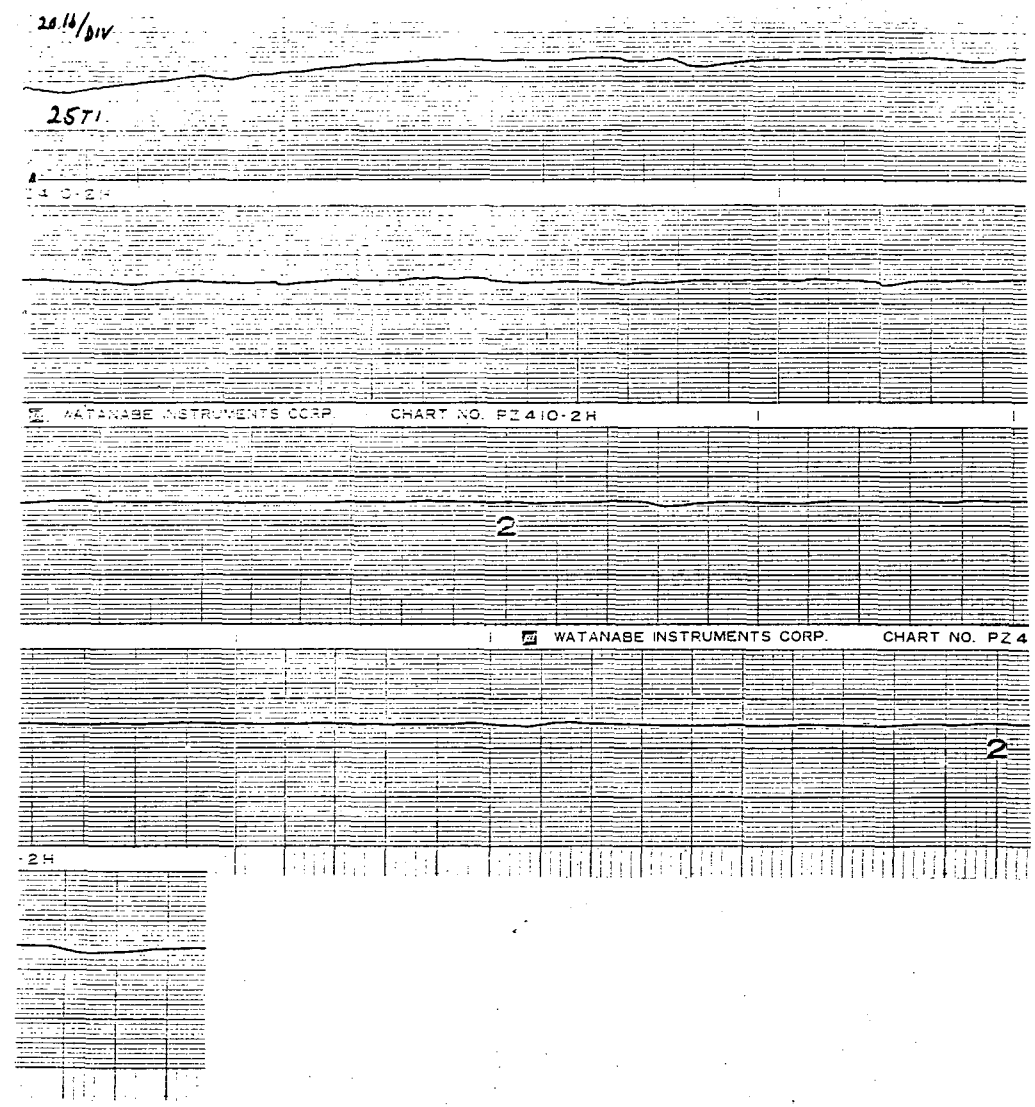

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 25
Sample No. . . . . = 440
Description No 14 1/c

Standards Used: 506225, 543175, 522035, 543211, 543202, 902038, 212506, 502445

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Virgin ___
Tensioned ✓

1-Conductor ✓
Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	2572							
1.	1	.1704	.1692	.0730	.0712	37.7	>10,000MΩ	Test OK
2.	2	.1718	.1704	.0734	.0718	41.5		
3.	3	.1717	.1715	.0727	.0719	34.6		
4.	4	.1715	.1701	.0741	.0717	31.3		
5.	5	.1734	.1711	.0769	.0721	40.3		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 505 lbs (Max.)
Radius (R) = .3542 ft
T/R = 1425.75 lbs/ft
Correction Factor (X) = .43
SWBP = X(T/R) = 613.07 lbs/ft

Anomalies:

Tested By/Date VLK 5-5-86 Tension; DM 5-5-86 Micrometer; JB R.A.I. 5/6/86 Dielectric; R.A.I. 5/6/86 Resistance

Verified By/Date HC 5/29/86
Test Observers JA

QA Approval/Date PGA 5/29/86

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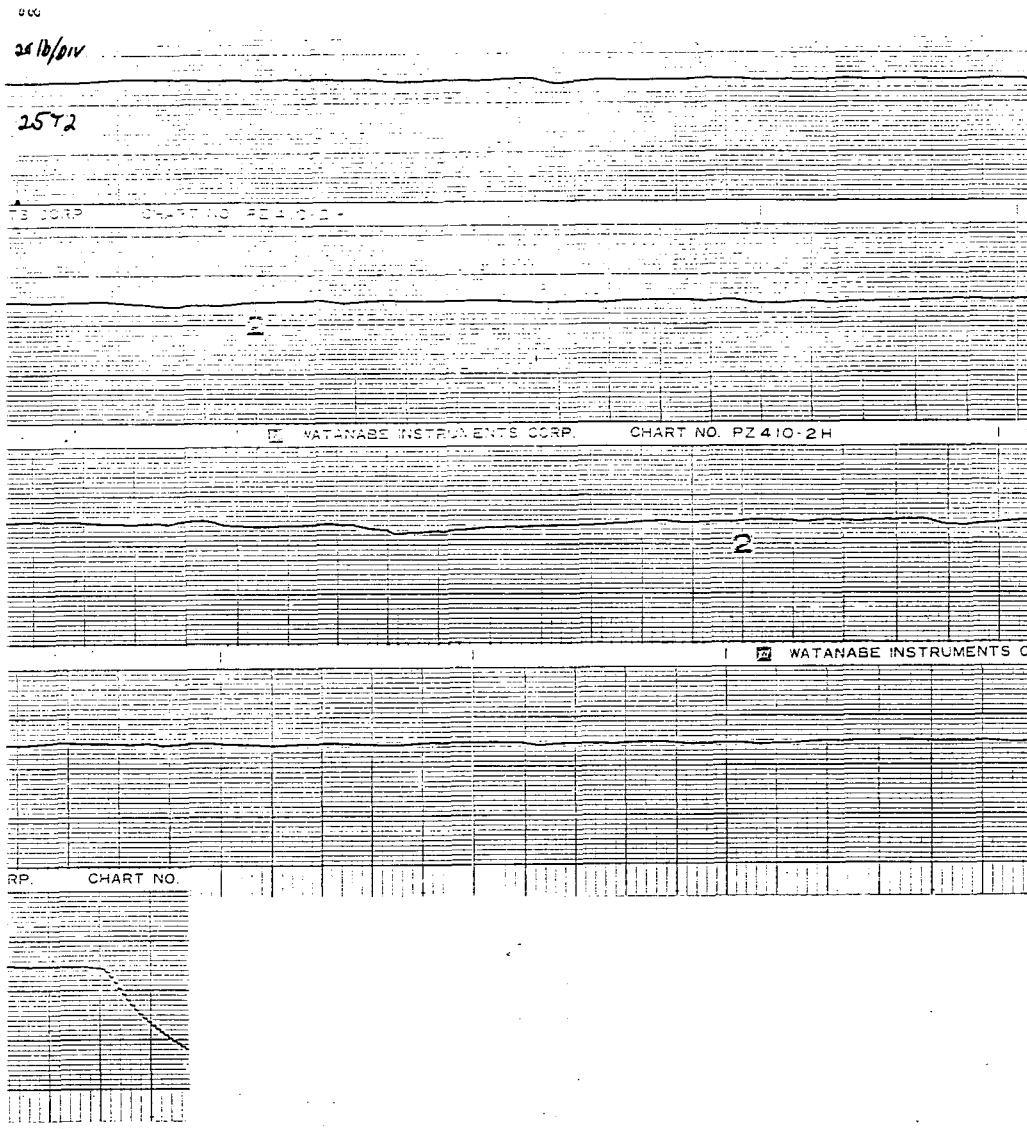

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 25
Sample No. . . . . = 440
Description No 14 1/C

Standards Used: 506325, 543175, 522035, 543211, 543202, 902038, 212806, 502445

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Virgin ____ Tensioned ✓
1-Conductor ✓ Multi-Conductor ____

Test No. 25T3-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.1727	.1714	.0724	.0724	39.2	>10,000MΩ	Est OK
2. 2	.1721	.1708	.0723	.0719	38.6		
3. 3	.1717	.1708	.0723	.0720	32.4		
4. 4	.1733	.1717	.0720	.0718	36.2		
5. 5	.1717	.1701	.0723	.0721	40.0		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 505 lbs (Max.)
Radius (R) = .3542 ft
T/R = 1425.75 lbs/ft
Correction Factor (X) = .43
SWBP = X(T/R) = 613.07 lbs/ft

Anomalies:

Tested By/Date: VEK 5-5-86 (Tension) Dm 7 5-5-86 (Micrometer) JB (Dielectric) R.A.T. 5/5/86 (Resistance)

Verified By/Date: JE 5/29/86
Test Observers: JR
QA Approval/Date: JBL 5/29/86

0148E-4

660

201b/DN

25T3

WATANABE INSTRUMENTS CORP. CHART NO.

410-2H

WATANABE INSTRUMENTS CORP. CHART NO. FZ 410-2H

2

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 25
Sample No. . . . . = 440
Description No. 14 1/C

Standards Used: 506225, 543175, 522025, 582211, 543202, 902038, 212506, 502445

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Virgin
Tensioned ✓

1-Conductor ✓
Multi-Conductor

Test No. 2574-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	.1732	.1707	.0728	.0721	35.7	>10,000 MΩ	Tcs/ OK
2. 2	.1728	.1714	.0741	.0728	35.4		
3. 3	.1719	.1707	.0734	.0722	34.2		
4. 4	.1736	.1708	.0747	.0722	42.2		
5. 5	.1719	.1719	.0738	.0720	38.6		
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 505 lbs (Max.)
Radius (R) = .3542 ft
T/R = 1425.75 lbs/ft
Correction Factor (X) = .43
SWBP = X(T/R) = 613.07 lbs/ft

Anomalies:

Tested By/Date VEK 5-5-86 (Tension) OMZ 5-5-86 (Micrometer) JB (Dielectric) RAT 5/5/ A.O.T. 5/5/86 (Resistance)

Verified By/Date HE 5/29/86
Test Observers JR

QA Approval/Date JBB 5/29/86

0148E-4

2016/DW

2574

WATANABE INSTRUMENTS CORP. CHART NO. PI 410-2-

2

WATANABE INSTRUMENTS CORP. CHART NO.

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 25
Sample No. . . . . = 440
Description No 14 1/c

Standards Used: 506325, 543175, 522035, 543211, 543212, 902038, 242516, 502445

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 5

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	2575-							
1.	1	.1723	.1717	.0731	.0724	31.7	>10,000 MΩ	Est ok
2.	2	.1715	.1714	.0729	.0720	39.6		
3.	3	.1727	.1715	.0736	.0725	36.1		
4.	4	.1723	.1714	.0722	.0719	37.3		
5.	5	.1728	.1710	.0733	.0719	34.2		
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 500 lbs (Max.)
Radius (R) = .3542 ft
T/R = 1411.63 lbs/ft
Correction Factor (X) = .43
SWBP = X(T/R) = 607.00 lbs/ft

Anomalies:

Tested By/Date [illegible] 5-5-86 (Tension) [illegible] 5-5-86 (Micrometer) [illegible] (Dielectric) R.A.T. 5/5 (Resistance)

Verified By/Date [illegible] 5/29/86
Test Observers [illegible]

QA Approval/Date [illegible] 5/29/86

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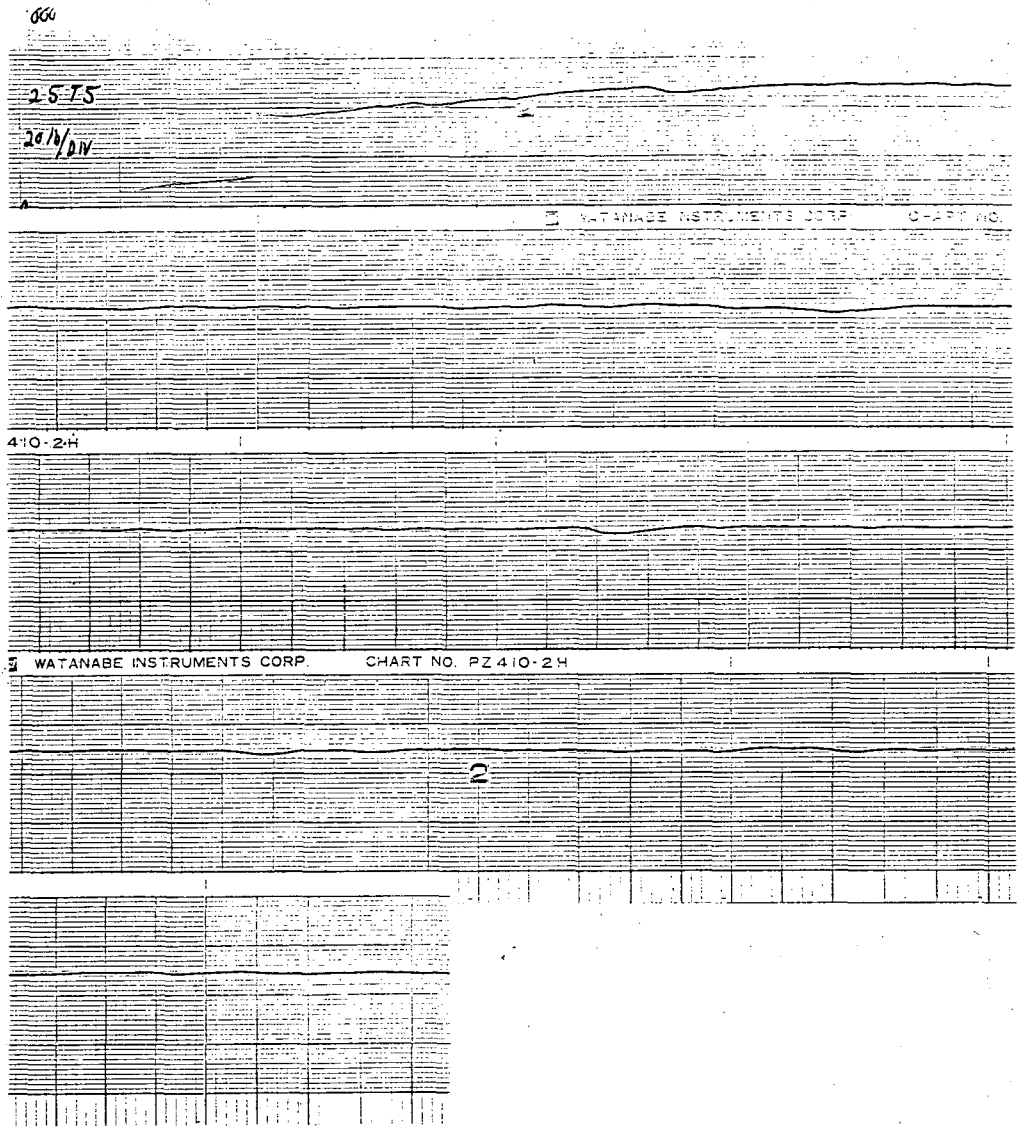


CLSB CONTROL No. 26 NOT TESTED

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 27
Sample No. . . . . = 103
Description No 2/0 1/C

Standards Used: 543211, 212506, 543202, 212506, 543202, 902203, 902203

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	27V1	1.0267	.9905	.4095	.4095	100KV*	>10,000MΩ	Test OK
2.	27V2	1.0190	1.0097	.4091	.4091			
3.	27V3	1.0244	.9873	.4107	.4091			
4.	27V4	1.0330	1.0082	.4177	.4148			
5.	27V5	1.0250	.9945	.4225	.4110	67KV**		
6.								
7.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

* ≅ 19 ft

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ** Failed ≅ 3/4 inch outside semi-conductor termination

Tested By/Date N/A Tension | Jm7 5-23-86 Micrometer | JB R.A.T. Dielectric | R.A.T 5/23/84 Resistance

Verified By/Date ~~KDW~~ HR 5/29/86 QA Approval/Date JBR 5/29/86
Observers KDW

0148E-4

VOID

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 27
Sample No. . . . . = 103
Description No 2/0 1/C

Standards Used: 506326, 506652, 522035

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ___
Tensioned ✓

1-Conductor ✓
Multi-Conductor ___

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
27T1							
1. VOID							
2.							
3.				VEK	5-16-86		
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = ___ Max ___ Min

SWBP Data

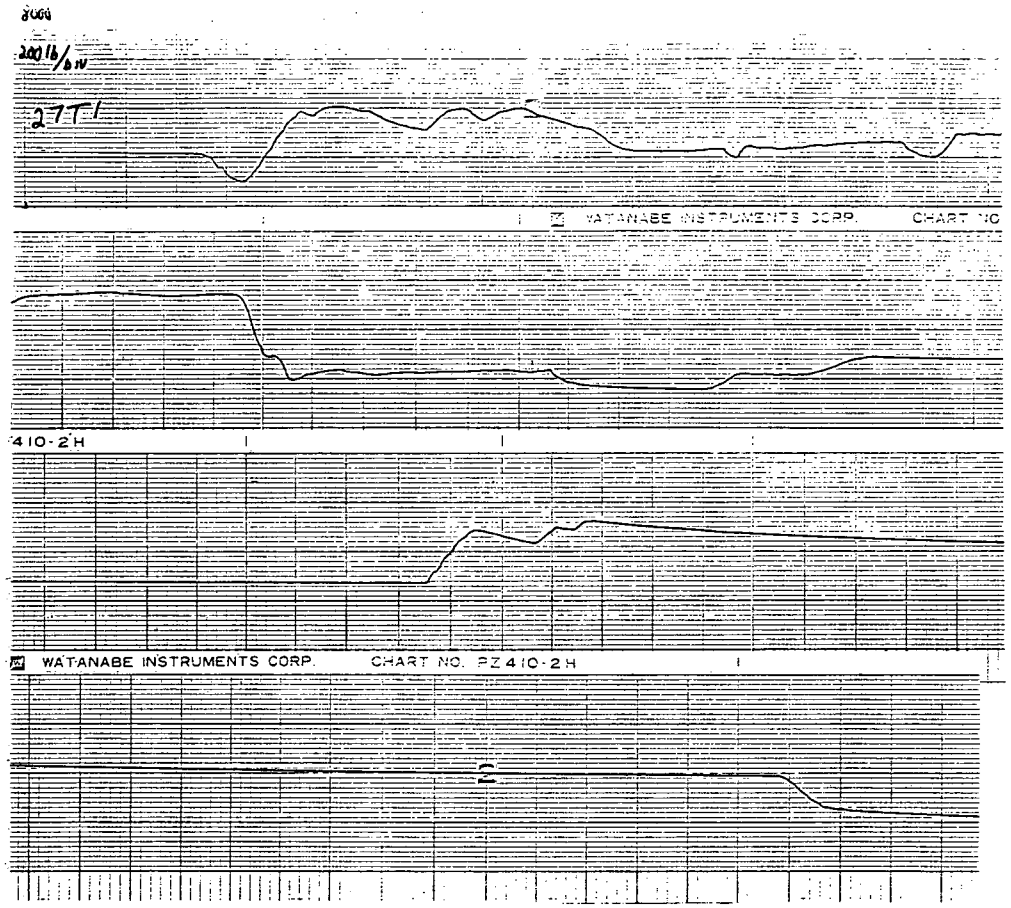
Tension (T) = 5550 lbs (Max.)
Radius (R) = ___ ft
T/R = ___ lbs/ft
Correction Factor (X) = ___
SWBP = X(T/R) = ___

Anomalies: ___

Tested By/Date VEK 5-16-86 ___ ___ ___
Tension Micrometer Dielectric Resistance

Verified By/Date ___ QA Approval/Date ___
Test Observers ___

0148E-4



VOID

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 27
Sample No. . . . . = 103
Description No. 2/0 1/C

Standards Used: 506326, 506652, 522035

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Test No. 2772	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. VOID			VEK 5-16-86				
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = ____ Max ____ Min

SWBP Data

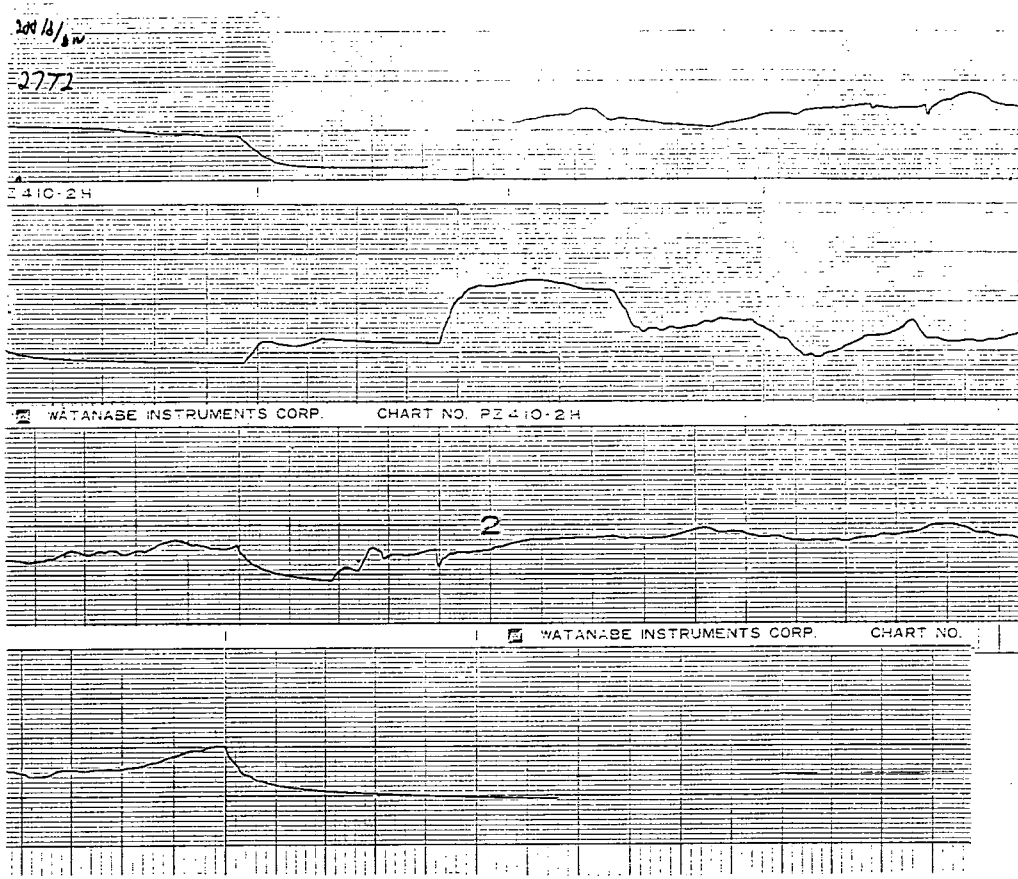
Tension (T) = 4950 lbs (Max.)
Radius (R) = ____ ft
T/R = ____ lbs/ft
Correction Factor (X) = ____
SWBP = X(T/R) = ____

Anomalies: ____

Tested By/Date VEK 5-16-86 ____ ____ ____
Tension Micrometer Dielectric Resistance

Verified By/Date ____ QA Approval/Date ____
Test Observers ____ ____ ____

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 27
Sample No. . . . . = 103
Description Nk 2/0 1/c

Standards Used: 506652, 506226, 522025, 543211, 212506, 502445, 902203

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
2773							
1. 2773-1	1.0216	.9989	.4132	.4086	100*	>10,000MΩ	Test OK
2. 2773-2	1.0086	.9763	.4100	.4074	100	↓	↓
3. 2773-3	1.0162	.9745	.4185	.4086	100		
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 6500 lbs (Max.)
Radius (R) = 1.026 ft
T/R = 6335 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 3104 lbs/ft.

Anomalies: * Failed ≅ 1/8 inch inside semi-conductor termination after 10 seconds at 100 KV

Tested By/Date VEK 5-17-86 Tension; VWE 5-22-86 UM 7-25-86 Micrometer; JB P.A.T. 5/24/86 Dielectric; JB Resistance

Verified By/Date HE 5/29/86
Test Observers KDW

QA Approval/Date JBR 5/29/86

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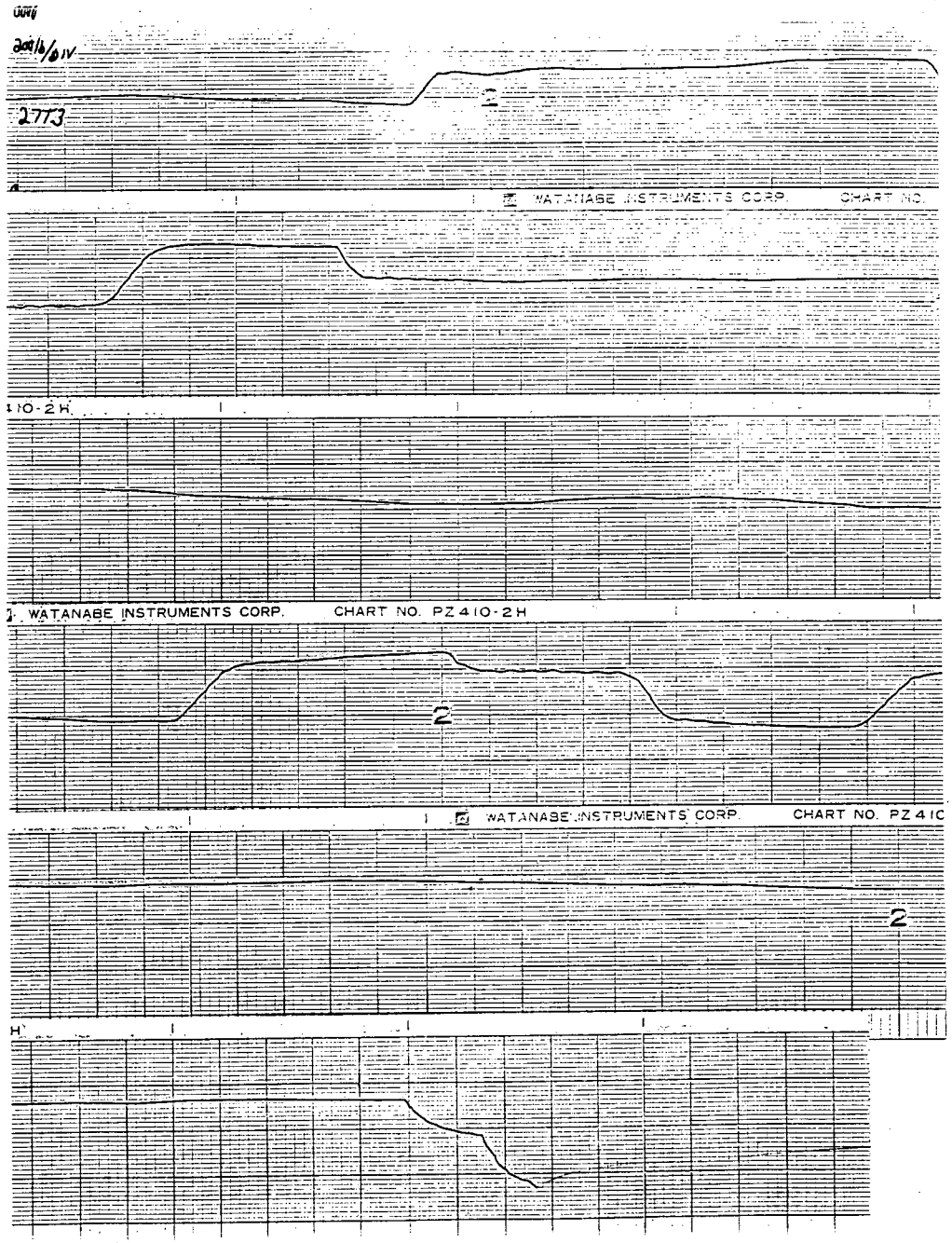


SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 27
Sample No. . . . . = 103
Description No 2/0 1/C

Standards Used: 506652, 506326
522035 ~~547242~~ 543211 912506
502445, ~~543202~~ 901404

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Test No. 27T4-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	1.0314	1.0037	.4155	.4080	*100KV	>10,000MΩ	Test OK
2. 2	1.0280	.9813	.4097	.4080	↓	↓	↓
3. 3	1.0230	1.0064	.4099	.4082			
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

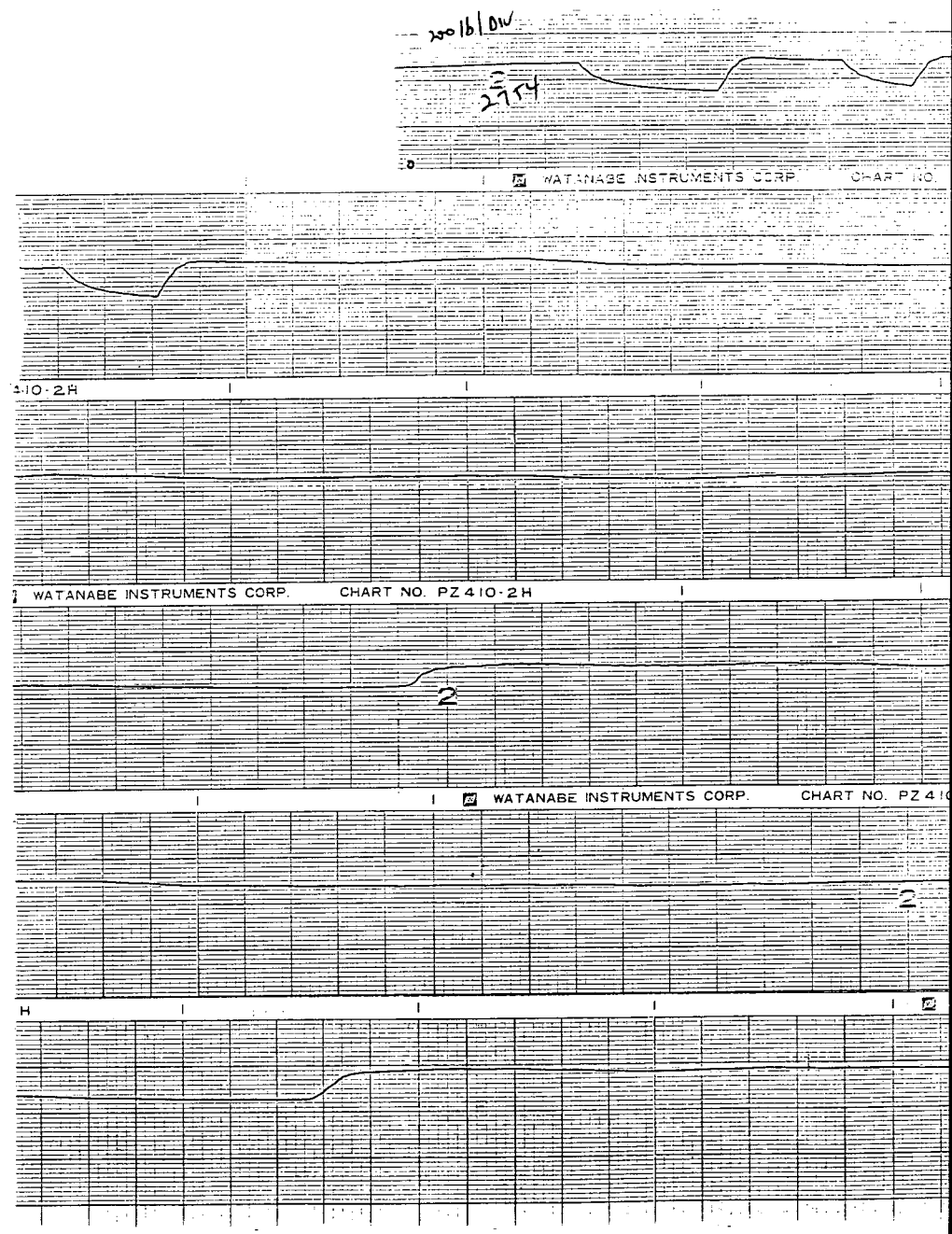
Tension (T) = 5820 ~~6550 max~~ lbs (Max.)
Radius (R) = 1.026 ft
T/R = 5673 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 2780 lbs/ft

Anomalies: * Held 100KV for 10 seconds. Failed ≅ 1/8 inch inside semi-conductor termination

Tested By/Date VEK 5-17-86 (Tension) CM 7 5-23-86 (Micrometer) JB R.A.T. (Dielectric) R.A.T. 5/23/86 (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JAR 5/29/86
Test Observers KDW

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 27
Sample No. . . . . = 103
Description No 2/0 1/C

Standards Used: 506652 506326 522035, 543211, 902203, 812586, 502445, 543202

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Test No. 2775-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	1.0198	.9869	.4097	.4073	100KV	>10,000 mΩ	Test OK
2. 2*	1.0205	1.0080	.4094	.4074	↓	↓	↓
3. 3	1.0220	1.0008	.4098	.4093			
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 5400 lbs (Max.)
Radius (R) = 1.026 ft
T/R = 5263 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 2579 lbs/ft

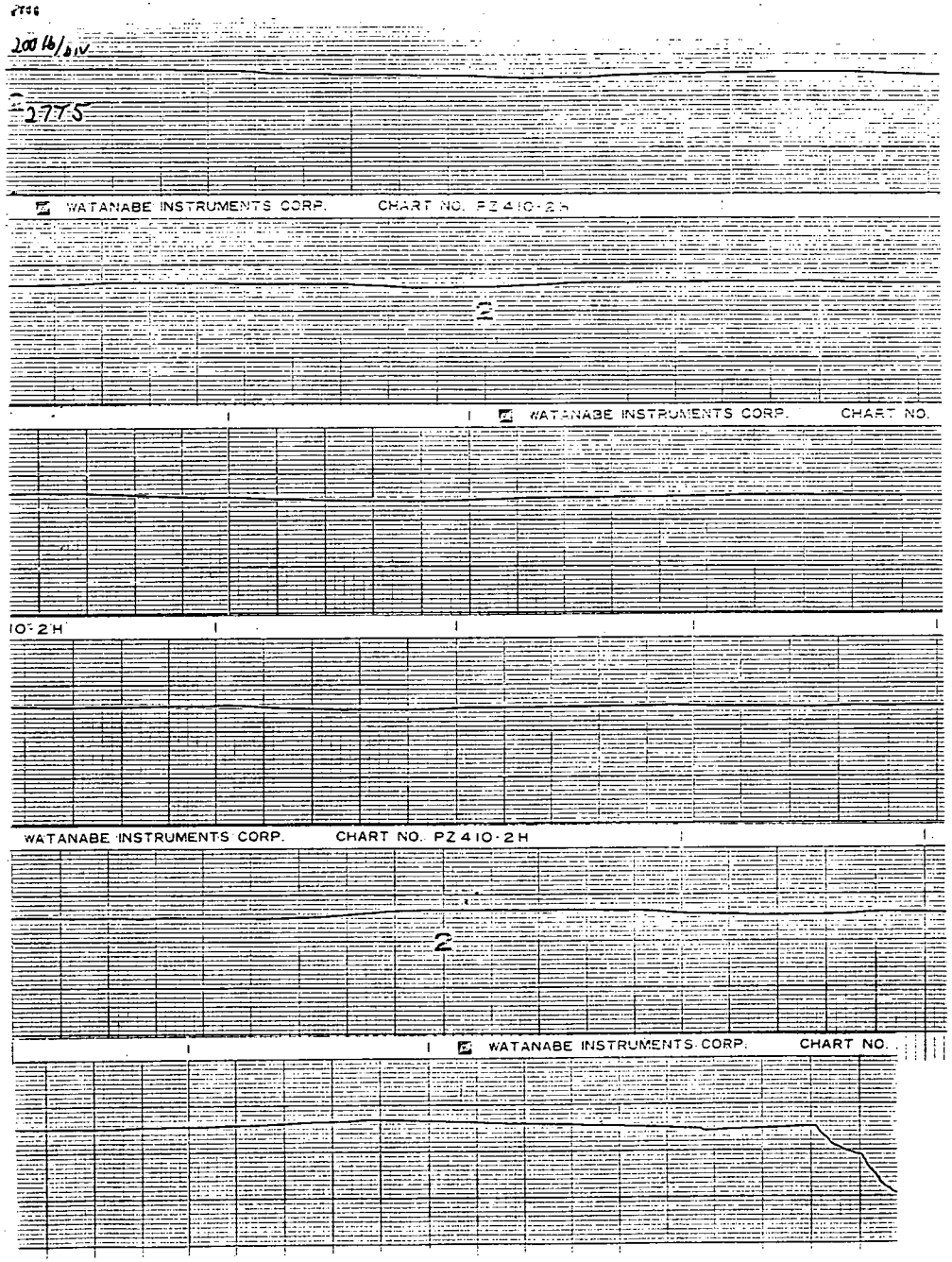
Anomalies: * Voltage of 100KV Held for 20 sec - Excessive leakage current made trip out imminent.

Tested By/Date VCK 5-17-86 (Tension) — CM 7 5-24-86 (Micrometer) — J.A. R.A.T. (Dielectric) — R.A.T. 5/24/86 (Resistance)

Verified By/Date 5/29/86
Test Observers KDW

QA Approval/Date 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 27
Sample No. . . . . = 103
Description Na 2/0 1/C

Standards Used: 506652, 506326, 522035, 543211, 902203, 312506, 502445, 543202

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ____
Tensioned ✓

1-Conductor ✓
Multi-Conductor ____

Test No. 2776 –	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	1.0302	1.0049	.4084	.4065	100KV	>10,000 MΩ	Test OK
2. 2	1.0379	1.0074	.4090	.4077	↓		↓
3. 3	1.0208	.9887	.4091	.4080			
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 6000 lbs (Max.)
Radius (R) = 1.026 ft
T/R = 5848 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 2865 lbs/ft

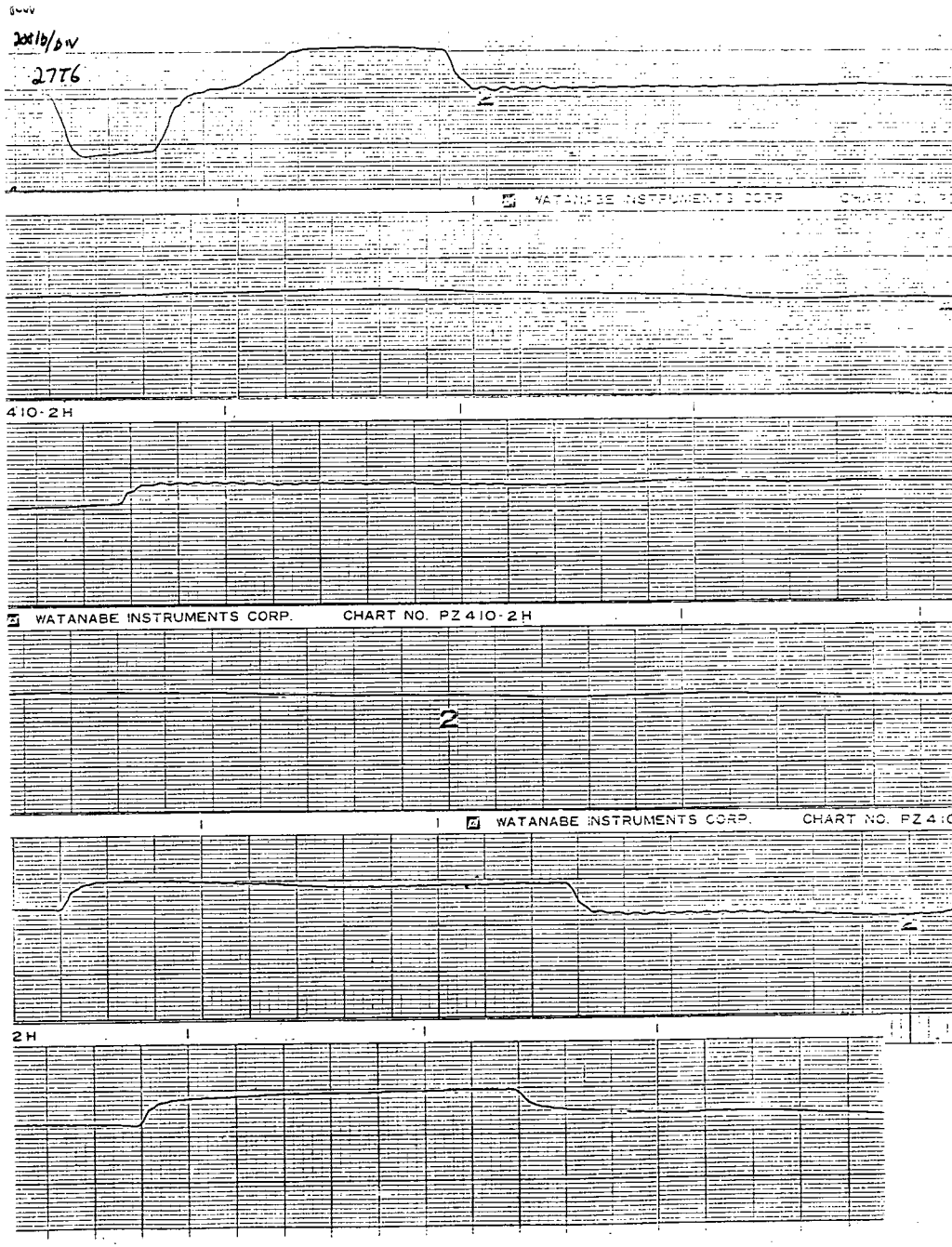
Anomalies:

Tested By/Date VCK 5-17-86 (Tension) — Dm7 5-23-86 (Micrometer) — JB (Dielectric) — R.A.T. 5/24/86 (Resistance)

Verified By/Date NE 5/29/86
Test Observers KDW

QA Approval/Date AJC 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 27
Sample No. . . . . = 103
Description No 2/0 1/C

Standards Used: 506652, 506326, 522025, 543211, 902203, 212506, 502445, 543202

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No. 2777- ~~2776-3 VGX~~	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	1.0220	.9955	.4097	.4072	100KV	>10,000 MΩ	Test OK
2.	2 *	1.0306	1.0051	.4093	.4030	↓	↓	↓
3.	3	1.0245	.9979	.4085	.4062			
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

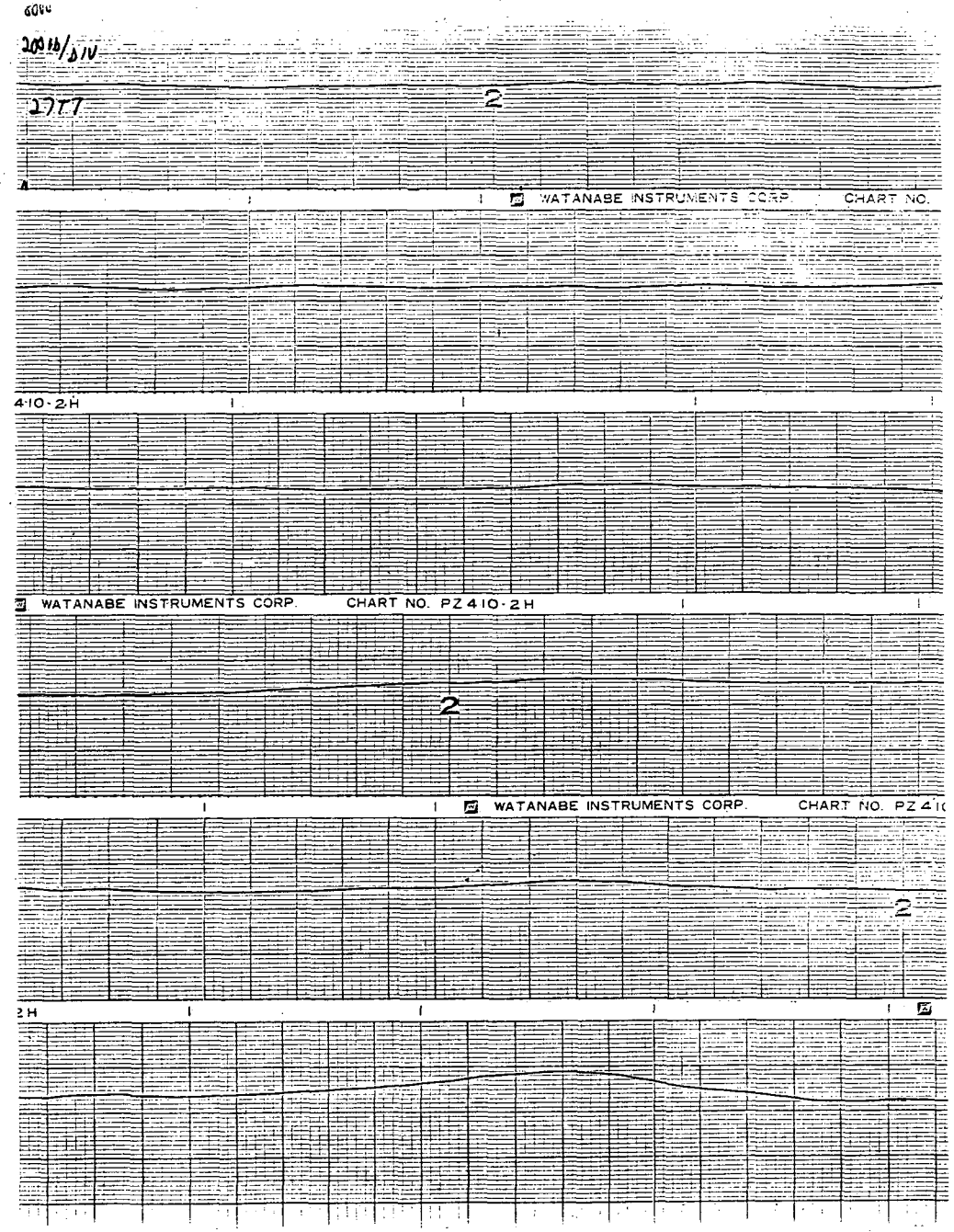
Tension (T) = 5800 lbs (Max.)
Radius (R) = 1.026 ft
T/R = 5653 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 2770 lbs/ft

Anomalies: * 100KV held for 20 sec. Excessive current made trip-out imminent

Tested By/Date VEK 5-17-86 (Tension) — Am7 5-24-86 (Micrometer) — JB R.A.T. (Dielectric) — R.A.T. 5/24/86 (Resistance)

Verified By/Date HE 5/29/86 QA Approval/Date JGL 5/29/86
Test Observers KDW

© 0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 28
Sample No. . . . . = 197
Description No 26 1/1

Standards Used: 543211, 902203, H2504, 543202,

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ✓
Tensioned ____ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	28V1*	1.0465	1.0120	.4132	.4108	100KV *	>10,000MΩ	
2.	28V2	1.0303	1.0167	.4126	.4125			
3.	28V3	1.0401	1.0098	.4140	.4125			
4.	28V4	1.0414	1.0213	.4139	.4134	**		
5.	28V5	1.0350	1.0205	.4119	.4110			
6.								
7.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* Failed after 25 seconds at 100KV within the 15 ft. test sample - Near, but not within one foot, of one end.
** Failed ≅ 1/2 outside semi-conductor immediately on being raised to 100KV

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A Tension | Dm 7 5-24-86 Micrometer | JB B.A.T. Dielectric | R.A.T. 5/24/86 Resistance

Verified By/Date He 5/29/86
Observers KDW

QA Approval/Date JBR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 28
Sample No. . . . . = 197
Description 16 2/0 1/6

Standards Used: 506652, 506326, 522035, 543211, 902263, 212506, 502445

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ___ Tensioned ✓

1-Conductor ✓ Multi-Conductor ___

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
28T1-							
1. 1	1.0500	1.0200	.4140	.4112	90 *	>10,000MΩ	Test OK
2. 2	1.0274	1.0078	.4109	.4086	75 **	↓	↓
3. 3	1.0330	1.0219	.4124	.4095	100 ***		
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 5650 lbs (Max.)
Radius (R) = 1.026 ft
T/R = 5507 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 2698 lbs/ft

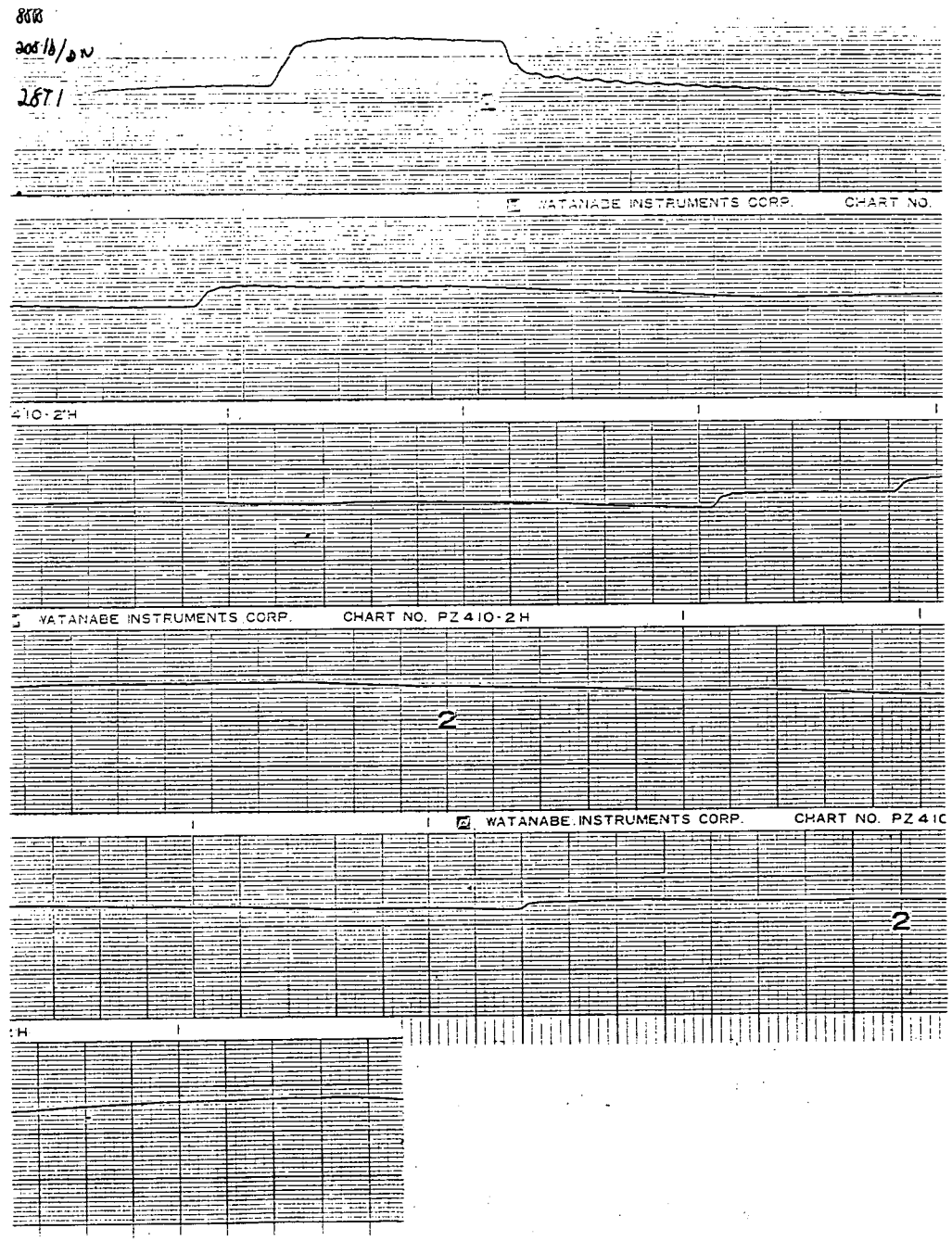
Anomalies: * Failed at 90KV ≅ 1/2 inch under semi-conductor
** Failed at 75KV ≅ 1/4 inch from semi-conductor
*** Test was stopped upon reaching 100KV - Excessive current

Tested By/Date VEK 5-17-86 (Tension) DMJ 5-24-86 (Micrometer) JB 5/25/86 (Dielectric) JB (Resistance)

Verified By/Date HK 5/29/86
Test Observers KDW

QA Approval/Date JAP 5/25/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 28
Sample No. . . . . = 197
Description No. 2/0 1/C

Standards Used: 506652, 506326, 522035, 543211, 902203, 212506, 502445

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Test No. 28T2-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. 1	1.0251	1.0156	.4105	.4077	*100	>10,000MΩ	Test OK
2. 2	1.0334	1.0202	.4153	.4100	100	↓	↓
3. 3	1.0302	1.0251	.4120	.4089	**66	↓	↓
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = 6050 lbs (Max.)
Radius (R) = 1.026 ft
T/R = 5897 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 2889 lbs/ft

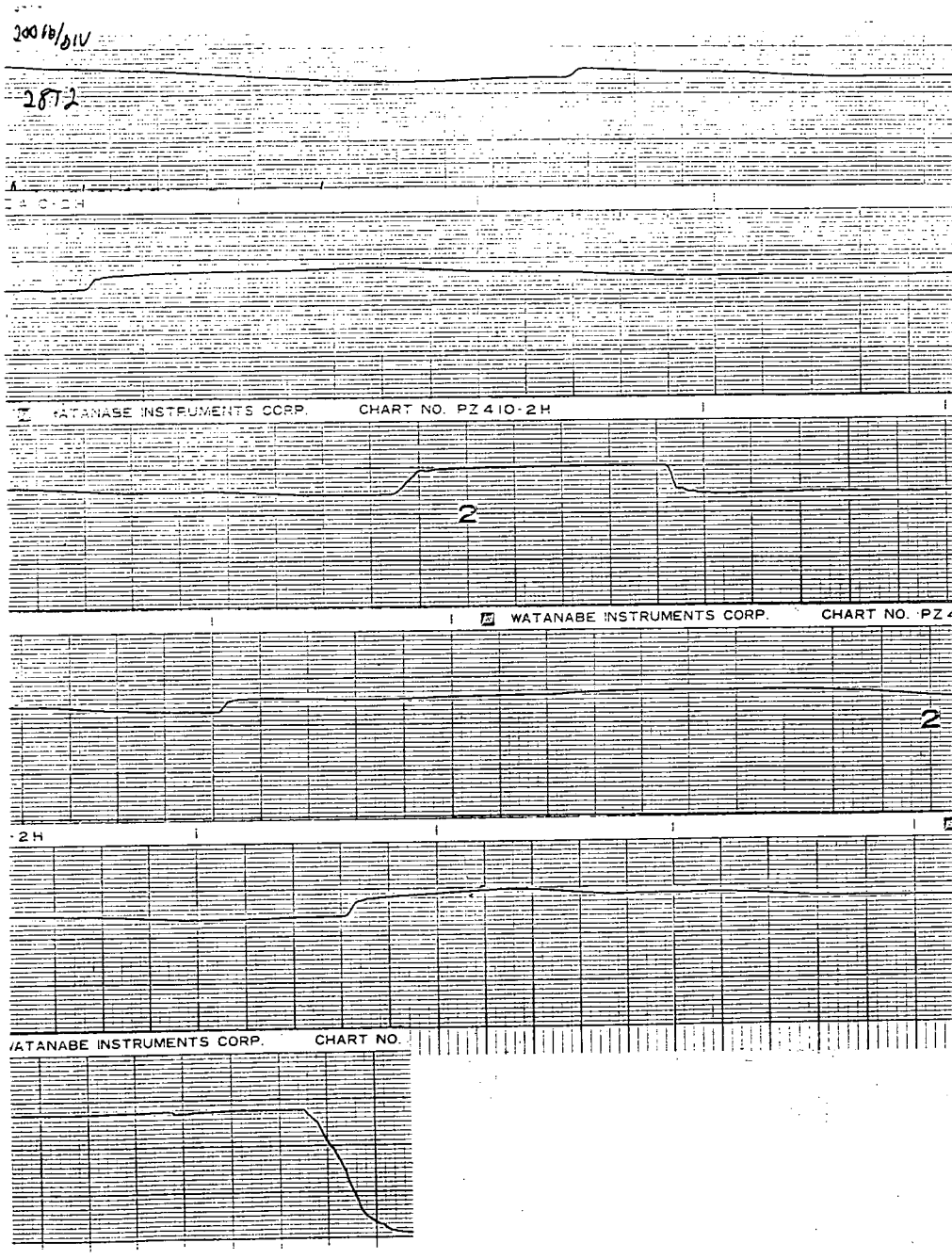
Anomalies: * Test terminated because of excessive current
** Failed at semiconducter at 66KV

Tested By/Date VSK 5-17-86 (Tension) DMZ 5-24-86 (Micrometer) JB 5/25/86 DMZ (Dielectric) JB DMZ (Resistance)

Verified By/Date HK 5/29/86
Test Observers KDW

QA Approval/Date JSL 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 28
Sample No. . . . . = 197
Description NO 2/0 1/C

Standards Used: 516652, 506226, 522035, 543211, 902203, 212506, 502445

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

	Test No. 28T3-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	1	1.0460	1.0115	.4185	.4132	94 *	>10,000 MΩ	Test OK
2.	2	1.0451	1.0271	.4118	.4112	100 **	↓	↓
3.	3	1.0346	1.0232	.4152	.4110	100 ***	↓	↓
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* Failed at 94 kV under semi-conductor, no closer than 5 inches from semi-conductor termination.

SWBP Data

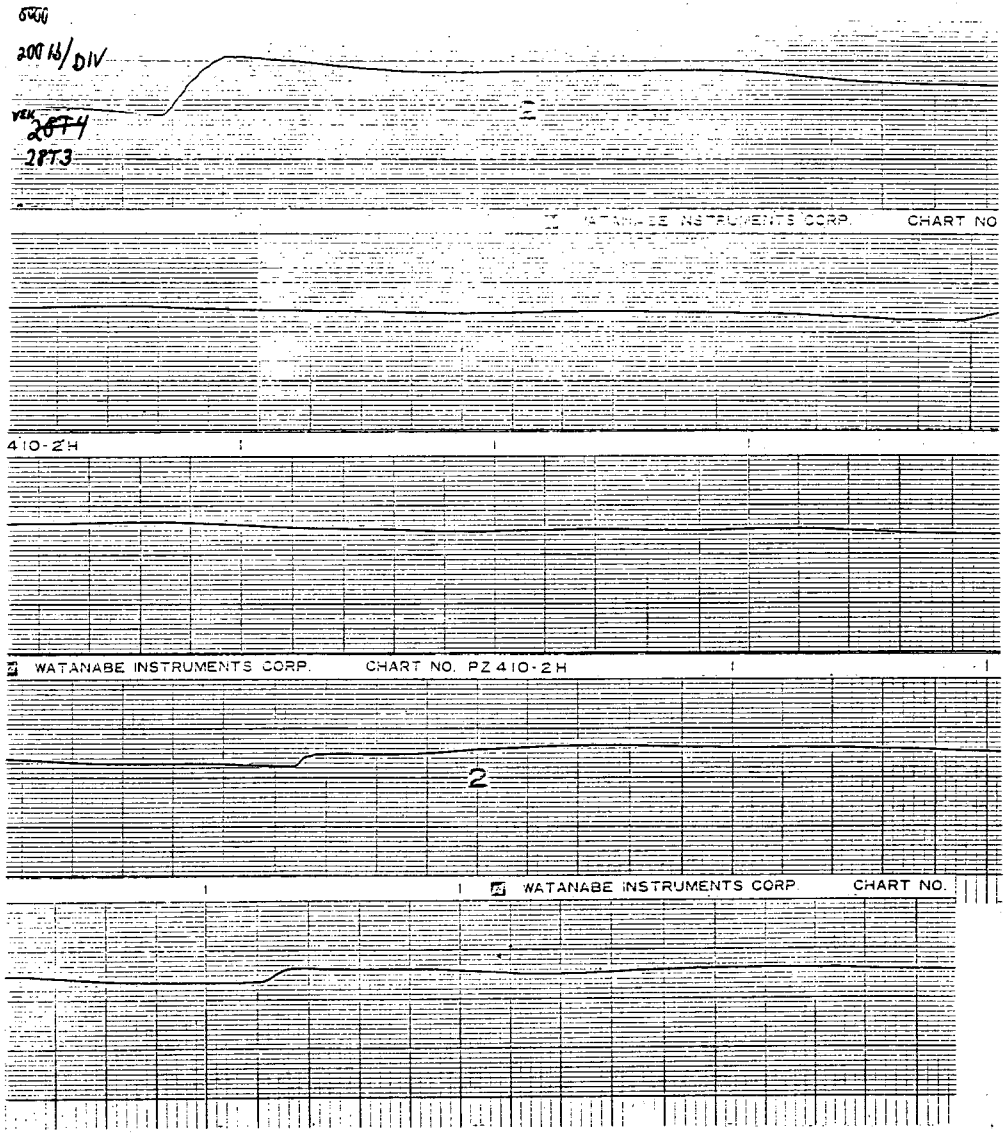
Tension (T) = 5600 lbs (Max.)
Radius (R) = 1.026 ft
T/R = 5458 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 2674 lbs/ft

Anomalies: ** Failed at semi-conductor termination after 10 seconds at 100 KV
*** Failed ≅ 5 ft (under semi-conductor) from semi-conductor termination. Failure point actually located.

Tested By/Date VEK 5-17-86 (Tension) ___ 5-25-86 (Micrometer) GB 5/25/86 (Dielectric) GB (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JRR 5/29/86
Test Observers KDW

0148E-4



VOID

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 28
Sample No. . . . . = 197
Description No 2/0 1/c

Standards Used: 506652, 506326, 522035

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ___ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ___

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
28T4	VOID		VEK 5-16-86				
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = ____ Max ____ Min

SWBP Data

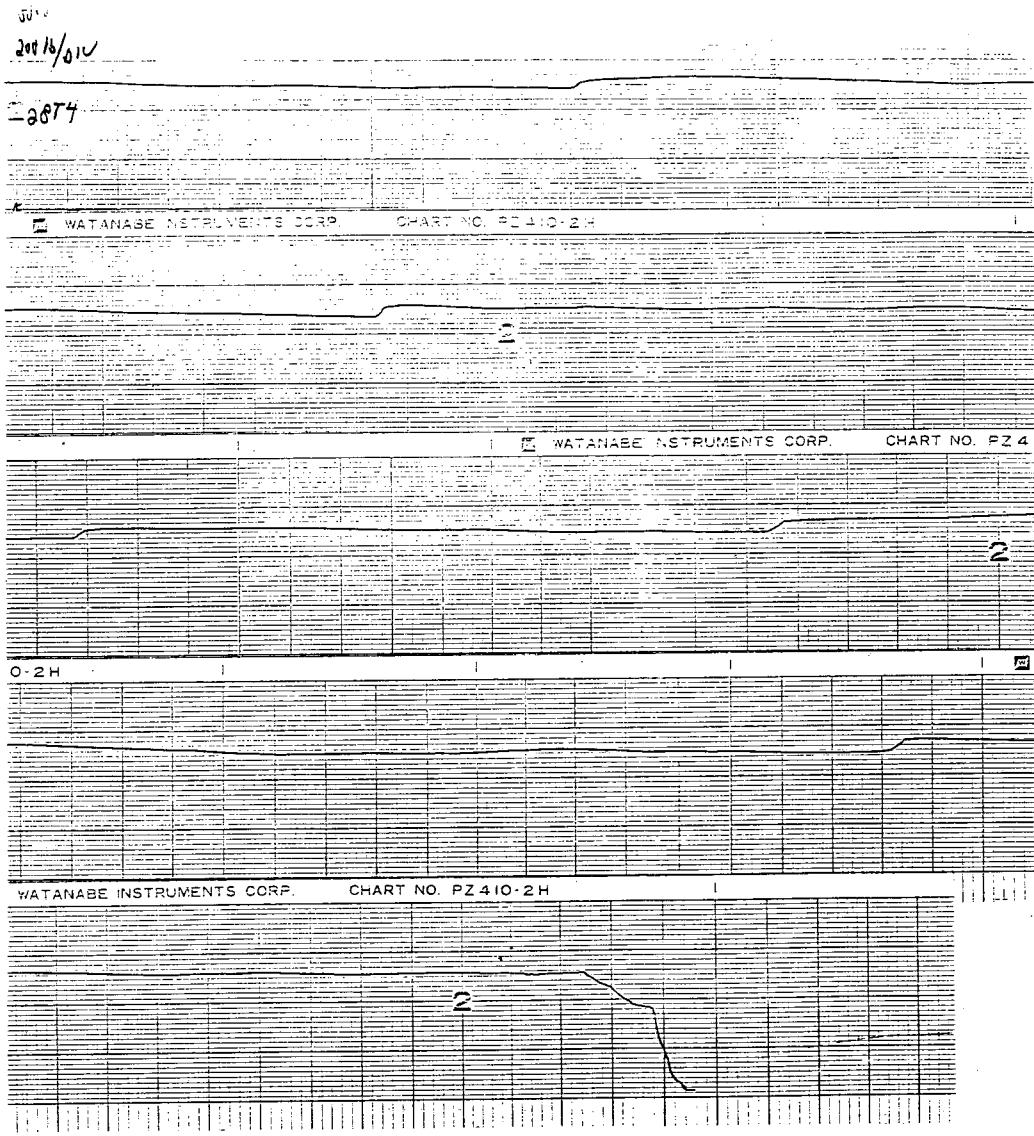
Tension (T) = 5500 lbs (Max.)
Radius (R) = ____ ft
T/R = ____ lbs/ft
Correction Factor (X) = ____
SWBP = X(T/R) = ____

Anomalies: ____

Tested By/Date VEK 5-17-86 ____ ____ ____
Tension Micrometer Dielectric Resistance

Verified By/Date ____ QA Approval/Date ____
Test Observers ____ ____ ____

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 28
Sample No. . . . . = 197
Description Nk 2/0 1/C

Standards Used: 506652, 506326, 522035, 543211, 902203, 212506, 502445

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ___
Tensioned ✓

1-Conductor ✓
Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	28T5 –							
1.	1	1.0420	1.0337	.4170	.4140	100 *	>10,000 MΩ	Test OK
2.	2	1.0603	1.0209	.4136	.4120	100**	↓	↓
3.	3	1.0421	1.0175	.4151	.4108	92***		
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* Test was terminated after 10 seconds at 100 KV because of excessive current

SWBP Data

Tension (T) = 5600 lbs (Max.)
Radius (R) = 1.026 ft
T/R = 5458 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 2674 lbs/ft

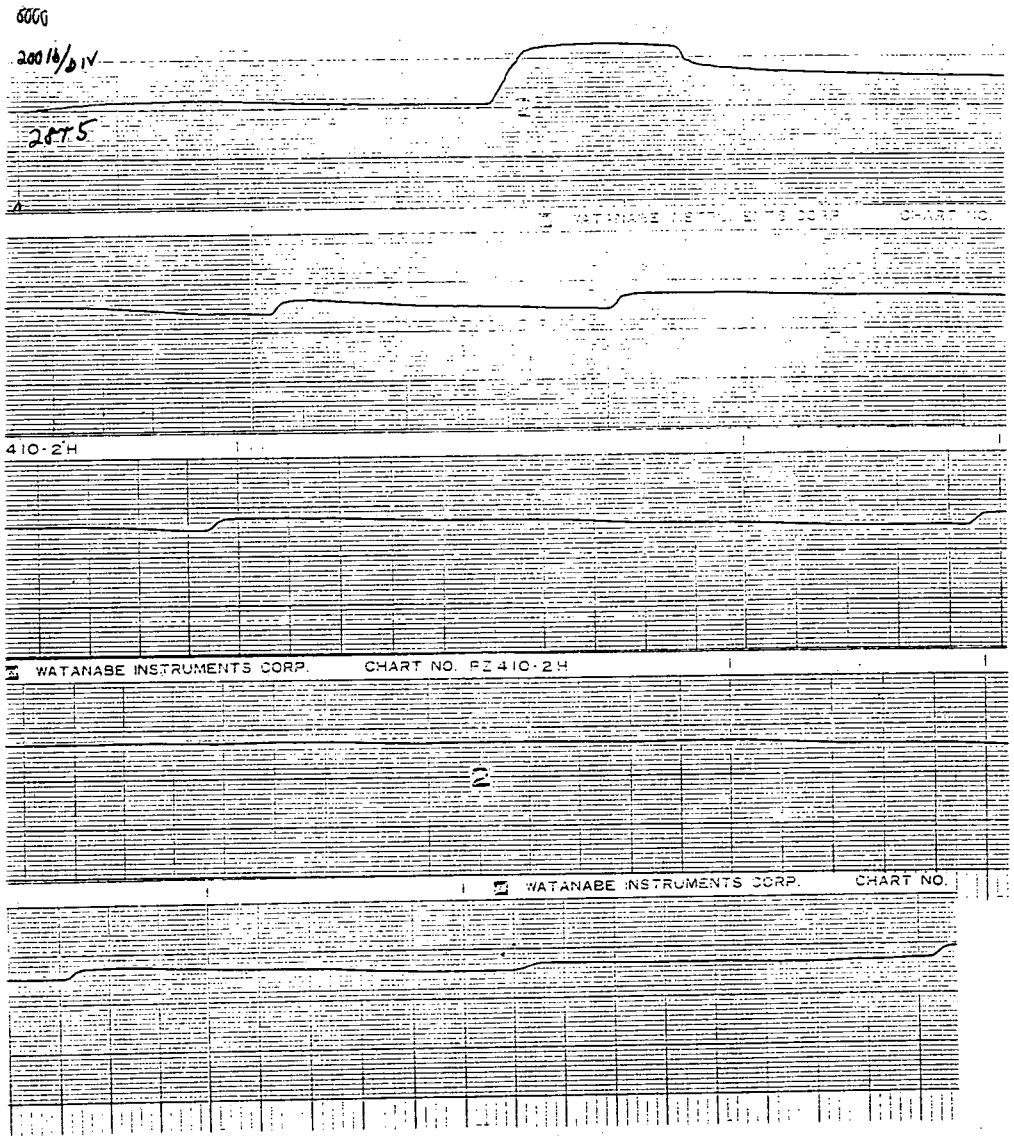
Anomalies: ** Failed under semi-conductor ≅ 3½ ft from semi-conductor termination. Failure point was located.
*** Failed at 92 KV ≅ 6½ inches from semi-conductor termination, but not under semi-conductor.

Tested By/Date VEK 5-17-86 (Tension) / [illegible] 5-25-86 (Micrometer) / JB 5/05/86 (Dielectric) / JB (Resistance)

Verified By/Date [illegible] 5/29/86
Test Observers KDW

QA Approval/Date [illegible] 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 28
Sample No. . . . . = 197
Description No. 2/0 1/C

Standards Used: 506652, 506226, 522035, 543211, 902203, 212506, 502445

Conduit Size in Test. . . . = 4"
No. Cables in Pull. . . . . = 3

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
28T6							
1. 1	1.0336	1.0243	.4123	.4104	58 *	>10,000 MΩ	Test OK
2. 2	1.0422	1.0298	.4160	.4109	100 **	↓	↓
3. 3	1.0536	1.0204	.4157	.4128	82 ***		
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* Failed at 58KV ≅ 4ft. from semi-conductor termination under semi-conductor. Failure point actually located

SWBP Data

Tension (T) = 6000 lbs (Max.)
Radius (R) = 1.026 ft
T/R = 5848 lbs/ft
Correction Factor (X) = 0.49
SWBP = X(T/R) = 2.865 lbs/ft.

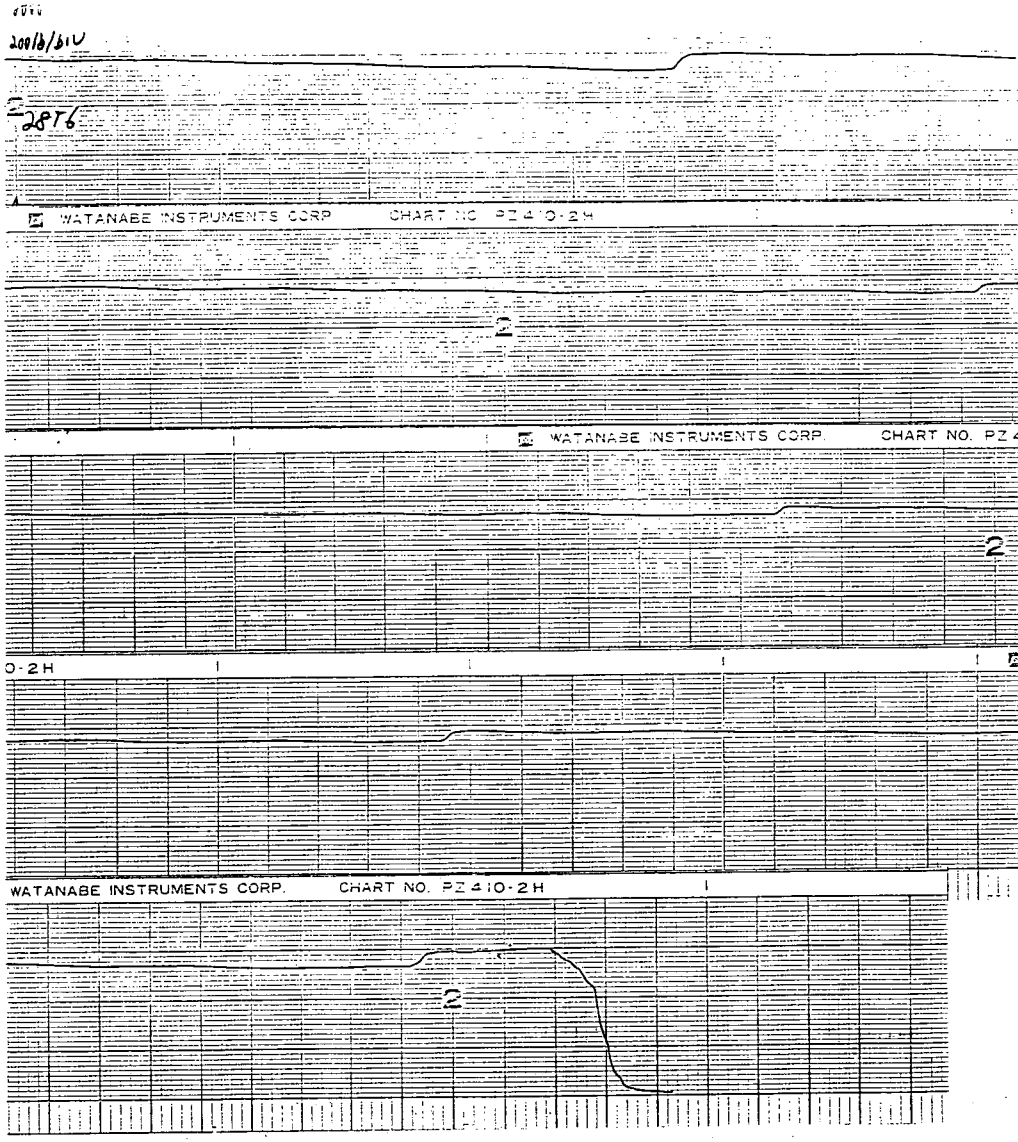
Anomalies: ** Test terminated because of excessive current
*** Failed at 82 KV ≅ 6ft. from semi-conductor termination under semi-conductor. Failure point actually located.

Tested By/Date VEK 5-17-86 (Tension) CMT 5-25-86 (Micrometer) JB 5/26/86 CMT (Dielectric) JB CMT (Resistance)

Verified By/Date HC 5/29/86
Test Observers KDW

QA Approval/Date JSR 5/29/86

0148E-4



SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 29
Sample No. . . . . = 5000
Description No 22 1/c shielded

Standards Used: 305896, 516811, 543211, 902203, 212506, 502445

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ✓ 1-Conductor ✓
Tensioned ___ Multi-Conductor ___

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
1.	29V1	.2445	.2439	.0309	.0308	100' 1"	2713 pf	69.271Ω	55/47*	>10,000 MΩ	N/A
2.	inside insulation	.1454	.1452								
3.	29V2	.2461	.2454	.0310	.0310	100' 0"	2709 pf	72.887Ω	61**		
4.	inside insulation	.1452	.1450								
5.	29V3	.2447	.2442	.0309	.0309	100' 1"	2708 pf	68.361Ω	53		
6.	inside insulation	.1452	.1450								
7.	29V4	.2452	.2430	.0310	.0308	100' 0"	2710 pf	69.271Ω	36		
8.	inside insulation	.1454	.1450								
9.	29V5	.2447	.2439	.0308	.0308	100' 0"	2709 pf	67.652Ω	55		
10.	inside insulation	.1450	.1446								
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* Test sample first raised to 55 KV and test terminated because of external arcing at terminations. Termination clearance lengthened and test resumed.... Failed at 47 KV

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies: ** Failed at coaxial termination.

Tested By/Date N/A (Tension) DMT 5-25-86 (Micrometer) JB 5/26/86 (Dielectric) DMT JB (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers DAR, KDW KDW

0148E-6

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

FLSB Control No. 29
Sample No. . . . . = 5000
Description N, 22 1/6 SHIELDED

Standards Used: 305896, 516811, 506325, 543175, 522025, 902203, 212506, 502445, 543211

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
	2971										
1.	O.D	.2456	.2432	.038	.0304	99'11"	2703pf	67.652	61	>10,000MΩ	Test OK
2.	INDIVIDUAL INSULATION	.1444	.1441								
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

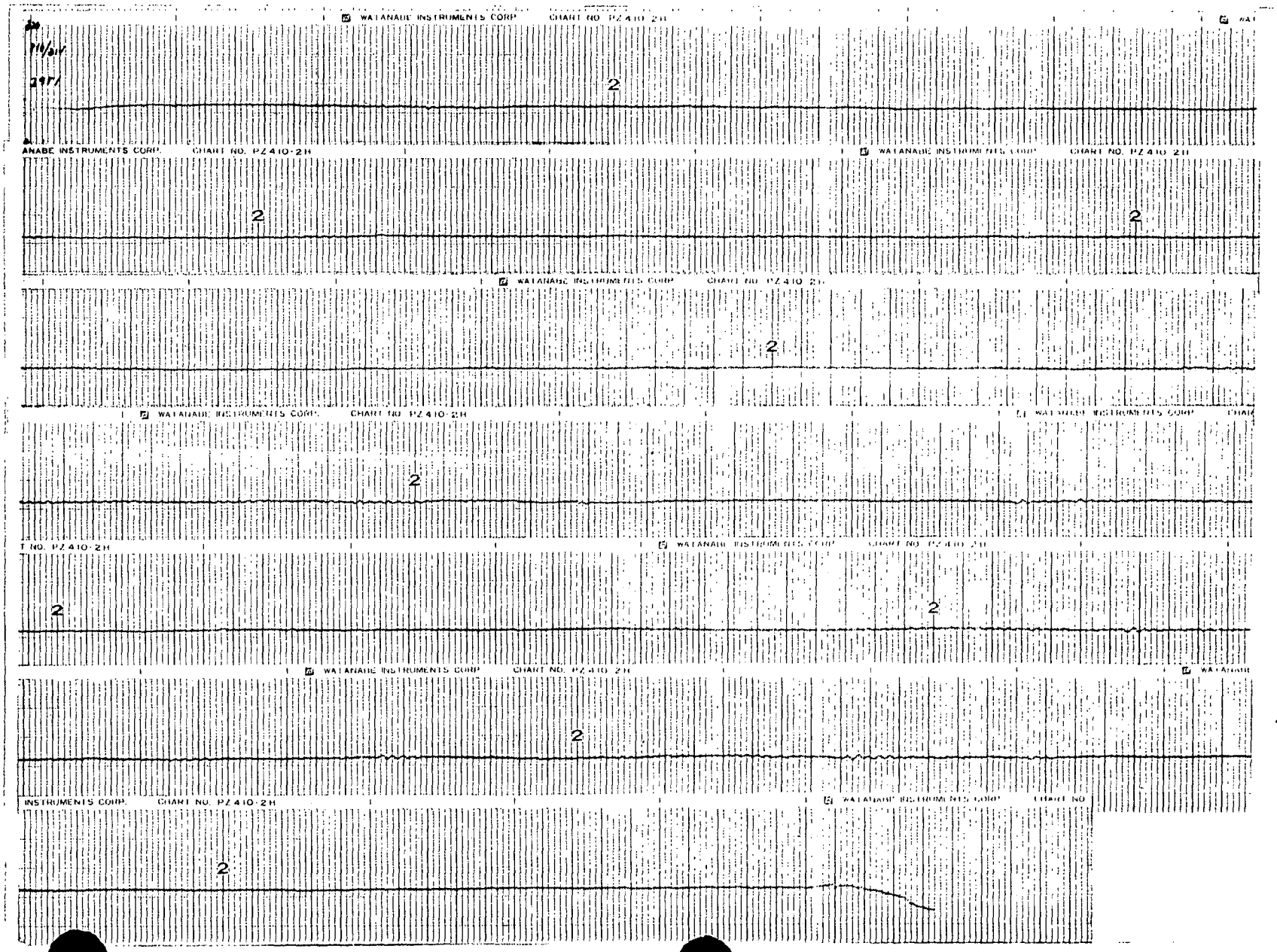
Tension (T) = 105 lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 296 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 296 lbs/ft

Anomalies:

Tested By/Date VEK 5-20-86 (Tension) DMZ-5-25-86 (Micrometer) JB 5/26/86 DMZ (Dielectric) DMZ JB (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers KDW

0148E-6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ANABE INSTRUMENTS CORP. CHART NO. PZ410-2H
WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H
WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H
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WATANABE INSTRUMENTS CORP.

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

LSB Control No. 29
mple No. . . . . = 5000
Description No 22 1/C SHIELDED

Standards Used: 305896, 516811, 506325 543175, 522035, 902203, 212506, 502445, 543211

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No. 2972	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
1.	O.D.	.2452	.2430	.0308	.0304	99'10"	2700pf	67.652	37	>10,000MΩ	Test ok
2.	INSIDE INSULATION	.1449	.1441								
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

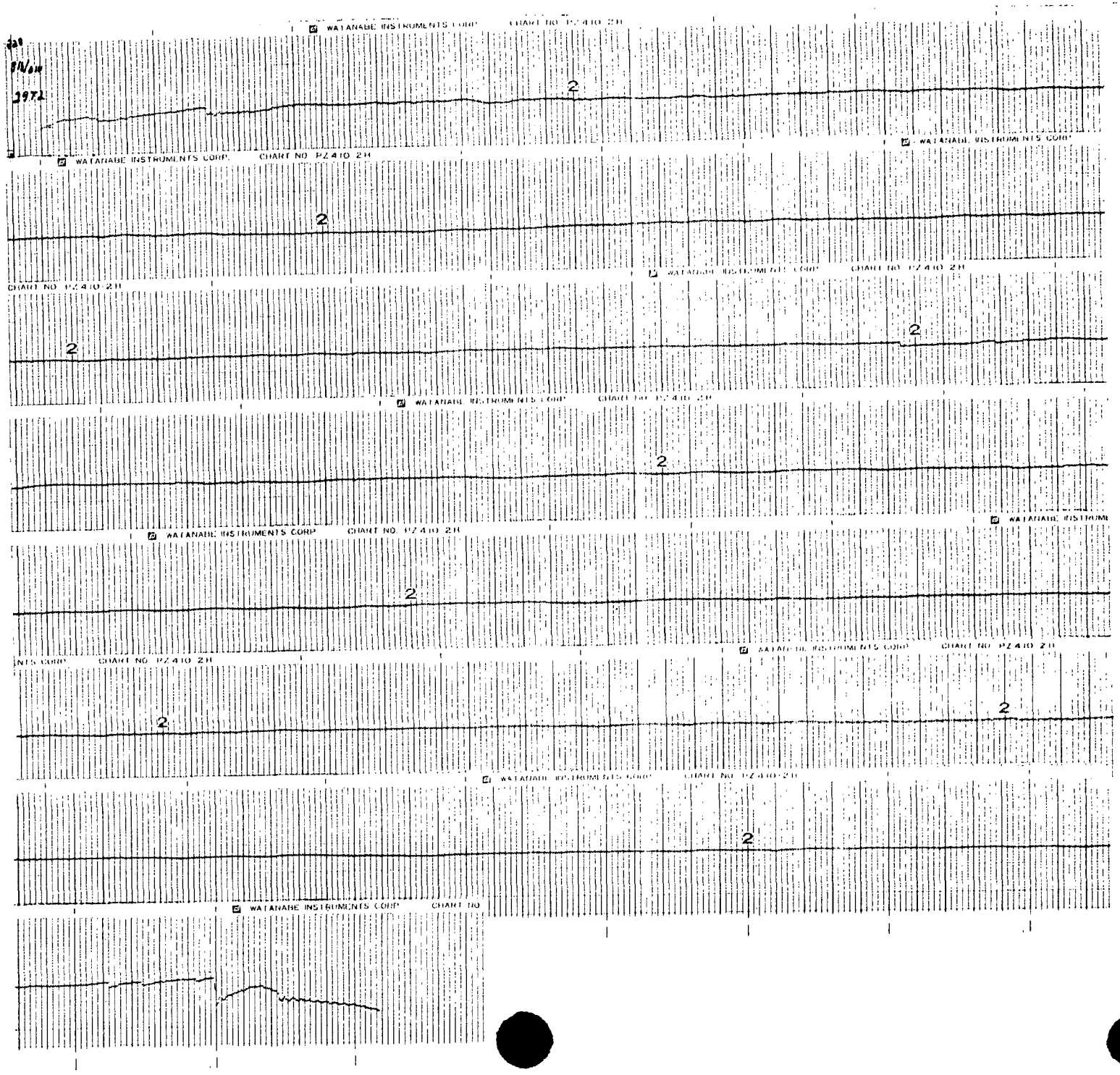
Tension (T) = 130 lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 367 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 367 lbs/ft

Anomalies:

Tested By/Date VER 5-20-86 (Tension) — DM 5-26-86 (Micrometer) — JB 5/26/86 DM (Dielectric) — DM JB (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JSR 5/29/86
Test Observers KDW

0148E-6


WATANABE INSTRUMENTS CORP. CHART NO PZ410 2H
2

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CSSB Control No. 29
Sample No. . . . . = 5000
Description No 22 1/C SHIELDED

Standards Used: 205896, 516811, 506325, 543175, 522035, 902203, 212506, 502445, 543011

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
	2973										
1.	O.D	.2432	.2418	.0305	.0303	99'4"	2692 pf	75.538	60	>10,000 MΩ	Test ok
2.	INSIDE INSULATION	.1446	.1438								
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

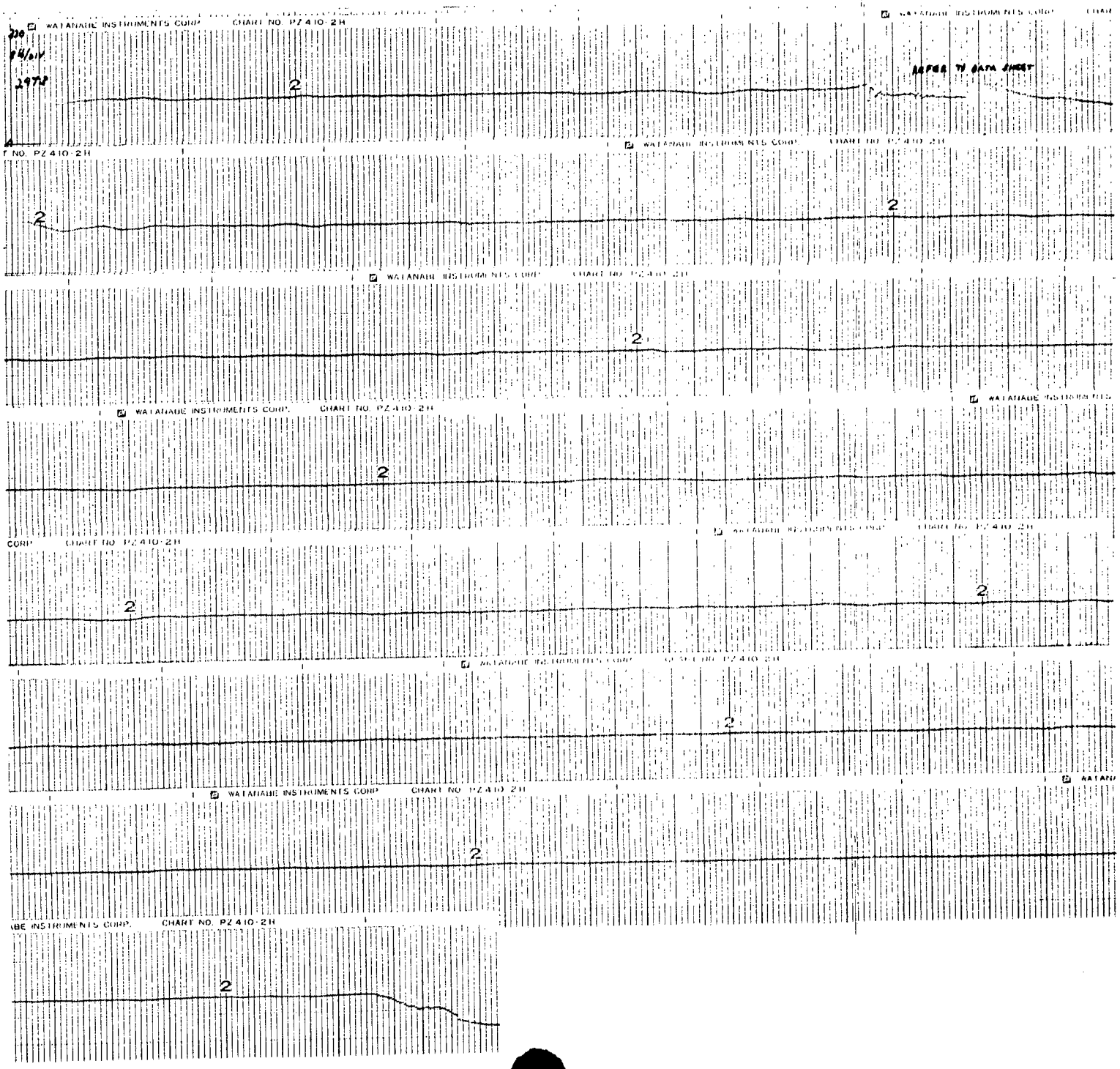
Tension (T) = 132 lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 373 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 373 lbs/ft

Anomalies: CHART RECORDING SHOWS WHERE PULL WAS STOPPED TWICE TO CORRECT WINCH CABLE PROBLEMS, PROBLEMS WERE CORRECTED AND PULL WAS COMPLETED.

Tested By/Date VEK 5-20-86 (Tension) — DM 5-25-86 (Micrometer) — JB 5/26/86 DM 7 (Dielectric) — DM 7 JB (Resistance)

Verified By/Date He 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers KDW

0148E-6


WATANABE INSTRUMENTS CORP. CHART NO. PZ410-2H
2
REFER TO DATA SHEET

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 29
Sample No. . . . . = 5000
Description No 22 1/C SHIELDED

Standards Used: 305896, 516811, 506225, 543175, 522025, 902203, 212506, 502445, 543211

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
29T4										
1. O.D.	.2450	.2420	.0306	.0304	99'8"	2705 pf	75.539	61	>10,000 MΩ	Test OK
2. INSIDE INSULATION	.1480	.1432								
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

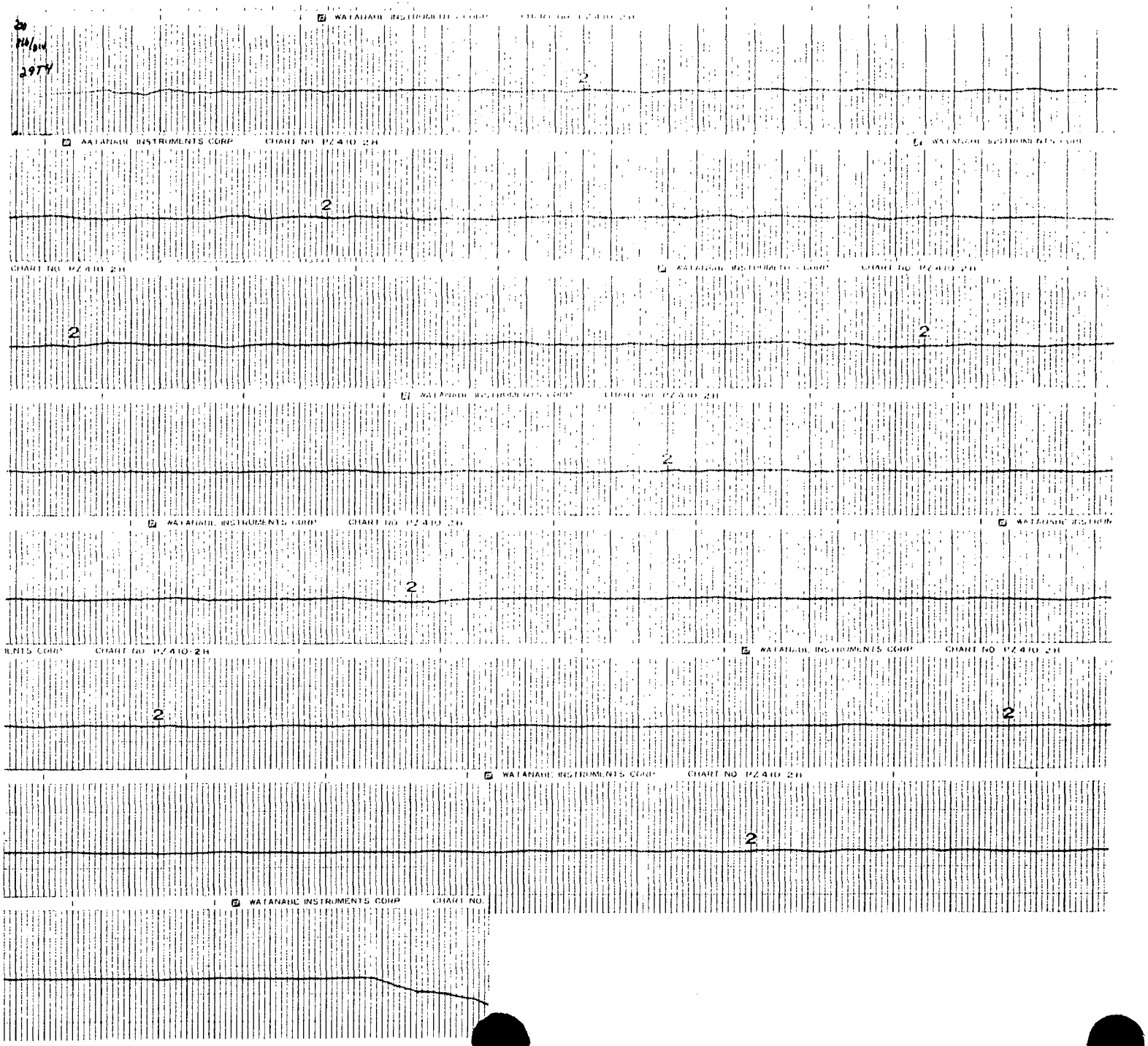
Tension (T) = 132 lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 373 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 373 lbs/ft

Anomalies:

Tested By/Date VEK 5-20-86 (Tension) / 7 5-25-86 (Micrometer) / JB 5/26/86 (Dielectric) / 7 JB (Resistance)

Verified By/Date HA 5/29/86 QA Approval/Date JMR 5/29/86
Test Observers KDW

0148E-6


WATANABE INSTRUMENTS CORP CHART NO PZ410 2H
2

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

SLSB Control No. 29
Sample No. . . . . = 5000
Description NO 22 1/C SHIELDED

Standards Used: 305896, 516811, 506325, 543175, 522035, 902203, 212506, 502445, 543211

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ✓
Tensioned ✓ Multi-Conductor ____

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
	29T5										
1.	O.D.	.2436	.2408	.0306	.0304	99'4"	2698 pf	68.361	47	>10,000 MΩ	Test OK
2.	INSIDE INS.	.1438	.1431								
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

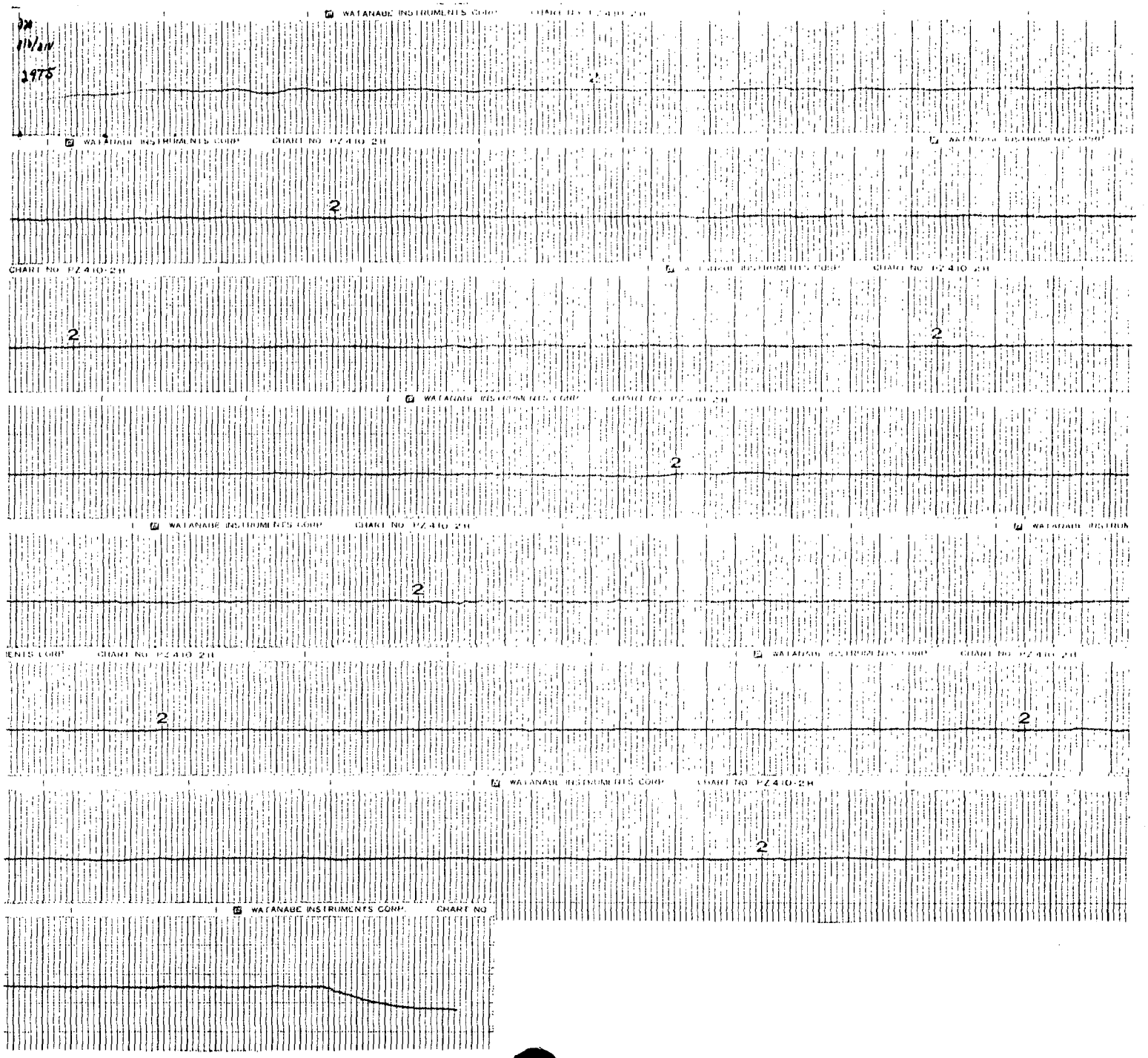
Tension (T) = 130 lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 367 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 367 lbs/ft

Anomalies:

Tested By/Date VEK 5-20-86 (Tension) DMZ 5-25-86 (Micrometer) JB 5/26/86 DMZ (Dielectric) DMZ JB (Resistance)

Verified By/Date HC 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers KDW

0148E-6


WATANABE INSTRUMENTS CORP
CHART NO PZ410-2H
2

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 30
Sample No. . . . . = 5001
Description 8/c shielded

Standards Used: 516811, 305896, 543211, 902203, 212506, ~~502446~~, 543202
JB 5/27/86

Conduit Size in Test. . . . = ~~24"~~ N/A
No. Cables in Pull. . . . . = ~~1~~ N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
	36V1										
1.	Black Coax	*.1137 .1625	.1112 .1615	.0164	.0162	100'-0"	2184 pf	90.076	44	>10,000 MΩ	N/A
2.	White Coax	.1118 .1644	.1116 .1619	.0165	.0161		2195 pf	90.076	34		
3.	Li BLK	.0524	.0519	.0299	.0298		N/A	N/A	21.8		
4.	Li WHT	.0515	.0513	.0293	.0293				20.2		
5.	BARE	—	—	.0296	.0296				N/A		
6.	RED	.0504	.0504	.0298	.0297				20.7		
7.	GRN	.0514	.0504	.0295	.0293				16.3		
8.	Bi BLK	.0605	.0590	.0384	.0364				21.8		
9.	Bi WHT	.0647	.0621	.0367	.0367				26.9		
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* TOP READING IS COPPER INSULATION
BOTTOM READING IS COAX INSULATION

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies:

Tested By/Date N/A (Tension) — DM 7 5-27-86 (Micrometer) — JB 5/27/86 VER (Dielectric) — VER JB (Resistance)

Verified By/Date NC 5/29/86
Test Observers KDW

QA Approval/Date JBR 5/29/86

0148E-6

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 30
Sample No. . . . . = 5001
Description 8/c Shielded

Standards Used: 516811, 305896, 543211, 902203, 212506, ~~502445~~, 543202
JB 5/27/86

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
	30V2										
1.	Black Coax	*.1145 .1680	.1127 .1645	.0165	.0163	100'0"	2188 pf	90.071	44	>10,000 MΩ	N/A
2.	White Coax	*.1124 .1660	.1097 .1617	.0165	.0161		2192 pf	90.071	38		
3.	Li BLA	.0506	.0496	.0288	.0286		N/A	N/A	16.3 *		
4.	Li WHT	.0499	.0486	.0284	.0282				18.1		
5.	BARE	—	—	.0297	.0284				N/A		
6.	RED	.0508	.0492	.0294	.0287				20.8		
7.	GRN	.0513	.0507	.0291	.0291				21.2		
8.	Bi BLA	.0612	.0586	.0365	.0355				20.3		
9.	Bi WHT	.0623	.0590	.0369	.0367				16.5 **	**	
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* TOP LINE IS COPPER INSULATION
* BOTTOM LINE IS COAX INSULATION

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies: * STRIPPING NICK HELD OUT OF WATER
** MEGGERED BETWEEN 100 AND 500 MΩ, NICK FOUND & HELD OUT OF WATER, MEGGERED > 10,000 MΩ. *** HIPOT WITH NICK OUT OF WATER.

Tested By/Date N/A Tension — Micrometer 5-26-86 — Dielectric JB 5/27/86 VEK — Resistance VEK JB

Verified By/Date HR 5/29/86
Test Observers KDW

QA Approval/Date JBR 5/29/86

0148E-6

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 30
Sample No. . . . . = 5001
Description 8/c shielded

Standards Used: 516811, 305896, 543211, 902203, 212506, ~~502~~ 543202
JB 5/27/86

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
30V3										
1. BlackCoax	*.1117 .1627	.1094 .1616	.0163 ~~.0297~~	.0161	100'0"	2189 pf	90.076	39	>10,000MΩ	N/A
2. WhiteCoax	.1142 .1662	.1137 .1638	.0165 ~~.0294~~	.0164		2195 pf	96.076	33		
3. Li BLA	.0515	.0509	.0297	.0297		N/A	N/A	21.3		
4. Li WHT	.0507	.0499	.0294	.0294				18.1		
5. BARE	—	—	.0297	.0296				N/A		
6. RED	.0499	.0495	.0299 ~~.0296~~	.0299				18.0		
7. GRN	.0510	.0503	.0297	.0290				23.7		
8. Bi BLA	.0602	.0596	.0366	.0365				23.1		
9. Bi WHT	.0622	.0603	.0372	.0369				13.7		
10.										
11.										
12.										

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* TOP READING IS COPPER INSULATION
Bottom reading is copper insulation

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies:

Tested By/Date N/A Tension | 5-27-86 Micrometer | JB 5/27/86 VEK Dielectric | VEK JB Resistance

Verified By/Date NR 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers KDW

0148E-6

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 30
Sample No. . . . . = 5001
Description 8/c shielded

Standards Used: 516811, 305896, 543211, 902203, 212506, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
30V4	*.1116	.1090								
1. Black Coax	.1634	.1629	.0167	.0163	100'1"	2192 pf	90.076	38	>10,000MΩ	N/A
2. White Coax	.1104 .1635	.1099 .1629	.0162	.0162		2200 pf	90.076	37		
3. Li Blu	.0538	.0522	.0297	.0296		N/A	N/A	18.3		
4. Li Wht	.0509	.0501	.0293	.0291				18.8		
5. Bare	—	—	.0295	.0295				N/A		
6. Red	.0508	.0506	.0298	.0298				23.0		
7. Grn	.0512	.0500	.0296	.0293				18.7		
8. Bi Blk	.0606	.0602	.0365	.0365				21.5		
9. Bi Wht	.0624	.0623	.0374	.0370				24.3		
10.										
11.										
12.										

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* TOP READING IS copper insulation
Bottom READING IS COAX insulation

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies:

Tested By/Date N/A Tension | D2175 5-27-86 Micrometer | JB 5/27/86 VEK Dielectric | VEK JB Resistance

Verified By/Date HL 5/29/86
Test Observers KDW

QA Approval/Date JAR 5/29/86

0148E-6

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 30
Sample No. . . . . = 5001
Description 8/C Shielded

Standards Used: 516811, 305896, 543211, 902203, 212506, 543202

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

Test No. 30V5	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
1. BLA COAX	.1116 .1672	.1100 .1662	.0165	.0163	100'0"	2190pf	90.076	37	>10,000MΩ	N/A
2. WHT COAX	.1129 .1655	.1108 .1625	.0165	.0162		2192pf	90.076	40		
3. Li BLA	.0524	.0508	.0297	.0297		N/A	N/A	21.0 *		
4. Li WHT	.0507	.0502	.0294	.0293				17.9		
5. BARE	—	—	.0297	.0296				N/A		
6. Bi BLA	.0514	.0507	.0297	.0296				22.8		
7. Bi WHT	.0506	.0504	.0297	.0294				16.6		
8. RED	.0600	.0595	.0294	.0363				16.8		
9. GRN	.0629	.0617	.0371	.0367				21.2		
10.										
11.										
12.										

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* Accidently caused hole held out of water for test

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies: ____

Tested By/Date N/A (Tension) | 5-27-86 (Micrometer) | 5/27/86 VEK (Dielectric) | VEK (Resistance)

Verified By/Date 5/29/86
Test Observers KDW

QA Approval/Date 5/29/86

0148E-6

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

SLSB Control No. 30
Sample No. . . . . = 5001
Description 8/C SHIELDED

Standards Used: 305896, 516811, 506325, 543175, 522035, 543211, 902203, 212506, 502445, ~~902038~~ 543202 VEK 5-28-86

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ___
Tensioned ✓

1-Conductor ___
Multi-Conductor ✓

	Test No. 30T1 UP ~~30TS~~	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
1.	BLACK COAX	*.1144 .1660	.1062 .1619	.0165	.0160	99'10"	2185pf	90.07Ω	40	>10,000MΩ	TEST OK
2.	WHITE COAX	.1635	.1583	.0162	.0160		2172pf	90.07Ω	34		
3.	Li BLA	.0512	.0506	.0293	.0291		N/A	N/A	18.0		
4.	Li WHT	.0502	.0489	.0291	.0286				17.8		
5.	BARE	—	—	.0295	.0291				N/A		
6.	RED	.0508	.0491	.0297	.0295				18.0		
7.	GRN	.0511	.0495	.0300	.0291				17.8		
8.	Bi BLA	.0610	.0577	.0363	.0359				18.5		
9.	Bi WHT	.0633	.0593	.0362	.0363				12.4		
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* top reading is copper insulation
Bottom reading is coax insulation

SWBP Data

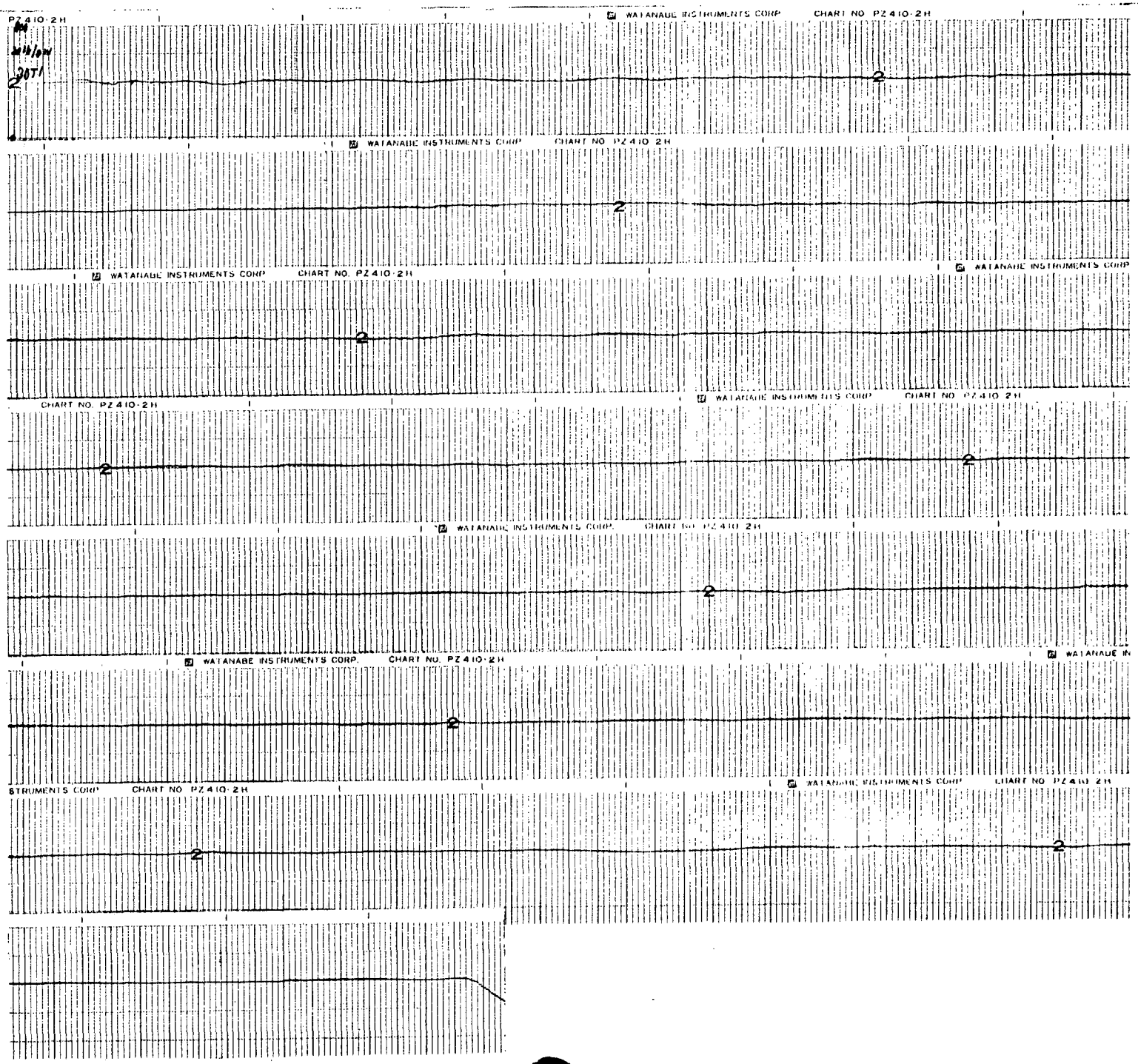
Tension (T) = ~~430~~ 420 UP lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 1186 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1186 lbs/ft

Anomalies: ___

Tested By/Date VEK 5-21-86 (Tension) — MM 5-27-86 (Micrometer) — JB 5/27/86 VEK (Dielectric) — VEK JB (Resistance)

Verified By/Date HR 5/29/86 QA Approval/Date JSR 5/29/86
Test Observers KDW

0148E-6


PZ410-2H
WATANABE INSTRUMENTS CORP
CHART NO. PZ410-2H
2

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 30
Sample No. . . . . = 5001
Description 8/C SHIELDED

Standards Used: 305896, ~~305896~~, 516811, 506325, 543175, 522035, 543211, 902203, 212506, 502445, 902038, 543202

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
30T2										
1. BLACK COAX	* .1129 .1638	.1104 .1600	.0164	.0160	99'8"	2195pf	90.076	44	>10,000MΩ	Test ok
2. WHITE COAX *	.1113 .1628	.1073 .1563	.0164	.0162		2202pf	90.076	38 ~~**~~ JB	***	↓
3. LiHle BLA	.0517	.0510	.0297	.0294		N/A	N/A	15.4 5/27/86	>10,000MΩ	
4. LiHle WHT	.0502	.0495	.0298	.0290				17.3	↓	↓
5. BARE	—	—	.0297	.0292				N/A	N/A	N/A
6. RED	.0513	.0502	.0299	.0294				21.0	>10,000MΩ	TEST OK
7. GRN	.0512	.0498	.0297	.0290				21.0	↓	↓
8. BigBLA	.0609	.0590	.0365	.0363				19.2	↓	↓
9. BigWHT	.0624	.0600	.0371	.0367	↓	↓	↓	21.3	↓	↓
10.										
11.										
12.										

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* Top reading = insulation for Copper
Bottom reading: outer insulation of coax

SWBP Data

Tension (T) = 425 lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 1200 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1200 lbs/ft

*** Missed megger test

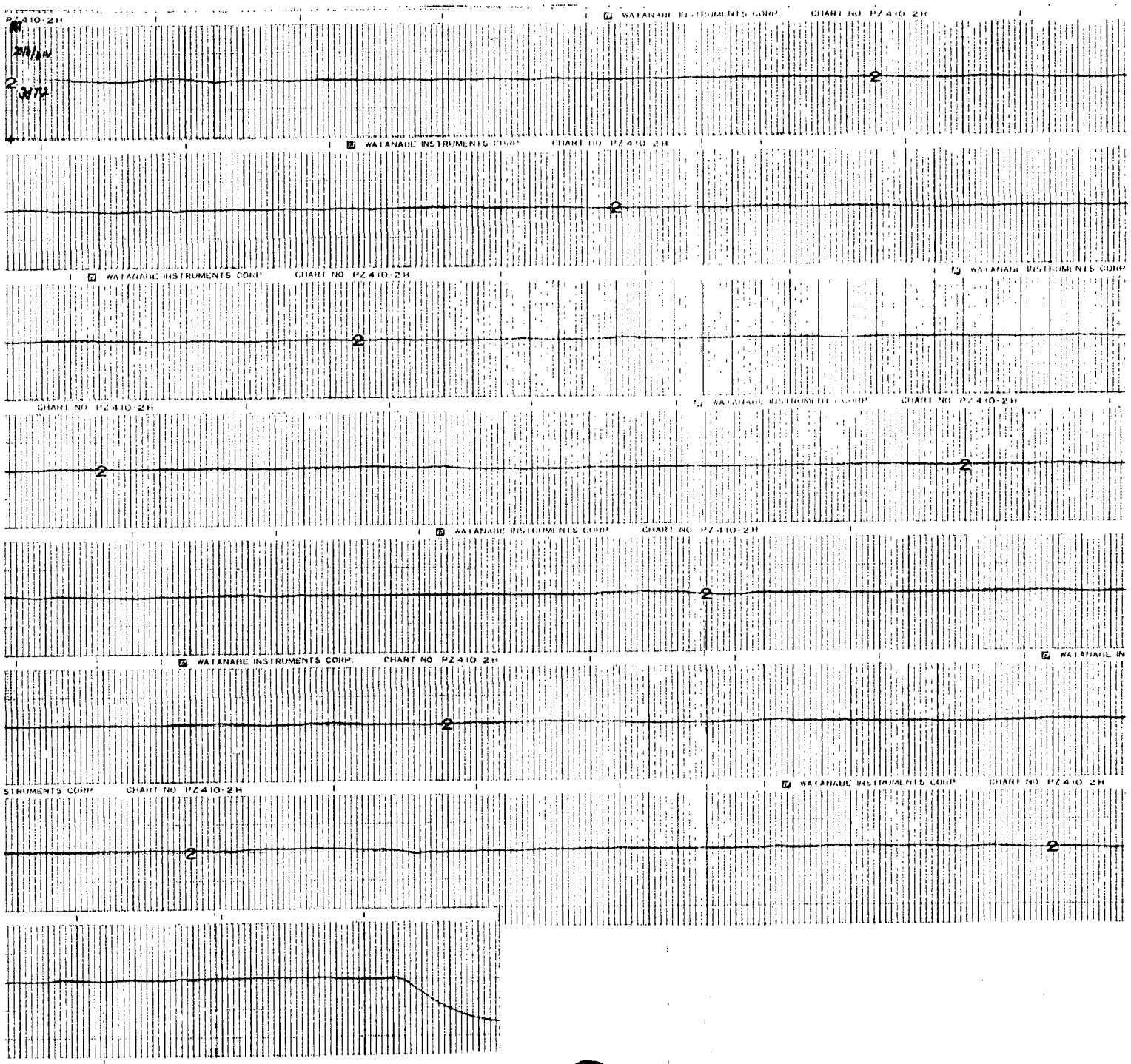
Anomalies: ~~** Blk wire had tape covering an impression in the insulation and a bump that appeared to be a splice. The tape and bump appeared to be associated with manufacturing process~~ JB 5/27/86

Tested By/Date VEK 5-20-86 (Tension) JM7 5-26-86 (Micrometer) JB 5/27/86 (Dielectric) JM7 JB (Resistance)

Verified By/Date HE 5/29/86
Test Observers KDW

QA Approval/Date JRR 5/29/86

0148E-6


WATANABE INSTRUMENTS CORP.
CHART NO PZ410-2H

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

SLSB Control No. 30
Sample No. . . . . = 5001
Description 8/c Shielded

Standards Used: 305896, 516811, 506325, 543175, 522035, 543211, 902203, 212506, 502445, 543202

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
	30T3										
1.	BLA COAX	*.1128 .1675	.1104 .1622	.0166	.0161	99'4"	2195pf	90.076	40	>10,000MΩ	TEST OK
2.	WHT COAX	.1113 .1606	.1083 .1554	.0165	.0162		2202pf	90.076	32		
3.	Li BLA	.0522	.0512	.0300	.0294		N/A	N/A	15.1		
4.	Li WHT	.0519	.0502	.0294	.0290				19.9		
5.	BARE	—	—	.0294	.0292				N/A		
6.	RED	.0513	.0500	.0296	.0295				19.9		
7.	GRN	.0510	.0504	.0294	.0294				21.0*		
8.	Bi BLA	.0602	.0589	.0367	.0360				21.2		
9.	Bi WHT	.0634	.0605	.0365	.0359				17.0		
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* TOP LINE IS COPPER INSULATION
* BOTTOM LINE IS COAX INSULATION

SWBP Data

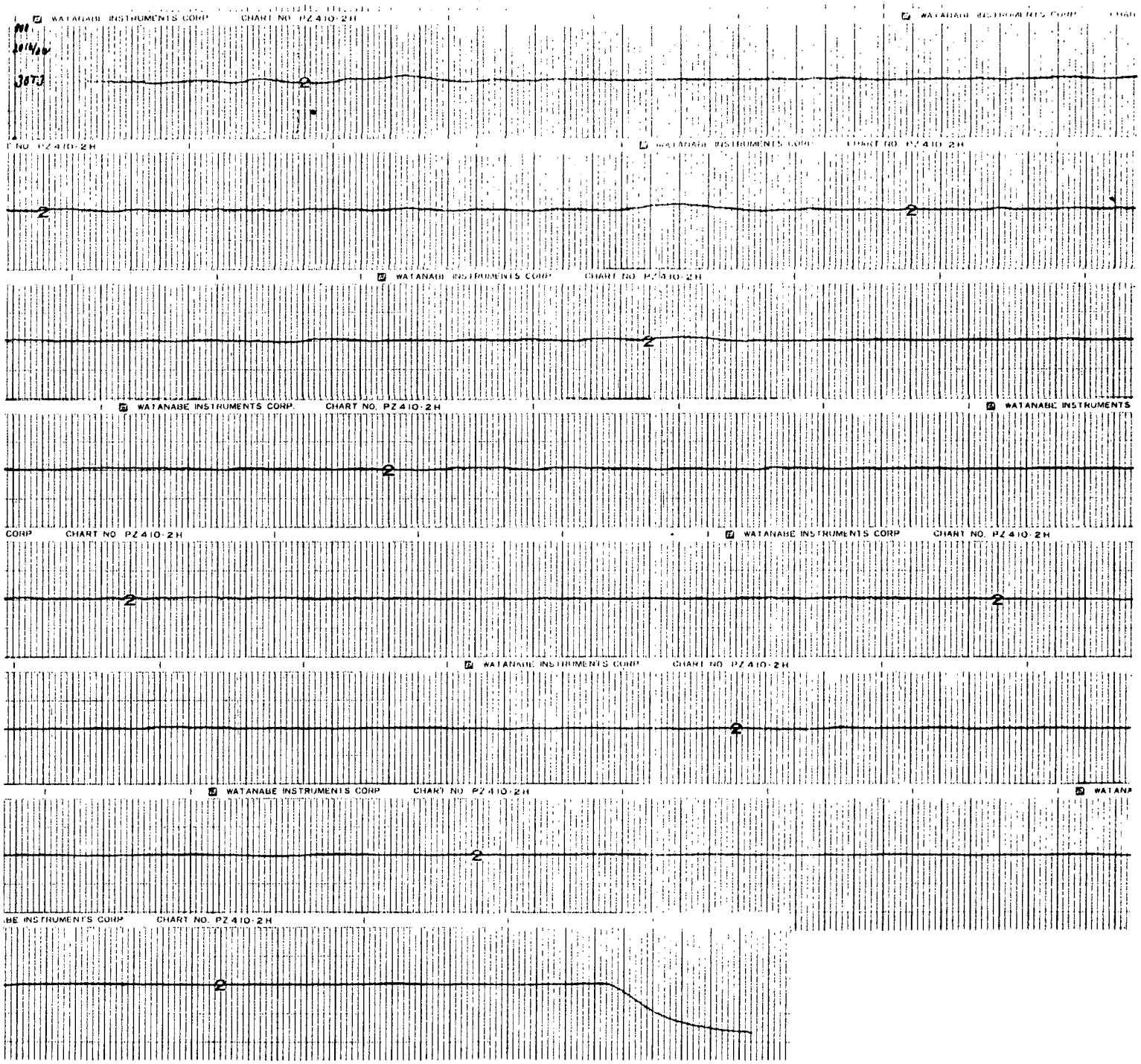
Tension (T) = 440 lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 1242 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1242 lbs/ft

Anomalies: * FAILURE POINT 1/4" ABOVE WATER

Tested By/Date VEK 5-21-86 (Tension) Dm 5-26-86 (Micrometer) GB 5/27/86 VEK (Dielectric) VEK GB (Resistance)

Verified By/Date HK 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers KDW

0148E-6


WATANABE INSTRUMENTS CORP CHART NO PZ410-2H
WATANABE INSTRUMENTS CORP CHART NO. PZ410-2H
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WATANABE INSTRUMENTS CORP CHART NO. PZ410-2H

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 30
Sample No. . . . . = 5001
Description 8/C Shielded

Standards Used: 305896, 516811, 506325, 543175, 522035, 543211, 902203, 212506, 502445, 902038, 543202

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
	3074										
1.	BLACK COAX	*.1102 .1632	.1085 .1617	.0167	.0162	99'9"	2200pf	90.076	39**	>10,000MΩ	Test OK
2.	WHITE COAX	*.1114 .1600	.1069 .1548	.0165	.0161		2204pf	90.076	34	>10,000MΩ	Test OK
3.	Li BLA	.0524	.0511	.0297	.0295		N/A	N/A	21.2		
4.	Li WHT	.0508	.0491	.0293	.0291				20.0		
5.	BARE	~~.0503~~	—	.0295	.0293				N/A		
6.	RED	.0503	.0493	.0298	.0295				16.7		
7.	GRN	.0514	.0506	.0297	.0293				21.1		
8.	Bi BLA	.0612	.0597	.0379	.0362				20.1		
9.	Bi WHT	.0624	.0619	.0373	.0365				20.9		
10.											
11.											
12.											

Multi-Conductor Jacket O.D. = N/A Max N/A Min

* Top line is copper insulation
* Bottom line is coax insulation

SWBP Data

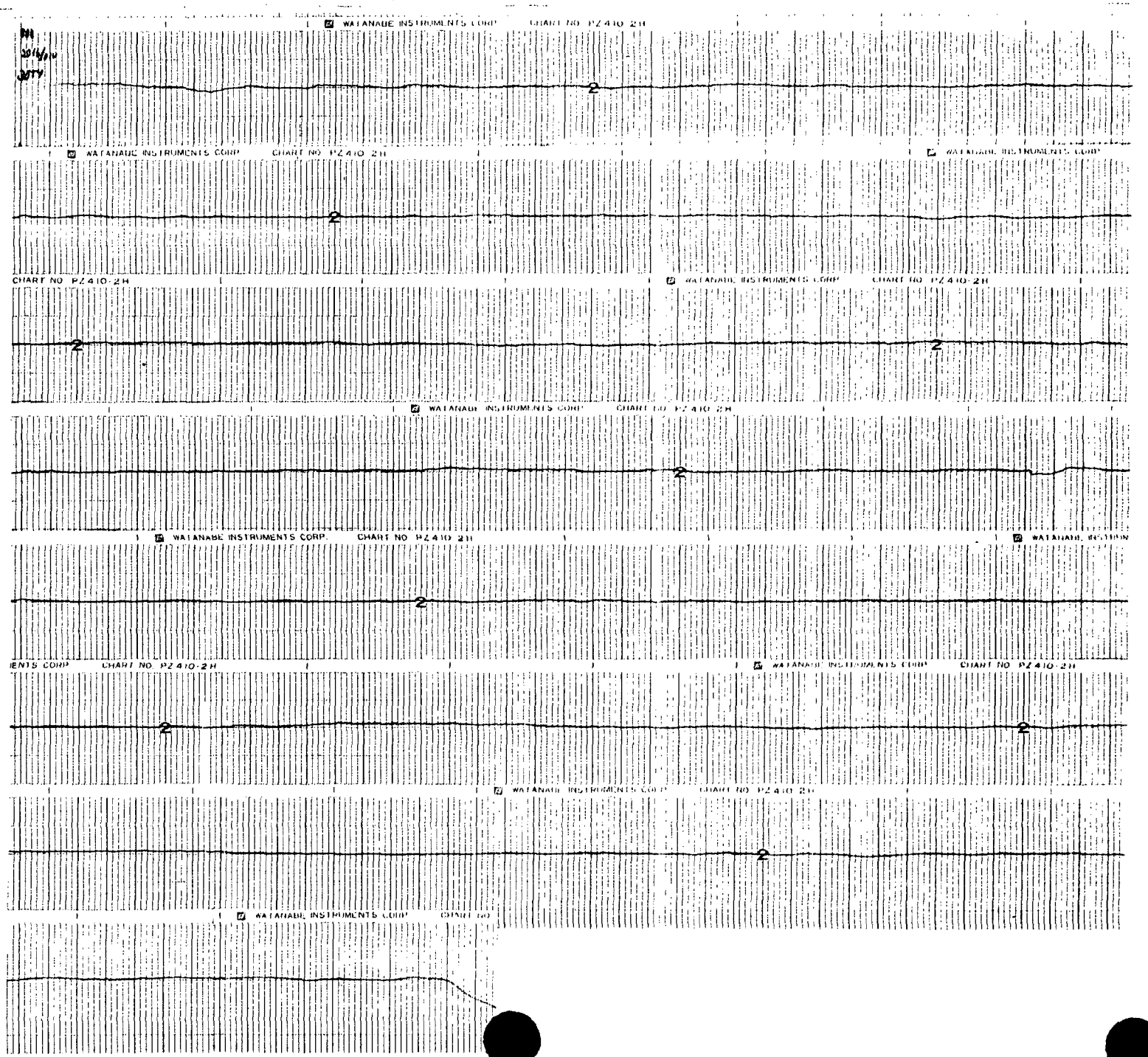
Tension (T) = 435 lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 1228 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1228 lbs/ft

Anomalies: ** Black wire has a "bump" that appears to be a splice associated with the manufacturing process. Did not fail at this "bump."

Tested By/Date VEK 5-21-86 (Tension) JM 5-26-86 (Micrometer) JB 5/27/86 VEK (Dielectric) VEK JB (Resistance)

Verified By/Date [illegible] 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers KDW

0148E-6


WATANABE INSTRUMENTS CORP
CHART NO PZ410-2H

SIDEWALL BEARING PRESSURE CABLE TEST DATA - COAXIAL CABLES

CLSB Control No. 30
Sample No. . . . . = 5001
Description F/C SHIELDED

Standards Used: 305896, 516811, 506225, 543175, 522035, 543211, 902202, 212506, 502445, 593202

Conduit Size in Test. . . . = 3/4"
No. Cables in Pull. . . . . = 1

Virgin ____ 1-Conductor ____
Tensioned ✓ Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Length	Capac.	Char. Imped	Dielectric Breakdown AC KV	500V Megger Test	Cont.
30T5	* .1131	.1092								
1. BLACK COAX	.1632	.1608	.0165	.0161	99'8"	2194pf	90.076	40	>10,000MΩ	TEST OK
2. WHITE COAX	.1145 .1597	.1112 .1569	.0163	.0162		2204pf	90.076	40		
3. Li BLA	.0515	.0490	.0296	.0291		N/A	N/A	16.7		
4. Li WHT	.0509	.0491	.0291	.0289				19.9		
5. BARE	—	—	.0294	.0290				N/A		
6. RED	.0510	.0494	.0297	.0293				18.2		
7. GRN	.0501	.0494	.0296	.0298				22.1		
8. Bi BLA	.0601	.0553	.0369	.0362				20.4		
9. Bi WHT	.0584	.0570	.0373	.0362				13.8		
10.										
11.										
12.										

Multi-Conductor Jacket O.D. = N/A Max N/A Min

SWBP Data

Tension (T) = ~~420~~ 430 lbs (Max.)
Radius (R) = 0.3542 ft
T/R = 1214 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1214 lbs/ft

Anomalies: ____

Tested By/Date VEK 5-20-86 (Tension) — 5-27-86 (Micrometer) — 5/27/86 VEK (Dielectric) — VEK (Resistance)

Verified By/Date 5/29/86
Test Observers KDW

QA Approval/Date 5/29/86

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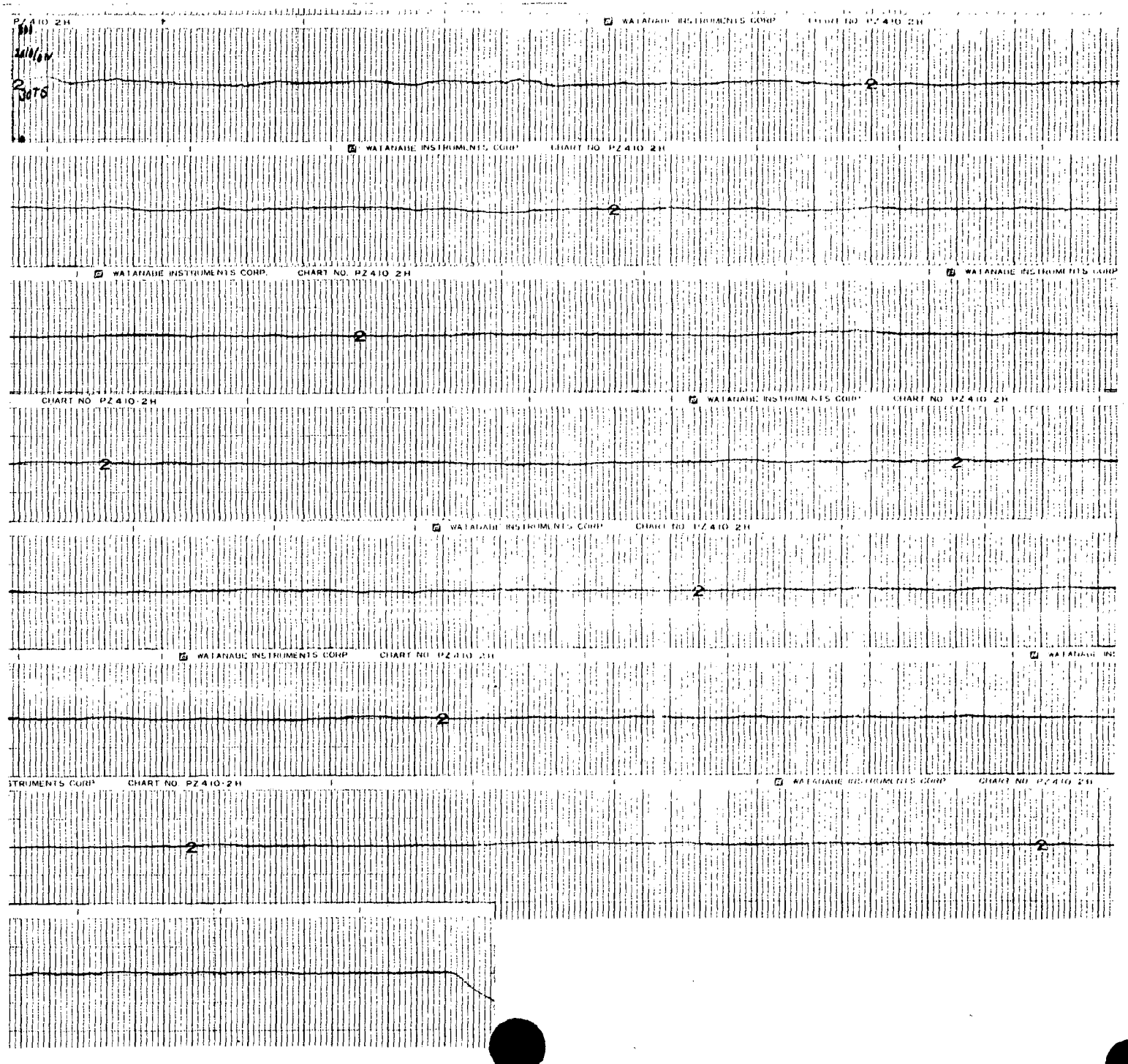
PZ410 2H
WATANABE INSTRUMENTS CORP
CHART NO PZ410 2H
WATANABE INSTRUMENTS CORP.
CHART NO. PZ410 2H
CHART NO PZ410-2H
WATANABE INSTRUMENTS CORP
CHART NO PZ410 2H
WATANABE INSTRUMENTS CORP
CHART NO PZ410 2H
WATANABE INSTRUMENTS CORP
CHART NO PZ410 2H
STRUMENTS CORP
CHART NO PZ410-2H
WATANABE INSTRUMENTS CORP
CHART NO PZ410 2H

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description No14 7/c ~~PVS~~ PSS

Standards Used: 543211, 212524, 543202, 902038.

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 31V1	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1389	.1378	.0717	.0714	26.0	>10,000 MΩ	
2.	RED	.1374	.1349	.0725	.0724	33.8		
3.	ORG	.1398	.1378	.0717	.0715	22.1		
4.	GRN	.1363	.1353	.0718	.0715	30.2		
5.	BLU	.1388	.1377	.0714	.0714	25.8		
6.	WHT	.1398	.1396	.0726	.0724	29.1		
7.	~~WHT/BLA~~	.1387	.1368	.0714	.0708	29.7		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5423 Max .5372 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies:

Tested By/Date N/A Tension | JM 7 5-24-86 Micrometer | VEK R.A.T. Dielectric | JB 5/24/86 Resistance

Verified By/Date HE 5/29/86
Observers KDW

QA Approval/Date JRR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description #14 7/c ~~PNO~~ PJJ

Standards Used: 543211, 212506, 543202, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 31V2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1391	.1380	.0712	.0709	19.2	>10,000 MΩ	
2.	RED	.1360	.1352	.0726	.0721	30.6		
3.	ORG	.1395	.1385	.0714	.0714	26.8		
4.	GRN	.1358	.1357	.0714	.0713	26.8		
5.	BLU	.1395	.1394	.0714	.0713	27.9		
6.	WHT	.1397	.1397	.0726	.0726	32.5		
7.	WHT/BLA	.1386	.1366	.0713	.0713	28.3		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5448 Max .5382 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A (Tension) / Jm 7 5-24-86 (Micrometer) / Vek R.A.T. 5/24/86 (Dielectric) / JB (Resistance)

Verified By/Date He 5/29/86
Test Observers KDW

QA Approval/Date JBR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description No 14 7/c ~~ANJ~~ PSJ

Standards Used: 543211, 212503, 543203, 902038

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 31V3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1391	.1365	.0713	.0712	27.7	>10,000MΩ	
2.	RED	.1363	.1357	.0730	.0727	21.5		
3.	ORG	.1387	.1382	.0713	.0713	27.2		
4.	GRN	.1362	.1359	.0716	.0715	34.3		
5.	BLU	.1389	.1384	.0718	.0714	38.8		
6.	WHT	.1399	.1392	.0726	.0722	25.8*		
7.	WHT/BLK	.1372	.1370	.0713	.0707	24.8		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5428 Max .5389 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: * Knew nick in wire belt out of water To Hi-pot

Tested By/Date N/A Tension | DM 7 5-24-86 Micrometer | VEK RAJ 5/24/86 Dielectric | JB Resistance

Verified By/Date WC 5/29/86
Witnesses Observers KDW

QA Approval/Date JBR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description No 14 7/c ~~PVC PVC~~

Standards Used: 543211, 212524, 543202, 902038.

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

	Test No. 31V4-	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1390	.1373	.0713	.0711	25.1	>10,000 MΩ	
2.	RED	.1372	.1349	.0726	.0724	28.3		
3.	ORG	.1394	.1380	.0717	.0713	31.0		
4.	GRN	.1353	.1352	.0716	.0715	29.3		
5.	BLU	.1397	.1373	.0716	.0714	29.5		
6.	WHT	.1399	.1396	.0728	.0725	39.3		
7.	WHT/BLA	.1391	.1371	.0714	.0710	29.9		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5433 Max .5406 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies:

Tested By/Date N/A (Tension) — [illegible] 5-24-86 (Micrometer) — VEK RAT 5/24/86 (Dielectric) — JB (Resistance)

Verified By/Date HE 5/29/86 QA Approval/Date [illegible] 5/29/86
Test Observers KDW

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description No. 14 7/c ~~PVC~~ PJT

Standards Used: 543211, 912506, 502445, 543202, 902038.

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 31US	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1393	.1370	.0713	.0713	25.9	>10,000 MΩ	
2.	RED	.1367	.1362	.0729	.0728	24.6		
3.	ORG	.1395	.1373	.0719	.0717	27.1		
4.	GRN	.1356	.1348	.0715	.0714	34.6		
5.	BLU	.1397	.1378	.0714	.0713	29.5		
6.	WHT	.1397	.1397	.0724	.0724	30.9		
7.	WHT/BLA	.1394	.1380	.0713	.0713	26.9		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5425 Max .5370 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A

Anomalies: ____

Tested By/Date N/A (Tension) | [illegible] 5-24-86 (Micrometer) | VER R.A.T. (Dielectric) | 5/26/86 JB (Resistance)

Verified By/Date HE 5/29/86
Observers KDW

QA Approval/Date [illegible] 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description No 14 7/6 TJ AWJ INSULATION
Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used: 506325 543175 522035, 543211, 212606, 502445, 543202, 902038.

Virgin ____ Tensioned ✓
1-Conductor ____ Multi-Conductor ✓

	Test No. 31T1	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1381	.1367	.0708	.0702	24.1	>10,000 MΩ	Cont OK
2.	RED	.1362	.1346	.0724	.0723	27.6		
3.	ORG	.1357	.1371	.0712	.0709	21.6		
4.	GRN	.1351	.1339	.0713	.0708	29.9		
5.	BLU	.1378	.1363	.0710	.0708	23.7		
6.	WHT	.1381	.1372	.0726	.0717	26.9		
7.	WHT/BLK	.1395	.1375	.0706	.0701	27.4		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5401 Max, .5348 Min

SWBP Data

Tension (T) = 760 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1697 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1697 lbs/ft

Anomalies:

Tested By/Date: DMT 5-24-86 (Tension) DMT 5-24-86 (Micrometer) RK (Dielectric) R.A.T. (Resistance) 5/24/86

Verified By/Date: HC 5/29/86
Test Observers: KDW
QA Approval/Date: JMR 5/29/86

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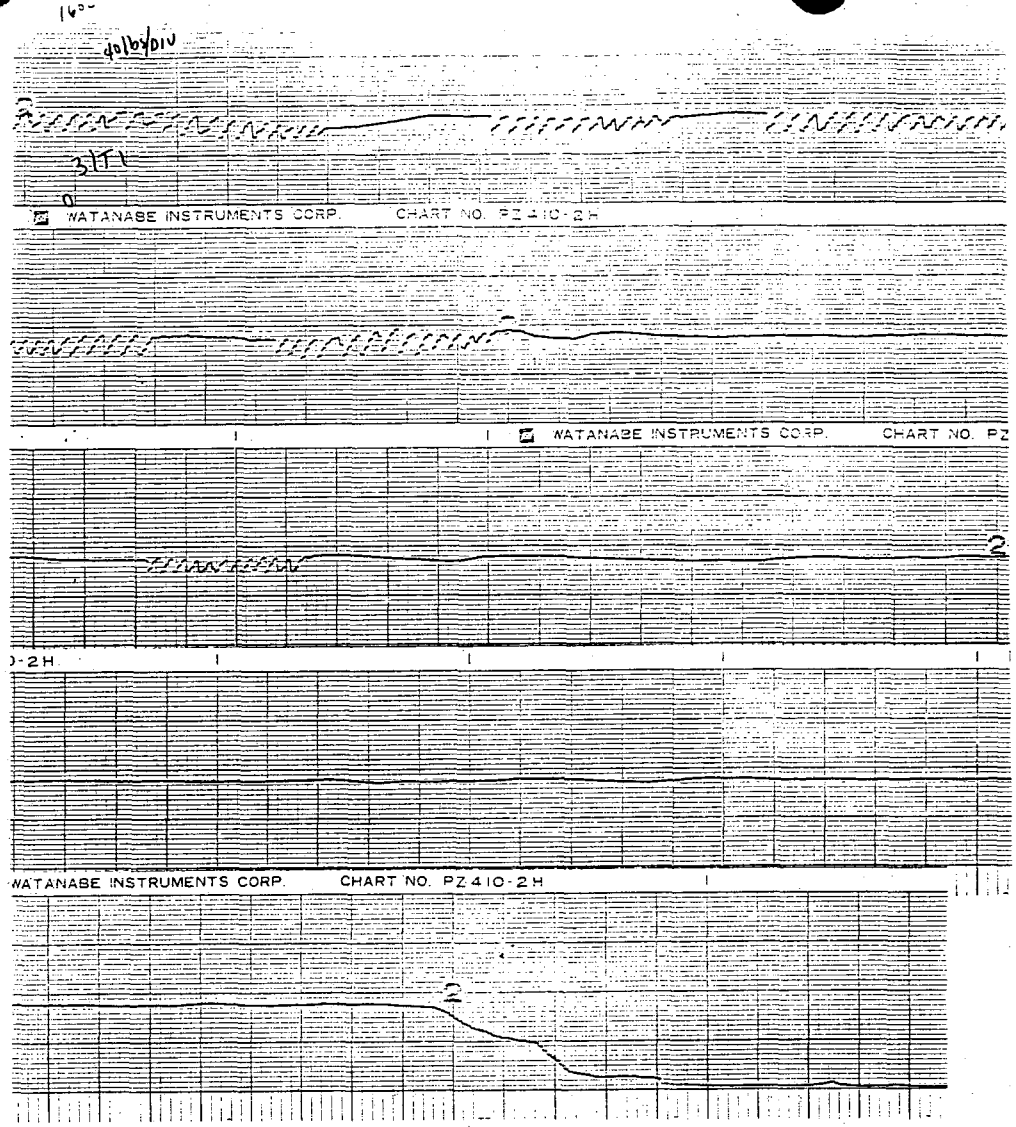

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description NO 14 7/C ~~PVC~~ PJJ

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Standards Used: 506325, 543175, 522035, 543211, 212206, 502445, 543202, 902025

Virgin
Tensioned ✓

1-Conductor
Multi-Conductor ✓

	Test No. 31T2	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1392	.1372	.0703	.0701	21.7	>10,000 MΩ	Test OK
2.	RED	.1359	.1341	.0723	.0715	33.7		
3.	ORG	.1399	.1380	.0710	.0700	24.9		
4.	GRN	.1354	.1349	.0720	.0706	24.5		
5.	BLU	.1378	.1341	.0706	.0687	24.5		
6.	WHT	.1399	.1363	.0723	.0717	25.1		
7.	WHT/BLK	.1392	.1362	.0709	.0707	27.2		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5390 Max .5329 Min

SWBP Data

Tension (T) = 760 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1697 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1697 lbs/ft

Anomalies: During test cable broke at serve swivle, cable was re-connected and test continued. Refer to chart on test number 31T3

Tested By/Date DM 7 5-24-86 (Tension) DM 2 5-25-86 (Micrometer) VER RAH. (Dielectric) R.A.T. 5/24/86 (Resistance)

Verified By/Date HR 5/29/86
Test Observers KDW

QA Approval/Date JMA 5/29/86

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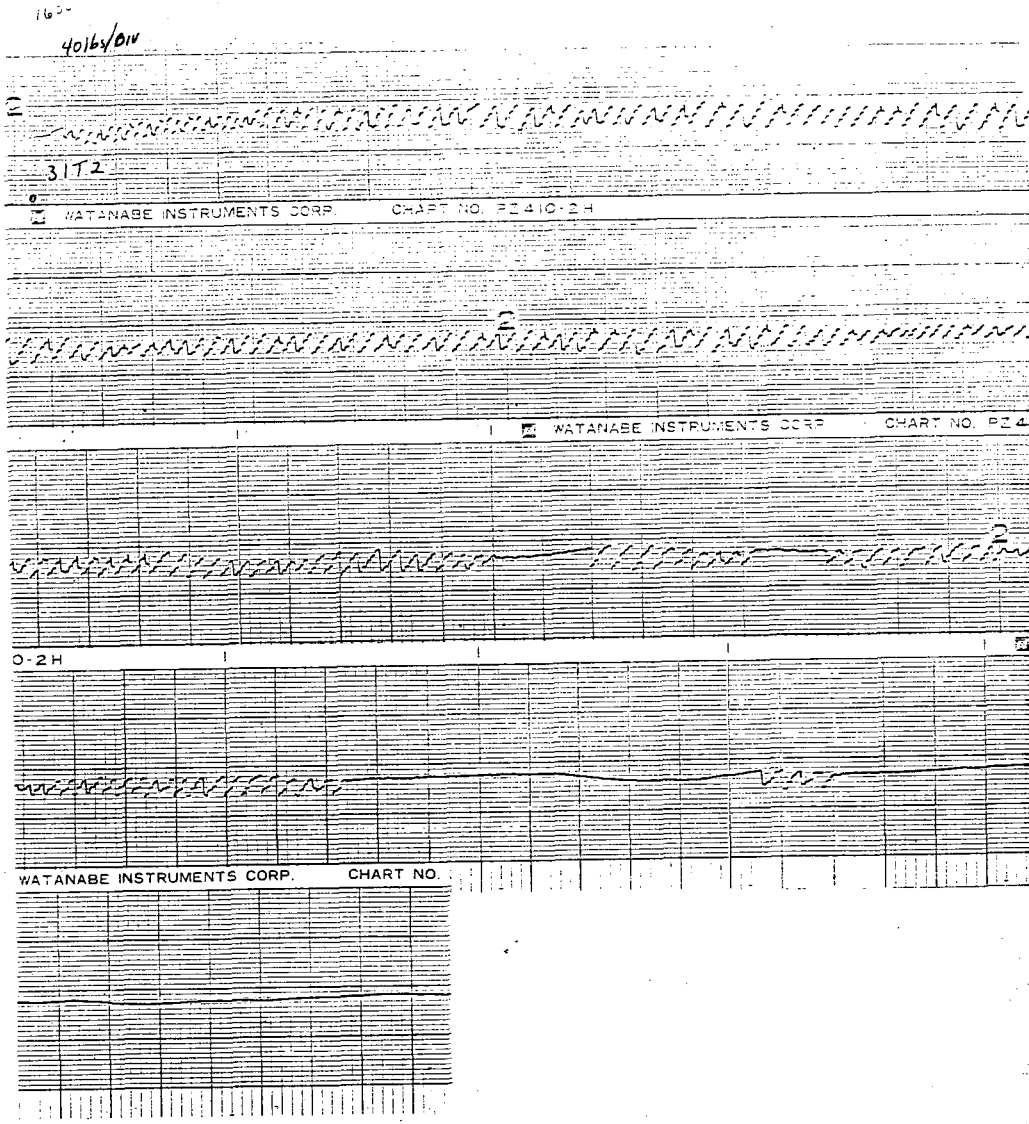

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description No 14 7/c ~~AWG~~ PJJ

Standards Used: 506325, 543175, 522035, 543211, 213506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ Tensioned ✓
1-Conductor ___ Multi-Conductor ✓

Test No. 31T3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1. BLK	.1381	.1366	.0707	.0702	30.2	>10,000MΩ	Test OK
2. RED	.1366	.1344	.0723	.0705	27.2		
3. ORG	.1396	.1383	.0712	.0706	19.7		
4. GRN	.1356	.1342	.0708	.0704	22.5		
5. BLU	.1399	.1369	.0705	.0690	24.8		
6. WHT	.1378	.1372	.0721	.0702	26.2		
7. WHT/BLK	.1393	.1371	.0708	.0704	25.0		
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .5389 Max .5313 Min

SWBP Data

Tension (T) = 720 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1608 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1608 lbs/ft

Anomalies: During test, cable broke at serve swivel, cable was re-connected and test continued.

Tested By/Date: Tension — Dm 7 5-24-86; Micrometer — Dm 7 5-25-86; Dielectric — RAT; Resistance — R.A.T. 5/26/86

Verified By/Date: HE 5/29/86
Test Observers: KDW
QA Approval/Date: JBR 5/29/86

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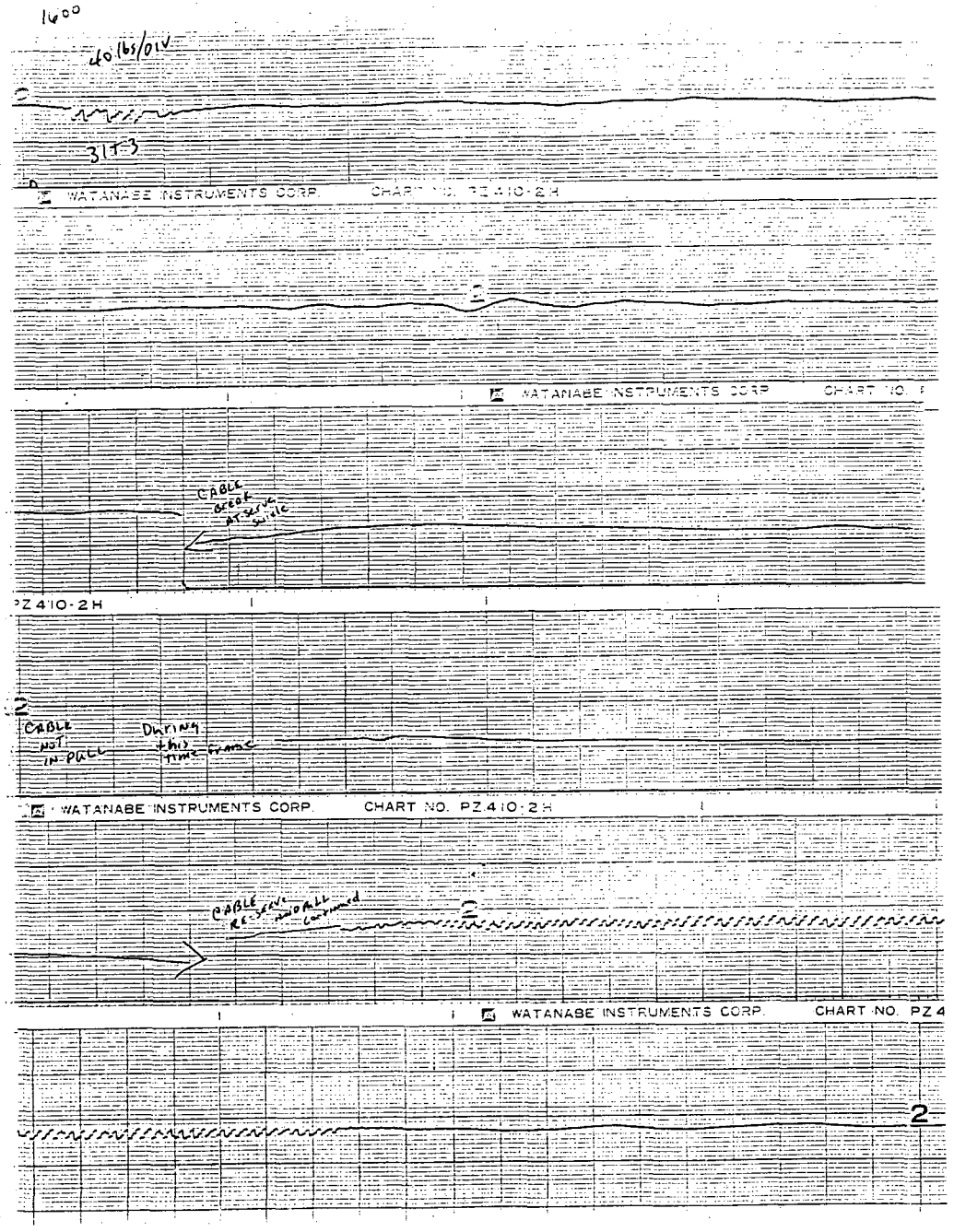

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description No 14 7/c ~~PWS~~ PJS

Standards Used: 506325, 543175, 522035, 543211, 212546, 502445, 543202, 907038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ Tensioned ✓

1-Conductor ___ Multi-Conductor ✓

	Test No. 3174	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1385	.1357	.0710	.0704	24.3	>10,000 MΩ	Test OK
2.	RED	.1360	.1345	.0716	.0718	25.9		
3.	ORG	.1394	.1382	.0710	.0707	23.1		
4.	GRN	.1360	.1344	.0711	.0707	34.6		
5.	BLU	.1393	.1367	.0713	.0710	22.0		
6.	WHT	.1399	.1391	.0724	.0717	23.1		
7.	WHT/BLK	.1398	.1376	.0714	.0705	26.7		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5386 Max .5357 Min

SWBP Data

Tension (T) = 720 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1608 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1608 lbs/ft

Anomalies:

Tested By/Date DMZ 5-24-86 (Tension) DMZ 5-25-86 (Micrometer) VCK RAI (Dielectric) R.A.I. 5/24/86 (Resistance)

Verified By/Date JK 5/29/86 QA Approval/Date JBR 5/29/86
Test Observers KDW

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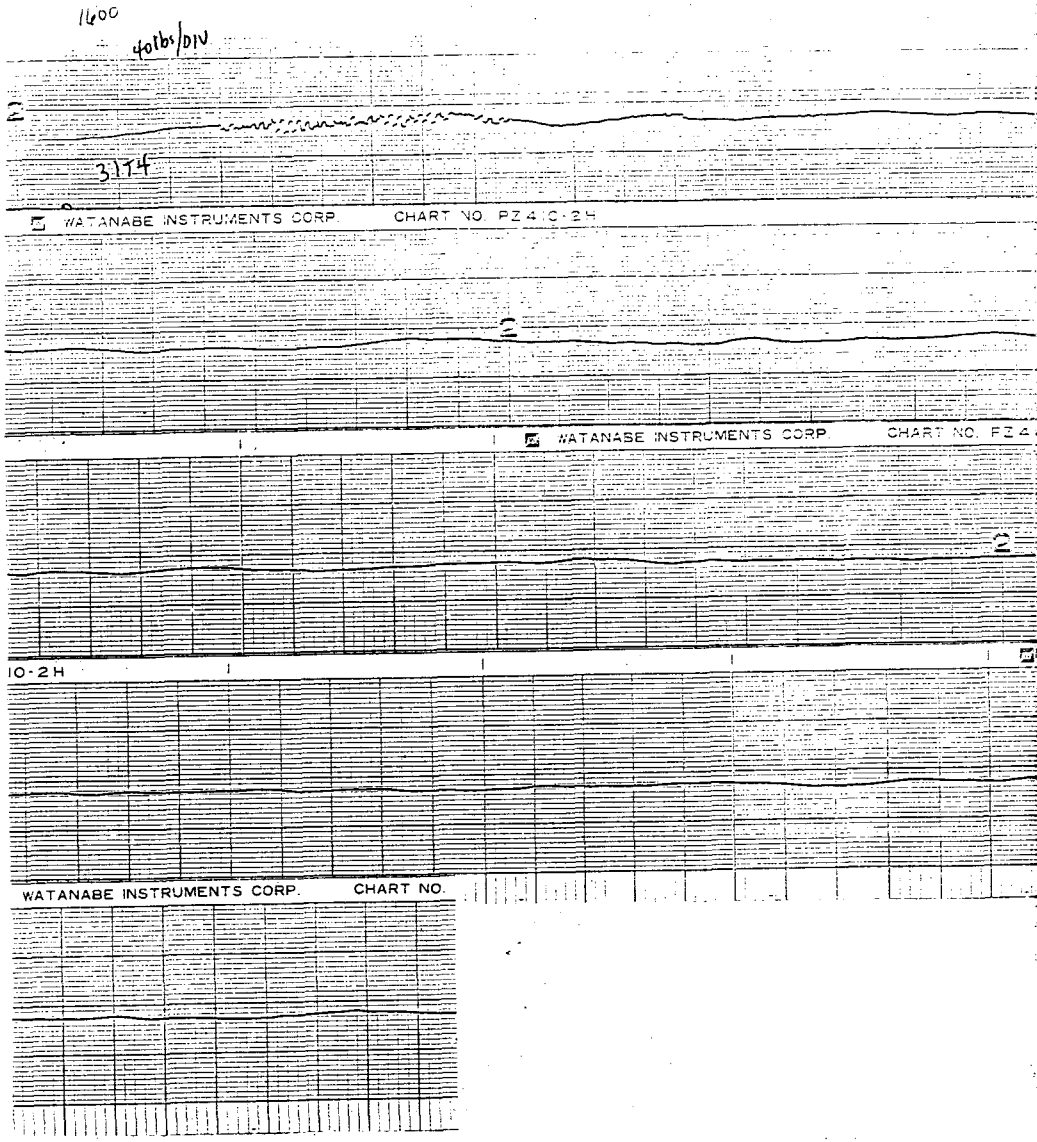

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 31
Sample No. . . . . = 5002
Description No 14 7/c ~~PNJ~~ PJJ

Standards Used: 506325, 543175, 522035, 543211, 212506, 502445, 543202, 902038.

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___
Tensioned ✓

1-Conductor ___
Multi-Conductor ✓

	Test No. 31T5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1395	.1375	.0708	.0705	27.5	>10,000 MΩ	Test OK
2.	RED	.1360	.1345	.0722	.0719	26.9		
3.	ORG	.1399	.1382	.0714	.0709	37.3		
4.	GRN	.1354	.1347	.0712	.0708	25.2		
5.	BLU	.1399	.1375	.0713	.0705	33.2		
6.	WHT	.1399	.1386	.0722	.0720	30.5		
7.	WHT/BLA	.1391	.1367	.0709	.0708	25.9		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .5399 Max .5344 Min

SWBP Data

Tension (T) = 720 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1608 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1608 lbs/ft

Anomalies: ___

Tested By/Date: [illegible] 5-24-86 (Tension); [illegible] 5-25-86 (Micrometer); VEK (Dielectric); R.A.T. (Resistance) 5/24/86

Verified By/Date [illegible] 5/29/86
Test Observers KDW

QA Approval/Date [illegible] 5/29/86

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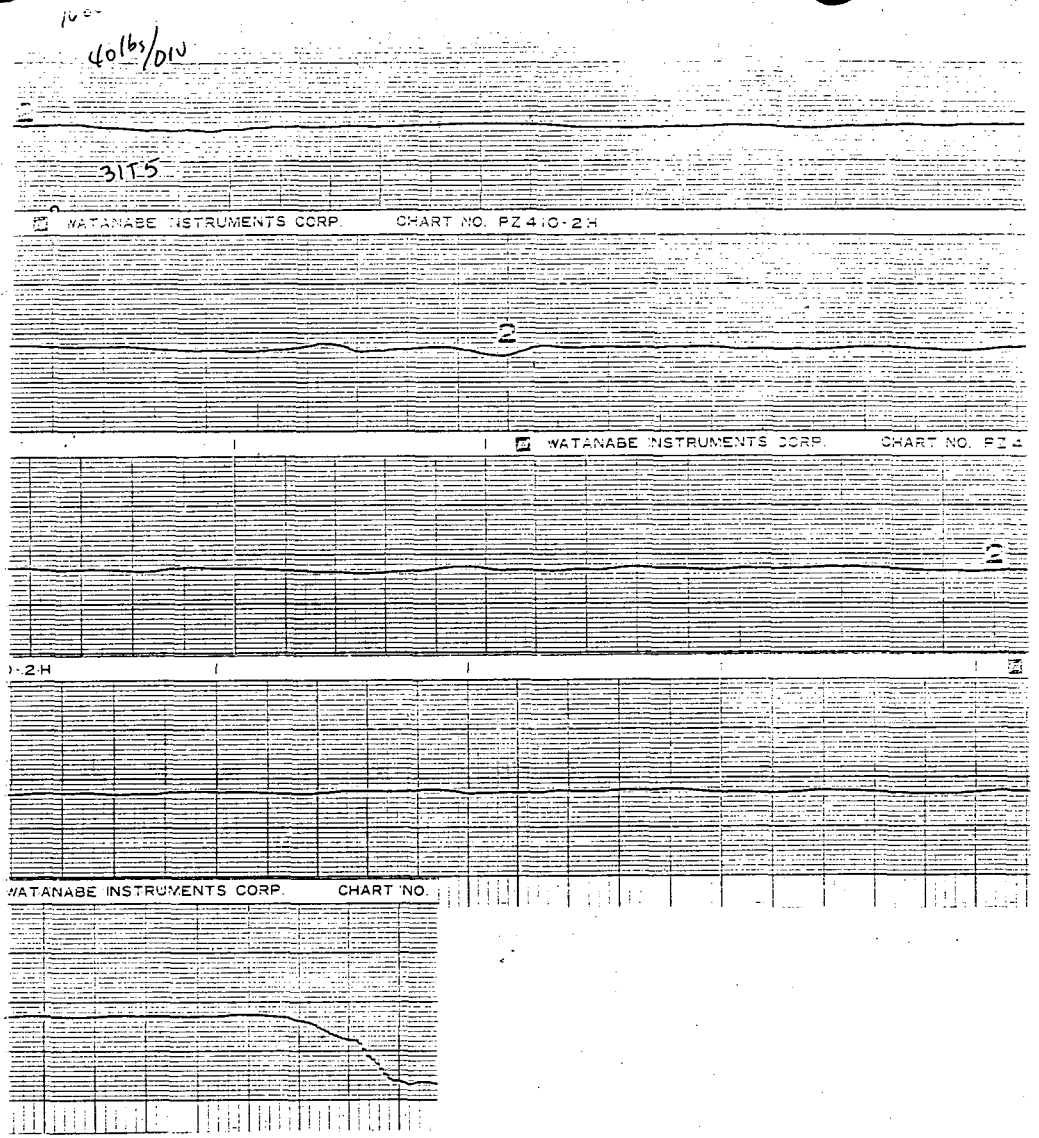

SIDEWALL BEARING PRESSURE CABLE TEST DATA

Control No. 32
Sample No. . . . . = 5003
Description No 12 7/c

Standards Used: 543211, 902038, 543202, 212506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 32V1	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1715	.1706	.0918	.0916	* 22.2	>10,000 MΩ	N/A
2.	RED	.1690	.1689	.0914	.0913	* 38.3	↓	↓
3.	ORG	.1730	.1670	.0914	.0912	* 28.2	↓	↓
4.	GRN	.1669	.1665	.0915	.0914	* 29.6	↓	↓
5.	BLU	.1682	.1636	.0905	.0904	* 27.4	↓	↓
	WHT	.1694	.1683	.0913	.0912	42.0	↓	↓
	WHT/BLA	.1670	.1657	.0914	.0913	28.3	↓	↓
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6414 Max .6326 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies: * Rate-of-Rise mistakenly set at 250v/sec.

Tested By/Date N/A Tension | [illegible] 5-28-86 Micrometer | JB 5/28/86 VEK Dielectric | N/A JB 5/29/86 VEK Resistance

Verified By/Date [illegible] 5/29/86
Test Observers [illegible]

QA Approval/Date [illegible] 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 32
Sample No. . . . . = 5003
Description No 12 7/6

Standards Used: 543211, 902038
543202, 212506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓ 1-Conductor ____
Tensioned ____ Multi-Conductor ✓

Test No. 32V2		Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1730	.1713	.0919	.0917	26.8	>10,000 MΩ	N/A
2.	RED	.1670	.1670	.0912	.0910	41.8		
3.	ORG	.1699	.1670	.0917	.0917	28.9		
4.	GRN	.1680	.1669	.0913	.0910	23.5		
5.	BLU	.1632	.1627	.0910	.0906	31.9		
6.	WHT	.1685	.1677	.0914	.0908	28.3		
7.	WHT/BLK	.1665	.1656	.0919	.0916	32.0		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6399 Max .6353 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies:

Tested By/Date N/A Tension | DM 75-28-86 Micrometer | JB 5/28/86 VEK Dielectric | ~~N/A~~ JB 5/29/86 VEK Resistance

Verified By/Date We 5/29/86
Test Observers Pat

QA Approval/Date JAR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

Control No. 32
Sample No. . . . . = 5003
Description No 12 7/c

Standards Used: 543211, 902038
543202, 212506

Conduit Size in Test. . . . = N/A
No. Cables in Pull. . . . . = N/A

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 32V3	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1715	.1708	.0921	.0915	25.5	>10,000 MΩ	N/A
2.	RED	.1693	.1680	.0915	.0911	17.8	↓	↓
3.	ORG	.1716	.1670	.0918	.0915	20.0	↓	↓
4.	GRN	.1680	.1657	.0919	.0917	21.6	↓	↓
5.	BLU	.1616	.1616	.0913	.0908	16.2	↓	↓
	WHT	.1702	.1686	.0913	.0908	13.3	↓	↓
	WHT/BLK	.1669	.1645	.0921	.0917	17.9	↓	↓
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6402 Max .6300 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies: ____

Tested By/Date N/A Tension | 5-28-86 Micrometer | JB 5/29/86 VEK Dielectric | N/A 5/29/86 VEK Resistance

Verified By/Date HR 5/29/86
Test Observers ____

QA Approval/Date JBR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 32
Sample No. . . . . = 5003
Description No 12 7/c

Standards Used: 543211, 902038
543202, 212506

Conduit Size in Test. . . . = N/a
No. Cables in Pull. . . . . = N/a

Virgin ✓
Tensioned ____

1-Conductor ____
Multi-Conductor ✓

	Test No. 32V4	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1709	.1698	.0913	.0913	30.2	>10,000 MΩ	N/A
2.	RED	.1688	.1667	.0917	.0910	35.3		
3.	ORG	.1703	.1669	.0918	.0914	38.8		
4.	GRN	.1685	.1665	.0912	.0912	33.2		
5.	BLU	.1638	.1612	.0912	.0908	27.2		
6.	WHT	.1678	.1655	.0913	.0910	43.2		
7.	WHT/RED	.1667	.1665	.0915	.0912	20.0		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6383 Max .6363 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies: ____

Tested By/Date N/A Tension | 5-28-86 Micrometer | JB 5/29/86 VEK Dielectric | ~~N/A~~ JB 5/29/86 VEK Resistance

Verified By/Date He 5/29/86
Test Observers ____

QA Approval/Date JBR 5/29/86

0148E-4

SIDEWALL BEARING PRESSURE CABLE TEST DATA

Control No. 32
Sample No. . . . . = 5003
Description No 12 7/c

Standards Used: 543211, 902038, 543202, 212506

Conduit Size in Test. . . . = _____
No. Cables in Pull. . . . . = _____

Virgin ✓
Tensioned _____

1-Conductor _____
Multi-Conductor ✓

	Test No. 32V5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLK	.1707	.1700	.0919	.0915	24.1	>10,000 MΩ	N/A
2.	RED	.1647	.1624	.0918	.0915	37.5	↓	↓
3.	ORG	.1689	.1663	.0924	.0918	24.6	↓	↓
4.	GRN	.1699	.1682	.0916	.0914	25.3	↓	↓
5.	BLU	.1637	.1636	.0916	.0906	30.6	↓	↓
	WHT	.1687	.1670	.0913	.0912	44.2	↓	↓
	WHT/BLK	.1664	.1654	.0918	.0914	33.2	↓	↓
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .1798 Max .1712 Min

SWBP Data

Tension (T) = N/A lbs (Max.)
Radius (R) = N/A ft
T/R = N/A lbs/ft
Correction Factor (X) = N/A
SWBP = X(T/R) = N/A lbs/ft

Anomalies: _____

Tested By/Date N/A Tension | [illegible] 5-29-86 Micrometer | JB 5/29/86 VEK Dielectric | N/A JB 5/29/86 VEK Resistance

Verified By/Date [illegible] 5/29/86
Test Observers [illegible]

QA Approval/Date [illegible] 5/29/86

0148E-4

ATTACHMENT F
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 32
Sample No. . . . . = 5003
Description No 12 7/c

Standards Used: 506325, 543175, 522035, 543211, 902038, 543202, 502445, 212506

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Conductor Insulation O.D. in. Min	Copper O.D. in. Max	Copper O.D. in. Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	32T1							
1.	BLA	.1713	.1695	.0916	.0909	24.8	>10,000MΩ	Test OK
2.	RED	.1692	.1662	.0915	.0911	44.6		
3.	ORG	.1711	.1655	.0917	.0913	26.8		
4.	GRN	.1686	.1666	.0914	.0910	36.3		
5.	BLU	.1643	.1612	.0915	.0903	29.2		
6.	WHT	.1692	.1672	.0913	.0905	34.2		
7.	WHT/BLA	.1684	.1660	.0923	.0910	26.3		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6396 Max .6317 Min

SWBP Data

Tension (T) = 780 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1741 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1741 lbs/ft

Anomalies:

Tested By/Date VCK 5-28-86 (Tension) / [illegible] 5-29-86 (Micrometer) / JB 5/29/86 VCK (Dielectric) / VCK JB (Resistance)

Verified By/Date NC 5/29/86
Test Observers [illegible]

QA Approval/Date [illegible] 5/29/86

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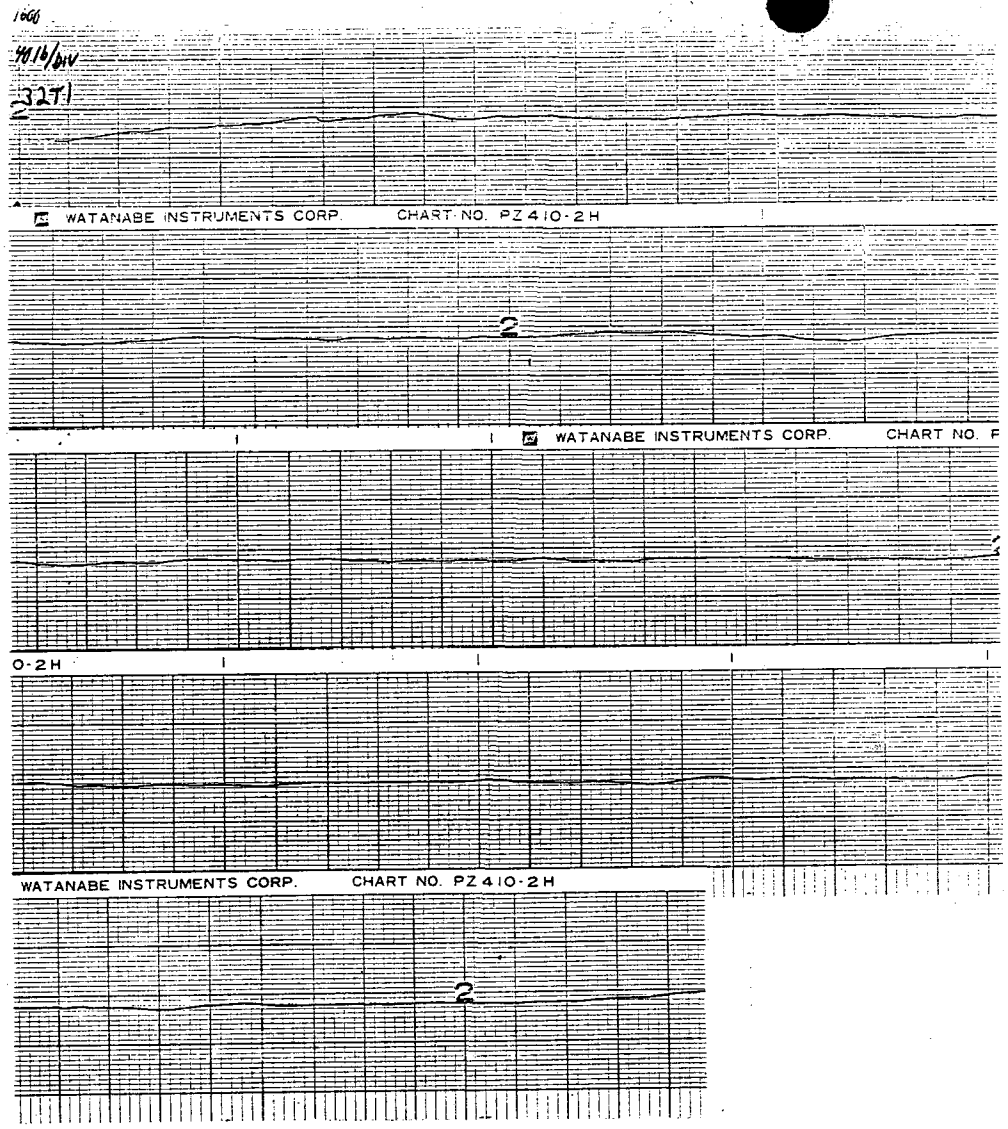


ATTACHMENT F
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 32
Sample No. . . . . = 5003
Description No 12 7/c

Standards Used: 506225, 543175, 522025, 543211, 902038, 543202, 502445, 212506

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___ Tensioned ✓
1-Conductor ___ Multi-Conductor ✓

Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
3272							
1. BLA	.1721	.1706	.0914	.0910	27.2	>10,000MΩ	Test OK
2. RED	.1691	.1657	.0913	.0911	35.4	↓	↓
3. ORG	.1706	.1678	.0913	.0907	34.1		
4. GRN	.1691	.1661	.0915	.0906	37.1		
5. BLU	.1667	.1635	.0908	.0900	20.0		
6. WHT	.1646	.1679	.0915	.0910	38.0		
7. WHT/BLA	.1630	.1643	.0918	.0910	29.1		
8.							
9.							
10.							
11.							
12.							

Multi-Conductor Jacket O.D. = .6367 Max .6330 Min

SWBP Data

Tension (T) = 790 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1764 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1764 lbs/ft

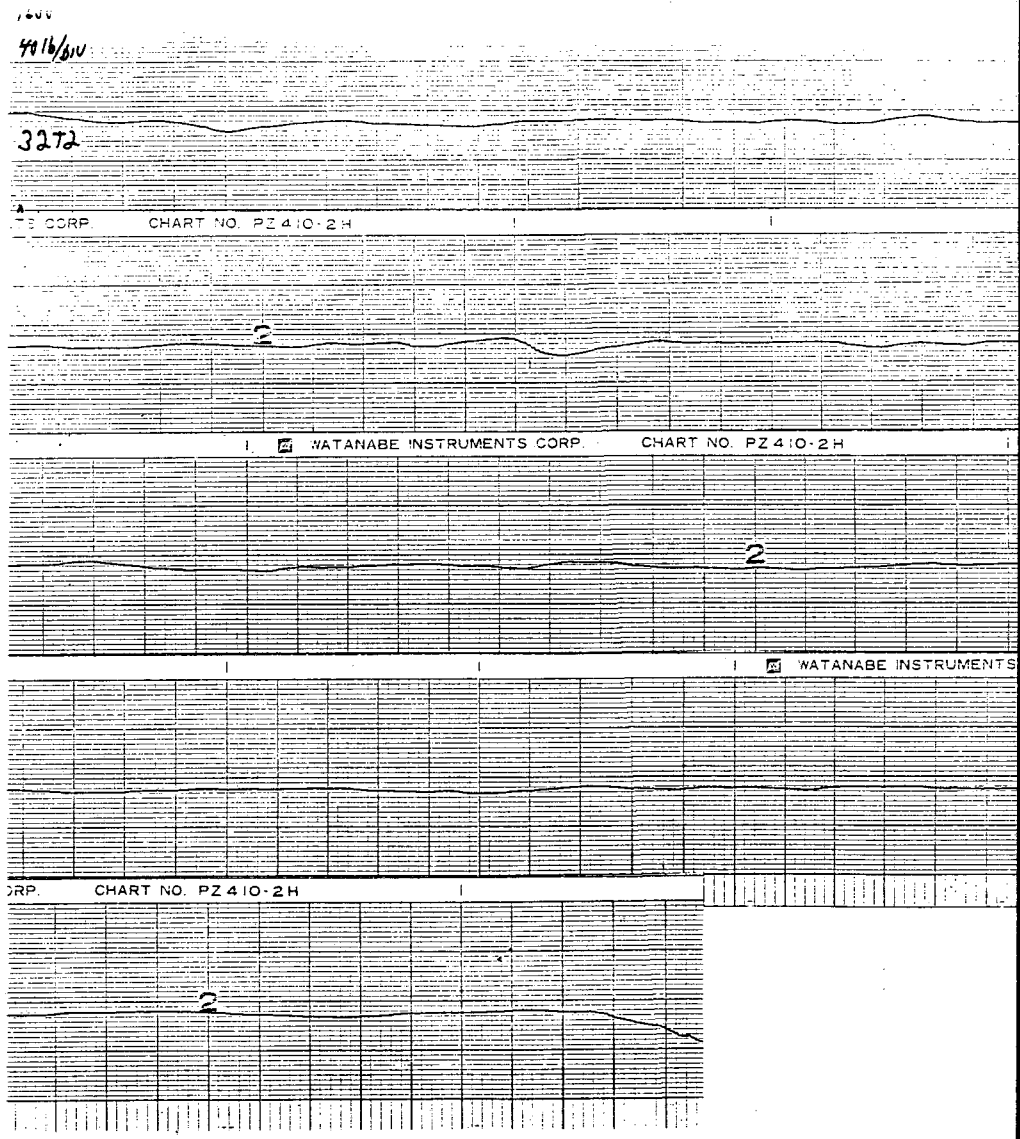
Anomalies:

Tested By/Date VER 5-28-86 (Tension) DM 7 5-29-86 (Micrometer) JB 5/29/86 VER (Dielectric) VER JB (Resistance)

Verified By/Date JR 5/29/86
Test Observers JR

QA Approval/Date JR 5/29/86

0148E-4



ATTACHMENT F
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 32
Sample No. . . . . = 5003
Description No 12 7/C

Standards Used: 506325, 543175, 522035, 543211, 902038, 543202, 502445, 212506

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ____
Tensioned ✓

1-Conductor ____
Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	32T3							
1.	BLK	.1724	.1702	.0912	.0910	33.1	>10,000 MΩ	Test ok
2.	RED	.1680	.1637	.0914	.0908	36.0		
3.	ORG	.1695	.1666	.0920	.0911	24.0		
4.	GRN	.1679	.1647	.0912	.0909	41.9		
5.	BLU	.1643	.1611	.0907	.0894	38.8		
6.	WHT	.1687	.1654	.0913	.0911	42.8		
7.	WHT/BLK	.1689	.1639	.0913	.0911	33.9		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6367 Max .6294 Min

SWBP Data

Tension (T) = 750 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1674 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1674 lbs/ft

Anomalies:

Tested By/Date VEK 5-28-86 (Tension) — DMZ 5-29-86 (Micrometer) — JB 5/29/86 (Dielectric) — VEK JB (Resistance)

Verified By/Date HO 5/29/86
Test Observers AR

QA Approval/Date MSR 5/29/86

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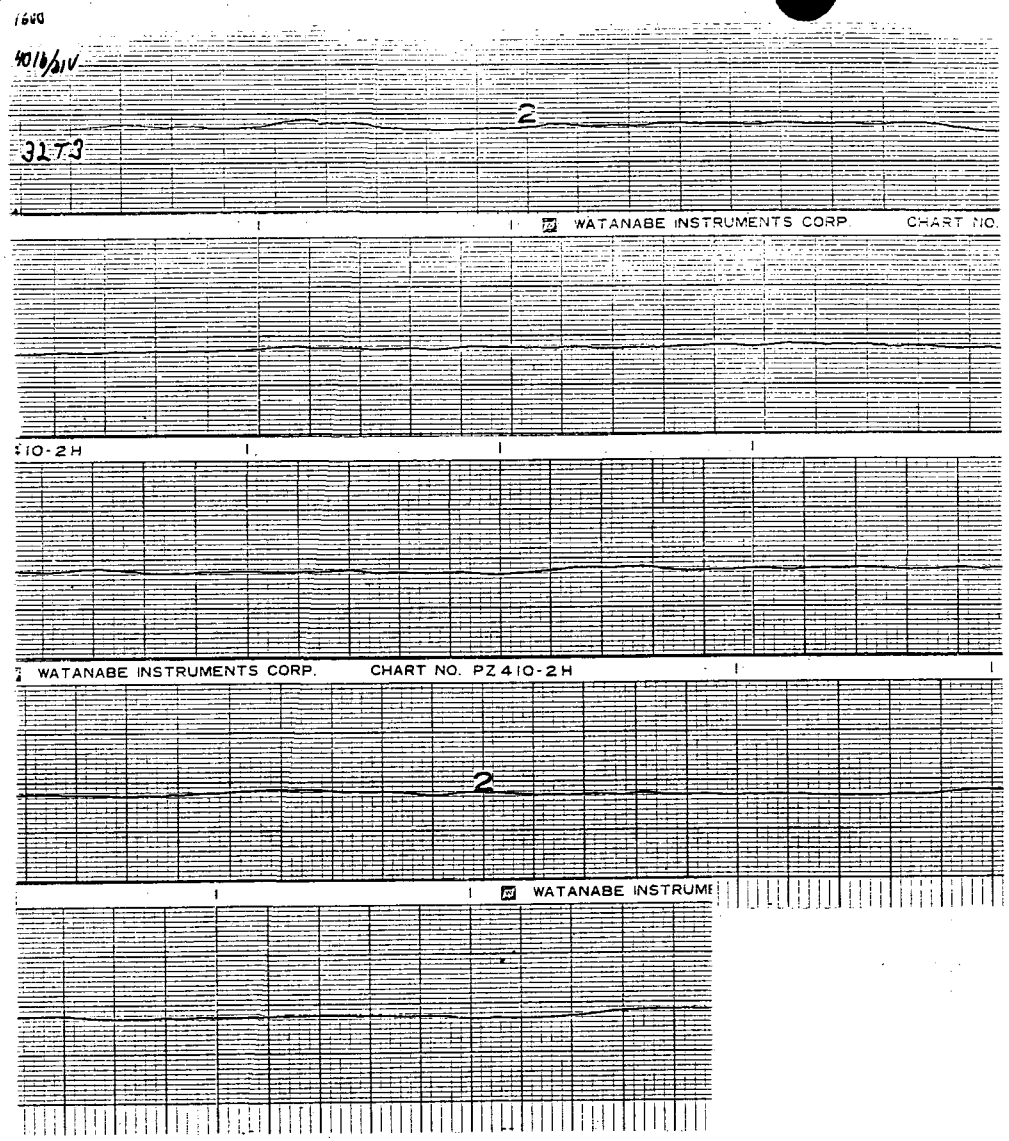


ATTACHMENT F
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 32
Sample No. . . . . = 5003
Description No 12 7/C

Standards Used: 506325 543175 523025, 543211, 902038, 543202 502445, 212506

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin Tensioned ✓
1-Conductor Multi-Conductor ✓

	Test No.	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
	3274							
1.	BLK	.1713	.1701	.0915	.0912	19.2	>10,000 MΩ	Test ok
2.	RED	.1697	.1684	.0915	.0908	41.8		
3.	ORG	.1655	.1647	.0922	.0915	32.1 *		
4.	GRN	.1664	.1662	.0912	.0908	31.2		
5.	BLU	.1640	.1616	.0905	.0902	21.5		
6.	WHT	.1713	.1650	.0916	.0909	32.0		
7.	WHT/BLK	.1676	.1655	.0912	.0910	29.8		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6366 Max .6329 Min

SWBP Data

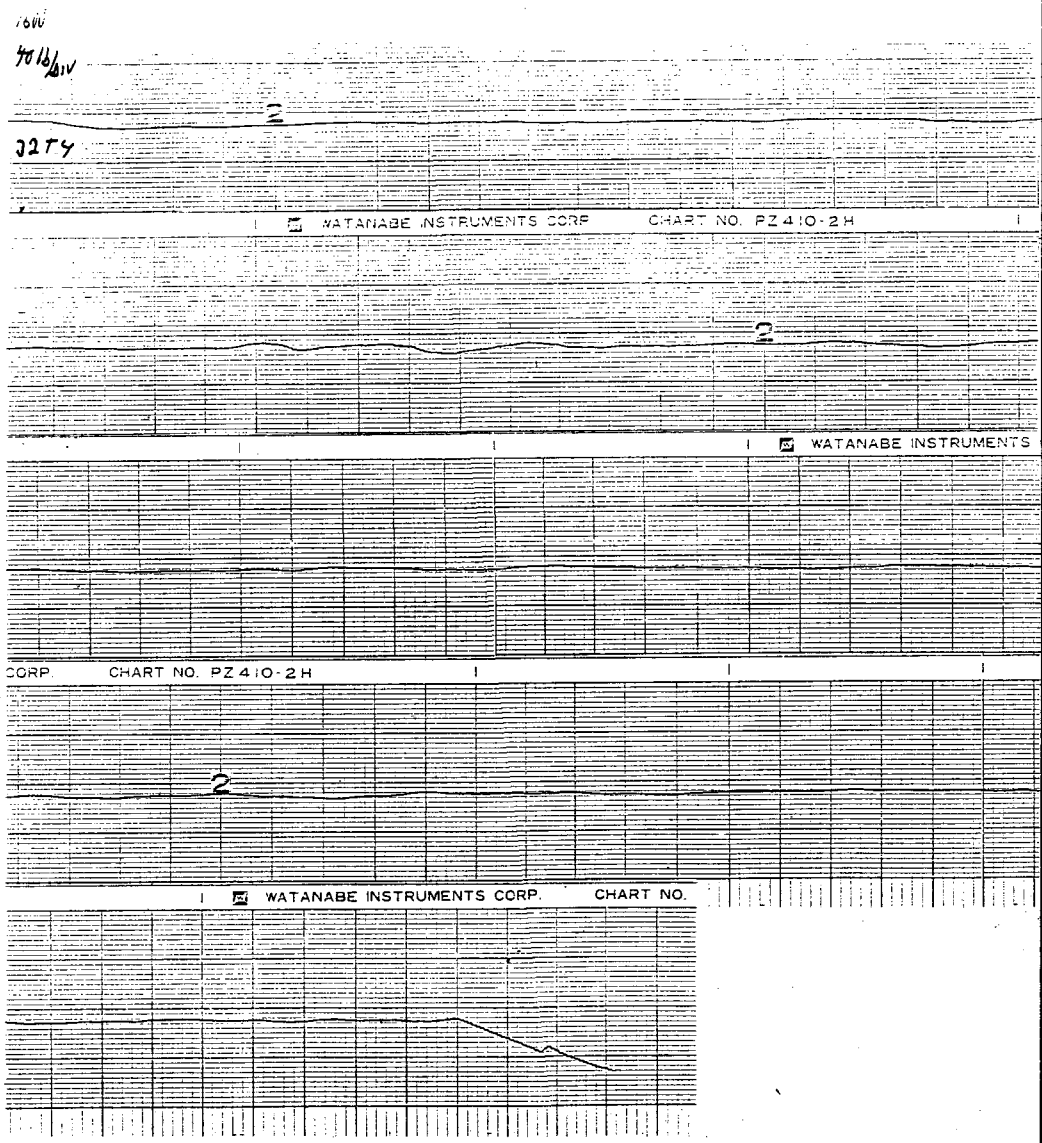
Tension (T) = 750 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1674 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1674 lbs/ft

Anomalies: * Failed at water line

Tested By/Date VEK 5-28-86 Tension; 5-29-86 Micrometer; JB 5/29/86 VEK Dielectric; VEK JB Resistance

Verified By/Date 5/29/86
Test Observers
QA Approval/Date 5/29/86

0148E-4



ATTACHMENT F
Revision 1
SIDEWALL BEARING PRESSURE CABLE TEST DATA

CLSB Control No. 32
Sample No. . . . . = 5003
Description No 12 7/6

Standards Used: 506225, 543175, 522035, 543211, 902038, 543202, 502445, 212506

Conduit Size in Test. . . . = 1"
No. Cables in Pull. . . . . = 1

Virgin ___
Tensioned ✓

1-Conductor ___
Multi-Conductor ✓

	Test No. 32T5	Conductor Insulation O.D. in. Max	Min	Copper O.D. in. Max	Min	Dielectric Breakdown AC KV	500V Megger Test Results	Continuity
1.	BLA	.1714	.1704	.0912	.0911	32.0	>10,000MΩ	Test OK
2.	RED	.1694	.1677	.0914	.0908	43.8		
3.	ORG	.1715	.1665	.0923	.0913	29.4		
4.	GRN	.1699	.1647	.0914	.0912	38.9		
5.	BLU	.1652	.1613	.0907	.0903	33.0		
6.	WHT	.1712	.1650	.0920	.0908	39.8		
7.	WHT/BLK	.1678	.1695	.0917	.0917	23.1		
8.								
9.								
10.								
11.								
12.								

Multi-Conductor Jacket O.D. = .6360 Max .6276 Min

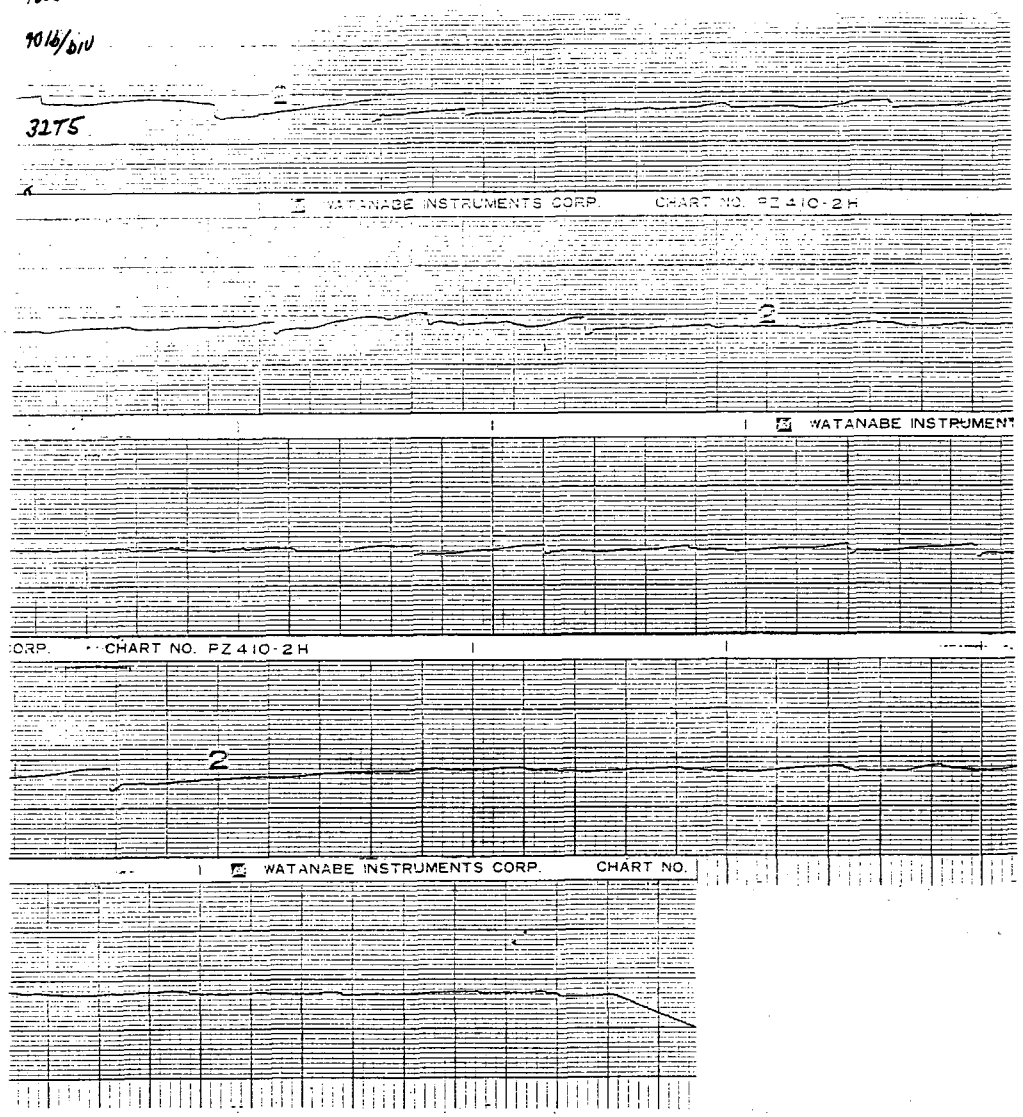
SWBP Data

Tension (T) = 820 lbs (Max.)
Radius (R) = 0.4479 ft
T/R = 1831 lbs/ft
Correction Factor (X) = 1.0
SWBP = X(T/R) = 1831 ~~lbs~~ lbs/ft

Anomalies:

Tested By/Date VCK 5-28-86 (Tension) — 5-29-86 (Micrometer) — JB 5/29/86 VCK (Dielectric) — VCK JB 5/29/86 (Resistance)

Verified By/Date HE 5/29/86
Test Observers PA

QA Approval/Date JBR 5/29/86

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