MODEL STUDY OF A STEEL TOWER FOR AN EXTRA HIGH VOLTAGE SINGLE CIRCUIT TRANSMISSION LINE LOAD TESTS AND STRAIN MEASUREMENTS ANALYSIS OF STRESS DISTRIBUTION

A Thesis

Presented to

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In Partial Fulfillment

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by:

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SYNOPSIS

A 30 ft.high structural steel model transmission tower was built and a laboratory investigation was carried out to determine the actual distribution of stresses in the loaded structure.

The electrical resistance type strain gages developed to a high accuracy in the last decade, and the availability of a multichannel Digital Strain Indicator offered an excellent means of measuring strains.

The problems encountered included measurement of axial loads in angle sections, the establishment of procedures for near simultaneous measurement of strain in approximately 200 strain gages and accounting for unbalances in the mathematical analysis due to flexure and torsion in the structural members.

Work on the project commenced in March 1964. A tight time schedule and limited funds necessitated that the tasks of providing detail drawings for the structure, constructing the test site, equipping and erecting the tower be carried out by the authors.

The load tests, the evaluation of the test data, and the final stress analysis culminated in a stress distribution in the whole structure, which it is anticipated will influence favourably the future design of extra high voltage transmission line towers. TO OUR WIVES

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CHAPTER I

INTRODUCTION

Distant Power Developments

Advancements in electrical science have made it practicable to transmit large blocks of power over long distances. In addition to this, the vigorous growth of power demand has resulted in the development of most of the water power resources close to load centers.

Fortunately, in Canada, the available power resources are far from being exhausted although it has been necessary to develop water power resources in relatively remote areas and to transmit the power to the load centers by means of overhead transmission lines.

The apparent inability of nuclear and thermal generating systems to produce power at a cheaper rate than hydro systems will result in the construction of major water power plants in even more remote areas before the cost equilibrium is attained.

The development of the techniques of extra high voltage (EHV)power transmission was extremely helpful for the utilization of distant power resources since, by doubling or tripling the voltage³, according to well known laws of physics (Power= $\frac{y^2}{R}$), a fourfold or ninefold amount of power can be transmitted without any increase of the cross sectional area of the conductor cable. EHV transmission enabled Electrical Utilities to build interprovincial connections of their power systems to take advantage of the time lag in the peak power demand. Also, these interconnections strengthen the reliability of the power supply having standby power available in case of power outages caused by lightning or equipment breakdown. For these reasons the cost of constructing extra high voltage overhead transmission lines is a matter of great concern to the electrical industry.¹⁰ On most of the important transmission lines steel towers are used and this has inspired an attempt at refinement of tower design by means of a model study.

Model Analysis

The model analysis of structures is for the modern engineer important to carry out research and development, and verify mathematical methods used to design the prototype.

For transmission line towers, a precise mathematical analysis of the structure is impractical because of too many variables and unknown factors. The transmission line tower, however, repeated as a structure many hundreds of times, is of such importance that a verification of the approximated mathematical solution is a prerequisite to eliminate any possibilities of failure.

Compared with other engineered structures such as roof trusses or bridge trusses a transmission line supporting structure is relatively flexible, and thus undergoes the largest deviation from its original shape and geometrical arrangement under applied load. Additionally, the nature of tower loading imposes large eccentric loads upon the structure causing a great variety of stress phenomena in the 100 to 150 members of the tower.

It was furthermore considered and recognized that load tests on isolated members have been conducted abundantly in the past and that the variety of analyses has reached a point of saturation from which little additional knowledge can be gleaned. It was therefore decided to conduct load tests on a model of the <u>entire</u> structure rather than

to subject only single members, removed from the structure, to isolated load tests.

Design Problems

The governing factors in the design of power line supporting structures, as in most designs, are stress analysis and member selection. Existing methods of design contain inherent discrepancies and uncertainties concerning these basic assumptions.

The major problems with regard to stress distribution are longitudinal and torsional loading and their effect on the structure.Conventional design assumptions are inconsistent in the distribution of torsional stress in the tower body. For example, is the shear at the support point shared equally by the two longitudinal faces of the support arms and is the waist diaphragm effective in distributing torsional shears equally to all four faces below waist level?

The major problem with respect to member selection is the proportioning of members carrying a given compressive load. For example, at least thirteen allowable ultimate compression formulae are used by leading designers, and there is precious little research data available to guide the designer with regard to end fixity and its influence on the slenderness ratio.

Economy

The final incentive to conducting these tests is the anticipation that, as a result of a more refined method of tower analysis and design¹, towers can in the future be designed as economically as possible given a fixed set of loading conditions.

It should be borne in mind that a small reduction in weight will be magnified manifold due to the large number of towers used in transmitting power from a remote power development to a load center. A reduction in weight will reduce initial, handling and erection costs of the towers.

CHAPTER II

PRELIMINARY LABORATORY TESTS

Purpose

The preliminary tests on structural angles were conducted primarily to establish a workable orientation of strain gages on angle sections for determining axial loads. The ideal gage orientation should permit calculation of axial loads within an acceptable accuracy, and should employ a minimum number of gages.

Test Pieces

From preliminary design of the model tower the approximate size of angle sections required were known, and the following typical sections were selected for the preliminary test purposes:

$$1 \times 1 \times {}^{3}16$$

 $2 \times 2 \times {}^{1}8$
 $2_{2}^{1} \times {}^{2}16$

The above angles were cut to length and drilled with $13/32^{\circ}$ $\not 0$ holes on gage lines and hole to hole distances shown in Figure 2A.The steel material conformed to ASTM specification A 36 for medium structural steel.

Load Application

The above mentioned angle sections were subjected to both compression and tension tests. For the compression tests two stub ends, shown in Figure 2 A, were used to make the single or multiple 3/8" β bolt connections.For the tension tests a 2 x $\frac{1}{4}"$ flat bar was connected with 3/8" β high tensile bolts to the test pieces.

The loads were applied by means of a 30,000 lb. mechanical Universal Testing Machine. This machine with its slow and constant speed



FIGURE 2A

of load application was particularly suited for these tests.

The magnitudes of applied loads were limited by the members' capacity and were applied in increments to give sufficient information regarding stress distribution at the different levels of load. Plate II A shows the test set up and the testing machine used.

Strain Measurements

To obtain strain measurements type SR - 4 wire strain gages (manufactured by the Baldwin - Lima - Hamilton Corporation) of the $\frac{1}{4}$ " size (A7) were selected because it was anticipated that their simple and reliable application and their durability in rough outdoor handling would render them suitable on the model tower members.

Based on theoretical studies the strain gages were located at the toes and at the heel of every angle section, as shown in Figure 2B and 2C. It will be noted that a minimum of three gages were placed on each cross section for reasons outlined below. The strain gages were attached to the test pieces in the method prescribed by the gage manufacturer. Strain readings were taken and recorded at every increment of load applied to the test pieces. A multichannel Digital Strain Indicator manufactured by the Budd Instrument Division was available for reading and recording of strains in microinches per inch.

Tabulation and Evaluation of Results

The strain readings, as recorded by the instrument, were tabulated on Tables IIA to IIE. Many more readings, than those shown on Tables IIA to IIE, were taken during the preliminary tests. However, to reduce the bulk of data, only typical readings are included.

Since the point of load application does not necessarily coin-



30,000 POUND MECHANICAL UNIVERSAL TESTING MACHINE



TEST SET UP FOR PRELIMINARY TESTING

PLATE II A







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TABLE II R

cide with the center of gravity of the angle, the eccentric loading on the angle sections causes moments about the principal axes (w-w and z-z) which, when combined with the $\frac{\text{Load}}{\text{Area}}$ value, results in varying stresses across the angle section. The general equation for combined stresses can be written as follows:

$$F = \frac{\text{Load}}{\text{Area}} \stackrel{+}{=} \frac{M_{WW}(c^{\dagger})}{I_{WW}} \stackrel{\pm}{=} \frac{M_{ZZ}(c^{\dagger \dagger})}{I_{ZZ}} \qquad ---(1)$$

where: F = combined stress at a point

 M_{WW} , M_{ZZ} = moments about the respective axis I_{WW} , I_{ZZ} = moments of inertia about the respective axis

c',c'' = distances from the respective axes to the point Hence, it becomes apparent that knowing the stresses at three points on a given cross section of an angle, it is possible to set up three simultaneous equations by relating the position of strain gages to the w-w and z-z axes as follows:



where:
$$A = Load$$
; $C = \frac{M_{WW}}{I}$; $B = \frac{M_{ZZ}}{I_{ZZ}}$

Solving for 'A' results in the stress component corresponding to the Load value of the section. For each particular angle section the aparea propriate geometrical dimensions were inserted into equation (2), (3) and (4), and the three simultaneous equations were solved resulting in an equation for the Load value which is dependent on the stress $\frac{1}{\text{Area}}$ measured at three known locations on the angle cross section, namely F₁, F₂ and F₃.

The geometrical dimensions and the calculated resulting equations are shown in the Figures 2 B and 2 C. The significance of each equation is that it provides a means of calculating the <u>axial stress</u> in angle cross sections knowing the stresses at three points on the cross section.

The stress coefficients for the final equations, shown on Table II F, were computed by multiplying the equations in Figures 2 B and 2 C by the area of the respective angle section to facilitate the calculation of <u>axial loads</u>.

The final equations then were used to compute the axial loads which were properly tabulated on the Tables II A to II E. A comparison of the computed loads with the applied loads indicated satisfactory results. Experimental differences ranged between 1.0 and 10.0%, with an average of 4.6% of the applied load.

It was observed that, without exception, the computed axial loads for the tension tests were lower than the applied loads, whereas the computed axial compressive loads were higher than the applied.

PRELIMINARY TESTING

(363 ²³² 232)		
Angle Section	Area in ²	
lxlx ³ 16"	0.34	$\frac{\text{Load}}{\text{Area}} = 0.330 \text{ F}_{0} + 0.277 \text{ F}_{1} + 0.394 \text{ I}_{3}$
		Load = 0.112 $F_0 + 0.094 F_1 + 0.134 F_3$
2x2x ¹ 8"	0.48	$\frac{\text{Load}}{\text{Area}} = 0.239 \text{ F}_4 + 0.426 \text{ F}_5 + 0.335 \text{ F}_6$
	ta ang kang sang sang sang sa	Load = 0.115 $F_4 + 0.204 F_5 + 0.161 F_6$
2 ¹ / ₂ x2 ¹ / ₂ x ³ 16"	0 . 90	$\frac{\text{Load}}{\text{Area}} = 0.306 \text{ F}_{0} + 0.428 \text{ F}_{2} + 0.265 \text{ F}_{4}$
		Load = 0.276 $F_0 + 0.385 F_2 + 0.239 F_4$

EQUATIONS FOR AXIAL LOAD COMPUTATION

TABLE II F

Strain Readings on Zinc Coated Members

Parallel to the tests of the five ungalvanized test pieces one load test was conducted on a galvanized $l\frac{1}{2} \ge l\frac{1}{2} \ge 316"$ angle to confirm that the smooth zinc coated surface transfers the strains accurately. The computed loads again compared satisfactorily with the applied loads proving that the zinc coating does not impair the transfer of strain between the surface of the metal and the strain gage.

<u>Conclusion</u>

As a result of the close comparison between the axial computed load and the axial applied load in the preliminary tests, it was concluded that, by measuring the strain at three points on the cross section of an angle, the axial load can be computed with a sufficient degree of accuracy, regardless of the point of load application. It was also decided that for simplicity and uniformity the strain gages would be orientated generally as it was done in the preliminary tests.

Realizing that the location of gages has a severe influence on the calculation of axial loads, particularly for small angle sections, it was decided to put emphasis on the placing of gages accurately. It was further realized that a desirable simplification of calculations can be achieved by standardizing the location of strain gages for particular angle sections.

CHAPTER III

Selection of Tower Type

Single Circuit Towers

For hydro power developments at great distances from load centers it is generally most common to employ single circuit type transmission towers to support the power lines. This type of tower with its horizontal configuration of conductors has several advantages over the double circuit type of tower where the conductors must be arranged in a vertically staggered configuration.

The single circuit type tower allows the use of bundled conductors. Due to its lower height the occurring maximum base moments, resulting from wind loads and conductor tension, remain within limits which can be satisfied by the use of economical steel sections.

For larger power developments two single circuit arrangements have a superior reliability compared to a double circuit. In case of line maintenance one of the two single circuits can be easily de-energized and serviced during off-peak hours, whereas on the double circuit tower only half of the conductors can be de-energized. This necessitates a greater measure of precaution during the repair work.

With the growing importance of the large bundled conductor power lines as permanent carriers of energy, the Utilities try to avoid any shut down of the line for maintenance purposes. Moreover, a trend has developed towards the "hot line servicing" which can be well carried out on a single circuit tower but is hazardous if done on a double circuit tower with energized conductors above, below and beside the working lineman. These reasons were the main influencing factors in selecting a single circuit type tower for this study.

Model Size and Similitude to the Full Size Tower

The main requirement of the planned model structure was that it behaves under applied loads in complete similarity to a full size tower. To achieve this objective, it was necessary to maintain an approximate similitude in slenderness ratio and unit stresses of the members, outline proportions, member shapes and material.

To establish the final shape of the model tower, several drawings from many highly competitive bids on the supply of transmission line towers were made available by a large Electric Utility and were used to select an optimum design.

Having established the tower outline it remained to establish a scale factor and hence the actual outline dimensions of the tower. This was based primarily on practicability and the ability to maintain a close degree of similitude with the large tower selected. Major factors were the availability of small structural angle shapes, and tower bolts (ASTM A-394) of sufficiently small sizes to permit a common bolt size for all connections.

After a number of trials, it was decided to use a scale factor of $\frac{1}{2}$, except as discussed below, which permitted the use of $78x^{7}8x^{1}8^{"}$ angle shapes as a minimum size combined with $3/8^{"}$ diameter bolts.

The height of the model was determined by the site. Initially it was intended that an existing wall anchor be utilized for anchoring a sheave in the longitudinal loading system. The wall anchor was located at approximately 30 feet above ground thus limiting the tower height to this dimension if undesired load components acting in other than "normal to girder axis" direction were to be minimized. Due to this limitation and the fact that the one-half scale factor applied to the prototype produced a 44 foot high tower, it was necessary to reduce this dimension. This was accomplished by in effect "cutting off" a 14 foot section from the bottom of the tower body. It should be noted that this did not disturb the similitude between prototype and model since the slope of the legs was maintained constant,
CHAPTER IV

DESIGN CRITERIA

Load Conditions

The forces to be considered in transmission line design are those due to wind pressure on the structure and conductors, and to the weight of structure, the conductors, and ice in the form of sleet adhering to the conductors.

Usually sleet storms and not wind pressure alone produce the greatest loading to which transmission line structures will be subjected and the effect of both must be considered. Wind and ice loads must be evaluated for the particular area where the line is to be installed.

The National Electric Light Association of America, near the turn of the century, established a specification of loading for transmission lines which has been almost universally accepted. These loading specifications are as follows:

- Class A ---- (For use in ice free latitudes) 15 lb/sq.ft. on the projected area of bare cables and 25.2 lb/ sq.ft. on flat surfaces.
- Class B ---- (In general use in Canada) 8 lb/sq.ft. on projected area of cables encased in a ½" thick annular ring of ice, and 13 lb/sq.ft. on flat surfaces.
- Class C ---- (Used very rarely in Canada) ll lb/sq.ft. of projected area on cables encased in a ${}^{3}_{4^{11}}$ annular ring of ice and $18\frac{1}{2}$ lb/sq.ft. on flat surfaces.

The actual wind velocities corresponding to these standard loadings are

Class A ---- 77.6 M.P.H.

Class B ---- 56.7 M.P.H.

Class C ---- 66.5 M.P.H.

The selected full size tower was designed to meet Class B loading condition and, being a standard suspension type tower, had to meet the longitudinal loading condition where any <u>one</u> of the conductors is assumed to be broken.

The magnitude of the model tower loading was chosen in direct proportion to the loading of the full size tower in ratio $\frac{1}{2.6}$ to maintain the similitude of unit stresses in the tower members. (See Figure 4 A for load combinations on the model structure).

<u>Clearance Requirements</u>

Under average specifications which vary with the given voltage, the phase conductor at its point of maximum sag, must clear the ground by 20 to 35 feet. This requirement fixes the height of the conductor support for any given sag and span.

The clearance of the conductor from the structural steel of the tower is based on the sparkover distance which increases with the voltage and the sideswing of the conductor suspended from the string of porcelain insulators. This requirement determines the shape of the structure in the vicinity of the conductor support point.

The spacing of the phase conductors between each other varies with the span, being dependent of the amount of sideswing of the conductors at midspan under critical conditions. The position of the overhead ground wire is determined by the degree of protection required for the phase conductor against lightning.



CHAPTER V

DESIGN

Stress Diagrams and Stress Scales

Based on the tower outlines and load types described earlier, a series of unit stress diagrams were constructed (see Figures 5 A to 5 E) making it possible to determine the stresses in any or all of the tower members, except for redundants, for any or all loads by applying the proper stress scale to the respective diagrams.

Figures 4 A and Table V A show the magnitudes and combinations of loading conditions that were considered in the design of the model tower. As mentioned in the foregoing chapters, these loads were arrived at by proportioning the loads used in the design of the full size tower so as to produce unit stresses in the model of similar magnitude to those existing in the full scale tower and, at the same time, permit the use of members with similar slenderness ratio.

It follows then, that in order to maintain full similitude between the model and the "considered best" full size tower, any assumption made regarding stress distribution must be faithfully followed in the design of the model as well.

The assumptions which were made in the design of the full size t_{OW} er and which were utilized in the construction of stress diagrams and the calculation of stress scales are as follows:

(a) Longitudinal Load Applied at the Ground Wire Peak.

For this condition of loading, it is normally assumed that all of the load is transferred to the waist by the outside longitudinal face of the support arms on the loaded side of the tower. At the waist it is assumed that the diaphragm redistributes the longitudinal load equally to the two longitudinal tower faces. (See stress diagram 5).





STRESS DIAGRAMS



FIGURE 5 C

STRESS DIAGRAMS



STRESS DIAGRAMS



TABLE V A

SUMMARY OF DESIGN LOADS FOR THE MODEL STRUCTURE

		Full Size <u>Tower</u>	Model <u>Tower</u>
(a)	Vertical Loads		
	 (i) at ground conductor, dead load of conductors and hardware ice load on ground conductor, arbitrary load 	, 395# 755# <u>150#</u> 1300#	<u> </u>
	<pre>(ii) at phase conductor, dead load of conductors and hardware ice load on phase conductor, arbitrary load</pre>	1460# 1250# <u>150#</u> 2860#	<u>1150/</u> *
(b)	Horizontal Loads Parallel to Crossarm Axi	5	
	(i) at ground conductor wind on iced conductor 2 ⁰ line deflection	1130# <u>205#</u> 1335#	514#
	Wind on model structure,concentrated at ground wire point (30 plf)	ikas key	<u> </u>
	(ii) at phase conductor wind on iced conductor 2° line deflection	1790# 360 <u>/</u> 2150#	aa muu 827#
	Wind on model structure, concentrated at phase conductor suspension point (30 plf)	fica bos e	<u>123#</u> _ <u>950#</u>
(c)	Horizontal Loads Normal to the Axis of Cro	Dssarm	
	(i) at ground conductor the maximum line tension of 6400# was considered	6400#	<u>2400#</u>
	(ii) at phase conductor the maximum tension for a bundle of two conductors is 110 Tension due to a failure of a single ductor was used	on 000#. con- 5500/#	2100#

TABLE V A (CONTINUED)

SUMMARY OF DESIGN LOADS FOR THE MODEL STRUCTURE

Full Size	Model
Tower	Tower

(d) Wind Loads on Model Structure

Wind per lin.ft. of model structure between base and waist 35 plf between waist and crossarm 30 plf

results in a concentrated wind load

68-0	above tow	er base			210#
12:-0	above tow	er base			160#
15"-0	above tow	er base,	at waist	level	235#

The twisting effect of the eccentric line pull is calculated by employing a moment arm measured from the tower center line to the ground wire peak, and is assumed to be resisted equally by all four faces of the tower body. (See stress diagram 3).

(b) Longitudinal Load Applied at one Outside Conductor Support Point.

For this load case, it is conventionally assumed that the longitudinal shear is carried down to the waist level by way of the two outside longitudinal faces of the support arms, and that the torque, calculated similar to (a) above is transmitted to the support point by the outside face of the upper support arm and is transmitted from the support point to the waist equally by the outside and the inside faces of the lower support arms. (See stress diagrams 6 and 7).

Assumptions made regarding stress transmission down from the waist are similar to those made for the longitudinal loading at the ground wire peak. (See stress diagrams 3).

(c) General Presumption.

A general basic presumption made in the entire stress analysis which permitted the construction of stress diagrams is that all tower members are pin connected. This basic assumption also makes possible the static solution of the tower for transverse and vertical loads. (See diagrams 1 and 2 for transverse loading, and diagrams 7 and 9 for vertical loading).

(d) Wind on Tower Structure.

Included on Figure 5 C are a number of stress diagrams for wind on the tower structure. These were constructed on the basis of having concentrated the uniform load at a number of panel points over the height of the tower, thereby obtaining the approximate distribution of

stresses due to wind on the structure. (See stress diagrams 4 and 4a).

All stress scales shown on Figures 5B to 5 E for the respective unit stress diagrams are calculated simply by dividing the design load by the diagram base dimension and by the number of faces assumed to be effective in the resistance of the applied load. The actual member stress for a given load may then be assessed by multiplying the scaled length on the unit stress diagram for the member in question by the appropriate stress scale.

Compression Formulae

For long compression members buckling (failure by bending) is a primary consideration. In buildings and heavy construction, the main forms of buckling considered in design are column buckling (which governs the allowable stress $\frac{P}{A}$ by virtue of the slenderness ratio \underline{L}) and lateral buckling of the compression flange of laterally unsupported beams (which governs flexural stress according to the AISC specification parameter Ld/bt). This is due to the fact that most of the members in building and heavy construction have a sufficiently small Thickness/Width, called \underline{b} , ratio so that they will not buckle at stresses below the yield point of the material.

For a large majority of members used in tower design, however, the <u>b</u> value is sufficiently large to cause local buckling at stresses t below the yield point.

When an equal leg thin angle reaches the buckling stress, for example, both of the equal legs buckle in the same direction thus causing a twisting distortion and a sudden, early collapse. Con-

sequently, for a safe design of such angles, it is necessary that the design stress does not exceed the critical buckling stress (f_{cr}) divided by the factor of safety since little or no reserve capacity is available beyond the f_{cr} stress.

The appended curves for allowable compression stresses were employed in the design of the model tower (See Figure 5 F). These curves were constructed on the basis of a modified "Johnson Parabolic Formula" as follows:

$$f_{c} = \frac{f_{y} Q}{n (1+a)} - \begin{bmatrix} f_{y}^{2} Q^{2} \\ \frac{f_{y} Q^{2}}{2} \\ \frac{f_{y} Q^{2}}{4n (1+a)\pi^{2}E} \\ \frac{f_{y} Q^{2}}{r} \end{bmatrix} ----(5)$$

where $f_c =$ allowable axial stress ($\frac{P}{A}$ allowable)

 $f_v = yield stress$

Q = a reduction factor dependent on the $\frac{b}{t}$ ratio or member t shape

n = factor of safety

KL = effective column length

a = an allowance for eccentricity

For the design curves in Figure 5 F a factor of safety 'n' of 1.375 was used, 'a' was set equal to 0.25 and $E = 29 \times 10^6$. These values inserted into equation (5) result in the following:

$$f_{c} = \frac{f_{y} Q}{1.72} - \begin{bmatrix} f_{y} Q & KL \\ ---- & (6) \end{bmatrix}^{2} ---- (6)$$

At this point, it must be emphasized that for large values of <u>L</u> the above equation does not apply since the slenderness ratio has r a larger effect on the allowable stress than the local buckling con-



siderations do.

Hence the lower portion of the curve (i.e. for large \underline{L} values) was constructed using the well known Euler Formula, modified slightly, to be consistent with equation (6) above:

$$f_{c} = \frac{TT E}{n (1-a) (\frac{KL}{r})^{2}}$$
(7)

Inserting again values for n = 1.375, a = 0.25 and $E = 26 \times 10^6$ the modified Euler Formula yields:

$$f_{c} = \frac{166\ 700\ 000}{(\frac{KL}{2})^{2}}$$
(8)

The point at which the equation (6) leaves off and the Euler Formula governs occurs when the values for f_c in equations (6) and (8) are equal.

Therefore $\frac{KL}{r}$ = $\frac{23900}{\sqrt{f_y Q}}$ (9)

For angle sections, in particular, the distribution of stress at ultimate load (P_{ult}) is assumed to be as in the following sketch:



where: f_{cr} = critical buckling stress

fav.ult. 😁 average ultimate stress

Therefore:

^Pult =
$$2b_e t f_y \div 2(b-b_e)$$

$$f_{av.ult.} = \frac{b_e}{b} f_y + (1 - be_a) f_{cr}$$

$$b \qquad (b)$$

and Q =
$$\frac{f_{av.ult}}{f_y} = \frac{b_e}{b} + (1 - \frac{b_e}{b}) \frac{f_{cr}}{f_y}$$

= $\frac{b_e/t}{b/t} + \left[1 - \frac{b_e/t}{b/t}\right] \frac{f_{cr}}{f_y}$ ---- (10)

t f_{cr}

Based on available test data (ref. Priest page 41, 1957 ed.), it has been found that $b_e/t = \frac{3820}{\sqrt{f_y}}$ where 'K' is a function of the

degree of edge support for a given shape. Usually 'K' is accepted being 0.425 for angle sections.

Thus
$$\frac{b_e}{t} \approx \frac{2490}{f_y}$$
 (11)

and for
$$0 < \frac{b}{t} \le \frac{2490}{\sqrt{f_y}}$$
 for for

Further tests conducted have indicated the following additional limits:

For
$$\frac{2490}{V_{f_y}} < \frac{b}{t} \leq \frac{3735}{V_{f_y}}$$
 $f_{cr} = 1.8 f_y - \frac{f_y 2}{3110} (\frac{b}{t})$
(12)

and for
$$\frac{b}{t} > \frac{3735}{V_{f_y}}$$
 $f_{cr} = \frac{8.360.000}{(b/t)^2}$ (13)

The allowable compression stress as given by the above formulae is stipulated in the specifications for the "Design and Supply of Transmission Line Towers" for Manitoba Hydro. The equations were originally derived and the curves constructed by A.W. Knight, P. Eng., Design Engineer, Manitoba Hydro.

Load Summaries and Member Selection

The member loads were computed by the method described earlier for the various loading assumptions and the members were selected to comply with these loads as tabulated on Tables V C to V F.

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CHAPTER VI

Detailing for Fabrication

After the design and dimensioning of the model tower members was completed the detail drawings, required for the fabrication of the structure, were drawn. The system outlines of the structure were used as the basic working lines and, at the same time, as gage lines for the bolt holes which is common practice in structural steel shop drafting. The gage line distances from the center line of hole to the back of the angle were chosen as recommended by the AISC manual for steel construction where practical. (See Appendix 'C' for detail drawings).

For secondary members, as subdiagonals and substruts, the design called for small $^{7}8x^{7}8x^{1}8^{"}$ angles. These angles were substituted by the $1x1x^{1}8"$ angles because the manufacturer could not supply the smaller angles on short notice. The same problem applied to the chord members of the cross girder where the $2x2x^{3}16"$ angles were substituted by $2\frac{1}{2}x$ $2\frac{1}{2}x^{3}16"$ angles.

As mentioned earlier it was desirable to employ only one size of bolts to simplify the fabrication, and the 3/8" \emptyset tower bolt (ASTM 394) was selected. The data for this size of tower bolt is listed in Table VI A. This table also shows the minimum distances from the center of bolt hole to the ends of members and from center of bolt hole to the rolled edge of the angle. It was initially intended to make the size of holes 13/32" \emptyset but, on the manufacturers request, a 1/16"bolt clearance was permitted and the bolt holes were made 7/16" \emptyset .

The fact that some pairs of diagonals on the lower portion of the tower were not detailed as "left and right" members did not influence the performance of the tower under load.

TABLE VI A

DATA ON 3/8" Ø TOWER BOLTS (ASTM 394)

Allowable unit stress, single shear	18 000	psi
Allowable bearing on bolts	48 000) psi
Gross area of shank	0,110) in ²
Capacity of bolt in single shear	1.98	k
Capacity of bolt in bearing:		
3' material thickness	2.25	k
316" material thickness	3.28	k
$\frac{1}{4}$ " material thickness	4.48	k
Bolt hole distances:		
Minimum edge distance (rolled edge)	716	in.
Minimum end distance (cut end)	5 ₈	in.
Minimum distance center to center of		
bolt hole	7 ₈	in.
Diameter of bolt holes	13 ₃₂	in.

CHAPTER VII

ELECTRICAL RESISTANCE STRAIN GAGES

Type of Strain Gages

The bonded wire resistance strain gage is an electrical device, developed simultaneously by Dr. A.C. Ruge working at the Massachusetts Institute of Technology and E.E. Simmons working at the California Institute of Technology in 1938, and it is used to measure the magnitude of strain due to stress. The gage, named the SR-4 gage, is manufactured in the United States by the Baldwin-Lima-Hamilton Corporation.

In using strain gages, two physical quantities must be considered; the change in gage resistance and the strain. The dimensionless relationship between these two variables is called the gage factor of the strain gage and is expressed mathematically as:

$$F = \frac{\bigtriangleup R/R}{\bigtriangleup L/L}$$

where	
-------	--

L = initial length of strain gage wire Δ L = change in length as gage is strained R = initial resistance of strain gage wire

 $\triangle R$ = change in resistance as gage is strained The gage factor thus is a measure of the amount of the resistance change for a given strain and thus is an index of the strain sensitivity of the gage.

The wire resistance must have the following characteristics; a constant ratio between resistance change and strain, a high resistance and a large change in resistance with strain, a high elastic

limit, be relatively insensitive to temperature in both its physical and electrical properties and have a very small diameter so that the cement in which it is enclosed will be considerably stronger than the wire.

SR - 4 type wire and foil gages are suitable for an extremely large variety of applications. Resulting from the many specialized and extreme conditions more than 275 different standard types have been developed and are available from the aforementioned manufacturer.

After due consideration of the conditions and the manufacturers literature (Baldwin-Lima-Hamilton⁶ Strain Gage Handbook Bulletin 4311 A) the SR - 4 Type A-7 electrical strain gage was selected as the one most suited for this project.

Basically this gage consists of a wire filament wound around a cylindrical paper core in the form of a close-wound helix which is then flattened and cemented between layers of paper for purposes of protection and insulation (sandwich construction).

	The	gages	used	were	produced	in	one	lot	and	all	hao	l the	fol	low-
ing	prope	erties	0]	Resistance	9:		119.	,5		•3	Ohms		
				(Gage Fact	or:		1.	,98		29	6		
					Lot No.:			В —	31	9	Tj	rpe:	A -	. 7

Application of Strain Gages

The preparation of tower members for the attachment of the strain gages was done without difficulties since the galvanized steel angles offered a smooth and clean surface. It was therefore sufficient to clean the surfaces with a 3" β rotating steel brush and to wipe them meticulously clean with a cotton swab soaked with acetor e. Based on experience from the preliminary tests, the location of gages was marked uniformly and very accurately at 3/16" distance from the heel and the toes of all angles except the $2\frac{1}{2}"$ wide angles where the distance was chosen to be $\frac{1}{4}"$.

It became obvious during the preparation of the angle sections for the preliminary tests that for a greater number of strain gages (i.e. 198 for the 30 ft. high tower) the method of application, as recommended by the gage manufacturer, had to be altered. Ways had to be found to avoid excessive consumption of time and material required to apply felt covers over the gages and clamping during the setting period of the bonding cement. These felt covers and clamps would also hinder inspection during the drying period of the cement.

It was observed that the edges of the paper backing of the SR -4 (A7) strain gages tend to curl up under the moistening action of the cement. At the same time, it is believed that cement is sucked in and away from the edges thus creating the undesirable condition for forming air bubbles between steel and paper backing of the gage.

Therefore it was decided to apply a more generous amount of cement to the underside of the strain gage. The strain gage was then placed on the member and the cement worked outwards from the center resulting in a small convexity of cement along the perimeter of the gage. A bluntly pointed pencil size instrument was found to be very satisfactory for performing this task.

The process of working out the cement and depressing the gage to the steel surface required about 40 - 60 seconds after which period the cement was sufficiently set to hold the gage to the steel. Any slight edge curling could now occur without impairing the bond of the gage since only cement, not air, could be sucked in from the

protective protrusion of cement at the edges.

Without further treatment the strain gages were ready for use after 24 hours drying time and from the total number of strain gages attached only two did not work properly and had to be replaced. It was found to be most important, when working with "Duco" cement that the cement be fresh and free of any bubbles.

The application of strain gages was done indoors at the prevalent room temperature of 75°F and at low relative humidity. Prior to moisture proofing the gages two tests were conducted to ascertain whether the gages would function properly.

First the gage resistance was checked and secondly the bonding of the gage to the member was tested. The latter was performed by connecting the gage in a Wheatstone Bridge circuit, balancing the bridge, bringing the dial to the zero point and then pressing lightly the strain gage with the eraser end of a lead pencil. If the dial did not return to zero after deflecting an imperfection such as an air bubble in the bonding cement was suspected.

Location of Strain Gages

For reasons of practicability, the locations of strain gages were chosen, as shown in Figure 7 A, at 6 different levels of the model tower structure. Each horizontal section carries the letter corresponding to the respective gage group.

The application of strain gages on all faces at the horizontal sections was considered to be the minimum requirement to determine the stress distribution in the model tower structure.

The detailed location of the strain gages at the various levels is shown on Figures 7 B to 7 H with gage to heel and toes of angle















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distances as mentioned earlier.

Wiring

Mechanical devices as shown on Plate VII A were fabricated from plastic material and affixed to the angle members by liquid aluminum so that external forces from the lead wires were not transmitted to the strain gage filaments. To minimize the lengths of lead wire supported by the strain gage terminals, the plastic pieces were located at 2" distance from the center line of gage.

For the wiring, a #24 A.W.G. = 0.0201 " \oint copper wire with polyethylene insulation was used. The copper cross section of the wire was 404 C.M. and the electrical resistance 25.7 Ohm per 1000 feet. The multitude of wires was bundled with plastic spiral wrap and the bundles were tightly secured to the steel members as shown on Plate VII A.

The bundles of wires contain: 24 double wires for the gage group A = -A = 2436 double wires for the gage group B = -B = 3640 double wires for the gage group C = -C = 4026 double wires for the gage group C = -C = 48D = 9 - D = 26

36 double wires for the gage group $E \perp - E$ 36 36 double wires for the gage group $F \perp - F$ 36

A plastic marker was attached to every pair of wires and stamped with number and group for easy identification.

Moisture Proofing

Since it was necessary that the structure be exposed to the weather some measure of protection for the strain gages and the uninsulated lead



BUNDLING LEAD WIRES WITH SPIRAL WRAP



SR-1: (A 7) STRAIN GAGES AND LEAD WIRE CLAMPS MOUNTED ON TOWER MEMBERS



wire ends against moisture was required.

Several moisture-proofing agents were applied to the strain gages on the preliminary test pieces, subjected to temperatures of -30° F for a period of 48 hours, subsequently submerged in water for a period of 24 hours and air dried for 6 hours followed by a gage response test and a steel to gage insulation test with a highly sensitive ohmmeter. The moisture-proofing agents were:

(a) Two-Component Epoxylite #222 manufactured by Epoxylite Corporation

(b) Wax moisture-proofing supplied by R.O.R. Associates, Toronto

(c) GW-1 moisture-proofing compound manufactured by Budd Instrument Div.

The GW-l moisture-proofing compound was finally chosen for the tower test project because of the simplicity of its application in any position and because of the possibility of protecting the uninsulated terminals of the strain gage and the soldered connections of the lead wires as well in one operation.

CHAPTER VIII

PREPARATION OF TEST FACILITIES

General

The location of the test site is shown on Figure 8 A. It was limited in its extent by the proximity of the transformer bank to the east, the wall of the Civil Laboratories to the south, the staff parking area to the west and the driveway which services the main delivery entrance for the Engineering building to the north.

Two desirable features of the test site were that it was protected on three sides by the Engineering building and that the test procedures did not interfere with University activities. Office space required for housing the Digital Strain Indicator and other office equipment was provided in the Engineering laboratories. The office location was most satisfactory due to its proximity to the test site permitting the lead wires to be kept to a minimum length. Also removable windows aided communication between the office and the test site.

Model Tower Foundation

The foundation for the model tower was designed on the basis of assumed soil strength characteristics and maximum test loads and, for the purpose of future testing, a drawing of the foundation is included (see Figure 8 B). Unfortunately, during construction, the south piles had to be terminated at 12'-6" below grade because of a concrete obstruction at that level.

Longitudinal Loading Arrangement

The longitudinal loading arrangement is shown in Figure 8 C. Permission was given by the University of Manitoba to install an

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NOTES:

1 - Minimum strength of concrete shall be 3000 psi at 28 days

2 - All concrete and reinforcing steel shall conform to CSAs specifications A-23 latest revision.



1.5

FIGURE 8 B



anchor consisting of a l_4^{\perp} diameter eye bolt complete with bearing plates and double nuts in the south wall of the Mechanical Engineering building approximately 30 ft. above ground level.

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sleeve bearings were attached to the anchor. The wall anchor was located such that the sheaves under load would swing into position at 28:-9" above the top of the tower foundation and $9:-7\frac{1}{2}$ " west of the centerline of the tower. This location minimizes the magnitude of

To make up the loads required and to aid in load application,

To complete the anchor assembly, two 9" diameter sheaves with undesired load components. (See Figure 8 D and Flate VIII A).

the following equipment was available: 75 pieces of standard laboratory cast steel test weights each 50# 5 pieces of standard laboratory cast steel test weights each 20# 10 pieces of standard laboratory cast steel test weights each 10# 480# 1 obsolete machine base, used as loading platform 105# l existing cage from steel angle sections 45# 1 existing cage of lighter construction 30// 1 existing cage made from 3/4" diameter pipes 3 planks 2" thick for placing weights for vertical loading 45# 180# 6 round concrete weights with an average of each l hydraulic jack, 20-ton capacity

l block and tackle, l_{2}^{1} ton capacity

1 gear type tackle, 3/4-ton capacity

Flate VIII A shows the arrangement of cables, blocks, loading cages and weights during testing.

Ground wire point						
	Conductor point_	Longitudinal Loading				
		Computation .	of components			
		1.375	Anchor point			
True Length of cable	301=0 NoTeSe		200 1 - 50 X			
V30.0 ² -1.375 ² -1.50	0 ² x 30 · 0 ⁵³ 64					
Transverse at G.W.point	Vertical at G.W.point	Transverse at Cond.point	Vertical at Cond.point			
log 1.375 = 0.13830 $log 2l_{155} = 3.39005$ 3.52835	log.l.500 = 0.17609 log 2455 = 3.39005 3.56614	log 1.375 = 0.13830 log 2255 = 3.35315 3.10 115	Iog 1.500 = 0.17 609 $Iog 2255 = 3.35 315$ $3.52 920$			
$\log 30 - 0^{53} 6h = 1.047 812$ 2.05 023	$\log 30 - 0^{53} \text{ ch} = 1.47 812$ 2.08 802	$\log 30 - 0^{53} = 1.17 812$ 2.01 333	$\log 30 - 0^{53} 6 = 1.47 812 2.05 112$			
112 03// 112 03//	$\sum_{i=1}^{2n+3} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{j=1}^{n} \sum_{j=1}^{n} \sum_{j=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{j=1}^{n} \sum$					
	SHEAVE LOCATION IN LONGIT	PUDINAL LOADING ARRANGEMENT				

FIGURE 8 D



Transverse Loading Arrangement

The transverse loading arrangement is shown in Figure 8 E. For transverse load application a 40 ft. pole, Class II, was erected to the west of and on the east-west centerline of the tower. The pole was set in an augered hole of 6 ft. depth and the backfill was well tamped during erection.

The pole was then anchored by a guy cable to the wall of the Civil Laboratory at ground level. Since the guy cable was not in line with the applied transverse load, it was necessary to resist the resulting load component with a strut to avoid deflection of the pole under load.

The pole was equipped with several eye bolts installed at heights corresponding to the points of transverse load application. Since there are five loading points for the transverse loads, evener pulleys were used to reduce the number of load lines so that one cage was used for loading either the ground wire or the conductor suspension points. In the case of the latter, an evener beam was further required to distribute the load in a ratio of 2:1 to the load lines.

A makeshift brace and eye bolt was attached to the pole for suspending the test load temporarily between tests to avoid excessive handling of weights. (See Plate VIII A).

Calibration of Dynamometer

Since it was not possible to read mechanical dynamometers on the tower during tests (due to undesirable stress influence on members and danger to the reader) and not feasible to use electrical load cells (due to existing large number of strain gages already installed), it was decided to apply dead loads and to accept some degree

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of friction loss the magnitude of which could be approximately determined by subsequent friction loss tests.

To determine the magnitude of losses of test load due to friction in the cable sheaves, a dynamometer (see calibration curve Figure 8 F) was placed between the conductor suspension point and the longitudinal loading cable.

As the test load was applied, control dynamometer readings were taken at the various load increments. The load cable was struck a sharp blow with a 4 ft. long $2^{"} \times 4^{"}$ timber prior to every reading in order to force the sheave to arrive at a near motionless and frictionless position.

The results of the calibration adjusted dynamometer readings versus the actually applied load are recorded on Table VIII A. The perusal of this table will demonstrate that friction losses vary between 12.8% and 1.1% of the applied load depending on the number of blows given to the load cable.

An average value of 8.2% was computed for a maximum of three blows applied to the cable. It was therefore decided to accept this degree of loss and to strike the cable three times prior to each stress measurement, since for a determination of stress <u>distribution</u>, a knowledge of the precise magnitude of the applied load is not a prerequisite.

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Load Applied	Dynamometer Reading on Tower	Dynamometer Reading corrected for	Friction Loss in Sheaves	Commonts Change in Friction Loss when Load Cable is struck with N number of blows		n Loss struck Dlows	
	pounds	pounds	pounds		No blows	3 blows	6 blows or more
1.005	875	920	· 85	Cable not struck	8.04%		
1.805	1675	1660	145	Cable not struck	8.0%		
2255	22.00	2070	215	Cable not struck	9.5%		
2255	21.75	00.62	255	3 Blows on Cable		6.9%	
2255	2220	2150	3.05	6 Blows on Cable			Le7%
2255	2300	2230	25	Contid Strilding			1.1%
1550	1700	1680	130	Cable not struck	8 . L.Y.		
1550	1.650	1620	70	3 Blows on Cable		4.05%	
1550	1650	1.620	70	6 Blows on Cable			4.5%
1055	1175	1190	235	Cable not struck	12*8%		
2055	1150	1.160	1.05	3 Blows on Cable	ne a statistical de seconda de la constatistica de seconda de la constatistica de la constatistica de la const	9 * 9%	and the state of the
				AVERAGE	9 elis	7.0%	3 .145
	CALCULATION OF FRICTION LOSSES						

TABLE VIII A

민역 E. 00 10 A 0 0 Ö T 8 +++ 0 19 00 ex M/CUNNNN 2000 257.50 2:200 3:000 3: 8 HEH

REUFFEL & ESSER CO

CHAPTER IX

TESTING

Instrumentation

A Digital Strain Indicator complete with the following accessory equipment was used to measure and to record the strains:

- (a) Two 20 channel Switch and Balance Units complete with Input Gage Adapters
- (b) Printer Control Unit
- (c) Data Printer

As shown in Plate IX A, the balance-indicator-recorder units have been mounted in a plywood cabinet by the University of Manitoba for portability and convenience of operation.

To cancel out any effect of temperature on the gage wire, the circuit shown in Figure 9 A was used. This circuit, commonly used in strain gage work, employs two gages as adjacent arms of the bridge, one being an 'active' gage mounted on a member being stressed and the other a 'dummy' gage mounted on an unstressed member of the same material. The latter dummy gage was freely suspended from the tower crossarm at approximately elevation + 26 ft.

The stressed gage as well as the dummy gage are exposed to the same change in temperature during the course of strain measurement resulting in a cancelling effect of resistance changes in the filament due to temperature.

Overcoming Initial Difficulties

Prior to commencement of the actual load tests, all the 198 electrical circuits from strain gages on the erected tower to the measuring instrument were checked for continuity.



DIGITAL STRAIN INDICATOR



DATA PRINTER AND INPUT GAGE ADAPTER

PLATE IX A



ELECTRICAL CIRCUIT FOR MEASURING STRAINS IN TOWER MEMBERS ; HALF BRIDGE POSITION

FIGURE 9 A

The first group of 36 double wires (Gages F 1 - F 36) were then connected to the input gage adapters and an attempt was made to tune in the channels at the switch and balance unit for the zero reading after a warming up period of 45 minutes. Subsequently to tuning all 36 channels to an approximate zero, the strains were recorded by manual operation of the data printer. Consecutive readings were taken after 10, 20 and 30 minutes without resetting the channels to zero reference.

It was found that the zero reading did not remain at its original position but showed a steady increase to the positive side (25-30 microinches within 30 minutes). The increase did not follow a regular pattern across the 36 gages in question.

It was suspected that these abnormal differences in the zero reading were caused by temperature changes in any or all of:

- (a) the outside temperature
- (b) the room temperature
- (c) the instrument temperature

Therefore, thermometers were positioned on the cutside of the window, in the room and on the metal front panel of the Digital Strain Indicator. The bulb of the latter thermometer was insulated against the influence of the room temperature by a protective ball of cotton open only toward the metal casing of the instrument.

An 8 inch diameter fan was placed behind the Digital Strain Indicator at a distance of 2 inches from the back of the plywood cabinet (back cover removed). The temperature of the instrument, from now on, could be held at a desired level by blowing a larger or lesser volume of air into the instrument. The room temperature was regulated by opening the window as required. 76

For further control, it was decided to take strain readings during those time periods of the day when the outside temperature changes were at a minimum i.e. not more than 1°F per hour up or down. The location of the tower was such that it was exposed to direct sunshine for a short period before sunset and to reflected sunlight in the afternoon making it necessary to discontinue testing during these periods because of the difficulty in holding the zero reference.

It is believed that change in resistance of the lead wires due to warming by the sunlight accounted for this difficulty. The lead wires all had different lengths of exposure due to their random location in the wire bundles.

To illustrate the high sensitivity of the instrument to temperature changes of the lead wires, it was observed that by gripping the dummy gage wire in the hand for a length of about 4 inches, the strain reading decreased by 20 - 30 microinches. Generally, it was noted that:

- (a) as instrument temperature increased, readings indicated temsile strain,
- (b) as the dummy gage lead wire temperature increased, readings indicated compressive strain,
- (c) as room temperature increased, readings indicated tensile strain.

The flow of current through the strain gages, for a prolonged period of time (up to 5 minutes), did not influence the readings, moreover the dial was noted to attain its final position in $l\frac{1}{2} - 2$ seconds after the corresponding channel was switched in.

Many thousands of readings were recorded by operating the manual button of the instrument since the automatic recording system did not 77

prove reliable. Although a high servo gain was set, an automatic recording corresponding to the dial readings could not be achieved. The reason for this malfunction can be attributed to the high recording speed with intervals so short that the dial had insufficient time to arrive at its proper balance position.

Another fault which occurred frequently was that the readings 008 and 009 were printed out 018 and 019, sometimes even 118 and 119. This behaviour of the Data Printer necessitated constant visual check during the test readings.

Log Book Entries

A log book was established to record immediately all the various test loadings, strain gage groups, dates, exact time of the various readings, temperatures (outside, room, instrument), coarse and fine setting of the balance switches, and other pertinent data.

The entries made in the log book were repeated on the strain recording tapes for easy identification and a check on recorded data. <u>Sequence of Test Load Application</u>

When the load tests were conducted, the channels of the Digital Strain Indicator were generally tuned to their zero position prior to the test load application. However, when consecutive readings for the same loading but for various gage groups were taken, the tuning of gage channels was also done with the test load in position. After completion of the zero tuning, the test load was taken off and final strain readings were recorded, bearing in mind that the indication of strain is deduced from the difference between the initial tuning and the final reading alone. To compensate for the reverse movement of the strain indicating dial, all readings obtained by the latter procedure were multiplied by -1. The saving of testing time and loading work achieved by this method was essential.

CHAPTER X

ANALYSIS OF TESTS

Averaging Recorded Data

The evaluation of strain readings from the values recorded by the Data Printer recording tape was carried out by the following uniform procedure.

For the sets of 'zero' reference readings the arithmetic mean was computed for every gage when only two or three sets of readings had been recorded. In cases, however, where four or more sets had been recorded an average of only the last two sets was considered to represent the initial 'zero' value. These mean values were tabulated on the 'Strain Readings and Member Loads' data sheet in microinches per inch (See Appendix A).

For the sets of 'load' readings the arithmetic mean of all sets of readings was computed for each particular gage and these means were similarly entered into the 'Strain Readings and Member Loads' data sheets (See Appendix A).

Importance of Zero Control Readings

As outlined earlier the initial zero reading underwent continuous changes caused by variation in temperature. It was therefore of utmost importance to take intermediate zero readings during load tests of longer duration. These control readings made it possible to introduce a "time correction" which was applied to every calculated member load prior to further evaluation. The time corrections as used are recorded in Appendix B. For obvious reasons these adjustments carry the opposite sign of the deviation from the initial zero reference.

Calculation of Loads

As stated above the 'zero' and 'load' readings were recorded on data sheets in Appendix A. The difference between 'zero' and 'load' representing the actual <u>strain</u> was then tabulated and multiplied by Youngs Modulus $(30 \times 10^3 \text{ kips per square inch for steel material) re$ sulting in the <u>stress</u> at the location of the gage (kips per squareinch).

Using the stress coefficients for the final equations, as computed on Figures 10 A to 10 D and summarized on Table 10 E, the axial loads for the respective members were calculated and tabulated.

Averaging Calculated Loads

To arrive at comparable load values for the various tests on the 'Summary of Member Loads' (Appendix B), the following procedures were applied:

(a) It was decided to adjust all <u>transverse</u> test loads to a load level which is most suited for comparison purposes i.e.

2350 pounds for transverse loads at three conductor points

1100 pounds for transverse load at ground wire point. Consequently, the calculated member loads for each respective member were multiplied by a coefficient of

<u>2350</u> = 0.778 for the transverse conductor load test of Oct. 3022 9th and 10th, 1964

1100 = 0.685 for the transverse ground wire load test of Oct. 1605 8th, 1964

The corrected values obtained were then inserted into column (f) of the 'Summary of Member Loads' (Appendix B).



 $A = 0.291 F_0 + 0.337 F_1 + 0.369 F_2$



FIGURE LO A

(1)

(2)



FIGURE 10 B



FIGURE 10 C



ANALYSIS OF TESTS

EQUATIONS FOR AXIAL LOAD COMPUTATION

Angle Section	Area in ²	
lxlx ¹ 8"	0.23	$\frac{\text{Load}}{\text{Area}} = 0.291 \text{ F}_{0} + 0.337 \text{ F}_{1} + 0.369 \text{ F}_{2}$
		Load = 0.067 $F_0 + 0.078 F_1 + 0.085 F_2$
l‡xl‡x ¹ 8"	0.30	<u>Load</u> = 0.270 F ₀ + 0.391 F ₁ + 0.340 F ₂ Area
New Company of the Company of the Company of the Company		Load = 0.081 $F_0 + 0.117 F_1 + 0.102 F_2$
lźxlźx ¹ 8"	0.36	<u>Load</u> = 0.260 Fo + 0.420 Fl + 0.321 F ₂ Area
		Load = 0.094 $F_0 \div 0.151 F_1 \div 0.116 F_2$
1 ³ 4x1 ³ 4x ³ 16	0.62	$\frac{\text{Load}}{\text{Area}} = 0.279 \text{ Fo} + 0.395 \text{ Fl} + 0.326 \text{ F}_2$
		Load = 0.173 $F_0 + 0.244 F_1 + 0.202 F_2$
2x2x ¹ 8"	0.48	$Load = 0.258 F_0 + 0.438 F_1 + 0.304 F_2$ Area
		Load = 0.124 $F_0 + 0.210 F_1 + 0.146 F_2$
2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	0.90	<u>Load</u> = 0.258 F ₀ + 0.435 F ₁ + 0.307 F ₂ Area
January 10 January 10 State (Jacobian Constant)		Load = 0.232 $F_0 + 0.392 F_1 + 0.276 F_2$
$2\frac{1}{2}x2\frac{1}{2}x\frac{1}{4}$ "	1.19	$\frac{\text{Load}}{\text{Area}} = 0.275 \text{ F}_{0} + 0.406 \text{ F}_{1} + 0.320 \text{ F}_{2}$
		Load = $0.327 F_0 + 0.483 F_1 + 0.381 F_2$

TABLE X E

(b) Similarly it was decided to adjust all <u>longitudinal</u> test loads to the suitable load levels of:

2255 pounds for longitudinal loads at conductor point

2455 pounds for longitudinal loads at ground wire point. The calculated member loads for the respective members had to be multiplied by coefficients of:

 $\frac{2255}{2305} = 0.978$ for the longitudinal load test at conductor point 0 of Oct. 5th, 1964

 $\frac{2255}{2455} = 0.920 \text{ for the longitudinal load test at conductor point}$ of Oct. 24th, 1964

2455 = 0.980 for the longitudinal load test at ground wire 2505 point of Oct. 6th, 1964

The corrected values obtained were then inserted into column (b) of the 'Summary of Member Loads' (Appendix B).

Prior to October 10th, 1964, combined load tests with longitudinal and transverse loads applied simultaneously were not conducted. Therefore, a second value for the member loads for this loading was required since a mathematical check of test results was desirable. An artificial value was obtained by adding the member loads from the longitudinal load tests and those of the transverse load tests. These values tabulated under column (j) are marked with an asterisk (*).

A percentage of error was calculated for purposes of comparison only, and this percentage was found by adding the two values in question regardless of their sign. The sum obtained then was related to the figure of column (m) indicating a percentage error.

The percentages of error range from 0 = 16.6% with an overall average of 4.2%. In a few cases the percentage was not calculated due to very small load readings which may lead to erroneous conclusions.

Determination of Indicated Load Components at Control Points

From the average member loads listed in Appendix B the stresses in all related members were determined by graphical analysis. Having all of the necessary stresses in the pertinent frames, it was then possible, by means of predetermined member slopes shown in Figures 10 F and 10 G, to obtain vertical and horizontal load components at the support point, waist, and tower base.

These calculations are performed on pages 95 to 143 and are summarized on Figures 10 H, 10 J, 10 K and 10 M.




























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CHAPTER XI

DISCUSSION

General

In order to fulfill the intended purpose of this study, the measured axial member loads were used as a basis for determining a distribution of stresses in the tower structure.

The first step in this procedure was to determine by graphical analysis the loads in related pertinent members, since it was not feasible to measure the loads in every structural member due to the large number of strain gages that would have been required.

Having determined the loads in all the necessary members, the indicated applied loads and/or reactions were derived for the respective frames (e.g. inside and outside faces of support arms. four faces of the tower body etc.) These calculations are performed on pages 95 to 143.

Subsequently all these indicated applied loads and/or reactions were summarized at the various control points (support point, waist and base of tower) on Figures 10 H, 10 J, 10 K and 10 M.

The methods of stress analysis used in the foregoing pages are based on the assumption that the members are connected at the joints by frictionless pins. It was further assumed that the gravity axes of members coincide with the working lines of the tower, and that all center lines meet at the pin center of each joint. Therefore, for all loading conditions, the members are assumed to be subjected to direct stresses of tension and compression only.

An inspection of the four summary sheets (Figure 10 H, J, K, M) demonstrates that in some instance the basic laws of static equilibrium are apparently not satisfied by the indicated applied loads. There are numerous possible reasons for these discrepancies of which the following are chief; flexure of members, framing stresses from continuity, distortion of the tower structure, and to a lesser extent, inaccuracies in fabrication and experimental errors.

In the analysis, the influence of each of these secondary effects was virtually impossible to assess. However, a comparison of applied load and resisting loads at the various control points shows that the stress analysis is sufficiently accurate to permit determination of the actual distribution of stress in the model structure.

Behaviour of Structure under Longitudinal Load at Ground Wire Suspension Point

Examining firstly the longitudinal ground wire loading condition, the results of which are summarized in Figure 10 H, the following effects were noted:

(1) A longitudinal test load of 2455 pounds was applied to the load cable. Since there was an estimated 8 per cent friction loss (see page 68), a net load of 2250 pounds was assumed to act on the tower. The indicated longitudinal load at the various control points is consistently less than this value (2250 pounds) with the exception of that measured by gages at the tower base. The lower values can be attributed primarily to flexure and framing action in the support arm chords and in the tower legs due to the unavoidable rigidity of some joints.

(2) For similar reasons the indicated torsional moment is consistently lower than the theoretical value computedfrom the indicated longitudinal load with a moment arm of 8.25 ft.

(3) A check of the vertical load components resulting from the longitudinal overturning moments demonstrates a fairly close agreement

with the theoretical values.

(4) For the condition of longitudinal load at ground wire suspension point, it can be observed that the majority of the load is transferred from the ground wire peak to the support point level by the outside face of the upper support arm on the loaded side of the tower and to a lesser degree by the outside face of the upper support arm on the unloaded side of the tower. Only minor stresses occur in inside faces of the upper support arms.

(5) At the support point, the overturning moment is resisted by the outside face of the lower support arm, while the shear is resisted equally by the inside <u>and</u> outside faces of the lower support arm.

(6) The shear carried down the inside face of the lower support arm is resisted by a statically indeterminate frame formed by the intersecting inside faces of the lower support arms. The method of analysis of this statically indeterminate frame is shown in the calculations on pages 104-106. It was necessary to resort to this solution since the assumption that both inside faces acted independently as trusses, cantilevered from the waist, yielded results which were inconsistent with those measured. Due to the nature of the detail of the tower at this point, it must be expected that the inside faces of the lower support arms cannot act independently of each other.

(7) It can be noted that the resulting loads applied at the waist level by the support arms combined with the face shears, obtained from the loads of the horizontal diaphragm, show a fairly close comparison with resisting loads calculated at the waist level from the 'E' gages. The difference in indicated torsion (face shear) above and below the waist is accounted for by realizing that the rigidity of

connections in the waist diaphragm will distribute torque to the tower body by framing action in addition to that transferred by ordinary truss action. An indication of the deformation and the resulting framing action is shown in the sketch below.







INDICATED LOADS APPLIED AT WAIST LEVEL BY SUPPORT ARMS,

INDICATED RESISTING LOADS AT WAIST LEVEL FROM AXIAL MEMBER LOADS.

PLAN VIEW OF TOWER BODY AT WAIST LEVEL SHOWING NATURE OF FRAME DEFORMATIONS DUE TO LOADS APPLIED AT WAIST.

(8) The following sketches verify the commonly accepted fact that the torsional shears are distributed equally to all four faces of the tower body by the diaphragm, since the results are in close agreement with those measured by the 'E' gages and with those indicated by summing the 'C' and 'D' gages at waist level.



Hence below the waist the longitudinal shears are resisted equally by the longitudinal faces and the torsional shears are resisted equally by four faces of the tower body. (9) Finally, the following calculation shows that the vertical load components at the base are consistent with those measured by the 'E' gages at waist.



Idealized Stress Diagrams for Longitudinal Load at Ground Wire Sus-

pension Point

Based on the above observations, an idealized stress distribution was assumed and resisting and/or applied loads were computed at the various control points and are summarized on Figure 11 A. A comparison of the measured loads at the control points (Figure 10 H) with those calculated on Figure 11 A demonstrates a satisfactory parallel.

At this point, it should be explained that the relative magnitudes of loads carried by the two support arms were arrived at by realizing that there is a change in slope from the outside face of the ground wire peak to the outside face of the upper support arm at the level of the bottom chords of the girder. Due to this change in slope, there is an unbalanced horizontal force at points 'A' and 'B' (see Figure 11 A).

The overturning effect applied to the loaded ground wire peak produces compression on the north face and tension on the south face, hence the above mentioned unbalanced horizontal forces are in opposite directions producing a couple with a moment arm equal to the width of

the girder (For a longitudinal ground wire load of 2.0 kips, the unbalanced horizontal forces are equal to 0.77 kips). ^LTo balance this transverse couple, a longitudinal load of (0.77 x 1.33/14.67) = 0.07 kips was applied to the <u>unloaded</u> upper support arm (outside face), leaving a net longitudinal load of (2.00 - 0.07) = 1.93 kips to be remisted by the <u>loaded</u> upper support arm (outside face).

It becomes evident from a comparison of Figures 10 H and 11A, as it does also from a perusal of Table XI A that the above assumptions are basically correct.

The explanation for the difference in vertical load values can be found in the fact that at the intersection of the two inside faces of the lower support arms, the loaded face introduces internal stresses into the unloaded face by virtue of the deflection of the intersection points. These internal stresses, being smaller than those in the loaded facees, are of minor concern in the design of the support arm members <u>but do</u> cause a significant redistribution of the overturning vertical load components on the tower body. This redistribution of vertical load components has the effect of increasing the loads in the diagonals on the most heavily loaded face of the tower body, and decreases the stresses in the legs of the tower body on the same face.

Having established a stress distribution in the structure, it is possible to construct the idealized stress diagrams for a longitudinal load at the ground wire suspension point.For ready comparison with the loads measured in the tower members, a longitudinal load of 2.0 kips was selected.The idealized stress diagrams are shown on Figures 11 B and 11 C and the results are recorded and compared on Table XI A.

Behaviour of Structure under Longitudinal Load at Conductor Juspension Point

Considering secondly the longitudinal conductor loading condition (Figure 10 K) the following observations were made:

(1)The indicated longitudinal load calculated at the various control points are consistently lower than the applied test load. The test load applied to the longitudinal load cable was 2,255 pounds but an estimated friction loss of about 8 per cent (ref.page 68) resulted in a load of 2,070 pounds being applied to the tower structure. The average longitudinal load indicated by the various gage groups was 1,860 pounds, which is approximately 10 per cent less than the estimated 2,070 pounds load.

Similar to the behaviour of the tower structure under longitudinal load at the ground wire point, flexure, framing action and torsion in the support arm chords and tower body legs must be assumed to be responsible for the inconsistency discussed above. This is further evidenced by the fact that for both cases of longitudinal loading that were considered (ground wire point and conductor point), the longitudinal load indicated by the 'F' gages (immediately above the tower base) where it is thought that a minimum of framing action should occur, is higher than that indicated at the other levels. (2) The indicated torsional moments are lower than those computed from the indicated longitudinal load with a moment arm of 11 ft. This consequence can be attributed to flexure and framing action in the structural members as well.

(3) The vertical load components due to the longitudinal overturning moments appear to be in conformity with those computed from the indicated longitudinal load. The latter are shown in brackets on Figure 10 K.

An isolated, exceptionally large discrepancy in the vertical load components indicated by the 'B' gages can be explained partially by the fact that the loads in the inside face diagonals were not measured. The magnitude of the possible loads in these diagonals, however, are insufficient since preliminary calculations introducing member loads of this magnitude yielded results with even larger and unacceptable discrepancies in the longitudinal and torsional shears. Therefore, the major portion of this discrepancy must be attributed to cumulative error. It is noted in this regard that the vertical load components indicated by the 'B' gages are 'differences' since in all four cases opposite stresses exist in the intersecting chords of the outside and inside faces. Therefore a large cumulative error is possible.

(4) For this condition of longitudinal load at the conductor suspension point, the structure appears to react differently than for the longitudinal ground wire loading condition. For example, appreciable stresses occur in the chords of the inside faces of the upper support arms (page 131) and also the inside faces of the lower support arm appear to be resisting more than one half of the shear applied at the support point (e.g. pages 124, 127), whereas this was not the case for the longitudinal load at the ground wire point.

Inasmuch as the following calculations result in a stress distribution which is compatible with the measured stress distribution, it may be stated that the longitudinal shear is resisted equally and totally by the outside faces of the <u>upper</u> support arms. The torsional moment is resisted largely by the outside faces and to a lesser degree by the transverse faces of the <u>upper</u> support arms as shown below.



To find the magnitude of P_3 , the average measured load in the inside face chord members of the upper support arm was computed (0.31 kips). This value of 0.31 kips indicates a transverse shear of 0.19 kips per face per support arm by virtue of the respective member slopes.

As shown in the above calculations, this results in a net large shear on the outside face of the support arm adjacent to the load point and a net small shear on the opposite support arm.

(5) At the support point (see pages 124, 125, 127, 128), the longitudinal shear is resisted equally by the longitudinal faces of the <u>lower</u> support arms while the transverse torsional shear is resisted by the transverse faces. The overturning moments resulting from the longitudinal shears are carried down the outside faces of the <u>lower</u> support arm to the waist.

(6) The shear carried down the inside faces of the <u>lower</u> support arm is resisted and analyzed at waist level in a manner similar to that described for the longitudinal ground wire loading.

(7) Observations made for the longitudinal ground wire loading regarding distribution of torsional shears, longitudinal shears and the effect of rigidity of connections at waist level apply for this case of loading as well.

(8) Similar to the longitudinal ground wire loading, the following sketches confirm the equal distribution of torsional shear to all four faces of the tower body. Below the waist, the longitudinal shear is resisted equally by the longitudinal faces and the torsional shear is resisted equally by all four faces of the tower body.



Torsional Shear

Longitudinal Shear

Summation

(9) Finally, the following calculation shows that the vertical load components at the base are consistent with those measured by the 'E' gages near the waist.



E'Gages

'F'<u>Gages</u>

Note: Torsional forces do not affect vertical load components.

Idealized Stress Diagrams for Longitudinal Load at Conductor Suspension Point

On the basis of the foregoing observations, an idealized stress distribution for the structure under longitudinal load at conductor point was established as shown in Figure 11 D. Having established the stress distribution, it was possible to construct idealized stress diagrams for this case of loading.

These diagrams are shown on Figures 11 E and 11 F. A longitudinal load of 1,860 pounds was selected for the determination of idealized member loads which are recorded and compared on Table XI A. <u>Behaviour of Structure under Transverse Loading at Ground Wire Support</u> <u>Point and at Conductor Suspension Point</u>

Finally, the distribution of stress in the structure resulting from a transverse loading applied at the ground wire support points and at the conductor suspension points as shown in Figures 10 J and 10 M were observed. 1:4

For the transverse loading at the ground wire support points, a total transverse load of 1,100 pounds was applied to the load cable but an estimated 8 per cent friction loss (Page 68) resulted in a load of 1,010 pounds applied to the structure. The average load indicated by the five gages groups is 1,010 pounds.

For the transverse loading at the three conductor suspension points, a load of 2,350 pounds was applied to the two load cables resulting in an estimated load of 2,150 pounds applied to the structure, this decrease being caused by the estimated 8 per cent friction losses in the loading system (Page 68). The average load indicated by the five gage groups is 2,170 pounds.

For both conditions of transverse loading, the structure showed considerably less distortion than under the longitudinal loading conditions which applied a torsion to the structure. Hence a minimum of framing action occurs and the average indicated loads (based entirely on axial member loads) are in close agreement with the applied test load.

Generally, it was noted that the stress distribution for these conditions of transverse loading are consistent with design practices used to analyze tower structures under transverse loading. This is further evidenced by the close agreement of measured and computed member loads shown on Table XI B.

The computed loads were derived by using the idealized stress diagrams shown on Figure 11 G and are similar to those used in the actual design of this model structure.



x













Description of Member and Gage Group	Longitudinal Load at Ground Wire Point		Longitudinal Load at Conductor Point	
	Measured	Idealized (2.0 kips)	Measured	Idealized (l.86 kips)
* la A 13-15	4.15	4.70		
2b B 19-21,B 28-30	7.79	7.22	3,94	3.63
3c C 25-27,C 40-42	7.32	7.92	5.53	5.07
6c C 28-30,C 37-39	2.95	2.50	3.14	2.77
12b B 31-36	0.76	0.76	1.41	1.35
13b C 43-48	0.03	0	0.34	0.37
14b C 31-36	0.44	0.43	0.41	0.50
Waist Diagonals D 21-23,D 24-26	1.46	1.48	1.65	1.71
15 E 10-12,E 19-21	5.70	6.99	4.24	4.58
15b F 10-12,F 19-21	5.10	6.04	3.76	4.38
18 E 13-18	l.77	1.96	2.41	2.98
21 F 13-18	0.82	0.84	1.09	1.26

 \ast For location of members, see Figure 5 A

TABLE XI A

Descri and	ption of Member Gage Group	Transverse Load at Ground Wire P^int (1.0 kips)		Transverse Load at Conductor Point (2.15 kips)	
		Measured	Idealized	Measured	Idealized
* la	A 7-12	0.52	0.53		
2Ъ	B 1-3, B10-12 B19-21,B 28-30	0.10	0.20	0.50	0.55
30	C 1-3,C 16-18 C 25-27,C 40-42	1.63	1.55	2.36	2.62
60	C 4-6,C 13-15 C 28-30,C 37-39	1.43	l.43	2.58	2.62
15	E 1-3,E 10-12 E 19-21,E 28-30	2.43	2.44	4.20	4.47
15b	F 1-3,F 10-12 F 19-21,F 28-30	2.36	2,28	4.36	4.47
18	E 4-9,E 22-27	0.12	0.11	0.05	0
21	F 4-9,F 22-27	0.04	0.08	0.07	0

* for location of members, see Figure 5 A

TABLE XI B

CHAPTER XII

CONCLUSION

In conclusion, the above discussed observations and findings may be summarized as follows:

- (a) Applying a longitudinal load at the ground wire suspension point on the model tower, it was evident that
 - (i) The load was transmitted to the support points by both outside longitudinal faces of the upper support arms in relative magnitudes determined by the geometry of the tower.
 - (ii) At the support points, the shear was shared equally by the two longitudinal faces of the support arms, and the overturning moment was transmitted by the outside longitudinal faces alone.
 - (iii) At the waist the diaphragm was effective in distributing the torsional shears equally to all four faces of the tower body.

- (iv) Below the waist, the longitudinal shear was resisted equally by the two longitudinal faces, and the vertical load applied to the tower body at waist level can be evaluated on the basis of conclusion (ii) above.
- (b) Applying a longitudinal load at the outer conductor suspension point, it was evident that
 - (i) The longitudinal load was shared equally by the outside faces of the two upper support arms; the torsional moment was resisted largely by the outside longitudinal faces and to a lesser degree by the transverse faces of the upper support arm.
- (ii) Below the support point, the transmission of load to the tower base was accomplished in a manner similar to that concluded for the longitudinal loading at ground wire suspension point.
- (c) Applying transverse loads at either the ground wire or conductor suspension point, it was apparent that all of the load was resisted equally by the two transverse faces of the structure. All of the member loads can be arrived at by employing idealized stress diagrams 'K' and 'L' as shown on Figure 11 G. This verifies conventional design methods since these diagrams are commonly used for transverse load design analysis.

CHAPTER XIII

RECOMMENDATION

The authors were led to believe at the commencement of this project that continued testing and research was to be carried out on the model tower during the next three to five years by other interested individuals. Therefore, many of the preliminary descriptive chapters in this thesis are purposely more detailed than may be necessary, hoping that this information might serve as a basis for, or might be an asset in future research programs.

The following recommendations are included since experience exposed many areas where questions arose and which could not be solved or dealt with in the current program.

- (1) The conclusions listed above should be reinforced by future load testing. The nature of these tests should be such that they verify the observed stress distribution and augment the study by determining the variation in stress distribution resulting from a variation in stiffness of the inside and outside faces of the support arms. It would also be of value to assess the effect of a less stiff girder on stress distribution.
- (2) Further testing should be limited primarily to longitudinal load application due to its greater degree of indeterminancy as compared to transverse and vertical loading.
- (3) It is believed that a determination of accurate tower deflections under load would be of considerable value and should be incorporated into future load testing programs for the purpose of confirmation of stress distribution.

- (4) Another area of uncertainty associated with transmission tower design which should be investigated using the model structure is the degree of end restraint offered to the tower members by the rigidity of the connection details.
- (5) The lengthy and time consuming task of computing member loads from the strain readings might be condensed into a simple computer program making it possible to obtain the member loads directly from the computer.
- (6) Additional strain gages should be added to the diagonals on the inside faces of the upper support arms.
- (7) The actual loads applied to the tower structure should be measured accurately by means of load cells, dynamometers or some other device.
- (8) Further consideration should be given to devising a means of minimizing the effect of temperature variation on the strain readings. Due to the varying lengths of exposed lead wires (Page 77), it is felt that adding a third lead wire to each gage, which normally is effective in compensating lead wire errors due to temperature variation would not be completely effective (reference 6, page 21).
- (9) The test site facilities should be improved to reduce testing time and possibly improve the accuracy of the tests as follows:
- (a) Improve means of applying test loads.
- (b) Provide site lighting equipment to permit night work hence eliminating the undesirable effect of direct sunlight on strain gages and lead wires.

- (c) Set the Data Printer of the Digital Strain Indicator to a slower speed that a reliable automatic recording of strain readings is possible.
- (d) Provide for better access from test site to office containing strain measuring and reading equipment.

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A PPENDIX A

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At conductor suspension point Longitudinal Lad Tosta suspension point (a) (b) (c) Longitudinal Lad Tosta (a) (b) (c) Longitudinal (b) (c) (c) Longitudinal (c) (c) (c) (c) (c) (c)	Transverens Local frocts Constrained Local frocts .(c) (c) (c) (c) (c) (c) .(a) .(b) (c) (c) (c) (c) (c) .(a) .(b) .(c) .(c) .(c) .(c) .(c) .(c) .(a) .(c) .(c) .(c) .(c) .(c) .(c) .(c) .(a) .(c) .(c) </td <td>For Comparison Corrisions (x) (x) 114 (x) (x) (x) (x) (x) (x) <td>At conductor suspension point Lengitudinal Leta Tosts (a) (b) (c) TostFortion (d) (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c</td><td>Principands Local Tools Constrained Lead Tools For Comparised Lead Tools For Comparised Corrections Corrections (c). (r) (g) (h) (j) (k) (k) (k) (c). (r) (g) (k) (j) (k) (k) (k) (c). (r) (g) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (c) (k) (k) (k) (k) (k) (k) (k) (k) (k) (c) (k) (k)</td></td>	For Comparison Corrisions (x) (x) 114 (x) (x) (x) (x) (x) (x) <td>At conductor suspension point Lengitudinal Leta Tosts (a) (b) (c) TostFortion (d) (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c</td> <td>Principands Local Tools Constrained Lead Tools For Comparised Lead Tools For Comparised Corrections Corrections (c). (r) (g) (h) (j) (k) (k) (k) (c). (r) (g) (k) (j) (k) (k) (k) (c). (r) (g) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (c) (k) (k) (k) (k) (k) (k) (k) (k) (k) (c) (k) (k)</td>	At conductor suspension point Lengitudinal Leta Tosts (a) (b) (c) TostFortion (d) (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	Principands Local Tools Constrained Lead Tools For Comparised Lead Tools For Comparised Corrections Corrections (c). (r) (g) (h) (j) (k) (k) (k) (c). (r) (g) (k) (j) (k) (k) (k) (c). (r) (g) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (k) (c) (k) (k) (k) (k) (k) (k) (k) (k) (k) (c) (k) (k)

At cenductor suspension point	Longitudinal Lond Tests	Combined Load Tests Load Tests	For Comparison Time Corrections	At conductor Longitudinal suspension point Lord Tests	Transverse Combined For Comparison Time Load Tests Load Tests
(a)	(b) (c) LeadFortion (d)	(e) (f) (g) (h) (j)	(k) (E) 12.	(a) (b) (c) IcadPortion (d)	(c) (f) (g) (h) (j) (k) (n) 12.
Cale group Outchur 1964 Longit. 1900 Transv. 5 1 1 1000 Transv. 5	(a) x cooff'nt (b) incldg. From trangv From trangv promyonent promyonent FINAL	Uncorrected reading (e) x cocfrhnt (f) incl. than the prime Uncorrected reading (h) incl.	(2) pure (a) (2) pure (b) (2) pure (c) pure	Cruce group Could and an	uncorrected reading (r) (r) (r) (r) (r) (r) (r) (r) (r) (r)
3. •978 1.30 m 10. •778 i 12. 1.37 m Avarego	1.27 1.27 1.30 1.28	-0.57 -0.14 -0.14 0.833 -0.01 -0.15 0.99 0.89 -0.30 0.89	0.98 0.12 7.6	3. \$778 - 0.16-0.16 10778 120.16 .778 .120.16 .0.71 .0.71 .0.71 .0.71 .0.71 .0.71 .0.71	-0.07 -0.05 -0.05 0.11 0.01 -0.18 -0.25 -0.01 -0.23 -0.20 0.03 15.0
3. •978 -0.30 m 10. •778 i 120.11 → Avenage	-0.29 -0.16 -0.23	. 1.06 0.82 0.82 0.53 1.00 0.87 0.57 0.81 0.70 0.61 0.57	Long0.05 Comb0.09 Trans0.13 22r0 0.21	A 3. .978 0.33 0.32 0.32 1 10. .778 0.38 0.32 2 12. 0.38 0.34 Moreored 0.33 0.33	-0.02 0.01 0.12 0.04 -0.02 0.21 0.27 0.26 0.31 0.05 14.0
on 30 0978 0.55 m 100 0.776 1 120 0.42 m Average	0.54 0.54 0.38 0.46	1.04 0.81 0.81 2.03 0.95 1.45 0.88 1.40 0.88 1.47	Long0.04 Comb0.06 Trans0.08 Zero 0.14	K 3. .976 -3.35 -3.26 -3.28 m 10. .778 -3.06 -3.16 1 12. -3.06 -3.16 M. Norrego -3.22 -3.28	0.77 0.60 0.60 -2.13 -2.68* Long0.08 1.05 0.67 -2.13 -2.25 - 0.73 -2.45 -2.49 -0.03 0.8
а 3978 -0.92 п 10778 1 120.66 д дуагаза п	-0.90 -0.90 -0.76 -0.83	-0.62 -0.48-0.48 -1.284 -0.13 -0.31 -1.03 -1.15 -0.40 -2.22	Long0.08 Comb0.12 Trans -0.18 Zero 0.30	₹ 3. • • • • • • • • • • • • • • • • • •	-1.23-0.96-0.96 -0.64 -0.74 -0.85 -0.55 -0.52 -0.42 -0.10 7.8
At conductor suspension point (a)	Longitudinal Load Tests (b) (c) LoadPortion (d)	Transverse Load Tests (c) (f) (g) (h) (j)	For Comparison Corrections (x) (m) 12.		
Cuclo Eroup Collobur 1904 Longit. Transv. Lucorrected Uncorrected	(a) x cooff int (b) incldg. (b) incldg. From transv orponent From vortio component	Uncorrected reading (c) x cooff'nt (f) incl. time reading Uncorrected Uncorrected Uncorrected Uncorrected Uncorrected Uncorrected Uncorrected Uncorrected Uncorrected (n) incl.	3) pure (c) you pure (c)		
3 • 9778 -0.23 m 10 • •778 i 12 • 0.03 m Avore 30	-0.23-0.23 -0.02 -0.12	-1.03 -0.80-0.80 -0.418 -0.59 -0.67 -0.64 -0.59 -0.67	* Long0.05 Comb0.08 Trans0.11 Zero 0.19		
♀ 3. • •978 ↓.55 ™ 10. •778 ↓ 12. ↓.92 ♥ ₩.varaga ↓.92	4.45 4.415 4.86 1.666	0.70 0.55 0.55 0.60 0.17 4.83 4.74 0.51 4.83	s Long0.06 Comb0.09 Trans0.13 Zaro 0.22	· .	
☐ 3. •978 □ 10. •778 □ 12. □ ☐ 12. □ ☐ Average	0•78 0•78 0•87 0•82	0.05 0.05 0.05 0.83 0.24 0.16 0.93 0.88 0.10 0.66	Longe -0.04 Comb0.05 Trans0.08 Zero 0.13		
9 3 • •978 -1.96 □ 10. •778 □ 122.05 Ω Avarage	-1.51-1.91 -2.09 -2.00	0.10 0.03 0.08 -1.83 0.26 0.19 -1.93 -1.97 0.11 -1.93 -1.97	* Long0.03 Corb0.04 Trans -0.07 Zero i 0.11 -1.86 0.04 1.9		

SUMMARY OF MEMBER

LUAUS

larsheraton botur	Longitudinal		Transvoi Load Te:	rsə sta	Combi Load	ined Josts	For C	Compari	Loon	Corr	Tiza		sus	t condi	totor point			Longitud	nal		Ĩ	ngyer id Tos	20 17	Comb	ined lasts	For	Compar	rison	Corr	Pipe Sections
	(b) (c) LoadPort	ion (d)	(1) (0)	(g)	(n)	(j)	(k)	(n)			12.	14.		······		(2)	(b)	(c)_1/	adPorti	on (d)	(e)	(1)	(g)	(h)	(j)	.(k)	_(m)_			12.
Gare group Gare group Cottober 1964 Longit. Pransv. Uncorrected readings	 (a) x coeff nt (b) incldd. (b) incldd. (c) incldd. (c) incldd. (c) incldd. (c) incldd. (c) incldd. 	somponent.	Uncorrected reading (c) x coeff'nt	(f) incl. time FINL	Uncorrected reading	(h) incl.	Sum of (c) and (g	Difference (j) and (k)	Percentage	Zero Long. Comb Trans. Zero	8 32 8 42 8 54 9 07 9 17	5 55 6 13 6 28 6 35 6 <u>1</u> 0	dnoul olag	Cetober 1964	Longit.	Uncorrected readings	(a) x coeff'nt	(b) incldg. time correct From transv	component From vortic.	TVNIJ	Uncorrected reading	(e) x coeff ⁱ nt	(f) incl. time FINAL	Uncorrected reading	(h) incl. time FIML	Sum of (c) and (g	Difference (j) and (k)	Percentage	Zero Long. Comb Trans. Zero	8 32 8 142 8 54 9 07 9 17
3	0.03-0.03 40.60 -0.28		3.58 2.79 2.81	2.79 2.73 2.76	2.99	2.76* 2.94 2.85	3.04	0.19	: 6.3	Long. Comb. Trans. Zero	-0.02 -0.05 -0.08 0.12	*************************************	c 4 - c 6	3. 9. 12. Avora	•978 •778	1.4	3 1.4	2 1.40 1.41 1.40			-3.05 -2.33	-2.37	-2.37 -2.38 -2.37	-1.01	-0.97 -1.04 -1.00	* 0.97	-0.03	0.8	Long. Comb. Trans. Zero	0.01 0.03 0.05 0.06
A .978 -0.12 0 9. .778 12. -0.12 2. -0.12 3. .978	0.12-0.12 -0.14 -0.13		2.h2 1.88 1.80	1.88 1.74 1.81	1.58	1.76* 1.54 1.65 1	L•68 (0•03	1.6	Long. Comb. Trans. Zero	-0.02 -0.04 -0.06 0.08		C 7 - C 9	3. 9. 12. Avera	•978 •778 30	-0.0	3 -0.0	3-0.03 0.06 0.01			-0.05 -0.04	-0.01	-0.04 -0.05 -0.05	0.02	-0.07 -0.03 -0.05	-0•01	-0.01	Smell reading	Long. Comb. Trans. Zero	-0.01 -0.01 0.03
₩ 14.	5.40-5.40 -5.39 -5.39	1	3.50 - 2.72 2.57	-2.72 -2.67 -2.69	-8.19	-8.12* -8.26 -8.19-8	3.08 -	0.11	1.4	Long. Comb. Trans. Zero	-0.03 -0.07 -0.10 0.14		C 10 - C 12	3. 9. 12. Avero	•978 •778 30	-0.0	3 -0.0	3-0.03 0.01 -0.01			-0.22 -0.08	-0.17	-0.17 -0.14 ~0.16	-0.12	-0.20 -0.16 -0.18	* ~0.17	-0.01	6.0	Long. Comb. Trans. Zero	-0.02 -0.04 -0.06 0.08
a 21 .919 6.13 c 9 .778 I 11 5.50 Average 0	5.62 5.62 5.72 5.67		3•58 -2•79 L•93	-2.79 -2.33 -2.56	3•55	2.83# 3.22 3.04 3	а . 11 о	0.07	0.9	Long. Comb. Trans Zero	-0.18 -0.33 -0.40 0.46		C 13 - C 15	3. 9. 12. Avera	•978 •778 50	-1.5 -1.0	3 -1. 5	L-1.54 -1.07 -1.32			-3.51 -2.66	-2.73	~2.73 ~2.77 ~2.75	-3.97	-4.27 -4.00 -4.14	* ~4.008	0.06	1.5	Long. Comb. Trans Zero	0.03 0.07 0.11 0.15
the second se							****													and the local day of the second day of the	a second s	Statistic Sector Statistics				****				
At conductor suspension point (a)	Longitudinal Lord Tests b) (c) LordPort	ion (d)	Transver Load Tes	32 313	Combi Lond I (h)	ned iests (j)	For C	ocpari (n)	son	Corro	Tillons		sus	t cond pensio	nuctor n point	(a)	(b)	Longitudi Load To:	nal ts	on (d)	(e)	d Tes	<u>е</u> (г)	Coub Lond (h)	ined Tests (j)	For (k)	Compar (n)	ison	Corre	Ctions 12. 14.
Confrected () () () () () () () () () () () () ()	Longitudinal Local Tosts (b) UCC Control Control (c) Local Part (c) Local Part (c	FINAL ()	reading (5) (c) (1) (3) (c) (1) (3) x coeffint (1) (3)	(f) incl. 500 time FIMAL E	Uncorrected () 70 reading () 20	(h) incl. () contract (c) contr	For (J) pue (o)	(1) and (k) (1)	Porcentage	Corro Zero Long. Comb Trans. Zero	Tira 12. 8 32 8 42 8 54 9 07 9 17		Gage Group	t cond spensio horrs	Longit Longit: Transv.	Uncorrected D readings	(a) $\widehat{\sigma}$ x coeff int ((b) incldr. (b) incldr. (c) front tilma correct (c) front From transv. 7	nal ts adForti orfice none tuouch orfice tuouch	(d)	Uncorrected	(c)	time FINAL	Uncorrected (1) 57 reading (2) 57 000	(h) incl. () incl. (c) inc	For (1) (2) pur (0) (2) Jo ung	Difference) 00 (j) and (k) = 14	Forcentage uosi	Corro Zero Long. Comb Trans. Zero	12. 11. 3.2 5.55 9.12 6.13 3.5L 6.28 9.07 6.35 17 6.40
Att conductor suspension point (a). (a). (a). (b). (b). (c). (c).	Longitudinal Local Tests (col Tests (col LeasPort) (col LeasPort)	component uoi	(c)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	-Co-13-	0.19 0.19 0.16 0.16	For C (k) (3) pue (0) Jo Eng 0.17	(n) (n) (n) (n) (n) (n) (n) (n) (n) (n)	Porcentago	Corro Zero Long. Comb Trans. Zero Long. Comb. Trans. Zero	12. 12. 12. 12. 12. 12. 12. 12.		C 34 - C 36 Carge group	t cond spensic	Coeff's Coeff's Since Sin Sin Sin Si	25°0 Uncorrected readings (P)	(a) x coeff ^{int}	Longitudi Load Ter (c) 110-14 (c)	nal ts adForti ty Loo Holdon	en (d)	Vincorrocted (a) reading (b)	(c) (c) (c) (f) (f) (f)	۲۵۰۰ (۲) incl. (۵) المال الم	Conpected (y)	ined (j) (j) (j) (j) (j) (j) (j) (j) (j) (j)	For (k) (2) put (3) Jo HTS 0.47	Difference (1) and (k) (1) (20.0	ison Crcontago	Corro Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero	12. 11 12. 11 8.32 5.55 8.42 6.28 9.7 6.40 -0.01 -0.02 -0.02 -0.03 0.04 -0.04
Att conductor suspension point (a). (a). (a). (a). (b). (b). (c). (c). (c).	Longitudinal Locd Tosts (c) LocaPorti (c) Lo	Ion (d) TWIL	Drangwar Idad Trs (c) (f) utilities 10 x x 10	10.02 0.12 0.12 0.12 0.12 0.13 0.12 0.13	(hoonrected (h), T Incorrected (0.11* 0.12* 0.12*	For C (k) (1) pur (2) K		Porcentago	Corre Zero Comb Trans. Zero Long. Comb. Zero Long. Comb. Trans. Zero	-0.01 -0.02		c 37 - c 39 c 34 - c 36 Gage group g	12 . 3. 9. 12. Avorra 9. 12. Avorra	Coeff's Coeff's Sorra Sorra Sorra Sorra Sorra Sorra Sorra Sorra	(a) hcorrected recatings 2.81 3.15	(b) 14 13000 x (a) 0.36	Longi tudi Load To: (c) Lo. (prostrong unit) (c) to strong unit) (nal ts adPorti ty webody to the two to to to to to to to to to to to to to	ELIMP	20.00 Uncorrocted ()	(r) (r) (r) (v) (v) (v) (v) (v) (v) (v) (v) (v) (v	(g) (g) (g) (g) (g) (g) (g) (g) (g) (g)	0.21 (y) 20.21 2.51	(j) (j) (j) (j) (j) (j) (j) (j)	For (k) (1) your your (0) 0.47 5.16	0.02 0	ison Serteste Laccoutedo Lacoutedo L	Corro Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero	Pictons 12. 11. 8 32 555 8 42 613 8 51 628 9 07 635 9 07 640 -0.01 -0.03 -0.02 -0.03 -0.03 -0.03 -0.03 -0.07
At conductor suspension point (a).	Longitudinal Locd Tosts (c)LoadForti i,	ion (d) TWIL	Drangwor Load Tros (c) (f) Part Stress (c) (c) (f) Part Stress (c) (c) (f) (f) (f)<	(c) (c) (c) (c) (c) (c) (c) (c) (c) (c)	Cornsi (h) Load 1 (h) Base (h) Base (h) Base (h) Corns (h) Base (h) Corns (h	(c)	For C (k) (J) put (A) (J) put (A) (J) put (A) (J) put (A) (J) (J) put (A) (J) (J) (J) (J) (J) (J) (J) (J) (J) (J	0,12 0,12 0,12 0,12 0,12 0,12 0,12 0,12	5.00 6.00	Corre Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero Long. Zero Long. Zero Long. Zero Long. Zero Long. Zero Long. Zero Long. Zero Long. Zero Long. Zero Zero Zero Zero Zero Zero Zero Zero	-0.01 -0.02 -0.02 -0.02 -0.03 -0.02 -0.03 -0.03 -0.02 -0.03 -0.02 -0.03 -0.03		c 13 - c 15 c 37 - c 39 c 34 - c 36 c.36 c.30 g.	t cond pensional solution solu	2000 200 2000 2	(a). (a). (a). (a). (a). (a). (a). (b). (a). (b). (b). (c). (c). (c). (c). (c). (c). (c). (c	(b) 11 13000 (a) (b) (c) (c) (c) (c) (c) (c) (c) (c	Longi tudi Load Tec (c) 1.500 (c) 2000 (c) 2000	nal ts		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(1) (1) (2) (2) (2) (3) (1) (1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	202 (j) (j) (j) (j) (j) (j) (j) (j) (j) (j)	Conclusion Laid (h) physical Burgersa 0.51 5.21	0.115 0.15 0.15 0.15 0.15 0.15 0.15 0.15	For (k) (1) pur yo 113 yo 1	0.02 0.02	ison دروس دروس دروس دروس دروس دروس دروس دروس	Corro Zero Long. Comb Trans. Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero	-12. 11. 12. 11. 6 32 5 55 8 54 6 13 8 54 6 28 9 07 6 32 -0.01 -0.01 -0.02 -0.03 -0.03 -0.03 -0.05 0.07

At conductor suspension point	Longi	ltudinal 1 Tista		i Za	inavori Id Tosl	20 85	Cob Loc.d	ined lests	For	Coupta	hison	Cor	Tir 2 riciar	13	At	condu	tor	1	3	Lengit	vdinal			To	insyci Id Rev	158 158	Cord	vined	For	Corph	rison	Corr	Ting County	.51
·······	(a) (b) (c)	Icodfort	ion (d)	(0)	(f)	(3)	(h)	(j)_	.(::)	(::)			1 14.					(2)	(6)	(0)	Ioses. _IoqdF	ortion	(d)	(e)	(f)	(c)	(h)	(j)	();	_(n)_			14.	
Ge Group Cottober 1964 1000 Trantv.	Uncorrected readings (a) x coaff'nt (b) incldg.	time correc From transv component From vertie	component FINL	Uncorrected	(c) x cooff'nt	(f) incl. the rink	Uncorrected reading	(h) incl. time FIML	Sum of (c) (c)	Difference (j) and (k)	Parcentage	Zero Long. Comb. Trans Zero	7 15 7 28 7 36 7 15 7 55		cuba Evend	Cotebur 1964	Iculit.	Uncorrected readings	(a) x coeff'nt	(b) incldg. time correct	From transv component	From vertic. component	FINAL	Uncorrocted reading	(e) x coefftnt	(f) incl. time FINAL	Uncorrected reading	(h) incl. time FINAL	Sum of (c) and (g)	Difference (j) and (k)	Percentage	Zero Long. Comb Trans. Zero	7 15 7 28 7 36 7 15 7 55	
m 5e 0978 12 90 ,778 1 140 14 Avovego	-2.68 -2.83 -2.8 -2.68 -2.7	83 77 80		5.53 4.85	4.31	4.31 4.64 4.47	2.39	1.48= 2.24 1.66	1.67	0,21	2.9	Long. Comb. Trans. Zero	-0.09 -0.15 -0.28 -0.28		Б Ц - Е б	5. 9. 14. Avora	\$78 •778 39	2.92 2.97	2,83	2.83 2.93 2.88				-0.03 0.08	-0.02	-0.02 -0.02 -0.02	2.79	2.813 2.71 2.76	2,86	0.10	3•4	Long. Comb. Trans. Zero	-C.Cl -C.C7 -0.10 0.13	
н 5978 н 9778 1 Ц. А Матада ц	-3.97 -3.88 -3.8	88 22 25		5•35 -4•25	-:.17	-4.17 -4.34 -4.25	-8.77	-8.05* -8.83 -8.44	6.30-	-0 - 31	1.7	Long. Comb. Trans. Zoro	-0.04 -0.05 -0.09 0.12		E 7 - E 9	5 9. 14. Avara	978 •778 39	-2.98 -3.04	-2.91	-2.91 -3.05 -2.98				0.14 0.07	دد.	0.05 0.08	-2.72	-2.80* -2.74 -2.77	-2.90	-0.13	4.2	Long. Comb. Trans. Zero	-0.01 -0.02 -0.02 0.03	ing and the second s
5. 978 9. 978 14. Алегодо м	հօրի իշ3ի իշ3 իշ20 իշ2 իշի	914 53 43		-5.36 -3.73	-4.17	-l:.17 -3.90 -1.03	0.76	0.17: C.64 0.40	0 . 40	0	0	Long。 Corb. Trans. Zero	-0.07 -0.12 -0.1? 0.22		E 13 - E 15	5 9. 14. Avera	978 •778 ;0	2.51 2.40	2.45	2.45 2.39 2.03				-0.03 -0.68	-0.02	-0.02 -0.11 -0.06	5°70	2.43* 2.38 2.40	2.37	0.03	1.2	Long. Comb. Tranc. Zero	-0.01 -0.02 -0.03 -0.04	
Ω 5. .978 ω 9. .778 ι 14.	2.82 2.76 2 . 2.59 2.5 2.6	•76 53 55		5.13 4.03	f*55	4.22 3.89 4.05	6.28	6.98* 6.18 6.58	6.70	0°15	1.8	Leng. Comb. Trans Zero	-0.06 -0.10 -0.14 0.19		E 16 = E 18	5 9. 14. Avera	978 •778 50	-2.38 -2.42	-2,33	-2.33 -2.45 -2.39				-0.03 0.06	-0.02	-0.02 -3.01 -0.01	-2.50	-2.35* -2.57 -2.46	-2.70	-0.06	2.5	Long. Comb. Trans Zero	-0.03 -0.05 -0.07 0.09	
At conductor suspension point	Longi	tudinal Tests		E	nsvers id Tool	:0 15	Corb Load	ined Tests	For	Cozbar	ison	Cory	fire	.s																			•	
Gure group Cotcher 1961 Longit. Franzv. s.	Uncorrected (2) readings (2) (a) x coeff (1) (3) x coeff (1) (3) (b) incldg. (3)	From transv. T component po From vortice 4	component FINAL	Uncorracted (a) reading (a)	(c) x cooffint (f)	(f) incl. (f) time pinkl (f)	Uncorrected 2. reading ((h) incl. (i) time FINAL (i)	Sum of (g)	Difference) (j) and (k) 2	Forcentage	Zero Long. Comb. Trans. Zero	14. 7 15 7 28 7 36 7 45 7 55																					
式 5。。978 1990 - 778 1110 2010 - 2010 2010 - 2010 2010 2010 - 2010 2010 2010 2010 - 2010	2.97 2.90 2.99 3.17 3.1 3.02	7 7 3		-c.01 0.01	-0.01	0.01 0.01 0.01	2 . 80	2.89* 2.79 2.84	3.02	0.22	7.2	Long. Comb. Trans. Zero	 -0.01 -0.62 0.02																					
స్ 5978 д. 9778 і Ць. Ж. Агогадо д	-2.78-2.72 -2.7 -2.91 -2.9 -2.8	2		0.21 0.10	0.16	0.16 0.05 0.10	-2.63	-2.56* -2.66 -2.61	-2.72	-0.11	4.2	Long. Comb. Trans. Zero	-0.02 -0.03 -0.05 0.06																					
ణ 5978 జ 5778 1 Ц. К Average	2.38 2.33 2.3 2.34 2.33 2.34 2.33 2.34	3 2 2		0.10 0.C5	0.08	0.08 0.02 0.05	2.40	2.41* 2.37 2.39	2.37	0.02	0.9	Long. Comb. Trans. Zero	-0.02 -0.03 -0.04 0.05																					
о 5° °978 9° 778 1 Ц. П Average а	-2.21-2.19 -2.19 -2.33 -2.33 -2.28	9 7 8		0.26 0.33	0.20	0.20 0.21- 0.20	-2,10	-1.99* -2.16 -2.07	-2.08	-0.01	0.4	Long. Comb. Trans Zero	-0.64 -0.06 -0.09 0.12																					

At conductor suspension point	Longitudinal	Transverse Load Tests I	Corbined For C	Comparison Corrections	At conductor suspension point	Longitudinal Load Tosts	Transverea Combine Load Tests Load Tes	d For Comparison Confidence
Guge group Cotcher 1964 Longit. Tranuv.	(a) readings (a) (b) (a) (b) (b) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c	Uncorrocted () reading (c) (c) (c) (f) x cooffint (f) tinc FIIML (c)	uncorrecture (F) reading (h) incl. thre FINKL (f) Sum of (g) (g)	(n) Laro 8 26 (2) 9 Zaro 8 26 (2) 9 Long. 8 33 (2) 9 Comb. 8 47 (2) 10 Trans. 8 53 (2) 17 20 7rans. 8 53 (2) 20 9 07 9 07 9 07	Gago group Gago group Longit. Solut Longit. So	(b) (b) reacting reacting (a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c	Uncorrected a reading (e) (f) incl. (f) incl. (f) incl. (f) incl. (f) incl. (f) incl. (f) ther (f) the (f) t	1 1 1 2 2 7 6 26 1 1 0 5 2 6 31 1
A 5. 3978 5. 978 5. 14. 5. 14. 6. Avorage	-3.48 -3.40 -3.40 -3.87 -3.94 -3.67	5.972 k.61 k.61 5.17 k.972 1 k.77	1.21# 1.034 1.27 1.10	0.17 2.0 2.0 2.0 0.17	5. •978 4. 9. •778 1. 14. -7 Avstrgg 4. Avstrgg	-0.814 -0.82 -0.82 -0.78 -0.79 -0.80	-0.01-0.01 -0.01 0.15 0.12 -0.05 -0. 0.05 -0.	.83* .83* .06 .16 -0.75 -0.29 5.5 .16 -0.10 -0.10 -0.00
Y 5. 978 Y 9. .778 JL.	-3.55-3.127 -3.127 -3.39 -3.123 -3.45	-5.416-41.025 -4:025 -3.97 -4:011 -6 -4:018	-7.72* 3.72 -8.93 -8.27 -7.63-0	Q.654 8.4	 ∽ 5. •978 № 9. •778 № 10. № 10. № 10. 	1.22 1.39 1.39 1.29 1.26 1.33	-0.17-0.13 -0.13 -0.07 -0.10 1.79 1. -0.11 1.79 1.	,264 1 1 1 1 1 1 1 1 1 0
5. 978 4. 9. •778 1 14.0 3 Average 5. •978 • 778 • 14.0 • 24.0 • 25. •978 • 778 • 14.0 • 25. • •978 • • • • • • • • • • • • • • • • • • •	3.92 3.83 3.83 4.35 4.32 4.07	-5,-91-4,-60 -4,-60 -4,-05 -4,-16 (-4,-38	-0.77* 0.94 0.85 0.04 -0.31 -	Long0.03 Comb0.09 Trans0.11 Zero 0.17	가 5978 ~ 9778 1 1Ŀ. 주 Average	1.26 -1.23 -1.23 -1.30 -1.31 -1.27	-0.25-0.19 -0.19 -1. -0.44 -0.49 -1.78 -1. -0.34 -1.	L2+ 62 -1.61 0.01 0.6 Long0.01 Corb0.01 Trans0.05 Zero 0.08
С 5. с978 4 9. с778 11. х луегада 4	3.644 3.36 3.36 3.664 3.55 3.425	5•57 և 34 և 34 և 51 և 16 7 և 25	7.35 7.39 7.39 7.67	Long0.02 Comb0.27 Trans -0.35 Zero 0.53	Image: Second	0.96 0.94 0.94 c.86 0.85 0.90	-0.11-0.11 -0.11 0. -0.71 -0.76 0.30 0. -0.83 0.	.834 .26 .54 C.h7 0.07 5.2
At conductor suspension point	Longitudinal Lead Tests	Transversa Load Tests I	Combined Sad Tests	Comparison Corrections				
Gare group Osteber 1964 Longit. fransv.	hnoorrected readings readings (b) incids. (b) incids. (b) incids. From transv from vortes. From vortes. From vortes.	Uncorrected reading (o) x coaff'nt (f) incl.	uncorrected reading (h) incl. time FIMAL Sum of (a) and (g)	(x) a o y y y y y y y y y y y y y y				
5. •978 	-0.99 -0.97 -0.97 -1.02 -1.03 -1.00	-0.04 -0.03 -0.03 0.35 0.33 - 0.15	-1.00* -1.05 -1.07 -1.03 -0.85	0.18 15.6 Long0.11 Comb0.02 Trans0.02 Zero 0.02				
Ν 5. •973 Δ 9. •778 1 14. • Ν Δ/γοrage •	1.31 1.28 1.26 1.37 1.35 1.32	0.116 0.31 0.31 0.16 0.39 1 0.36	1.62* 1.38 1.50 1.68	0.18 10.7				
	-0.97 -0.98 -0.97 -0.98 -0.96	-0.16 -0.12-0.12 -0.14 -0.19 - 2 -0.15	-1.06# -1.06 -1.06 -1.11	Q.05 k.4				
 ∞ 5978 № 9778 № 11:. ™ Average № 	0.88 0.88 0.88 0.88 0.87 0.37	0.08 0.06 0.06 -0.02 -0.07 0	0.94* 0.81 0.77 0.85 C.87	Comb0.01 Comb0.02 Trans -0.02 Trans -0.05 Zero 0.09 0.02 2.3				

SUMMARY

OF MEMBER LOADS

it ground wire Longitudinal suspension point Lord Tests	Transvorca Load Tosts Load Josts	For Corparison Corrections	At ground wire Longitudinal suspension point Load Tosts	Transverse Locations For Comparison Corrections
(g) (h) include (g)	Uncorrocted () reading (e) x coaff'nt (f) x coaff'nt (f) thel. (f) thel. (f) thel. (f) neading (f) hel. (f)	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Cottobur Cottobur 1964 Tranev. 1, Tranev. 1,	$\begin{array}{c} \label{eq:constraint} \begin{tabular}{c} reaching $
7. :980 -0.04 -0.04 8. .635 .0.02 0.02 17. 0.02 0.02	0.30 0.21 0.21 0.17 0.27 0.27 0.25 0.25 0.24 0.21	Long. Comb. Trano. Zero 0	7.	0.674 0.51 0.51 0.52 0.68 0.60* Long0.01 0.64 0.62 0.81 0.79 0.79 0.79 0.02 0.55 0.69 0.71 0.02 2.8
∞ 7. •,980 0.02 0.02 0.02 ⊲ 8. •585 0.02 0.02 0.02 1 17. 0.02 0.02 0.02 0.02 ⊣ 17.0 0.02 0.02 0.02 0.02 0.02	0.31 0.21 0.21 0.22 0.26 0.26 0.22 0.22 0.26 0.26 0.21 0.21	Long. Comb. Trans. Zaro 0 0.23 0.01 4.2	Y1 7. .980 0.25 0.21 8. .585 0.13 0.12 Y1 Y1 0.13 0.12 4.7317330 0.12 0.18	0.57 0.62 0.60 0.60 0.49 0.67 0.67 0.67 0.67 0.67 0.12 18.0
Y 7980 < 8685 ¹ 17. → Averego → 1.10 → 1.15	-0.29-0.20 -0.20 -0.17 -0.17 -1.4.7 -0.18 -1.22	u u u u u u u u u u u u u u u u u u u	7. •980 0.64 0.63 4. •685 0.53 0.52 5. 17. 0.53 0.52 Average 0.57	-0.62 -0.43-0.43 0.208 Long0.02 -0.72 -0.74 -0.13 -0.15 Zoro 0.03 -0.58 0.02 0.01 0.01 1.3
Image: Second	-0.40-0.27 -0.27 -0.33 -0.33 3.15 3.15 -0.30 3.00	Long. Comb. Trens Zero 0 3.08 0 0	₹ 7980 -0.37-0.36 -0.36 8685 -0.19 1 170.19 -0.19 N yardo -0.13	-0.67 -0.46 -0.46 -0.82* Comb0.01 -0.42 -0.43 -0.90 -0.91 Trans -0.01 -0.44 -0.87 -0.87 0 0
	5 - 4			T IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
At ground wire Longitudinal suspension point Load Tests (a) (b) (c) LongPartian (d)	Transverse Co.bined Load Tests Load Tests (a) (f) (g) (h) (j)	For Comparison Corrections	At ground wire Longitudinal suspension point Load Tosts (a) (b) (c) LoadFortion (d)	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
At ground wire suspension point Longitudinal (a) (b) (c) (a) (b) (c) (b) (c) LendForbion (a) (b) (c) (b) (c) LendForbion (c) Coorfin Particle (c) Coorfin Particle (c) Coorfin Particle (c) (c) LendForbion (c) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c) (Uncorrected () reading (c)	For Comparison Controllons (*) (n) 17. (*) (n) 10. (*) (n) 11. (*) (n) (n) (*) (n) (n) </td <td>At ground wire Longitudinal suspansion point Longitudinal (a) (b) (c) (b) (c) Longitudinal (c) (c) Longitudinal (a) (b) (c) Longitudinal (a) (b) (c) Longitudinal (a) (b) (c) Longitudinal (a) (b) (c) Longitudinal (b) (c) Longitudinal (d) (c) (c) Longitudinal (d) (c) (c) Longitudinal (d) (c) (c) Longitudinal (d) (c) Longitudinal (c) (c) (c) Longitudinal (c) (c) (c) Longitudinal (c) (c) (c) Longitudinal (c) (c) Longitudinal</td> <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td>	At ground wire Longitudinal suspansion point Longitudinal (a) (b) (c) (b) (c) Longitudinal (c) (c) Longitudinal (a) (b) (c) Longitudinal (a) (b) (c) Longitudinal (a) (b) (c) Longitudinal (a) (b) (c) Longitudinal (b) (c) Longitudinal (d) (c) (c) Longitudinal (d) (c) (c) Longitudinal (d) (c) (c) Longitudinal (d) (c) Longitudinal (c) (c) (c) Longitudinal (c) (c) (c) Longitudinal (c) (c) (c) Longitudinal (c) (c) Longitudinal	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $
At ground wire Longitudinal suspension point (a) (b) (c) Longiburtion (d) (c) Longiburtion (c) (c) (c) Longiburtion (c)	O.cc2 O.cd1 O.cd2 O.cd3 O.cd3 <th< td=""><td>For Comparison (*) (m) Corrections (*) (m) Correc</td><td>At ground wire suspansion point Longitudinal Cooff'is Signature</td><td>Transverge Coching For Comparison Corrections (c) (f) (g) (h) (d) (k) (n) 17. (g) (g) (h) (g) (h) (g) (h) (h) (g) (g) (g) (g) (g) (g) (g) (g) (g) (g)</td></th<>	For Comparison (*) (m) Corrections (*) (m) Correc	At ground wire suspansion point Longitudinal Cooff'is Signature	Transverge Coching For Comparison Corrections (c) (f) (g) (h) (d) (k) (n) 17. (g) (g) (h) (g) (h) (g) (h) (h) (g) (g) (g) (g) (g) (g) (g) (g) (g) (g)
At ground wire suspension point Longitudinal (a) Longitudinal (cod Totals (a) (b) (c) LeniPortion (d) (b) (c) LeniPortion (d) (d) (c) (c) (c) (c) (c) (d) (c) (c) (c) (c) (d) (d) (d) (c) (c) (c) (c) (c) (d) (d) (d) (c) (c) (c) (c) (c) (c) (d) (d) (c) (c) (c) (c) (c) (c) (d) (d) (d) (c) (c) (c) (c) (c) (c) (d) (d) (c) (c) (c) (c) (c) (c) (c)	Theorem Construction Lood (15) (20) Lood (15) (20) (a) (17) (20) (b) (17) (20) (a) (17) (10) (b) (17) (10) (a) (17) (10) (a) (11) (11) (a)	For Comparison Corrections (k) (m) 17. (m) 200 200 (m) 200 200 </td <td>At ground wire suspansion point Longitudinal 0 Cooff's The code Tools 0 Cooff's The code Tools 0 The code Tools The code Tools</td> <td>Transverge Local ford Constrained ford For Comparison ford Constrained ford For Comparison ford Constrained ford For Comparison ford Constrained ford The ford The ford</td>	At ground wire suspansion point Longitudinal 0 Cooff's The code Tools 0 Cooff's The code Tools 0 The code Tools The code Tools	Transverge Local ford Constrained ford For Comparison ford Constrained ford For Comparison ford Constrained ford For Comparison ford Constrained ford The ford
At ground wire suspension point Longitudinal (a) (b) (c) (c) (c)	Theorem Construction Load Toste Construction Load Toste Construction (a) (f) (g) (h) 1000 fill Time Time 0000 fill Time Time 0000 fill Time Time 00000 fill Time	For Comparison Corrections (k) (m) 17. (a) (a) 17. (b) (a) 17. (c) (c) (c) (c) (c) (c) </td <td>At ground wire Longitudinal suspansion point. (a) (b) (c) Load Tosts (a) (b) (c) Load Tosts (d) (b) (c) Load Tosts (d) (c) (c) Load Tosts (d) (a) (b) (c) Load Tosts (c) (c) Load Tosts (d) (c) (c) (c) CostStient (c) (c) (c) (c) (c) (c) (c)</td> <td>Transverge Cockshold For Comparison Corrections (c) (f) (g) (h) (d) (k) (n) 17. (c) (f) (g) (h) (h) (h) (h) 17. (c) (f) (g) (h) (h) (h) (h) (h) (c) (f) (g) (h) (g) (g) (h) (h) (c) (f) (g) (g) (g) (g) (g) (h) (h) (c) (f) (g) (g) (g) (g) (h) (h) (h) (c) (f) (g) (g) (g) (g) (g) (g)</td>	At ground wire Longitudinal suspansion point. (a) (b) (c) Load Tosts (a) (b) (c) Load Tosts (d) (b) (c) Load Tosts (d) (c) (c) Load Tosts (d) (a) (b) (c) Load Tosts (c) (c) Load Tosts (d) (c) (c) (c) CostStient (c) (c) (c) (c) (c) (c) (c)	Transverge Cockshold For Comparison Corrections (c) (f) (g) (h) (d) (k) (n) 17. (c) (f) (g) (h) (h) (h) (h) 17. (c) (f) (g) (h) (h) (h) (h) (h) (c) (f) (g) (h) (g) (g) (h) (h) (c) (f) (g) (g) (g) (g) (g) (h) (h) (c) (f) (g) (g) (g) (g) (h) (h) (h) (c) (f) (g) (g) (g) (g) (g) (g)

At ground wire suspension point	Longitudinal Lond Tosts	Transverse Loud Tests Loud Test	For Comparison	Corrections	At ground wire	Lengitudinal	Transvarce Loca Tasta T	Combined For Comparison Tiro
	(a) (b) (c) IcadPortion (d) (c) (f) (g) (h) (j)	(%) (m)	17.		(a) (b) (c) IcadFortion (d)) (3) (1) (a)	(h) (j) (X) (m) 17.
Guga Eroup Cataber 1994 Lought. Tranuv.	Uncorrected readings (u) x coeff int (b) inclác. thus correct thus correct from transv orponent orponent orponent	broorvootad broorvootad veading (o) (c) x cooffint t(f) incl. this Flint bloorvootad bloorvootad	Sum of Sum of (e) and (g (j) and (k) Forcontago	2ero 1 55 Long. 2 03 Comb. 2 25 Trans. 2 31 2ero 2 38	Carlo Group Cotaber 1964 1964 Longit.	Uncorrected readings (a) (b) include. time oscreet from trans' component Prom vertice. enconont	Uncorrected reading (c) tn!to: tincl. tincl.	Dependence Depend
m 7 • •980 m 8. •685 i 17. m kvozago	-0.29 -0.28 -0.28 0.01 0 -0.11	-0.16-0.11 -0.11 -0.35 0.05 0.02 -0.01-0.06 -0.05 -0.22	-0.19 -0.03 15.7	Long0.01 Comb0.02 Trans0.03 Zoro 0.04	7780 m 8685 1 17. m Avore 50 m	-0.39 -0.38-0.38 -0.20 -0.19 -0.28	0.61 0.12 0.12 0.15 0.12 0.13 (0.145	0.19 0.20 0.12 0.16 0.04 5.6
N 7. \$980 m 8. \$685 i 17. Normage	-0.21 -0.21-0.21 -0.10 -0.13 -0.17	-0.17-0.12 -0.12 -0.33 -0.10 -0.18 -0.11-0.25 -0.15 -0.29	-0.32 -0.03 9.1	Long0.03 Comb0.07 Trans0.08 Zaro 0.10	 ○ 7. •980 ∞ 8. •585 i 17. ► Average ∞ 	0.57 0.56 0.56 0.62 0.61 0.58	0.69 0.17 0.17 0.17 0.15] 0.15]	1.03* Long - 0.01 1.13 Trans -0.02 1.08 0.04 3.5 0.02
₩ 7. •980 ₩ 8. •585 ₩ 17. ₩ 17. ₩ 2. •585	-7 •10 -6 •94 -6 •94 -7 •45 -7 •43 -7 •21	0.13 0.30 0.30 -5.61 0.38 0.31 -5.82-5.63 0.30 -5.76	-5.91 -0.15 2.0	Long0.03 Comb0.06 Trans0.07 Zero 0.09	ਜ਼ੋ 7. •980	-0.07 -0.07 -0.07 -0.05 -0.07 -0.07	-0.76 -0.52-0.52 -0.46 -0.52 -0 -0.52	-0.59* -0.59* -0.59* -0.60 -0.59 -0.59 0 0
	7.64 7.48 7.48 8.25 8.26 7.87	-0.10-0.07 -0.07 7.11 -0.17 -0.14 7.99 8.01 -0.10 7.71	777 006 0.8	Long. 0.01 Comb. 0.02 Teans: 0.03 Zero -0.03	₩ 7980 ₩ 8685 ! 17. ₩ Average 	-0.20 -0.20-0.20 0.06 0.04 -0.08	-0.64 -0.44 -0.22 -0.28 -0 -0.36	-0.64* -0.32 -0.37 -0.50 -0.44-0.05 13.6 Long0.02 Comb0.02 Comb0.02 Comb0.05 Zero 0.07
At ground wire suspendion point c. Cooff's c. Cooff's c	$\begin{array}{c} \mbox{Longitudinal} \\ Longitudi$	Uncorrected () Uncorrected () (c) (c) (c) (c) (c) (c) (c) (For Comparison (1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	II? 17. 2ero 1 55 Long. 2 08 Comb 2 25 Trans.? 2 31 Zero 2 38				
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ස 7	0.03 -0.03 -0.03 0.03 0.03 0	-0.03-0.03 -0.04 -0.04 -0.03 -0.03 -0.03	-0.03 0 0	Long. Comb. Trans. Zero 0				
Ω 7.0 •980 0 π 8.0 •585 0 τ 17.0 •585 0 μ Ανοταιρο 0 0	0.08 0.08 0.09 0.12 0.11 0.10	0.03 0.02 0.02 0.17 0.09 0.06 0.17 0.15 0.04 0.13	0.14 0.01 7.0	Long0.01 Comb0.02 Trans0.03 Zero 0.03				
ରୁ 7. •୨୫୦ <u>-1</u> ଜ 8. •େ୫୨ ፡ 171 ଲ Avarage ଇ		0.01 0.03 0.03 0.06 0.02 -1.12 -1.15 0.02 -1.139	-1.40 -0.01 0.7	Long0.02 Corb0.03 Trans - 0.04 Zero 0.05				

suspension point		Longitudinal Lond Tusts	11.11.11.11		Baa	sversa Tests	Land	bined Tests	For	Coupa	ricon	Corr	Tian Coulons	 At gr susper	vound v sion p	vire point			engitud Jard Ta	inal rts		ţ,	NG ME	nce La	Land	vined 1925s	For	Compa	rison T	Cori	Tiso Vections
0226 Broup Outober 1960 Longit. Transv. st	Uncorrected () readings ()	x cceff'nt ((b) incld. ((b) incld. (ftim corruct From transv.	From vertice 10	(b)	Uncorrected) reading ((c) x cocff'nt (f)	Uncorrected 2 reading	(h) incl. C	Sum of (E)	Difference (1) and (k)	Forcentage	Zero Long. Comb Trans. Zero	12 30 12 45 12 52 1 03 1 10	Golde Group Ontaber	196h Tourit.	aff's	Uncorrected () readings ()	(a) (b) x coeff ¹ nt	(b) inclág. a timo correct From transv.	component From vortic.	component FIIAL	Uncorrected o reading ((e) (c) (c) (c)	(f) incl.	Uncorrected () reading	(h) incl. () time FIML	Sum of (5) (Difference (j) and (k)	Percontage	Zero Long. Comb. Trans. Zero	12 30 12 45 12 52 1 03 1 10
6. 980 . 8. 685 17. 1 . Average	-0.85 -0.	.83-0.83 -0.59 -0.71		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2.14 1.80	1.47 1.4 1.8 1.6	7 5 0 . 8	0.61 0.87 0.75	.* 0•95	0.20	8.5	Long. Comb. Trans. Zero	0.02 0.03 0.05 -0.06	9 0 1 1 AV	698 8. 7. araga	•685	0.44 0.50	0.43	0.43 0.52 0.47			-1.97 -1.36	-1.34	-1.34 -1.33 -1.33	-0.92	-0.91 -0.90 -0.90	≁0.86	-0.04	2.2	Long. Comb. Trans. Zero	0.02 0.02 0.03 0.04
8 6	1.16 المالة. 1.16	.31 1.31 1.23 1.27			1.40 0.96	0.96 0.9	5 1 2 . 3 3	2.27 3 2.43 2.35	2.30	0.05	2.2	Long. Comb. Trans. Zero	0.07 0.10 0.15 -0.18	0 13 1 C 15	698 8. 7. are go	°C ₀685	-1.33 -1.30	-1.29	-1.29 -1.27 - 1.28			-2.32 -1.57	-1.58	-1.58 -1.50 -1.54	-2.99	-2.87 -2.95 -2.91	-2.82	-0.09	3.2	Long. Comb. Trans. Zero	0.03 0.04 0.07 -0.08
 № 6. •980 ○ 8. •685 17. № Average ○ 	-7.68 -7.	,52-7.52 -7.97 -7.75			-2.48 - -1.81	1.70-1.7 -1.7 -1.7	0 4 -9.7 2	-9.22 -9.66 -9.41	-9 . 47	0.03	0•3	Long. Comb. Trans. Zero	0.03 0.04 0.07 -0.08	c 58 1 1 C 58	698 8. 7. ercge	685	-2.66 -2.63	- 2.63	-2.63 -2.62 -2.62			2.29 1.86	1.56	1.56 1.88 1.72	-0.83	1.07 0.82 0.94	-0 . 90	-0.04	0•9	Long. Comb. Trans. Zero	0.01 0.01 0.02 -0.02
역 6. •980 · 8. •685 · 17. · Average ·	6.84 6. 7.10	70 6.70 7.09 6.90			-1.84 - -1.63	1.26-1.2 -1.6 -1.1	5 7 5.4 7	5.41 3 5.40 5.42	* 5•43	0.01	0•5	Long. Comb. Trans Zero	-0.01 -0.03 -0.04 0.04	C 37 - C 39	698 8. 7. erage	•685	3 . 18 3 . 42	3,12	3.12 3.14 3.28			1.57 1.10	1.05	1.08 1.14 1.11	4.42	4.20 4.15 4.33	≈ 4•39	0.06	1.4	Long. Comb. Trans Zero	0.02 0.03 0.04 -0.05
																								the second s			the second s				
At ground wire suspension point	(a) (b)	Longitudinal Load Tests	((4)	Pran Load	svorse Tests	Long	bined Tests	For	Compan	'ison	Corr	Tino Cetions	 At gi nispens	round w	wire cint	(2)	L (b)	ongitudi Lead Te:	nal ts	on (d)	Ē	ansver ad Tos	ce ts	Comb Lond	ined Tests	For	Conpar	rison	Corr	Time Sections
At ground wire suspension point c. Cooff's a state a state c. Cooff's a state c. Cooff's	Uncorrectud p readings (Longitudinal Locd Tests (c) LocdF. (c) LocdF. Line connect. Line contained Line c	From vartic. i	(d)	Uncorrected a reading (51)	x cocff'nt (j) sice (f) incl. 3) sice	Uncorrected 7 52 reading (25	the FINAL Clear	Fr (2) pur (0)	Difference (j) and (k) (J	Forcontage	Corr Zero Long. Comb. Trans. Zero	Tire 17. 12 30 12 45 12 52 103 1 10	Gode Group	round v ston px Coe	wire cint if's	Uncorrected () readings ()	(a) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	(b) incldg. (b) of time correct (c) prou	component From vartice.	(b) ro.	Uncorrected o reading (55)	(c) (f) x coeff'nt (f)	(f) incl. a time rink	Incorrected () reading ()	(h) incl. () (100 chi tire FIMAL () (200 chi	Even of (g) and (g)	Difference (j) and (k) (a)	Forcentage	Corr Zero Long. Comb. Trans. Zero	17. 17. 12 30 12 45 12 52 1 03 1 10
At ground wire suspension point control of the adjust of	(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	Longitudinal Lead Tests (0) LoadF 10, LoadF 10	From vertice i	FINAL ()	10.0-0-	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Produce (4) (5) (6) (6) (6) (6) (6) (6) (6) (6) (6) (6	(i) (i) (i) (i) (i) (i) (i) (i) (i) (i)	-0.11	(1) and (k) (1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	Due to small Forcontage use	Corr Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero	Ting Collons 17. 12 30 12 15 12 52 103 1 10 0.01 -0.01	 C 19 - C 21 Gage Group	Count y ston y Coe 1307 Fourt	vire pint ff's e	20.0- 20.0- 20.0- 20.0- 20.0-	۲ (a) x cooff 'nt (d)	(c) include (c) in	component starts	component io	-0.10 Incorrocted () reading ()	o a a a a b a a b a a b a a b a a a a a a a a a a a a a	70.0-0-10-000000000000000000000000000000	Conding ()	-0.11 (h) incl. (j) Ling FINL	For (2) pure (2) Jo Eng	0 Difference (j) and (k) []	Leveentage Percentage	Cory Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero	17.0 12.30 12.52 10.31 0.01 0.01
At ground wire suspension point a confirs a c	(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	Longitudinal Lond Tests (c) LondF (c) LondF (c	Fron vertic.		Co-060	10 - 11. 10 - 1	Line Contraction (Contraction)	(i) (i) (i) (i) (i) (i) (i) (i) (i) (i)	For (%) pur (9) Jo ung -0.11	(n) (n) (n) (n) (n) (n) (n) (n) (n) (n)	Due to small Forcontage	Corr Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero	Tire Citions 17. 12 30 12 15 12 52 103 1 10 -0.01 -0.01	C 22 = C 24 C 19 = C 21 Gale Group	Coe ston k in k in k in k in k in k in k in k i	منبة منبع دولاح دولاح دولاح	(5) (5) (5) (5) (5) (5) (5) (5) (5) (5)	L (b) 14, J3000 X (c) -0.005 0.1%	ongitudi Local To: (c) to source the provide the source of the -0.07 -0.08 -0.07 -0.07 -0.05 0.15 0.17 0.16	nal tts orrite to orrite to orrite t	Component to Component	(10) (10) (10) (10) (10) (10) (10) (10)	0.01	د. داری ایران در مار در مار در در در در مار در مار مار دمار در دم مار دم ما دمان دم مار دم مار دم مار دم ما	052	0.12% 0.222	For (X) (B) pure (c) Jo mns -0.11	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	vison opposed	Cory Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero	17.0 17.1 12 30 12 15 12 15 12 52 1 03 0.01 0.01 0.01 0.01 0.01
At ground wire suspension point 	(a) (b) passature passature passature (c) passature (c) (c) (c) (c) (c) (c) (c) (c)	Longitudinal Lond Tosts (c) LondF Lugger 1 (c) LondF Lugger 2 (c) LondF Lugger 2 (c) LondF Lugger 2 (c) LondF C (c	Section 11 House 12 August	(b)	-0.00 -0.00 -0.00 -0.00 -0.00 -0.00 -0.00 -0.00 -0.00	(1) (1) (1) (1) (1) (1) (1) (1)	Case (1536) (h) parameter (h)) (1) (1) (1) (1) (1) (1) (1) (1	For (k) (c) Je (c) Je (c) (c) (c) (c) (c) (c) (c) (c) (c) (c)	Company (n) automated automate	0.2 Due to small Porcontago reading Porcontago	Corr Zero Comb. Trans. Zero Comb. Trans. Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero Long. Comb. Zero Zero Zero Zero Zero Zero Zero Zero	Ting Citions 17. 12 30 12 15 103 1 10 0.01 -0.01 0 0	At Draw and a set of the set of t	Coe Ston P Coe Ston P Coe Store S S S S S S S S S S S S S	<pre>#ire pint if('s</pre>	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	L (b) t=15000 (c) -0.05 0.0-0-0 0.015	ongitudi Locad To: (c) - 10-000 -0000 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.00 -0.01 0.01 0.00 -0.00	nal tts gdfortt tusuoduoo	.o.n. (d).	0.00 0.00	angwer ad fres (f) ti ti ti ti ti ti ti ti ti ti	دور در این	Cocichi Lasa (h) Butpostreeted (h) Butpost Po-0-05 0-05	1000 1000	For (x) (x) Jo pue (y) Jo end 0.23 0.04	Compan (10) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	reading 6 Percentage 0 Percentage	Cory Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero Long. Comb. Trans. Zero	0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01

At ground wire suspension coint	Longitudinal	Combined Load Tosts	For Comparison Tive Correspons	At ground wire Longitudinal	Transverse Combined For Comparison Title Load Tests Load Tests Corrections
	(a) (b) (c) IonaFortion (d)	(e) (f) (g) (h) (j)	(k) (n) 17. 19.	(a) (b) (c) LogiFortion (C)	(c) (f) (g) (h) (j) (k) (h) 17.
Guge Group Costober 1964 Longit. Tronav	Uncorrect.d readin (b) includ. (b) includ. (b) includ. (c) includ. (c) includ. (c) includ. (c) includ. (c) includ.	Uncorrected reading (e) reading (f) incl. then <u>run</u> Uncorrected reading (h) incl. (h) incl.	(1) (2) (2) (3) (4) (5) (5) (5) (5) (5) (5) (5) (5	Crubber Crubber 2004 Innurit. 98 Innurit. 98 Innurit. 98 Innurit. 98 Innurit. 98 Innurit. 98 (a) (b) inclufer (b) inclufer (b) inclufer (b) inclufer (c) inclufer From transv. component component PTML	(i) havorrocted reading (i) (o) (o) (i)
6. ,980 m. 8685 m. 17. 1 19. 1 19. 1 19.	-h.e.12 -l.e.32 -h.e.55 -l.e.55 -h.e.9h -h.e.9h -h.e.60	3.75 2.57 2.57 2.73 2.51 -1.88 -1.63 2.91 2.90 -1.66 -1.68 2.63 -1.69	Long. 0.00 0 Ccmb. 0.25 0 Trans. 0.32 0.01 Zero -0.47 -0.02	6. 980 -0.78 -0.76 -0.76 6. 685 -0.80 -0.79 1. 170.80 -0.79 4. Avar 52 -0.77	-0.05 -0.03 -0.03 -0.07 -0.08 -0.79* Long. 0.01 -0.88 -0.80 -0.87 -0.77 -0.02 2.5
N 6. 980 H 8. 685 I 17. I 19. A Manage	-5.26 -5.15 -5.15 -5.26 -5.23 -5.42 -5.42 -5.42 -5.42	-3.36 -2.30 -2.30 -2.94 -2.70 -8.04 -7.45 -2.85 -2.84 -8.17 -8.17 -2.61 -7.82	Long. 0.03 0 Comb. 0.19 0 Trans. 0.21 0.01 22r0 -0.36 -0.02	6. 980 6. 6685 1.17 1.15 1.15 1.01 1.02 1.02 1.08	-0.07 -0.05 -0.05 -0.05 -0.07 1.10* Long. 0.01 -0.17 -0.06 0.97 1.05 1.05 0.04 3.5 200 -0.16
6 • •980 8 • •685 17 • 19 • 19 • 5	4.88 4.78 4.78 5.07 5.10 4.90 4.89 h.92	-3.36 -2.33 -2.33 2.27 -2.03 2.74 2.93 -2.33 -2.11 2.73 2.67 -2.26 2.73 2.68	Long. 0.03 -0.01 Corb. 0.19 -0.05 Trans. 0.24 -0.08 Zero -0.37 0.07		0.07 0.05 0.05 -0.92* Long. 0.01 -0.04 0.05 -1.01 -0.92* Comb. 0.07 0.05 -1.01 -0.91 0.05 -0.93-0.89 -0.04 1.00 2cro -0.13
0 6. •980 8. •685 17. 19. ≈ tvorage ∞	5=08 h=97 h=97 h=99 5=05 5=22 5=25 5=09	3.01 2.06 2.06 7.03* 1.15 1.70 6.23 6.65 2.00 2.04 7.11 7.11 1.93 6.94 6.94	Long. 0.06 0 Comb. 0.42 0.03 Trens 0.55 0.04 Zero -0.91 -0.05 7.02 0.08 1.1	5. 6. •980 0.85 0.83 0.83 a. 8. •685 0.98 1.00 i 17. 0.98 1.00 Xerrage 0.91 1.00	0.14 0.10 0.10 0.10 0.93* Long. 0.02 -0.16 -0.02 0.76 0.87 0.01 0.90 0.95 0.05 5.2 Zero -0.21
At ground wire suspension point	Longitudinal Load Tosts (a) (b) (c) LoaiPortion (d)	Transverse Load Tests Corbined Load Tests (c) (f) (g) (h) (j)	For Comparison Time Corrections (k) (a) 17.0		
020 Croup Cottbur 1964 Longit. Tranav.	Uncorrected reatings (a) inclag. (b) inclag. (b) inclag. (c) incla	Uhrorroctod reading (e) x cooff ht tho ring Uhrorroctud Uhrorroctud (h) incl.	(1) you (1) (2) you (2) (3) you (2) you (2)		
ษา 6. ₀980 8. ₀685 1 17. ฅ ผ Avoreso	-1.00 -0.98 -0.98 -1.11 -1.10 -1.04	-0.06 -0.04 -0.04 -1.02 0.05 -1.21 0 0 -1.11	Long. 0.01 Comb. 0.05 Trans. 0.07 Zero. 0.07 6.8		
 ∞ 6. •980. ∞ 8. •685 17. ∞ Average ∞ 	0.69 0.68 0.68 0.53 0.514 0.62	-0.05 -0.03 -0.03 -0.20 -0.07 0.30 0.40 -0.05 0.52	Long. 0.01 Octb. 0.10 Trans. 0.13 Zuro -0.19	· · · ·	
е 6980 е. 8685 1 17. П Аусторо е.	-0.48 -0.47 -0.47 -0.77 -0.75 -0.61	-0.12 -0.08 -0.08 -0.55 -0.37 -0.20 -0.55 -0.11 -0.68	Long. 0.02 Ocmb. 0.13 Trans. 0.17 Zero -0.25		
9 6980 또 8685 ! 17. 국 kyprese 또	1.12 1.10 1.10 0.94 0.95 1.03	-0.02 -0.01 -0.01 1.11 -0.22 -0.06 0.79 0.91 -0.02 1.01	Long. 0.02 Comb. 0.12 Trans 0.16 Zero -0.23		

At ground wire		Len	gitudinal	1		Tonsy	erge	Cort	ined basss	For	Compar	ison	Cori	Tiro	s	A	t gro	ound 1	wire		I	Lengi	tudinal L Sonte			130	nsver d Tos	te i	Lond Cold	insd Tosts	For	Compar	doon	Corr	fir: colion:	a
suspension print	(a.) (b) (ad 19868 c)_leadi	Fortion	(d)	(c) (f) (g)	(h)	(j)	():)	_(::)_			17.	19.					(a)	(b)	(c)	Lidovs L_IosáF	ortion	(d)	.(e)	(1)	(3)	(h.)	(j)	():)	(n)_1			17.	
Gage group Cotcher 1984 Longit. Condition	Uncorrected readings (a)	x cooffint	(U) Include. From transv. component	From vertic.	FINE	Uncorrected reading (c)	x coolf ht (f) incl. time FIML	Uncorroctud reading	(h) incl.	Sum of (o) and (E)	Difference (j) and (k)	Percentago	Zero Long. Comb. Trans. Zero	10 50 10 52 11 00 11 10 11 28	7 26 7 30 7 37 7 L2 7 L5	dnorg ogog	Cotober	1964 Tenrit, 83	ff's Asucul	Uncorrected readings	(a) x coeff'nt	(b) incles.	time correct From transv. component	From vertie. component	TIMIT	Uncorrected reading	(e) X cooff ¹ nt	(f) incl. ting FINL	Uncorrected reading	(h) incl.	Sum of (c) and (g	Difference (j) and (k)	Percentage	Zero Long. Comb Trans. Zero	10 50 10 52 11 00 11 10 11 28	•
6980 m 8685 ^M 17. i 19. M	-3.16 -3. -3.72 -3.70	3- میل 3- 3- 1-	3.40 3.70 3.69 3.50			3.64 2.1 2.56 2.76	9 2.49 2.76 2.75 2.68	-0.95 -0.90	-0.91 -0.85 -0.88 -0.88	-0.92	-0.04	0.6	Long. Comb. Trans. Zero	0.02 0.10 0.20 0.38	0.02 0.03 -0.03	E 4 - E 6	6. 8. 17 Ave	• • 980 •	0 •685	2.47 2.58	5°75	2.5	42 59 50			0.06 0.13	0.01	0.04 -0.03 0	2.47	2.38* 2.52 2.45	2.50	0.05	2.0	Long. Comb. Trans. Zero	0.01 0.05 0.10 -0.19	
<u>ດ</u> 6980 ເມີ່8	-5•95 -5. -6•62	•93 -5	5.93 5.41 5.61 5.32			-3.49-2.5 -2.82 -2.68	9 -2.39 -2.66 -2.61 -2.55	-9.08 -9.34	-8.32* -9.00 -9.30 -8.87	-8.86	-0.01	0.1	Long. Comb. Trans. Zero	0.02 0.08 0.16 - 0.31	0.01 0.04 0.07 -0.07	E 7 - E 9	6. 8. 17 170	。。980 。 。	0 •685	-2.65 -2.86	-2.59	-2.5 -2.5	59 65 72			-0.10 -0.09	-0.07	-0.07 -0.01 0.04	-2.79	-2.66+ -2.75 -2.70	-2.76	 .06	2.2	Long. Comb. Trans. Earo	0.01 0.04 0.03 -0.16	
€ 6. 980 Ω 8. 685 1 17. Ω 12. Ω 12. Ω 12.	4.95 4 5.08 5.29	•85 1 5	1.85 5.10 5.29 5.08			-3.36-2.3 -2.39 -2.36	-2.30 -2.19 -2.32 -2.27	2.61 2.82	2.55* 2.71 2.84 2.70	2.81	0.11	1.5	Long. Comb. Trans. Zero	0.02 0.10 0.20 -0.40	0.02 0.04 -0.04	E 22 - E 24	6 8 17 Avo	• •98(• • • • •	0 .685	2.50 2.58	2.45	2 .: 2 .: 2 .:	45 59 52			-0.30- -0.30	-0,21	-0.21 -0.21 -0.21	2.27	2.24+ 2.32 2.28	2.31	0.03	1,1	Long. Comb. Trans. Zero	0.01 0.05 0.09 -0.18	
С 6980 а 85685 1 17 С 19. х дуагада а	4.70 4 4.64 4.62	.51 1 1 1	4•61 4•67 4•63 4•64			3.37-2.3 1.76 2.19	1 2.31 2.02 2.26 2.20	6.60 6.93	6.92 6.73 6.97 6.87	6.84	0.03	0.4	Long. Comb. Trans Zero	0.03 0.13 0.26 -0.49	0.01 0.04 0.07 -0.09	E 25 - E 27	6 8 17 Ave	• •98(• • •	0 •685	-2.11 -2.11	-2.1	-2.	10 40 25			0.28 0.1h	0,19	0.19 0.25 0.22	-2.16	-1.91; -2.11 -2.01	-2.03	-0•02	0 . 8	Long. Comb. Trans Zero	0.01 0.05 0.11 -0.20	: ; }
At ground wire suspension point	6. J.A.	Lon Le	gitudinal ad Tests	L		Ecansy Load T	erse ests	Lond	incd Tasts	For	Conpar	rison	Corr	Titlon	з !	-																				
Urge Croup Coucher 1964 Langta, 52 Transv, 51	Uncorrected f readings ((a) 6	x cooffint (h)	Eron transv.	From vertic.	TVNIE	Uncorrected () reading (e)	x cocff'nt (f) incl. (f) tincl.	Uncorrected F	(h) incl. 5 thro FIML	Sum of (g)	Difference (i) and (k)	Percentage	Zero Long. Comb. Trans. Zero	10 50 10 52 11 00 11 10 11 28																						
6980 1 8685 1 17. Avair 12	1.70 l 1.78	.66]]	1.66 1.79 1.72			-0.10-0.0 -0.15	07 -0.07 -0.05 -0.06	1,56	1.61 1.71 1.66	1.66	c	0	Long. Comb. Trans. Zero	0.01 0.05 0.10 -0.19																						
ଳ୍ମ 6୨୫୦ ଜ 6୨୫୦ ነ 17. ଜ ଅନସାନ୍ତର ଜ	-1.75 -1 -1.92	•71 -: -:	1.71 1.91 1.81			-0.14-0.1 -0.17	.0 -0.10 -0.05 -0.05	-2.05	-1.814 -2.01 -1.91	-1.90	0.01	0.5	Long. Comb. Trans. Zero	0.01 0.04 0.09 -0.17																						
т 6980 н 8685 і 17. т Avorage	2.14 2 2.19	•09	2.09 2.20 2.11			0.05 0.0 -0.07	0.03 0.05 0.02	2°15	2.12 2.18 2.15	2.19	0 • 01	2.0	Long. Comb. Trans. Zero	0.01 0.06 0.12 - 0.23																						
9 6980 и 8685 I 17. П sverage	-2.02 -1 -2.24	•98 -	1.98 2.23 2.10			0.15 0.3 -0.03	0.0 0.0 0.0	-2.18	-1.88 -2.13 -2.00	-2.02	0.02	1.0	Long. Comb. Trans Zero	0.01 0.05 0.10 -0.19)																					

APPENDIX B

Seereratures:	Dati	9	T	Sáma:					Typ	o of	Yest	Lead						r en	3.53,01 3.53,01	n 63	Te	mperatures:	Date	3	T	Time:					1	Гуре	of T	est :	Load						Posit	ion o	, <u>r</u> .
00/2011 58 °2 12 2011 70 °8	Oct.	3rd 196	4	Initia Load R	1 1. v 2041a	io Rece G	ding	1 30 2 00	Lon sus	gitud	lunal lon po	load	at co	nduc	tor			0;		- 2 - 2	Ou Ro	tside 58 °P om 70 °P	0ct.3	rd 19	64	Initi Load	al Zer Readin	o Re	adin	13		cngi nint	tudir	nal]	load a	at con	nduct	or su	spensi	on		Gag	,e ,
Enclorements 76 °F		1 1		Minal I	2585 	Readin	15		Lar.	d fin	Pavrzi	3	230	ν5 Γ		r					In	strument 76 °F				Final	Zero	Read	Ling		-	Load	in P	ounds	<u>, 23</u>	305	r	1	<u>-</u>	\rightarrow		~	
Cage Hunder	<u> </u>	A 2 A	3 1	4 A	5 A	6 A '	7 1 6	1.3	1 10	A 3.3	A 3.5	<u>A 13</u>	1 14	A 15	16	4 1') 	A 16	17	1. 20	d 4 20	Ga 	ge Number	A 22 /	1 23 A	1 24			\perp							·								
Toot Chounch	0	1	2	3 1	5	6	7	8	9	10	n	12	13	24	15	16	17	18	1.7	20	Te	st Channel	21	22	23																		
Destador of Griga	2	1	>	0 1	2	0	3.	2	2	1	0	2	1	0	0	1.	2	0	1	2	Po.	sition of Gage	2	1	0																		
Cive Predict	004	003 C	<u>00 00</u>	2 004	001	1 005	006	006	006	003	003	002	CO3	003	001	002	005	004	004	005	:hea	Zero Reading	006	001	004												<u> </u>						
성 IN A Treffing	058	-013 -0	05 X	5 012	-071	1 -042	-014	-032	055	-013	031	-248	070	055 -	-080	-031	121	-212	-655	750	roin	Load Reading	-490	424 2	345																		_
B B SY Dere	054	-010 -0	05 00	B00 E	+081	L +047	-020	-038	049	-016	028	-250	067	052	-081	-083	116	-216	-659	745	51	Difference	-496	423	341																		_
112	1.62	-0,	15	0.2	4	-1.4	-p.60	-1.14	1.47	0.48	0.54	7.50	2.01	1.56	-43	2.49	3.40	-6.48	19.77	22.35		Kips/in ²	14.88	2.69	.023													[·	
2 rebilon	12:	ರಿ.ಕ್ಷೇನ್ ತಿ		uka).	d'3	2		3 <u>1.6</u>	- 2 get	2'. ³ 1	6	rj×	1/2/8		13d	l.½x ¹ 3		2];	:3]%	326		Section	21/2×	2 ¹ 2x ³ 1	.6																		
() ? Dial whe	Ĩ2	r <u>1</u> 2,	, ſ	o [1	f2	0	1.	2	2	1	0	2	ı	0	0	ı	2	0	1.	2		Cooffiniates	f2 :	f ₁	fo																		
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: Ciga	0.19	0.05	o2 0.	0.0	-0.5	28	0.24	-0.31	0.12	0.19	0.20	0	•30	0.15	0.23	.38 D	.40	1.50	7.76	6.19		Kips	-1:.17	•98	-38			\uparrow															
tatual trail		0.12								0.10		-1_1.20	. Lo			27			2 07			Actual Load	3	-25				1	I	l					I				I		L		
1.05402 2		0.12		-0.04				, 					•42			• < 1			5.07																								
Temperatures:	3AG	e		Time:					Typ	e of	Yest	Lead						257	151.07	n of (Τe	erperatures:	Date	8		Time:						Гуре	of T	est :	Load						Posit	ion c)I
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Rechargers 73 °F	 	· · · · · ·		Firs1	<u>Suro</u>	Readin	<u>ng</u>	120	Log Bust	d in	Pound	່ວ 2	255						0 <u></u> - 1999-1999	9-22 Sparrana	Ir	istrument 73 °P	<u> </u>			Load Final	Readin Zero	Read	ling	6	27	Load	in P	ound	3 22	55					1 .	2	:
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ng Lui Invitor	Ofite	004 0	02 0	015 01	.7 -0	51-023	-007	-019	043	-018	023	-245	599	033 -	-070	-060	102	-227	-598	660	oin:	Load Reading	-465	451	349			Τ														•	
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, ligra		0.01	0	.03	-0.20	0 18	-0.12	0.18	0.33	0.05	0.14	D BF	-47		3. 18	0.28	0.37		6.98	5:47		Kina	2.02	•30			-	+						\rightarrow							-		<u> </u>
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00001d0 65 °P	Oct.12th 1964	Initial	2.50 1	leading	6 18	Zero	contro	l readi	ng				C)	79 	0	utside 65 °F	Oct.1	2th 1964	In	itial Z	ero l	Readir	g [′] 6	18 Z	ero	contro	olre	ading					0 1	Gage
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de go Fendor	A 1 A 2 A 3	A 4 A 5	Λ 6	Α7Α8	3 A'9	1 10	A 15 A	2/4 13	A 14	A 154 :	26	1 171 18	1 1	9 1 20	A 22	Ga	age Number	A 22	A 23 A 2	4															
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n an	-012 -013 023	051 026	-024 -	046 -00	9 015	026 🛶	015 -OL:	3 001	501	-066 -0	05+00	05 -030	-024	-038	056	d'uro	Load Reading	-030	010 01	3															
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de 30 Hurdoor	A 1,	1 2	13	Λ 1, 1	5 Λ	6 1 7	A 8	A'9	1 3.0	A L	A 2.	A 13	1 U;	A 1.5	1 1.6	1 1	A 1.5	A 19	2 1 2	d a 2	G	age Number	A 22	A 23	3 A 24		-			Γ								Τ			
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f L. C. Was	-007	-018	005	001 -	026 -01	2 015	01	1-004	-034	013	037	008	506	-023-	-021	005-	-003 ·	-065	-022	017	roin.	Load Reading	003	-021	445		_						· .								,
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Cutside 58 °F Room 70 °F Instrument 76 °F	Oct.3	rd 1964	Ini Loa Fin	tial Z d Read al Zer	ero Re ing o Read	ading ing	3 00	Long poin Loa	itudinal it d in Pou	l load Inds	at c 230	onduct 5	tor s	uspen	sion	0	2	0: R- T-	ntesido 58°7 Aote 70°7 Antesido 76°7	Oct.	3rd 19	961	Ini Loa Fin	Sial d Ros al 20	Zero Ming pro R	Readi	ng	3 00	Long poin Lond	itudi: t in Po	nal l ovnds	oad a	t con 2305	ducto	r su:	pensio	, i		iage = 2
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J Load Reading	-057 -	100 -045	024	039	011 -0	10-06	61-049	024	075 041	L 022	027	020	-078	-080	007			cuilo:	Load Reading	-052	231	379	-068	०धंग	-136	019	005	044	-357-	504 (668	204 -	220 -	379	437 1	83 -01	3		ļ!
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Kips/in ² x (-1)	+1.71 [#]	2.91	-C.72	2.1.14	0.15 41.	ու ե.7	17 1.53	0.69	.2.19	23 -0.63	-0.78	0.63	2.37	2.40	-0.2	<u> </u>			Mips/in ² x (-1)	1.50	-5.9	11.40	2.07	-1.3	ء لا•عل	-0.60	3.21	-1.38	10.74	5.18	5.04	6.09	•60	-1	3.08	0.5	4		
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Coefficients	202	.21,1, 173	.094	,151	.116	116.19	51 .094	.173	,244 20	02,035	.078	.067	.067	.078	.035				COSTITUTEROS	.202	.244	. 1.73	.09!	.151	.116	1.116	.1.51	.094	.173.	2/4/4	202 .	035.	076 .	037.0	67 .	78.05	5		
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Actual Load	1	.•30		-0.30		0.5	55	-	0.92		-0.16			0.33					Actual Load		-3.35			0 . 4	7	·	-0.23		4	•55		0	. 80		-	.96			
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Outside 62 °F	Oct.1	2th 1961	Ini	itial 2	ero Re	ading	7 13	Lon	gitudina	al loz	d at	conduc	ctor	suspe	asio	n 01	Gage		Dutsido 62 °F	Oct	.12th	1964	Ini	ibial	Zero	Read	ing	7 13	Lon	ditudi	inal	load a	at co	nduct	or 81	spensi	m	011	Gage
Room 69 °F Instrument 74 °F			Los Fir	ud Read nal Zer	ling 10 Read	ling	7. 35	poi Los	nt id in Po	unds	2	255				1	2	n I	hoon 69 °F Instrucent 74 °F				Los Fi:	ad Re nal Z	adin; cro I	i leadin	3	7 · 35	Load	in F	Poinds	3.	2255					J. K	⇒ 2
Gage Number	ві	B 2 B 3	B B 4	B 5	B 6 E	37 B	8 B 9	B 10	B 11 B :	128 13	3 B 1	L/ B 15	B 16	5 B 11	В 1	8		G	lage lingber	5 19	3 20	3 21	73 22	2 В 2	33 2!	3 25	5 25	E 27	E 28	D 29D	30 3	3 31 E	32	3 33 1	3/5	a 356 3	6		
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Section	134	134x316	:	lýslýx	Lg	lźxl	1x18	1.34	, x134x ³ 16	,	lxlx	18		lxlx	18			-	Section	13	34x2 ³ 15	.3 ₁₆	1	jorja	18	12	oljx ¹	8	1 ³ 1;:	1 ³ 4:2	310	1:1	12: ¹ 5		حد 	1218			
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King		0.81	0		- 0 •06	12 p.	20 0.10	-0.12		16	-0.0	-0-06	0.1	9 0.2	-0.0	2			Xips	0.6	-1.5	-2.2	0.22	2-0.2	6 0.5	.0 -0.0	0	0.0	1.92 8	4.24	1.24	0. 54	0.60	0.85	.90	L.27 0.	<u>11</u>		
	0.25	μ.,	-	-0.05				<u>'</u>	0.40			16		0-3	3				ining Tood	_	-3.0	 8		0.4	6		0.03				4.92		0.91	•	-	2.06			•
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Room 69 OF	06 cel 2011 1904	Load Reading	7 46	load at cond	uctor suspensi	on point	l ĭ	0absido 62 ° 7	Oct.12th 1964	Initial Zer	o Reading 7 13	load at cond	ngitudinal and iuctor suspensi	transverse on point	OH Garo
Instrument/3.5 °F		Final Zero Re	cading	Load in Pou	nds 2255 longi	t. 2350 transv	1 1 2	Instrument 73.5 T	1	Final Zero I	z 746 Reading	Load in Pour	123 2255 Jong.	2350 transv.	1 2
Gage Number	B1 B2 B3	B4 B5 B6	B7 B8 B9	B 10 B 11 B 1	23 13 B 1/B 1/	5 B 16 B 17 E 1	e III	Caga Romber	5 19 5 20 3 21	1 7 22 8 235 2/	E 25 E 25 E 2	7 E 25 E 255 30	B 31 6 32 3 3	3 D 3/ D 350 36	
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17		fest Gaanel	18 19 20	21 22 23	24 25 25	27 25 29	30 31 32	33 34 35	
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2 Zero Reading	-004 -004 -005	-011 -002-003	-004 -004 -005	-003 -003 000	002 004 001	002 -001 001		E Zero Reading	005 004 000	-002 -002 00	000-002-00	2 000 003 505		2 507 007 000	
C Load Reading	044 080 010	085 047 053	091 121 140	-064 -074-032	-099 -038 -02	4 088 071 -009		Jend Reading	136-144 -361	-033 -149 08	0-073-046-05	371 582 281	-215 265 12	0 055 -516 070	
Difference	048 084 015	096 051 056	095 125 145	-061 -071-032	-011 -042 -02	5 086 072 -010		T Difference	131-144 -361	-033 -31/7 08/	073 -011 -011	371 570 -227	212 266 12		
Kiro/in ²	2.52	2.88 1.68	2.85 3.75	1.83 -0.96	1.26	2.53 -0.30			-4.32	0.93 2.4	0 +1.32	11.13 -6.53	7.98	-13.38 2.10	
·		1+023	4.05		10.001 10.00	2 Kerrol	<u> l</u>		3.93 -10.8	× 1-1-1-1	-2.19 -1.4	17.31	-6.39 12.7	2-15.45	
Section	134x134x316	l ₂ xl ₂ x ¹ 8	12x12x18	1 ³ 4x1 ³ 4x ³ 16	lxlx ¹ 8	lxlx ¹ 8		Section	1347131,316	lýslýs ¹ 8	12:12x ¹ 8	1 ³ 4:1 ³ 4:: ³ 16	1:1x ¹ 8	1:1:1 ² 3	
	f ₂ f ₁ f ₀	f_0 f_1 f_2	f_2 f_1 f_0	fo f1 f2	f ₂ f ₁ f ₀	f ₀ f ₁ f ₂			12 11 10	$\begin{bmatrix} r_0 \\ r_1 \end{bmatrix} \begin{bmatrix} r_2 \\ r_2 \end{bmatrix}$	f2 f1 fo	f_0 f_1 f_2	\mathbf{I}_2 \mathbf{I}_1 \mathbf{I}_0	1 I I I I I I I I I I I I I I I I I I I	
Coefficients	202 _241, 173	.094 .151 .116	5	,173 ,244 20	2.035 .078 .067	.067 .078.035		Coofficients	.202 .244 .373	.02: 151 .116	.116 .151 .091	.173.244.202	.035.078.0%	7.057.078.035	
Kips '	0.62	0.27 0.20	0.18 0.57	0.32 -0.19	0.10	0.17 0.03			+1.05	-0.09 0.28	-0.20	1.93 -1.33	0.62	-0.90 0.18	
	0.29 0.00	p. 23	0.40 0.40	-0.52	10-03 +0-0	Del7			0.80 1.80	a ~0.67	0.25 -0.1	4.23	0.54 0.8	-1.21	
Actual Load	0.99	0.70	1.46	-1.03	-0.18	0.31		Astual Load	-2.13	-0 _ 48	-0.59	4.83	0.93	-1.93	
	1	1	· · · · · · · · · · · · · · · · · · ·		1				I		<u> </u>		<u> </u>	1	
Temperatures:	Date	Time:		Type of Test	t Lozd		Position of	Temporatures:	Date	Tire:	•	Type of Test	Lond	· · ·	Position of
Outside 62 °F	Oct.12th 1964	Initial Zero	Reading 7 13	2ero contro	l reading		On	Outside 62 °F	Oct.12th 1964	Initial Zero	Reading 7 13	Zero control	reading		Oy Gage
Instrument 73 °F		Final Zero Ro	ading 800	Load in Pour	nds Koload		12	Room 69 °F		Load Reading	centing 800	Lord in Power	ta No load		1 2
			In a la al no		halta									la alta ada ad	ŀ
Gage Number	B1 B2 B3	84 85 80	B7 B8 B9	P TO P TT B T	28 13 6 1/6 15	D 10 B 1/ B 1/	<u> </u>	Gaja Number	5 19 5 20 5 21	1 22 3 235 24	5 25 5 23 5 27	5 25 5 250 30	ور ۵ ۵۷ ۵ ۱۱ و ۶	0 26 250 260 200	
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17		Test Cannel	16 19 20	21 22 23	24 25 25	27 23 29	30 31 32	33 34 35	
Position of Gage	2 1 0	0 1 2	.2 1 0	0 1 2	2 1 0	0 1 2		Pecition of Gage	2 1 0	0 1 2	. 2 1 0	0 1 2	2 1 0	0 1 2	
2 Zero Reading	-004 -004 -005	-011 -004 -00	3-004 -004 -005	-003 -003 000	005 001 003	002001 001		5 2ero Reading	005 004 000	-002 -002 000	000 -002 -002	000 003 505	-002 -001 -004	501 -001 000	
H Load Reading	011 012 004	012 015 010	0 011 008 010	001 017 023	028 025 021	4 024 019 020		g No Lord Reading	029 014 015	an are an	017 015 015	015 006 523	012 016 019	520 017 010	
5 Difference	015 015 009	023 019 013	015 012 015	004 020 023	026 021 023	3 022 020 019		B Difference	024 010 015	013 018 013	017 017 017	015 003 018	014 017 023	019 018 010	
Kips/in ²	0.45 0.45 0.27	0.69 0.57 0.39	0.45 0.36 0.45	0.12 0.65 0.69	0.78 0.63 0.69	p.66 p.60 0.57		Xips/in ²	0.72 0.30 0.15	0.39 0.39	0.51 0.51 0.51	0.05 0.54 0.09	0.51 0.42 0.69	0.57 0.54 0.30	
Section	1 ³ 4x1 ³ 4x ³ 16	12x12x18	12x12x18	134,x134,x316	lxlx ¹ 8	lxlx ¹ 8		- Section	1 ³ 4:1 ³ 1:315	12122 ¹ 8	12:12:x ¹ 8	1 ³ iz1 ³ iz ³ 16	1x1x ¹ 8	lxlx ¹ 3	
	6 6 6	c. c. c.	5 5 5	5 10 m		f. f1 52			6 6 6		En En E	f. f. f.	1 1 3	1. 1. 1.	
Coefficients	12 11 10	10 11 12	12 11 10					Coefficients	-2 1 -0	*0 *1 *2	-2 -1 -0	-0 -T -5	-2 -1 -6	0/7 074 077	
	.202: .21,4,.173	.091; .151 .116	.116.151 .094	,173 ,244 20	4,035,078,067	0.02/ 0/6.035			.202 .245 .273	0.01 0.05	0.116 .151 .054	0_08 Col2	0.04	0.04 0.03	
Kips	0.09 0.11 0.04	0.07 0.05	0.05 0.03	C.02 C.14	0.07 0.05 0.05	0.05 0.05		7193 	0.15 0.08	0.08	0.05 0.05	0.02	0.04 0.05	0.04	
Actual Load	0.24	0.21	0.14	0.30	0.17	بالده	-	letuzl Lond	0.30	9.1 7	0.19	0,22	0.13	0.11	
					-		-	~		-					
	1:22			tort lord r		<u> </u>	L	ieltiply (Lips/	<u>/</u>	l a initial žero	uas read with t	col loud on.	I	L	
Multiply (Kips	/in~) by -i who	en initial Zero	s was read with	test 1024 0h.											
							Noc								
					STRAIN	READ	NGS	IR MEMBI	ER LO	DADS					•
L			•												

Teoperatures:	Date	Tino:		Type of Test	Load		Position of	Tempiratures:	Date	1	Tire:		1990 of Test	Lond		Position of
Outsido 46 OF Room 69 OF Instrument 73 OF	00t.10th 1964	Initial Zero H Load Reading Final Zero Rea	leading 852 912 Iding	Transverse lo suspension po Load in Foun	ead at three co bints ds 3022	nductor		Outside 46 °F Room 69 °F Instrument 73 °F	Oct.10th	h 1964	Initial Zero Loud Reading Final Zero Re	Reading 8 52 9 12	Transverse lo suspension po Log4 in Porm	oad at three co pints As 3022	nductor	
Gage Number	B1 B2 B3	B4 B5 B6	B7 B8 B9	Б 10 В 11 В 12	B 13 B 1/B 15	B 16 B 17 B 1	e	Gago Busher	5 19 3 2	20 2 21 2	0 22 B 235 24	D 25 D 26 D 27	D 25 D 292 30	D 31 B 32 D 33	D 316 B 350 36	
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 1.6 17	•	Test Channel	18 19	20	21 22 23	24 25 25	27 20 29	30 31 32	33 34 35	
Position of Gage	2 1 0	0 1 2	2 1 0	0 1 2	2 1 0	0 1 2		Position of Gage	2 1	0	0 1 2	2 1 0	0 1 2	2 1 0	0 1 2	
g Zero Reading	001 004 003	003 001 -001 -	-001 -002 -004	002003001	-003 -004 -002	-002-002 -002		S Sero Reading	-004 -00	05 -004	-006-003 -006	-003 -002 -001	-002 -002 496		199 -002 000	
2 Load Reading	020 046 030	-106 -098 -086 -	-072 -108 -112	019 038 034	037 -006 -019	022 024008		E Load Reading	-031 -06	65 -036	122 123 079	095 091 095		006 -025022	520 -007 -049	
E Difference	019 042 027	-109 -099 -085 -	-071 -106 -108	021 041 035	040 -002 -017	024 026 -006		B Difference	-027 -06	50 -032	128 126 085	699 093 096	-039-022	009 -021 -017	021 -006 -049	
Kipo/in ² x (-1)	-0.57 -0.81	B•27 2•97 2•55	2.13 3.18 3.21	0.63 -1.05 -1.23 -	1.20 0.06 0.51	0.72 -p.78 0.18		11490/111 ² x (-1)	0.81	30 - 0.96	3.64 -2.55	-2.79 2.97 -2.88	0.18 1.17 0.65	0.27 0.63 0.51	-0.63 1.47 0.18	
Section	134,x131,x316	lįxlįx18	l ¹ 2xl ¹ 2x ¹ 8	1 ³ 4,x1 ³ 4,x ³ 16	lxlx ¹ 8	lx1x ¹ 8		Section	1 ³ /01. ³	3 ₄₅ 316	lýdýr ¹ 6	1 jalja ¹ 6	1 ³ 621 ³ 62 ³ 16	1:1): ¹ 8	b:b: ¹ 3	
	f ₂ f ₁ f ₀	fo fl f2	f ₂ f ₁ f ₀	f_0 f_1 f_2	f ₂ f ₁ f ₀	fo fl f2			12 î.	1 20 3	1 ₀ /1 /2	r ₂ r ₁ r _o	r _o r ₁ r ₂	I2 I1 Io	2 ₀ 2 ₁ 2 ₂	
Coefficients	202 .244.173	.091; .151116	.116.151 ,094	,173 ,244 202	.035 .078 .067	.067078035		Coolinchents	.202 .24	16 .273	.09/.3.51 .215	.116 .151 .074	.175.244 .202	.035 .070 .054	.037 .078 .005	
Kips	-0.12 -0.11	0.31 0.30	0.25 0.48 0.31	-0.30 -0.21	3.13 0.03	0.05 -0.06 0.02		Kips	0.16 0.14	·4 0.17	0.36 -0.30	-0.42 0.34 -0.27	0.31 p.26 0.13	0.02 0.05 0.03	-0.04 0.13 0.01	
Actual Load	-0.57	1.05	1.04	-0.62	-0.07	-0.09		Astrict Lord	0.7	77	-1.23	-1.03	0.70	0.06	0.10	
Temperatures:	Date	Time:		Type of Test	Load		Position of	Toma tanga			175 mar.		Suma of Saat			Projition of
Cutside 62 ^O F Room 69 ^O F Instrument 73 ^O F	Oct.12th 1964	Initial Zero F Load Reading Final Zero Rea	deading 713 754	Transverse lo suspension po Load in Foun	oad at three co Dints ds 2350	nductor	Cage	Outsido 62 °r Room 69 °r Instrument 73 °r	0ct.12t	th 1964	Initial Zero Load Reading Final Zero Re	Reading 7 13 7 54	Transverse lo suspension po Load in Port	ad at three co bints : 33 2350	nductor	
Gage Number	B1 B2 B3	B4 B5 B6	B7 B8 B9	в 10 в 11 в 12	B 13 B 1/B 15	B 16 B 17 E 1	8	Co., o Winsbor	5 19 5 2	20 21 3	22 B 238 24	5 25 5 25 E 27	L 20 L 251 30	B 31 B 32 B 33	B 34 B 355 36	
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 1.6 17		Test Channel	JS 19	20	21 22 23	24 25 23	27 28 29	30 31 32	33 34 35	
Position of Gage	2 1 0	0 1 2	2 1 0	0 1 2	2 1 0	0 1 2		Position of Gage	2 1	0	0 1 2.	2 1 0	0 1 2	2 1 0	0 1 2	
2 Zero Reading	-004 -004 -005	5 -022-004 -003	-004 -004 -005	-003 -003 000	002 004 001	002 -001 001		8 Zero Reading	005 001	14 000 -	-002002 000	000 -002 -002	000 003 505	-002 -001 -004	501 -001 000	
g Load Reading	014 -009 -023	3 108 085 076	069 093 117	-025 -011 007	005 026 039	017 011 028		-g Loud Reading	056 06	53 059 .	-052061039	-036 -029 -047	034 039 534	018 036 045	521 032 055	
b Difference	018005018	8 119 089 079	073 097 122	-022 -008 007	003 022 038	015 012 027		6 E Difference	051 059	59 059 -	-080059039	-036 -027 -045	034 036 029	020 037 049	020 033 055	
Kipo/in ²	0.54 0.51	3.57 2.37 2.67	2.19 2.91 3.66	0.66 -0.24 0.21	0.09 0.66 1.11	0.115 0.36		Mips/in ² .	1.7	1,77	2.40 -1.17	-0.71 1.08 -1.35	1.02 0.77	0.60 1.11	0.60 71.69	
Section	1 ³ 4x1 ³ 4x ³ 16	l ¹ ₂ xl ¹ ₂ x ¹ 8	lýxlýx ¹ 8	1 ³ 4x1 ³ 4x ³ 16	lxlx ¹ 8	1xlx ¹ 8		Section	1 ³ /01 ³	3 ₄₀ ,3 ₁₆	ા}ેનારે≍ ¹ 8	lý:lýx ¹ 8	1 ³ 102 ³ 107 ³ 16	L:1x ¹ 8	b:br ¹ 3	
	f ₂ f ₁ f ₀	fo f1 f2	f ₂ f ₁ f ₀	fo fl f2	f ₂ f ₁ f _o	fo fl f2		Perchatente	f ₂ f ₁	1 20	$r_0 r_1 r_2$	f ₂ f ₁ f ₀	fo fl f2	f ₂ f ₁ f ₀	2 ₀ 21 22	
Coefficients	202 .244.173	,094, ,151116	.116.151 ,094	,173 ,244202	.035 .078 .067	.067078.035		CODITION CONTRACTOR	.202 .24	14 .273	.094.151 .116	.116 .152 .094	.173.244 .202	.035 .076 .037	.037 .078 .035	
Kips	0.04	0.33 0.40 0.27	0.25 0.44 0.34	0.01 -0.06	0.01 0.05 0.03	0.03 0.03 0.04	5	Kips	0.31	13 0.31	0.23 -0.1	-0.11 0.13 -0.13	0.18 0.16 p.26	0.05 0.09 0.10	0.04 0.03	
Actual Load	-0.01	1.00	1.03	-0.13	0 .1 4	0.12		Actual Load	1.0	cs	-0.64	-0.37	0.60	0.24	0,26	
													 	-		
Nultiply (Kip:	s/in ²) by -1 wh	en initial Zero	was read with	test load on.				Albaply (dips/	ло") by -	-3 Pien	initial fero	010 Foxa (Alba)	sena Torra Ou*			
				S	TRAIN	READI	NGS	& МЕМВІ	ĒR	LO.	ADS					
								l		*****						

											<u></u>								, a							<u></u>																_				·····	
Temperatures:	Dat	e		Time	:					Ту	po of	Test	t Loa	1						Posit	ion Ga	of age	Terry	peratu	res:		Date			Ti,	a:					Typ	no of	Tes*	Lozd						Posi	tion	of
Outside 49 °F Room 70 °F Instrument 75 °F	Octa	.7th 19	64	Init Load Fina	ial Rea 1 Ze	Zero ding ro Ro	Readi cading	ing S	6 50 7 15	LC SU LC	ngitu spens ad in	dinal ion p Pour	l load point nds	l at	grow 251	nd #1 05	ire			01 1		-2	Oute Root Inst	side a traten	19 70 75	or or or	Oct.	7th (1964	Ini Los Fin	tial d Roa al Zo	Zero ding ro Ro	Readi ading	ng	650 715	Lon SUL Log	ngitu spens d in	dinal ion p Pour	. load xoint	iat g 27	2701111 (05	i wirv	8		1 I		2
Gage Number	Bl	B 2	В 3	в4	в5	в 6	B 7	B 8	В 9	в 10	B 1J	. в 1:	28 13	в	/B 1	5 в 1	16 B	17 B	18				Gaga	a Hunb			3 19	3 20	3 21	7) 22	B 23	52%	3 25	D 23	5 27	E 29	D 2	se 30	31	B 32	B 33	3 B 3!	4 B 3!	36			
Test Channel	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	5	16 1	7				Test	t Chan	ncl		18	19	20	21	.22	23	2!4	25	25	27	28	29	30	31	32	33	34	35			
Position of Gage	2	1.	٥.	0	1	2	2	1	0	0	1	2	2	1	0	0	-	1 :	2		÷		Posi	ition	of Gag	e	2	1	0	0	1	2.	2	1	0	0	1	2	2	1	.0	0	1	2			
2 Zero Reading	008	800	009	007	007	007	7 004	007	006	007	006	005	005	005	000	5 00	26	004 0	56				2343	Zero	Rendin	s	004	005	005	007	005	coli	007	005	coli	007	007	502	1 006	5 00F	00	503	005	003			
d Load Reading	-004	013 -	038	-024	-047	-011	022	0 88	054	ò35	-025	-017	-055	027	03	3 -00	03 (200 OC	55				2070	Lord	Readin	c	-285	-368	499	040	-096	091	-037	005	-014	496	598	636	-184	1 120	151	202	-358	032			
Difference	-015	005 -	047	-031	4054	-018	8 018	081	048	028	-031	-022	-060	025	02	7 -00	- 90	204-20	21				UT1	Diffe	rence		-289	-373	-50li	033	-101	087	-044	000	-018	489	591	132	: -190	115	14	-301	-363	029			
Kips/in ²	0.36	p.15	_ .41	0.93	1.62	0.51	0.51	2.43	1.44	0.84	-0.93	0.66	-1.80	p.66	0.8	-0.2	27	.12	.03					Kips/	in ²	ļ	8.67	1.19	-15.1	p.99	3.03	2.61	1.32	000	-0.51	рт °6.	17.7	3,96	-5.70	3:15	4.35	-9.0	10.8	0.87			
Section	134	x134x3	16	12	xl ¹ x	18	1	al ja	18	131	v:1 ³ 40	316	:	lxlxl	8		lx	1x ¹ 8						Secti	ən		2. ³ 4:	:1 ³ 1;:	.3 ₁₆	13	aļ:	ø	ı¢	1):: ¹	8	1 ³ 1	::1 ³ 4:	316	1	×1× ₁ 8	:	,	prix ₁	3	•		
	f2.	fl	fo	fo	ſì	f2	f2	ſl	ſo	fo	fl	f2	f2	11	fo	۱°	f	1 :	5								£2	Ĵ.	2 ₀	20	r ₁	1 ₂	£2	ſı	ſo	r,	1 ² 1	r ²	¹ 2	fl	ſo	20	r1	î2			
Coefficients	202	-244	173	.094	,151		6 126	.151	,094	,173	,244	202	035	.078	.06	7 .00	67	078.0	35					Cooff	icients	·9	.202	. 24,4,	.173	.02/	.151	.116	.115	.151	.094	.173	.244	.202	.035	.070	.061	.057	.078	•C35			-
Kips		0.03	.25	0.09	0.21	0.06	5	b. 37	0.11	0.15	0.22	0.13	0.16	p.05	h.0	-0.0	² -0	.01	5					Kips	·		1.76	2.72	-2.62	0.09	-0.46	0,30	-2 - 25	٥.	-0.05	2.54	4.30	0.80	40.48	0.27	0.2	-0.6	0.85	0.07			
Actual Load	-	0.29			0.39	-		0.57	1		-0,21		•	0.0 6			-0	•03						Actual	l Load		-	7.10			-J.07			~0.2	0		7.64			0.08	1		-1.39				
Temperatures:	Dat	e		Time	:		_			Ty	pe of	Test	Load	1						Posit	ion	oſ	7		700 f		Date			557						20	ວວ ດໃ	Test	6 Load	<u></u> i				•	Posi	tion	02
Outside 62 °F	Oct.	17th 1	964	Init	ial 2	Zero	Readi	ng 2	2 10	ю	ngitu	dinal	load	i et ;	grou	d wi	re			Οŋ	Ga	ge	Out	nide	62	°	Oct.1	7th	196h	Ini	hial	Zero	Read	ing 2	10	Lon	zitud	inal	load	at g	round	wire	ı		01	Ga	<u>.</u> 6
Room 72 °F Instrument 76.5 °F				Load Fina	Read 1 Zei	ding ro Ro	ading	;	2 15	Lo	ad in	Pour	oint Ids	2	455					ıL		2	Roor Inte	is bratter	72 t 76.5	567				Lo: Fir	d Res al Ze	ding pro R	adin	2	15	sus Lo:	pensi 11 in	on po Port	vint 1å3		2455				11		2
Gage Number	ві	B 2]	331	в 4	B 5	в 6	В 7	в 8	В9	в 10	в 11	в 12	в 13	B 1	/B 1	5 B 1	L6 B	17 B	18				Ca.,	o Lund	er	122200497	5 19	3 20	3 21	3 22	B 23	5 21;	3 25	D 25	Б 2	E 2	D 2	st: 30) B 31	в 32	: B 3;	3 5 3	4 B 3	5 36			
Test Channel	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	5 :	16 17	7				'î e5'	t Chan	ncl		18	19	20	21	22	23	21,	.25	25	27	23	29	30	31	.32	33	34	35			
Position of Gage	2	1	0	0	ı	2 .	2	1	0	0	1	2	2	ı	0	0	1:	1 2	2				Fes	ițion	of Gag	3e	2	1.	0	0	1	2	2	ı	0	0	1	2	2	1.	0	0	1	2			
2 Zero Reading	003	002 0	36 (205	005	001	000	002	001	000	-001	001	001	001	002	2 00)2 (201 00	21				51 C 3	Sero	Readin	×S	-001	-004	-005	5 005	-001	000	001	<u>∞3</u>		2 000	-00	12 497	1 -006	5 -003	006	501	004	-001			
E Load Reading	006	023 -0	24 -	201 -	029	-010	018	C89	060	025	-026	-007	-048	021	02	00	6	00 800	2				nioi.	Loud	Readin	is –	-288	-403	-546	038	-109	100	-029	020		542	649	608	3 -210) 128	1 155	169	-390	040	·		
Difference	p03	021 -	030 ·	-006	-031	-011	018	087	059	025	-025	-008	-049	020	025	6 00	24 (207 00	DI I				2	Diffe	rence		-287	-399	-541	033	-108	100	-030	017		542	651	111	- 204	1 131	161	332	-386	041			
Kipo/in ²	0.09	0.63 -0	•90	3.18	0.93	-0.33	p.54	2.61	1.77	0.75	0.75	p.24	1.47	b. 60	0.75	0.1	L2 0.	21)3					Kips/	in ²		-8.6	1.97	16.23	0.99	3.24	3.00	-0.90	0,51	-0.1	10.2	1953		-6.1:	2 2 2	4.83	-7.90	-11.5	8		·	
Section	134	x134x3	16	12	xl ₂ x	18	l	al ja	lg	134	x1 ³ 4x	316	-	lx1x1	8		lx	1x ¹ 8						Secti	.on	·	1 ³ 4	::1 ³ /;	. ³ 16	1	91§2	l.a	ıž	્યો:× ¹	8	13	×1 ³ 4	21 ³ 16]	نامير بريامير	3		bilx ¹	3			
	£2	f1	٢,	fo	fl	f2	f2	fl	fo	ſo	ſı	f2	f2	fl	fo	fo	f	1 2		Τ							ſ2	î.	20	10	r1	52	£2	î,	1°	г _о	r1	f2	î2	r,	1°	fo	ſ1	£2			
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Kips	0.06	0.12		0.21		.18	.16	•30	.21	-04	10	0.04	0.06	0.0	I .		0.03	-0.0	0.0	2			_		Kips .	0.0	p.22	0.77	0.27	0.3	-0.1	7	-0.2	-0.20	0	0.01	-0.1	-0.0	0.03	0.03	-0.03	0.0	p.06		T	
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Test Channel	0		2	3	4	<u> </u>	<u> </u>	7	8	9	.0	<u>н</u>	- <u>-</u>					-		_				3.6	est Channel	1.0	19		12			24			~1		10	1.0		1	1.		1.		+	+
Position of Gage	2	1	0	0	1	2 '	2	1	0	0	1	2	2	1	0		0	1	2					Po	esition of Gage	2	1	0	0	1	2				0	1	2			+	Ļ	<u> </u>	<u> </u>			
Zero Reading	003	002	006	005	002	001	000 0	02 @	01	200	202	001	001	00	a o	02 0	002	003	1 00	n				ach co	Sero Reading	-001	001	4 -005	00	;-001	. 00	00	1 00;	3 -002	000	-002	497	-004	5 -003	300	5 501	-001	-001		+	
Di Load Reading	030	006 -	021	077	031	036	028 0	39 0	73	026	207	013	-007	-00	5 0	07-0	0014	+00;	<u></u> x	3				170.71	Load Reading	000	01:	2 044	-07.	-033	3 -02	5 -02	1	2 -045	018	-015	471	. 005	5 013	3 000	5 498	010	016			
Difference	027	004 -	027	072	029	035	028 0	37 0	72 -	026	306	012		-00	6 0	05 -	-006	5-010	0-00	24				ř.	Difference	001	. 010	6 049	078	3-032	2 -02	5 -02	2 -00	5 -043	018	-013	-026	01	1 016	01 ز	2-003	014	017	1		
Kips/in ²	0.81	0.12	0.81	2,16	0.87	L.05 0	-84 ¹	·11 2	.16	•78 -p	.18	36	ਹ• ਬਾਂ	10.1	.8 0.	15		-p.3	201						Mips/in ²	0.03	0.40	1.47	2.3	-0.9	6	-0.6	6	-1.25	0.54	-0.3	9	0.3	3	°.36	-0.09	р . 42	0.51	-		
		. 2. 5	3.7	- 1			1 2	ملداه		131~	31-3	316	-	יויו	ls			lxl	.1 ₈						Section	1,3	loc1.31		1	bulĝa	1 _{0.}	1	ನಿರ್ದರ್ಶಿ	L ₆	134	2 ³ 4	316		b:b: ¹ :	s		ъъ; _ј	3			
Section		x174x-	10	12	-72DX-	°	157	121-0						T	<u>т</u>			1		_							1	T		1.	Τ.		1	Τ.					Τ_		+		T		<u> </u>	Τ
Coefficients	f ₂ .	f1	fo	fo	fl	£2 1	¹ 2	ſ <u>1</u>	fo 	fo	1	f ₂	f2	11	ſ	o f	f _o	11	12			_			Coofficients	21	<u></u>	- ² 0	20	1 ¹ 1	-2	12	11	10	10	1-1	-15	1-2	11		-0	1-1	12			
boerricients	202:	-21,1,	173	, 091;	,151	.116 .	.116.	151 ,	094	173	.244	.202	,085	.07	8.0	67.	.057		18.03	5					· · · ·	.202	.24	4 .273	. 69/	1.151	. 11	\$.11	6 .15	1.07/	.173	.244	.202	.03	5 .073	3 .03	1.067	.078	1.035			
- Kips	0.16	0.03	ىلارە0	0.20	0.13	0 21.0	.10	.17 0	-0 ••20	•13 -p	•04 K	0.07	0.02	10.0	0.	.01	•01	-þ.o	-0.0	21					Kipa	0.01	L 0.1	2 0.25	0.22	0.15	+0.0	-0.0	8	-0.12	0.09	0.10	0.10	0.0	3 3	0.0	2	0.0	10.04	•		
Actual Load		0.05			0.45		0	. 47		-0	.10			-0.0	2		-	-0.0	4						Astual Load		0.3	8		-0.46	5		⊶0 ₀2	2		-0.17	,		0.0;	9		0.0	\$			
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	1:2) br -) who	l in ini	tial	Zero	uas r	ead w	ith	test	load	on.	l											 	19184527 (dire,	127)	by -	-1 the	n 1913	tial	Zere	1,25	roga	ui Ui T	631	lecu	011.	1								
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l												<u> </u>		17-11	• •			1 1 6								_,	-				-							·								

Terperatures:	Date	fire:		Type of Test	Local	••••••••••••••••••••••••••••••••••••••	Position of	Serry personales:	D-50	Time:		Type of Test	s Lead		Pesition of
Cutcide 55 op Noom 71 op Ingbructut 75 op	Oct.3rd 1954	Initial Zero Load Realing Final Zero Re	Reading 3 10 4 35	Longitudinal : point Load in Pound	load at conduct	tor suspension		Oubsido 55 °F Joem 71 °F Joyt Laton 75 °F	Oct.3rd 1964	Initial Zoro I Lond Reading Final Zoro Re	Reading 3 10 4 35	Longitudinal point	L load at condu	actor suspension	0 0 0000
Gage Humber	010203	C 4 C 5 C 6	C7 C8 C9	C 10 C 11 C 12	22 13 0 14 0 15	5 C 16 C 17C 18	C 19 C 20 C 21	Ga_: ilunbor	C 22 C 23 C ::	0 25 0 26 0 27 0	0 28 0 250 30	0 31 0 32 0 33	0 3/ 0 3/ 0 3	6 37 0 38 0 35	C 1.0
Test Charmal	0 1 2	3 4 5	678	9 3.0 2.1	12 13 14	15 16 17	18 19 20	2:55 Channel	21 22 23	24 25 26	27 23 29	30 31 32	33 34 35	36 37 36	39
Position of Cage	0 1 2	2 1 0	2 1 0	0 1 2	0 1 2	2 1 0	2 1 0	V. Littica of Cage	0 1 2	0 1 2	2 1 0	2 1 0	0 1 2	0 1 2	2
2 Loro Reading	002 005 005	0014 005 005	006 002 005	005 001: 005	007 005 005	007 005 009	col: 005 001	S fere Rouling	001 003 002	000 000 000	005 -001 004	001 002 003	002 003 004	001 003 002	004
Load Reading	017 005005	100 124 001	024 -003 -032	035 -012 -014	-015 -157 -065	057 005 -053	3 005-033 -049	T: A Presiding	018 -013 001	-180 -127 -165-	169 -179 -188	-028 -076-077	058 069 046	063 204 171	167
2 Difference	009 -003 -007	096 118 -006	018 -005 -037	031 -016 -019	019 -129 -687	017 -003 -028	002-038 -050	10 21 21 21 21 21 21 21 21 21 21 21 21 21	017 -016 -001	-180 -127 -165-	174 -178 -192	-032 -078-080	056 066 042	2 062 201 169	163
Kips/in ²	0.27 0.09	2.88 -0.18 3.54	0.54 -1.1	0.93 -0.57 -0.48	-0.57 -2.6	0.51 +0.81 1 +0.09	0.06 -1.50		0.51 -0.03	-5.40 -4.95	.22 5.34 5.76	-2.34	1.68 1.26	1.86 6.03 5.07	4.89
Section	$2b2b2h^{1}h$	1 ³ 1x1 ³ 1x ³ 16	izlz ¹ 8	lrlx ¹ 8	13/0213/02326	$2^{1}_{k} \times 2^{1}_{2} \times {}^{1}_{4}$	0 ¹ xix ¹ 0	Cookien	lzlx ¹ 8	2 ¹ / ₂ ::2 ¹ / ₂ :4	1 ³ 4:1 ³ 1:x ³ 16	hda ^l 3	lzlx ¹ 3	134003400336	alzalista
	ro ri r2	f ₂ f ₁ f ₀	f ₂ f ₁ f ₀	ro ri r2	1 ₀ 1 ₁ 1 ₂	f ₂ f ₁ f ₀	f ₂ f ₁ f ₀		fo fl f2	f ₀ f ₁ f ₂	co [1] [2	f_0 f_1 f_2	f_0 f_1 f_2	$\begin{bmatrix} r_0 & r_1 & r_2 \end{bmatrix}$	\mathfrak{L}_0 \mathfrak{L}_1 \mathfrak{L}_2
Goelliciches	.327.403 .301	.202 .244.173	.035 .078 .037	.037 .075.035	.173 .244 .202	.301.483 .327	.035 .078 .037	Ceafileicnbs	.037 .070.005	.327 .463 .301	.202.244 .173	.035 .078 .03	1.057 .078 .035	.173 .244,202	-351
Kiyo	-0.04	0.58 -0.03	0.05	0.05 0.05	-0.95	0.20 -0.28	-0.09		-0.04	1.76 1.89	-1.30	-0.08 -0.16	0.17 0.15	0.32 1.04	:
						I		<u>2</u>			.00	0.10	0.37	0.81	
Actual Load	-6.03	1.043		-0.03	-1.50	-0.12	-0.18	. Actacl Load	-0.01	ورہ ر ہ	-00	-0.412	1000	2004	
Temperatures:	Date	fine:		Type of Test	Lond		Position of	Ing manages:	Dase	Time:		Type of Test	Load	· · ·	Pesition of
Catside 60 °F	oct.12th 1964	Initial Zero	Reading 8 25	Longitudinal	load at conduc	tor suspension	0 I Gage	Guaddo 60 °2	Oct.12th 1964	Initial Zero i	londing 8 25	Longitudinal	load at conduc	tor suspension	
Room 66 F Enstrument 75 F		Load Reading Final Zero Re	840 ading	Load in Pound	1s 2255		1 1 2	Negative tont 75 °F		Final Zoro Re:	ding	Le q in Fear	ds 2255	·	L
Gage Humbor	010203	C 4 C 5 C 6	C 7 C 8 C 9	c 10 c 11 c 1;	20 13 0 14 0 1	5 C 16 C 17C 18	C 19 C 20 C 23	Gage Husber	C 22 C 23 C 🗆	C 25 C 26 C 27 C	28 0 250 30	C 31 C 32 C 33	C 31: C 35 C 34	60 37 0 38 0 35	с њо
fest Charmel	0 1 2	3 1; 5	6 7 8	9 10 11	12 13 14	15 16 17	18 19 20	Yost Chaanel	21 22 23	24 25 26	27 26 29	30 31 32	33 34 35	36 37 38	39
Position of Gage	0 1 2	2 1 0	2 1 0	0 1 2	0 1 2	2 1 0	2 1 0	Cuilden of Cage	0 1 2	0 1 2	2° 1 0	2 1 0	0 1 2	0 1 2	2
S Loro Reading	001 -003 001	-002 000 -003	000-002 -001	-004 -002 000	000 000 000	001 000 000	001 -002 000	2 Zuro Ranikez	-001 000 -001	001 000 -002	000 000 -001	000 -001 -002	001 002 002	000 -001 000	000
H Lord Reading	025 016 01	097 111 -001	025 011 -017	034 -014-007	018 -102 -061	026 -005 -035	014-024-032	S To d Reeding	024 -012 010	-181 -128 -152 -	177 -170 -177	-022 -068 -069	074 089 069	071 228 186	180
Difference	024 019 009	092 111 002	025 013 -016	038 -012-007	018 -102 -062	025 -005 -035	013 -023 -032	B Dira vorta	025 -012 011	-182 -128 -150 -	177 -170 -176	-022 -067 -067	073 087 067	071 229 186	180
Kips/in ²	0.72 0.27	^{2.97} 3.33 ^{0.06}	0.75 -0.48	-0.36	0.54 -1.86	0.15	0.39 -0.96	<u></u>	0.75 0.33	-3.84 -5	.31 5.10 -5.28	-2.01	2.19 2.01	6.87	5 40
Section	21/2:21/2 ¹ /2	1 ³ /121 ³ /12 ³ /16	ix1x ¹ 8	lx1x ¹ 8	1 ³ 4x1 ³ 4x ³ 16	2 ¹ / ₂ :2 ¹ / ₂ :1 ¹ / ₄	lxlx ¹ 8	Stobion	lx1x ¹ 8	21:21:c ¹ 4	1 ³ 4::1 ³ 4:: ³ 16	lxlx ¹ 8	lxlx ¹ 3	1 ³ 1:×1 ³ 1:× ³ 1.6	22:23ch
One official ender	r _o r ₁ r ₂	f ₂ f ₁ f ₀	f ₂ f ₁ f _o	r _o r ₁ r ₂	f _o f ₁ f ₂	f ₂ f ₁ f ₀	f2 f1 fo		f_0 f_1 f_2	f_0 f_1 f_2	c _o ε ₁ ε ₂	f ₀ f ₁ f ₂	f _o f ₁ f ₂	r _o r ₁ r ₂	$c_0 c_1 c_2$
COSILICICIUS	.327.403 .301	.202 .244.173	.035 .078 .037	.037 .075.035	.173 .244 .203	.361.453 .327	.035 .078 .037	COCLEMONOUS	.057 .078.005	.327 .483 .301	.200.244 .173	.035 .078 .03	.037 .078 .035	.173 .2/4.202	. 301
Kips	0.24 0.10	0.60 0.81 0.01	0.03	0.08 -0.02	-0.75 0.09 -0.38	0.29 -0.34 -0.07	-0.05 0.03 -0.07	21.ga	-0.03 0.05 0.03	-1.79 -1.71	-1.24	-0.06 -0.13	0.15 0.20 0.17	0.37 1.13	
Astual Lord	0.62	1.42	0.05	0.03	-2.04	-0.12	-0.09	Actual Load	0.05	-5.36	-3.28	-0.35	0.52	3.18	
Luising (Find)	 n ²) i∉ −1 tikan	initial Zero w	as read with t	est lord on.	<u> </u>			1919-197 (33)-37	 (in') (y -0 viu	n initial zero	<u>- 1000 1.001</u>		J		
1.070230° (vetto) +	···· / ···. ··· ···														
					STRAIN	READ	DINGS	& MEMB	ER LO	DADS					
<u></u>						-		<u> </u>		- 				- <u></u>	
<u>.</u>															

Temporatures: Catsido 59 ^o P	Dat Oct.	e 12th 1	964	Fine: Initi	al Zer	•o Re:		8 25	Ty Co	pe of mbine	Test 1 lon	Lord Lord	nal a	nd tr	ansve	rse		Fosi O N	tion d Caj	1 ;3	Temperatures: Cubside 59 °F	Date Oct.		1961	Ti I Ic	ime: nitia	l Zere	o Rea	nding	; 8	25 1	Typ: Comb	e of ined	Test long	Lead itudi	nal s	and tr	ansve	rse		Posit:	ion of Gage
Room 68 °F Instrument 75 °F				Load Firal	Readi: Zero	ng Read:	lng	8 50		ad at ad in	Poin	ds 22	suspe 55 lo	ngit.	2350	t tranı	3V.	11			Roten 68 F Instructions 75 F				Le Fi	nal :	oadin Zero 1	g Readj	ing	8	50	Load L	d in	ondu Feun	otor ls 22	suspe 55 lo	nsion	poin 235	t 0 tran	SVe	1	2
Gege Humber																																										
fest Channel	0	ı	2	3	1,	5	5 7	e	9	1.0'	11	12	13	14,	15	16	17	18	19	20	Tost Channel	21	22	23	24	25	26	27	7 2	8 2	9 3	30	31	32	33	34	35	36	37	38 3	9	
Position of Gage	$ \frac{1}{10000000000000000000000000000000000$																																									
2 Zero Reading	001	-003	001 -	-002	000-00	3 00	o- a	os -co	1 -00	4 -00	2 000	000	000	001	001	000	000	001	-001 (00	2 Zoro Reading	-001	000	-001	. 001	1 <u>00</u>	0	2 00	0 00	<u>~</u> ~0	01 (xo ·	-001	-002	001	002	002	000	-001	000 0	00	_
S Load Reading	096.	089	065	072	062-03		x -a	10 00	00 00	7 -04	1-021	-145	-277	-195	018	069	039	011	-036-0	42	g Jord Breding	007	062	001	-261	4 -21	5 -21	8-01	9 -00	<u>4 0</u>	30	526	-034	019	064	088	074	130	337	300 1	27	
Difference	Alternal and																																									
Kipo/in ²	2.85	2•70 1	•92	-10	.86	01	, " •	0.0	3 0.3	-1.1	10.6	-4.35	-8.31	-5.88	0.51	2.07	1.17	0.30	1.05 	. 26	ng yan ³	0.24	1.00	0.06	5	46.4	5 .4	-0.5	7	0.	93	•10	0.99	-0.51	1.89	2.58	2.16	1.90	0.14	<u></u>	81	
Section	21	22]:: ¹ 4		1 ³ /.,	1 ³ 4x ³	16	iri	x ¹ 8		1×1×1	e 	1 ³ 4		3 ₁₆	212	≈22̀x ¹ 4		Lx	:1x ¹ 8		Section	٦×	1x ¹ 8	}	2]	\	14 	12	34:13 	³ 4x ³ 1	6	lx:	1::18		Ŀ	xlx ¹ 8	·	134×	1 ³ / _{1×} 31	6	2.2::22	<u>ع</u> لم ا
Conflicionts	ſo	fl	î2	ſ2	l f	n f	2 1	1 f.	j îo	ſl	f2	fo	ſl	ſ2	f2	fl	ro	ſ2	11 1	•	Cooligication	fo	fl	12	fo	ſı	f2	ľ,	ſı	1	2 1	r _o	fl	î2	fo	ï1	£2	fo	ſl I	2	0 I	L f2
oberrieren/s	.327	.403 .	301	.202	244 1	73 .0	35 .0	78 .03	57 .03	7 .07	s.035	.173	.21,1,	.202	.381	.1;83 .	327	.035	.078	037	0001120201000	.037	.078	.005	.325	7 .48	3 .30	1.2	21.24	.1.	73 .0	:85	. 67ε	.067	.057	.078	.C35	.173	.21,1 .2	02 .3	31	ίΩ.
- Kips	0.93	1.33	0.73)- <u>1</u> 2	.45	.14	- P +	02	0.0	2 -0.0	-0.0	-0.75	-2.03	-1.19	0.20	1.00	.38	0.03	8 0. 08	.08	Kiņs	0.02	0.15	0.01	-2.61	0 -3.1	-2.47 2	-0.1	-0.(2	03	19 19	•07		0.03	0.13	0.20	0.18	0.67	•72 ¹	82		
Actual Load		2.99]	01		-0.	02		-0.1	2		-3.97			1.58		•	0.13		Actual Load		0.18			8.1	.9		0.0	24			~	.1 8	1	0.51		5	°51			
Temperatures:	Dat	e		Fine:					Ty	pe oí	Test	Load	, in the second s			50794 G1144		Fosi	tion o	ſ	Temperatures:	D::	te.			Time:				-		ĩy	npa o	f Tes	t Loa	ıd			•		Posi	tion of
Cutside 58 °F	oct.	12th 19	964	Initi	al Ze	ro Re	ading	8 2	5 2	ero co	ntrol	read	ing					01	Gag	.е	Cubside 58 Cr Rocm 67 F	Cct.	12th	n 196	14	Initi Load	al Zo Readi	ero R	eadi	ng 8	25	Ze	ro co	ntro	l rea	ding					0	
Instrument 75°F				Final	Zero	Read	ing	91	7 1.	ad in	Poun	ds No	load						2 	_	Inch	·			-	Final	Zere	Rea	ding	9	17	La	nd in	n Peu	nds	No J	oad				-: -: 	
Gage Humbor	Сl	C 2 C	3 (240	; 5 C	6 C	7 0	809) c 1	.0 0 1	1 C 1	20 13	C 14	C 15	С 16	C 170	16	C 19	C 20 (21	Gage Huzber	C 2	2 0 2	23 C	2/0	25 C	26 C	27 0	28	0 250	30	C 31	L C 3	2 C 3	3 0 3	l, C :	35 C 3	,60 37	7 0 33	C 39	с 40	
fest Channel	All Disc Dis Disc Disc D																																									
Fosition of Gage	0	l	2	2	1	5 :	2 1	0	0	l	2	0	1	2	2	1	0	2	-1	0	Publition of Gage	0	1	:	2 0	1	. 2	2	2	ı	_c	2	1	0	0	1	. 2	<u>o</u>	1	2	2	
2 Zero Reading	Summa Summa <th< td=""></th<>																																									
F Load Reading	003	-001	700	003	001 0	ωια	<u>ц</u> о	03 00	6 01	4 00	2 000	016	000	014	006	000	002	000	002	004	g Land Reading	001	4 01	ц-с	0 200	05 0	05 0	01	000 -	-002	_011	-002	005	6 00	9 00	9 00	19 00	3 002	005	003	006	
Difference	002	2002	206	005	001 0	x011 00	1:0	05 00	7 01	8 01	1 00	2 016	000	013	005	000	002 05	-001	003		원 Differencen	-00	3 01	<u>u -</u>	0 I 0	04 0	05 0	03	000	-002	012	-002	006	5 01	1 00	8 oc	7 00	1 002	006	003	006	
Kips/in ²	0.06	0.00	.18	0.15	0.03	•••••••••••••••••••••••••••••••••••••••	12	0.	21 °.	p•33		0.48		0. 39		0		0.03	þ	<u>,15</u>		-0.0	9	-0.	.03	•14 р.	15 0.	09	<u>o </u> †	0.06	0.36		0.10	3 0.5	0.2	4	0.03		0.18		0.18	
Section	2	≈2]∝ ¹ 1		1 ³ 1,:	1 ³ 4x ³	16	ix1	x ¹ 5		rry,	8	1 ³ 4		2 ³ 16	2 ¹ .	222x14		ມ	:1x ¹ 8		Stebion		lxlx	18		2]:2]	x ¹ 4		1 ³ 4x	13 ₁₀₂ 3	316	3	lx1x ¹	3		1%1x	1 ₃ .	131	1,x1,3/1,x	316	2]22	2.14
	ι°	ſı	12	f2	l ^j l	o f	2 1	í f	o Îo	ſı	f2	ſo	ſı	ſ2	f2	ſl	î°	ſ2	۲ ₁ :	°	Des Critei subs	fo	fl	ſ	2 [0	î ₁ f;	2 1		ſl	£2	ſo	fl	î2	fo	11	f2	fo	ſl	£2	ŕo .	r _l r ₂
Gostildiches	.327	. 163 .	351	.202	.244 1	73 .0	35 .0	78 .0	57 .0:	57 .07	e. 085	.173	.21,1,	,202	•361	.483 .	327	.035	.078	.067	Geerradionas	.03	.0	79.C	35 .3	27 .1	.83 .3	301 .	202.	24.1,	.173	.089	5 .07	ε	57.057	.07	3 .Ca	j . 17:	3 .2!;1;	.202	,331	
Kipo	0.02	0.03	0.07	0.03	.01 0.	⁰² 0.	02	01 0.	0.	0.0	0.0	0.05	0	0.07	0.06	0	0.02	0	0.01	.o1	Rigs	-0.0	1 0.0	03	, °	.04 p.	07 0.	03	•	-0.01	0.06	-0.0	ນ 0.01	0.0	2 0.0	2 0.0	2 0	0.01	0.04	0.02		
Actual Load		0.12		C	•05		0	.03		0.0	3		0.15			0.08			0,02		Actual Load		0.0	02		0.	.14			0.05			0.02	2		0.0	Ц		0.07			
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Outside 60 °F Room 71 °F Instrument 77 °F	Oct.]	17th 1	964	Initia Load 1 Final	nl Zer Neadin Zero	o Re 5 Read	ading Ling	12 20 12 4	b Lon Sus Loc	gitudi: pension nd in 1	nal 1 n poi	load a int Is	t gro 2455	ound w	rire				Gage 2		Cutaldo 60 °F Acca 71 °F Inctstat 77 °F	Oct.17	th 1	964	Ini Lo: FA	itial ad Ro aal Z	Zero nding ero R	Rend Gadir	ling 1g	12 2 12 4	D Lor 5 sur L	ngitu spens: id in	dinal ion p n Feu	loa oint nds	d at 245	grou 5	nd wi	T O				±2
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feşt Channel	0	1	2	3 1	4 5		6 7	8	9	10	11	12	13	14	15	16 1	7.	18	19 20	0	2cot Channol	21	22	23	24	25	26	27	28	29	30	31	32	33	3 34	3	5 3	6 3	7 3	3 39		
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Section	2 <mark>1</mark>	72;7 ¹ /	5	1 ³ 4x	1 ³ 1x ³ 1	.6	in	. ¹ 8	2	121x18		134	,1 ³ 4	316	2þ	22x ¹ 4		1:1	x ¹ 0		Section	lx1	Lx ¹ 8		2]:	:2½x ¹	4	13:	,::1 ³ !;	:: ³ 16	1	المندد	3		lala	1 ₃	1	3 _{4:41} 3	1:1 ³ 16	2	<u></u>	4
	ro	ſ	£2	f2 f	1 fo	í	2 Î	ı f	î,	î1	ſ2	ſo	ſ1	f2	£2	f ₁ i	0	ſ2	ι ^j ι°		0	f _o	۲ ₁	- ² 2	fo	r1	ī2	fo	fl	2	fo	fl	12	fo	f1	ſ	2 fo	ſı	f_2	£o	£ <u>1</u>	f ₂
Coefficien-3	.327	.453	.331	202 .2	244,17	3.0	05.0	78 .03	.05	.075	.035	.173	.244	.202	.381	1.53 .3	327	.035 ,	278 .0.	57	CCCITACICAS	.037	.078	.005	.327	.483	.301	.20	21,1,	.17	.035	.071	e .03	7.05	707	3 . C	35 .1	73 .	2.1.20	2 . 33	1.	
Kips	-0.0	0.22	· 0 0 35	.21 0.	-0.0	080	.04 O.	.03	0.12	0.02	0.01	0.05	0.91	-0.44	0.09	0.80	•27	0.03	2.0 <u>1</u> 0.0	5		0.02	.14	0.01	2.22	3-16	-2.62	-0.6	0.97	-0-8	-0.0	0.1	-0.1	6 0.1	8 0.2	3 0.	17 0.	щ.	1.21	ł		
Actual Load		-0.61	•	0.	50		-0.	.06		0.13			1.30			1.16		-	0.07	-	Actual Load	0	.17			-8.00	L		-2.63	1		-0.3	6		9 •5	8		3.	42			
· · ·						_		÷																																		
Jultiply (Mips/i	1,1 ²) b	ƴ −1 u	then i	nitial	1 Zero	was	read	uith	test]	ocd or	. .										natory (mps/	<u>कि</u> , ए	/ -1	uher	1 2003	sial.	Zero	0.7073	Baen	:125h	ंत्वर	<u>102</u> d	on.				······			L		
												ST	RA	IN	F	REA	١D	ING	S		8 MEME	BER		L	0A	DS	- I -															

Yemperabures;	Date	fime:		fype of Tes	t Load		Position of	Tengeraturos:	Pite	Time:		Type of To	est Load	,	Pesition of
Catside 60 °r Norm 71 °r Instrument 77 °r	0ct.17th 196	h Initial 2er Load Readin Final 2ero	o Reading 12 20 3 12 52 Reading	Combined lor load at grou Load in Per	ngitudinal and m md wire suspens nds 2455 longit.	transverse sion point • 1100 transv.	0 Gage	Cubride 60 °P Reca 71 °P Inctitutent 77 °P	Oct.17th 1961	Initial Zor Load Roadi, Final Zoro	ro Reading 12 20 ng 12 52 Reading	Combined 1 load at gr	ongitudinal and ound wire suspe unds 2455 longi	transverse nsion point t. 1100 transv.	
Gage linebor	01 0203	C 4 C 5 C	6 6 7 6 8 6 9	0 בו ס סב ס	120 13 0 14 0 1	5 C 16 C 172 16	C 19 C 20 C 21	Gage Ruzber	C 22 C 23 C :	1 C 25 C 26 C 2	27 0 28 0 293 30	C 31 C 32 C	33 C 31 C 35 C	340 37 0 33 0 39	C 40
Test Channel	0 1 2	3 4 5	678	9 10 11	12 13 14,	15 16 17	18 19 20	Test Channel	21 22 23	24 25 26	27 28 29	30 31 3	2 33 34 35	36 37 38	39
Position of Gage	0 1 2	2 1 0	210	0 1 2	0 1 2	2 1 0	2 1 0	Publithen of Gage	0 1 2	0 1 2	2 1 0	2 1 0	0 1 2	0 1 2	2
2 Zero Reading	-003 -004 -0	04-004 -003 -00	15 -005 -003-004	200 000 100-	002 002 000	0-001 000 -001	002 003 002	3 2 ivo Retslang	002 000 000	002 003 00	2 000 -004 -002	-001 -002 -00	03 -003 -001 00	000 000 -003	
S road Meading	035 025 0	0-069 -055 -03	3 -007 -032-032	043-009-00	6 -080-222 -151	005 104 075	013 -021 -028	rd 75 - 4 Providing	010 100 000	-273 -270 -26	5-050 -039 -054	-017 -060 -00	66 076 092 06	298 270 געבר 57	
21 Dallerense	030 029 0	-1.95 -052 -02	-002 -029-028	044 -009 -00	8 -082-224 -151	006 104 076	011 -024 -030	2 Difference	008 100 000	-275 -273 -26	7 -050-035 -052	-016 -058 -0	63 079 093 0	57 114 298 273	
Kips/in ²	1.1 0.	1.56	-0.06 -0.84	-0.27	-2.46 -4.53	3.12	p.33 -0.90	sspojin?	0.24 0	-8.19	-1.50 -1.56	-0.48 -1.8 5 -1.74	2.37 2.79 2.0	3.42 8.94 8.19	
Scotion	2/22/2 ¹ /4	1 ³ 10:1 ³ 10x ³ 10	inix ¹ 8	lxlx ¹ 8	1 ³ 4x1 ³ 4x ³ 16	2 ¹ / ₂ ,2 ¹ / ₂ x ¹ / ₄	bilx ¹ 8	doction	lxlx ¹ 8	2/22/21/4	1 ³ /1 ³ / ³ 16	lula ¹ 8	1:1x ¹ 3	1 ³ hx1 ³ hx ³ 1.6	· 2/22/24
Coofficients	10 f1 f2	f ₂ f ₁ f ₀	f ₂ f ₁ f ₀	I ₀ I ₁ I ₂	fo fi f2	f ₂ f ₁ f _o	f2 f1 fo		f_{\circ} f_{1} f_{2}	f _o f ₁ f ₂	f ₀ f ₁ f ₂	f_0 f_1 f_2	f _o f ₁ f ₂		20 L1 L2
	.327.403 .33	1.202.244.173	.035 .078 .057	.037 .075.03	.173 .244 .20	2 .331.453 .327	.005 .078 .037	Coollingiones	.037 .078.025	.327 .483 .30	1 .202.244 .173	.035 .078 .0	67.067 .078 .C3	5 .173 .244.202	. 381
llips	0.37 0.42	-0.39 -0.38 -0.38	5 -0.07	0.09 0.0	2 -0.43 -0.9	20.07 1.51 0.75	0.03 -0.06	illes	0.02 0.23 0	-2.69 -3.0 -3.96	-0.26 -0.30 -0.27	-0.04 -0.1 -0.14	13 0.16 0.22 0.17	0.59 2.18 1.65	
Actual Lond	0.84	-0.92	-0.24	0.05	-2.99	2.33	-0.09	Actual Load	0.25	-9.70	-0.83	-0.31	0.55	կ օկ2	
Temperatures:	Date	fime:		Type of Test	Load		Fosition of	Temperatures:	Date	Time:		Type of Tes	t Load		Pesilian of
Outside 62 OF Room 71 OF Instrument 77 OF	Oct.17th 196	Initial Zero Load Reading Final Zero R	Reading 12 20 cading 1 10	Zero control	. reading ds No load		0 Gage 12	Outside 62 °p Reca 71 °p Abot atoms 77 °p	Oct.17th 1964	Initial Zero Load Roading Final Zero f	Reading 12 20	Zero contro	l reading		0 Goge
Gage Humbor	01 02 03	C 4, C 5 C 6	C7 C8C9	C 10 C 11 C 1	20 13 0 14 0 15	5 C 16 C 177 18	C 19 C 20 C 21	Cage Hunder	C 22 C 23 C 21	0 25 0 26 0 27	C 23 C 250 30	C 31 C 32 C 3	3 6 2/ 6 34 6 3	0 37 0 39 0 39	cud (
Test Charmel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17	18 19 20	Test Channel	21 22 23	24 25 26	27 28 29	30 31 22	22 21 25	26 27 20	
Fosition of Cage	0 1 2	2 1 0	2 1 0	0 1 2	0 1 2	2 1 0	2 1 0	Position of Cage	0 1 2	0 1 2	2 1 0	2 2 0		0 1 0	29
2 Loro Reading	-003 -004 -00	4 -004 -003 -00	5-005 -003 -004	-001 000 002	002 002 000	-001 000 -001	002 003 002	9 Turo Reading	002 000 000	002 003 002	000 -004 -002 -	-001 -002 -00	3 -003 -001 000	000 000 -006	~
H Lord Reading	-007 -005 -005	5 -007 -005 -00	7-007 -005 -004	-001-001 -003	-002 -003 -003	-004 -006-006	000 003 000	B Torit Product	000 000 800	000 000 000	000 -002 -001	-002 -004 -005	5 -008 -006 -00	-006 -005 -002	
ri Difference	-004 -001 -00	-003 -002 -00	2-002 -002 000	000-001-005	-004 -005 -003	-003 -006 -005	-002 000 002	6 61.61	006 000 000	-002 -003-002	000 002 001 -	-001 -002003	2 -005 -005-004	-006 -005 004	
Kipo/in ²	-0.12 +0.03	-0.06	-0.00 0	-0.03	-0.12 -0.09	-0.18 -0.15	0.06 0.06	17 - 7 L.P	0.18 0 0	0.06 +0.06	0 0.06 -0	-0.03	-0.15 -0.15	0.18 0.12	
Section	2 ¹ / ₂ 22 ¹ / ₂ 2 ¹ / ₂	1 ³ 1×1 ³ 1× ³ 16	lx1x ¹ 8	lx1x ¹ 6	1 ³ 4521 ³ 45316	$2\frac{1}{10}2\frac{1}{2}x^{1}l_{t}$	¹ ×1×18	Gretion	lxlx ¹ 8	22:22:24	1 ³ 4:1 ³ 4x ³ 16	lidin ¹ 8	lxlx ¹ 3	1.34m134m316	elselsty
Coefficients	fo fl f2	f ₂ f ₁ f ₀	f ₂ f ₁ f ₀	fo fl f2	f ₀ f ₁ f ₂	f ₂ f ₁ f ₀	f ₂ f ₁ f ₀		f_0 f_1 f_2	f ₀ f ₁ f ₂	\mathbf{f}_0 \mathbf{f}_1 \mathbf{f}_2	fo fi f2	fo li fo	50 F1 F2	5 15 B
	.327.403 .301	.202 .244.173	.035 .078 .037	.037 .075.085	.173 .214202	.351.453 .327 .	.035 .078 .037	CoolTheisins -	.037 .078.005	.327 .483 .301	.202.244 .173	.035 .072 .03	7.057 .078 .035	.173 .244 .202 ;	301
Kips	-0.01 -0.01	-0.02 -0.01 -0.01	0 0 0	° °.	0.02 0.04 0.02	0.04 -0.05 -0.09 -0.05	0 0 0.01	Kins þ	.01 0 0	0.02	0.01	0 0 0	-0.01 -0.01	-0.03 -0.02	
Actual Lond	-0. 06	-0.04	-0.01	0	-0.08	-0.18	-0.01	Actual Load	0.01	-0.08	0.02	0	-0.03	-0.05	
fultiply (Mips/in	r ²) by -1 when	initial Zero w	as read with to	st load on.		·		Harder (Higel	a , , , -1 1818	ivitial ford	to rola mon v.	of Lead on.	<u> </u>		
														1. 1 . 1	
					STRAIN	READI	NGS	& MEMBI	ER LC	ADS					
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Temperatures: Outside <u>17</u> °F Roon 71 °F Instrument 76 °F	Date Oct.6	th 1964	fi In Lø Fi	ne: itial ad Re: nal 20	Zero Iding Pro Re	Readir	ر ت ر	1 25 1 32	Type Trans point Load	of T sverse t in P	est I loa d	wad datg ; 1	roun 605	l wire	susp	ension	Posi O I 1	ition Ga	of 50 2	2000 Cubs Rocia Iret	itate ido	47 °7 71 °7 70 °7	Det.	e Sth 1	.964	Tir Ini Lo; Fir	sial d Naa al Zo	Zero ding ro Re	Readi	ng]]	L 25 L 32	Typ Trai sus L	e of ' nsver: pensic l in	Test se lo: pon po: Pound	Lond ad at int s	grou	und wi 1605	ire			Pci 0 1	tion Ca	00 . 22
Gage Number	C.J	0203	3 C 4	C 5	C 6	C 7	cε	09	C 10	с 11	0 123	; 13 C	14	: 15 C	16 C	170 18	C 19	C 20	C 23.	Gage	Humb	517	C 22	C 23	c :::	C 25	C 26	C 27	C 28	0 25	J 30	C 31	C 32	C 33	0.34	C 35	0 34	C 37	0.33	0 35	c 1,d		
fest Channel	0	1 2	. 3	4	5	6	7	ε	9	10	11	12	13	14 1	.5	16 17	18	19	20	2005	Cham	col	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39		Ì
Position of Cage	0	1 2	2	l	0	2	1	0	0	1	2	0	ı.	2 2	2	2 0	2	l	0	7.61	lien (of Cage	0	1.	2	0	l	2	2	ı	0	2	1	0	0	1	2	0	ı	2	2		
2 Loro Reading	001	∞ -	00-100	2 000	-001	000	000	000	-002	001 0	01 0	000 -0	01 -	xx3 -04	02 00	0 -001	000	203	001	3	ftro l	Recting	000	-002	000	000	000	000	000	003	002	-002	-002-	-001	000	-002	000						
G Load Reading	067	066 0	248-24	s -175	-018	021	020	010	-033	-029-0	012 +:	136 +1	.30 -	113 -0	11 06	3 059	-010	-914-	215	in in	7:33	Fredding .	-015	Olula	-008	-070	-076	-060	112	128	135	≂ 308	017	924 ·	-015	-003	019						
5 Difference	066	066 0	49-14	0 -142	-017	-021 -	020	010	-031	-030	013 +:	136 -1	29 -	10 -0	39 06	3 050	-010	-017-	013	10 TH	DLLA -	.ur.sə	-015	046	800	-070	-076	-060	112	125	133	-006	019	025	-015	-001	019						
Kipo/in ²	1.98	1.98	47:02	0 4.26	-0.51	0.63	0.60	0 . 30	0.93	0.90	39	4.03	.67	-0.1 3.30	27	.89 1.60	-0.30	-0.51	0.39		$U_{ij} q^2$		0.45	1.38	0.24	-2.10	2.28	1.80	3.36	3.75		0.18	0.57	0.75	0.45	0.03	0.57						
Soction	2 ¹	2]x ¹ 1	3	3 _{1,22} 3	1.2316	i	:1): ¹ 8	3	lx	3 ¹ x1		1 ³ 105	1 ³ 4x ²	316	23:2	dx ¹ 4	. 1:	alx ¹ 8			Stabio	on	1:	xlx ¹ 0	3	2	21.x ¹ 4		1 ³ 42	13400	316	Ŀ	1:x ¹ 8		l7	lx ¹ 3		1 ³ / ₁₂	1 ³ /12	3.6	2,52	izh,	
	10	f ₁ f	2 12	ſı	fo	f ₂	î1	f _o	ſo	ſ1	f2	fo	ſ	f ₂ f ₂	, ſ	ı î _o	f2	î1	f _o				fo	fl	12	fo	ŕl	ſ2	o1	ſı	52	fo	fl	£2	f ₀	£1	f2	fo	τı	f2	£.	r ₁	£2
Coefficients	100	1/2 2	21 20	10 21	1 152	025	072	047	057	.675	025	173	21.1	202 . 5	191.10	53 .327	.035	.078	.037		Coofi	icionès	.Cś7	.072	.05	.337	.483	.391	.202	24,5	.173	.005	.075	.057.	037 .	078	.C35	.173	.21	202 .	301		
		0.95	-0.8	5	-0.0	0.00	0.05	.007	0.06		0.03		0.94	0.	10	0.59	0.02	-0.c!	2.02		Mins		-0.03	0.11		-0.69		0.69	a (0	0.92		0.02		0.05		0							
																	k	l	_																								
Actual Load	val past																																										
Temperatures:	Date	e		lme:					fype	2 of 1	Cest]	Lond			<u></u>		Fos	ition	oſ	Terr	scratu	res:	D 18	.e		Ti	::3:					257	no of	Test	Lead				•		Fesi	ttion Ca	10
Catside 61 °F	$\frac{10 \text{ isleads}}{337, 163, 331, 202} = \frac{10}{2.244} \frac{173}{173} = \frac{10}{0.05} \frac{12}{0.057} = \frac{10}{0.057} \frac{12}{0.057} = \frac{10}{0.07} \frac{12}{0.07} + \frac{12}{0.07} \frac{12}{0.07} + \frac{12}{0.$															0																											
Room 71 °F Instrument 77 °F			L/ F	bad Re inal 2	ading ero R	eading		100	Load	i in F	Pounds	s	1100					K	2	Incl). Laton	≲ 77 °F	_			F1.	nal Zo	oro A	eadin	3		L:	d in	Franc	<u>l</u> 3	בני	<u>хо</u>						
Gage Humbor	C 1	C 2 C	3 0 1	1 C 5	C 6	C 7	сs	C 9	c 10	сл	с 12	c 13 0	: 14	C 15 C	26 0	: 172 16	C 19	c 20	C 21	Gage	e Huzb		C 22	2 C 2	3 C ::/	C 25	C 26	C 27	C 28	C 25	3 30	C 31	C 32	C 33	C 31-	C 35	C 34	C 37	C 33	C 35	c 1,0		
fest Channel	0	1 2	3	4	5	. 6	7	в	9	10	11	12	13	<i>u</i> , :	15	16 17	18	19	20	Sost	t Chan	nel	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39		
Position of Cage	0	1 2	2	1	0	2	1	0	0	1	2	0	1	2	2	1 0	2	l	0	Post	liich	cî Gage	0	1	2	o	1	2	2	1	e	2	1	0	0	l	. 2	0	1	2	2		
E Loro Rezding	- 0 03	-004 -0	cio	24 -20	3-005	-005	-003	-004	-001	000	002	002	002	000	201	000 -00	1 002	003	002	83	2020	Readler 3	002	000	000	002	003	002	000	-004	-002	-001	-002	-003-	003	-001	000	000	000	-003]
Lond Reading	048	053 0	42 -0	98 -10	3-014	-015	-010	014	-011-	013	-004	-085 -	-089	-074	005	042 01	0-001	-003		office	7:01	Fredding	-004	041	-002	-048	-055	-040	090	096	110	001	017	021	-005	002	009	030	071	066			
Bifforence	015	057 0	46 -0	94 -10	1-009	-010	-007	013	-012	013	-002	-087	091	-074 -	004	01:2 04	1-002	-006	-007	Maio	DIE.	uutta	-006	Oh1	-002	-050	-058	-04:2	090	100	112	002	019	024	-002	003	009	030	071	069			
Kips/in ²	1.35	1.71	-2.	82 +3•0	3-0.2	7-0.30	0.21	0.54	0.36	0.39	•0.06 -	2.61	•73	2.22	12 1	.26 1.2	3 −0.06	-0.18	0.23	- Harden	$\mathbb{C}^{*}(\mathcal{A}$	1.13	-0.18	1.2	3-0.04	-1.50 5	1.74 1.74	1.26	2.70	3.00	3.36	0.06	0.57	0.72	0.06	0.09	p.27	0.90	2.13	2.07			
Suction	21	-2}x ¹ 1.		1 ³ /::1 ³	4x ³ 16	1	xlx ¹	8	1:	xlx ^l 8		دبا ³ د	1 ³ 4×	3 ₁₆	2)02	2.x14	2	xlx ¹ 8			Cooti	.on	1	lxlxl	8	2,	2lx ⁱ	4	134	1 ³ 1,7	316	1:	a:43		Ŀ	xlx ¹ 8	;	1.3 _{1;:}	1 ³ 1x	31.5	2 20	2 <u>]</u> .c ¹ /,	
	r.	f ₁ i	2 1	5 [1]	fo	f2	ſı	ſo	î _o	<u>r</u> 1	ſ2	î,	ſl	ſ2 ſ	2	1 fo	ſ2	ŗ1	ŕo				fo	11	i2	r. 10	f1	£2	fo	ſŢ	£2	r.	fŋ	f2	fo	î _l	f2	fo	ſl	f ₂	60	ſŢ	£2
Coefficients	-				1 122	0/25	070	0.57	.049	.074	.085	.173	21.5	.202	351.1	53 .327	.035	.078	.03	-	Ceafi	Ticionis	.C57	7 .07	0.005	.387	.483	.302	.202	.21,1,	.173	.035	.078	.037	.057	.078	.035	.173	•2!:l;	.202	381		•
	.321	0.83	+0.	57	. 0.0	5 -	0.02	0.001	-0.02		0.01		.67	0.1.5	.05	0.40		-0.01	-0.0					0.10	0.	p.49	D PL	0.48	0.55	0.73	0.58	0.01	0.01	0.05	2	0.09	0.02	0.16	0.52	0~42			
- 1155	نلناون	0.	.53	+0.	14	-0.03		10.04	· '	-0.03		0•45	7	0.45	Ľ	••	1	·]	1000	<u> </u>			-0-u	<u>-</u>			0.04	I	0.55		0.50		Usual		- <u>v</u>				<u>v•</u> ,			l.	
Actual Load		1.80		-1.	36	-	0.01		-	0.06]	•57		0	•96		-0.03			Loba:	rl Lord		0.0	9 .	· · ·	-1.81		ļ	1.66			0.10			0.11			1.10				
																														• .										ł			
Lultinly (liny)	1 in ²) b	y -1 w	en in	itial	Zero	l uas re	ad ur	ith to	l est le	ond or	n			I						1	1.a.s.	iply (Mir.	7 <u>5</u> 7)		-1 ide	l n ini	Vial	Sero	1.00 P	oad :	Neh	1 V.55	1220-1	on.	L		l	L		l			1
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Temperatures:	Da	te		Ti	no:					Typ	ne of	Test	Load						Po:	sition of	Tem	peratur	es:	Dat	e		Time	:					Type	of Tes	t Loa	d				P	osition of				
Outside 76 °F Room 79 °F	00	t.l!:tb	1961	In Lo	itial ad Re	Zero	Read	ing	5 50 6 13	Lor poi	igitud .nt	linal	load	at c	onduci	tor s	susper	nsion	(Gage	Out Roo	side	76 °F 79 °F	Oct.	,14th	1964	Init: Load	ial Z Read	ero A ing	leadir	18 5 6	50	Longi point	tudina	1 108	d at c	onduc	tor s	ıspensi	or	Gage				
Instrument 82 P	1_		1	Pi.	nal Z	ero R	eadin	g T	1	Loc	id in	Pound	ls I	2255	1	-	1	1	ļ	2 2	Ins 	trument	82 °P	<u> </u>	T		Fina	L Zer	o Rea	ding	<u> </u>		Load	in Pou	nds	2255	T			_					
Gage Number	C 4	0 C 41	C 42	C 4	30 44	C 45	C 46	C 4	7 6 48	D 9	D 10	בנס	D 12	D 13	1 ם	D 1	16	D 17			Gag	a Numbe:	r	D 18	D 19	D 20	D 21 1	0 22	D 23	D 24	D 25 1	26				<u> </u>				_					
Test Channel	39	0	1	2	3	4	5	6	7	8	. 9	10	п	12	13	14	15	16			Tes	t Channe	el .	17	18	19	20	21	22	23	24 :	25													
Position of Gage	2	1	0	2	1	0	0	1	2	2	1	0	2	l	0	2	1	0			Pos	ition o	f Gage	2	1	0	0	1	2.	0	1	2													
Zero Reading	000	,003	001	003	003	001	000	002	: 002	002	002	002	001	001	003	002	003	000			hes	Zero I	Reading	002	002	004	003	001	<u>∞э</u>	001	002	202									·				
Load Reading	180	177	136	005	043	029	-133	-083	-010	-036	-093	-034	-015	-007	034	-011	081	030			rotno	Load I	Reading	-cl:8	-010	c 67	341	198	012	318	231	32			_					_					
Difference	180	174	135	2002	240	028	133	-085	-012	-038	-095	-036	-016	-008	031	-014	078	030			Mico	Diffe	rence	-050	-015	063	338	197	009	-119	233	032		_											
Kips/in ²	5.40	5.2	4.05	0.06	1.20	0.8!	3.99	2.55	-0.36	1.14	2.85	-1.08	-0.48	24	0.93	0.42	2.34	0.90				Kips/	in ²	-1.50	0.36	1.89	10.11	5.91	0.27	.57	•99 o	96								_					
Section		222222	£ .		lxlx	18		lxlx	8	2	and a second	3	2	522x ¹	3	:	222 ¹ 8	3				Sectio	on	2	727 ¹ 8		1}	xl 2xl	8	1}	al ^j a ^l	3	,												
	f2	fl	fo	f2	f1	fo	fo	fl	f2	f2	f1	fo	12	ŗl	fo	f2	fl	fo						f2	f1	fo	fo	f1	f2	fo	f ₁	2			1										
Coefficients	.38	1.481	.327	.085	.078	.067	.067	.07	8.085	.146	.210	.124	.146	210	.124	.146	.210	.124				Coeff	icients	.146	.210	.124	.094	.151	.116	.094.	151 .:	16													
. Kips	2.0	62.52	1.32	0	0.0	0.0	0.27	p.20	-0.03	0.17	0.60	-0.13	0.07	0.05	0.12	0.06	0.49	0.13				Kips		0.22	0.07	0.24	0.95	0.89	0.03	-1	•06 o	.11			1					+	<u>+</u>				
Actual Load		5.90			0.1	5	-	0.50)		-0.90		•	0			0.54					Actua	l Load	-	-0.05		1	87		-	1.29														
Temperatures:	l Da	te		Ti	me:		<u>.</u>			1 1771	pe of	Test	Load						Po	sition of	Tem	perature	851	Date	e ·	_	Time						Type o	of Tes	t Load	1				P	sition of				
Outside 64 °F	oct	.24th	1964	In	itial	. Zerc	Read	ing	1 15	Lon	gitud	inal	load a	at co	nduct	or			'	Q Gage	Out	sida	64 °F	Oct.	.24th	1964	Initi	ial Z	ero R	eadin	g 1	15 1	ongit	udinal	lcad	at co	nduct	or su	pensio	n (Gage				
Room 78 °P Instrument 81 °P				Lo Fi	ad Re nal 2	ading Lero B	; leadir	g	1 25	Log	pensi ad in	on po Pound	int. Is	245	5				:	¥2	Roo Ins	m trument	78 °F 81 °F				Load Final	Read Zere	ing o Rea	ding	12	5 r	oint Load :	in Pou	nds 2	455				1	L2				
Gage Number	C L	0 C 41	. c 4	2 C 4	30 44	, C 45	; c 46	C 4	.7 C 4	3 D 9	p 10	ם דו	D 12	D 13	ע ב	D 1	50 16	D 17	/		Gag	se Number	r	D 18	D 19	D 20	D 21. I	0 22 1	D 23	D 24	D 25 I	26													
Test Channel	39	0	1	2	3	4	•5	6	7	8	9	10	ш	12	13	14	15	16			Tes	t Channe	el .	17	18	19	20	21	22	23	24 2	5													
Position of Gage	2	1	0	2	1	0	0	1	2	2	1	0	2	ı	0	2	1	0			Pos	ition o	f Gage	2	1	0	0	ו	2.	0	1	2													
Zero Reading	00	-002	000	00	L 003	000	001	001	1 000	001	002	000	000	000	002	001	002	000			93	Zero I	Reading	-002	001	001	000	001.	001	001	001 0	00													
E Load Reading	17	190	139	00	7 04.2	023	-172	-101	1 -015		-107	-043	-013	-025	027	-005	071	034			olne	Load 1	Reading	-050	-021	063	366	222	007	-140	-277 0	36	· .					·							
Difference	17	: 192	139	-00	8 038	023	-173	-102	2 -015	-047	-1.09	-043	-013	-025	025		069	034			Mcr	Diffe	rence	-048	-022	062	366	222	006	-141	-278 0	36													
Kips/in ²	5.	25.76	4.17	-0_2	• 1.1	4 0.6	9 -5•19	- 3. 06	-0 . 45	+1.41	.27	29	0•39	0.75	0.75	-0,18	2.07	1.0	 			Kips/	in ²	1.14	J.66	1.86	10.98	.66	0.18	4.23	⁸ •34	•08													
Section		22222	đ		נוצר	ትፄ		lxlx	28	:	2002-1	8	2	2x2x ¹	8		2x2x ¹	8			р. Т.	Secti	on	2	327 8	3	Ъ	x1 ½x1	8	1	al ^{jal}	3													
	I:	fl	fo	f2	'n	fo	fo	ſı	. 1 2	f 2	ſı	fo	£2	fl	fo	f2	fl	fo			:			f2	fl	fo	fo	r1	f2	fo	f1	¹ 2													
CONTICIENCS	.30	1.48	.32	7.085	.078	3.06	.067	.07	8 085	.146	.210	.124	.146	210	.124	.146	.210	.124				Coeff	lcients	.146	.210	,124	.094	.151	.116	.094	151 .	ii6													
Kips	1.9	2.78	1.36	-0.0	2 0.0	9 0.0	5 0-35	-þ.21	-0.04	0.21	0.69	0.16	p.06	0.16	0.09	-0.03	р . ц	0.13				Kips	-	-0.2	0.34	0.23	1.08	1.01	2.02	C.LO	1.26	.13													
Actual Load		6,13	•		0.1	2		-0.63	3		-1.06			0.13			0.54					Actua	1 Load		-0.12		:	2,11			1.53					۰.									
																								1																					
Hultiply (Kips/	/in ²)	by -:	whe	n ini	tial	Zero	was 1	read	with	test	load	on.	L		l				I			Hulti	ply (Kips,	(1)	by -]	L wher	init	ial Z	ero 1	was r	ead wi	th te	st loa	d on.			!								
												S	TF	RAI	Ν	[٦E	AD	١N	GS	8	M	IEMBI	ER		LO	AD	S																	
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Temperatures:	Da	te		T	ime:					Ty	pe of	Test	: Load	1						Pos	itic	on of	Tem	perature	5:	Dat	te		2	fime:					T	pe of	f Test	t Loa	d					Posit	ion of
Outside76Room79Instrument82	°F °F °F	•14t)	n 196	I I F	nítia oad R inal	l Zer eadin Zero 1	o Read g Readin	ing (5 50 6 28	Com at Lo	bined condu ad in	i lon actor a Pour	gitud susp nds 2	inal ensi 255	and on po longi	tra int .t.	nsve 2350	erse 0 tra	load	q ц	<u> </u>	⊷2	Out Room Ins	side m trument	76 °F 79 °F 82 °F	Oct	.14	th 196	54 J J	Initia Load F Final	l Zen leadin Zero	o Rea g Readi	ding ng	55 62	0 Co 8 at 14	mbine cond cad in	d long uctor n Pour	gitud susp nds 2	inal ensio 255 l	and ta n poin ongit	ransvé nt • 235	erse 1 50 tra	oad nsv	°[2
Gage Number	C 4	0 C 4	101	2 C	430 4	4 C 4	5 C 46	C 47	7 C 48	8 D 9	p 10	נוס	ב ס	2 D :	13 D	14 1	0 1 5	50 16	D 17	,	Ι	Ī	Gag	e Number	•	D 18	8 D	19 D	200	21 D	22 D	23 D	24 D	25 D :	26		Τ	T	T				+		-
Test Channel	39	0	1	2	3	4	5	6	7	8	9	10	11	Ľ	2 13	1	14	15	16	1	\square		Tes	t Channe	1.	17	1	18 1	9 2	20 2	1	2 2	3 24	25		-	1	1	-						
Position of Gage	2	1	0	2	1	0	0	1	2	2	1	0	2	1	0		2	1	0				Pos	ition of	Gage	2	+;	1 0	,	0 3	. :	2.0	1	. 2			1								
Zero Reading	00	00	3 00	1 00	003	001	000	002	002	001	. 003	3 002	001	00	1 00	3	003	003	000				63	Zero R	eading	002	0	x02 00	34 0	03 0	01.0)3 O)1 (X	02 00	1	+		1							
Load Reading	12	10	5 06	3 00	3 052	039	-128	-073	-009	-031	-122	2-056	017	-01	6 -03	32 -	028	139	043				Inch	Load R	eading	-090	-0	01 13	35 3	66 1	39 0	x6 -0'	3 -22	22 03	8		1								
Difference	12	10	3 06	2 [00]	5 045	038	-128	-075	-011	-032	-125	5-058	016	-01	7 -03	5-	031	136	043				dere	Differ	ence	-092	2 -0	X03 1.3	31 3	63 1	38 O	0- 50	15 -24	24 03	7			1							
Kips/in ²	3.	в.0 п	7 1.8	5 -	15.	7 1.1	ц -3.84	2.25	0.33	-0.96	-3.79	1.74	p.48	- þ. 5	1	50	•93	1.0	1.29				1	Kips/i	.n ²	-2.7	-b.	.09	33	0.89	.61. 0	·09 -2	25	1.1	1										
Section		22222	x‡		171	x ¹ 8	:	lxlx	8		22221	8		202	۲ ₈		2	202x1	8					Sectio	m	2	272	x ¹ 8	-	1.22	1. 27 ¹ 8		12/2	.12x18			.1		-	1		Lana			
·	f2	fl	f	f2	fl	fo	fo	fl	12	f2	fl	fo	f2	fl	fo	1	2	fl	fo							fo	T	f ₁ f,		fo		5 I.	ſ	I.	1				1						
Coefficients	.38	1.48	1.32	7.08	5 .07	8.06	.067	.078	. 085	.146	.210	.121	.1.46	5,210	.12	4.1	46	.210	.124					Coeffi	cients	-2	6 .:	210.12	24 .	09/1	51.	16.0	, <u> </u>	a .ii	6		<u> </u>						$\neg \uparrow$		
Kips	1.1	i i o li	20.5	0.0		0.08	- 26	0.18	0.03	0.11	- 70	0.22	0.07	0.1	1	-0	.14	0.00	0.16					Kips	3		-0.	.02	1	•02		21	-1.0	01											
				-	1002		-0.20	<u> </u>	10.05	1	<u>P0+12</u>	1			- 10.1	1	ł	p.05	L		L					-0.4	1Q	0.	19	10	•85]	- <u>-</u>	<u>.</u>	10.1		_[J			I	1			I	
Actual Load		3.5	> .		0.2	:0	-	0.47			-1.15			-0.1	. f 			0.07						Actual	Load		٥.	.07		1	.88		-1.(9						_	,	•			
Temperatures:	Da	te		T	Lme:	•				Ty	pe of	Test	Load	1						Post	itio	n of	Temp	perature:	5:	Dat	.e		T	ime:					Ty	pe of	Test	Load	i				1	Posit	ion of
Outside 76	F Oct	•14tł	1.961	I	nitia	L Zero	Read	ing 5	5 50	Ze	ro co	ctro]	l read	ling						q	1	Gage	Outs	aide	76 °F	Oct.	•Jiłt	th 196	4 I	nitia	l Zer	o Rea	ding	5 50	Zei	ro con	trol.	read	ing					o 1	Gage
Room 79 Instrument 82	o _F			L P	ad Re	eading Zero I	eadin	g é	5 55	Lo	ad in	Pour	ds]	s lo	ad				J.		-2	Room	n trument	79 °F 82 °F		·		F	oad R inal	eadin Zero	g Readi	ng	655	La	ad in	Poun	ds i	No 108	d				ıL	2
Gage Number	c 4	0 0 4	1 C 4	2 C	430 44	4 0 45	C 46	C 47	C 48	D 9	b 10	בב ס	D 12	נס	.3 D :	14 D	15	D 16	D 17				Gage	9 Number		D 18	3 D	19 D :	200	21 D	22 D	23 D	24 D :	25 D 2	6										
Test Channel	39	0	1	2	3	4	5	6	7	8	9	10	l 11	12	2 13	1	4	15	16				Test	t Channe	1	17	1	18 1	9 2	0 2	1 2	2 2	3 24	25											
Position of Gage	2	1	0	2	1	0	0	1	2	2	1	0	2	1	0		2	1	0			1.	Posi	ition of	Gage	2	1	. 0		0 1	2	. 0	1	2											
2 Zero Reading	00	0 00	3 001	. 00	3 00	3 000	000	002	CO2	002	002	002	001	003	L 00	3 🗙	13	CO3	000				hes	Zero R	eading	002	α	00 20	4 0	x3 C	01 0	03 00	1 00	2 00.									İ		
Load Reading	00	6 02	0 016	01	6 02	L OOK	002	015	C13	021;	024	016	022	01!	1 02	0 00	6	036	021				olnc	Load R	eading	003	02	21 02	2 0	us -0	u-0	05 02	9 01	6 013	2										
n Difference	00	6 01	7 015	01	3 01	1 00	002	013	011	022	022	011	021	01	3 01	7 🗙	5	033	022				Mcr	Differ	ence	001.	03	19 01	8 C	012 -0	12 -0	08 02	8 01	4 01:									·		
Kips/in ²	0.1	a p.5 1	0.45	þ.3	9- 0-3	3 0,19	0.06	0•39	6.33	0.66	0.66	0.42	0.63	0.39	0.5	10.	.15	0.99	0.63					Kips/i	n ²	0.03	þ.5	57 p.5	40.	36	36	24 0.	0.1; 84	2 0.3											
Section	:	22222	x‡		1xb	ج 8	3	x1x1	8	2		6		2x2x	18		2:	5227 ¹	3			• •		Sectio	n	2	හත	ر 8		12/21	گرا 8		1½x1	12x18											
Coefficients	f2	r1	fo	f2	fl	fo	fo	ſl	f2	12	fl	fo	f2	t1	fo	ſ	2	fl	fo					Cooff	atorta	f 2	1	1 f.	f	1 0	t r	2 10	f1	f2											
	.38	.48	1 .32	7.08	5 .078	3 .067	.067	.078	.085	.146	.210	.124	.146	210	.121	4.1	46	.210	.124					008111	,	.146	6.2	210.12	4.0	94 .1	51 .1	16.0	94.15	ı ii	5		ļ								
Kips	0.0	7 0. 21	p.15	0.0	3 0.0	3 0.01	0	0.03	0.03	0.10	0.14	0.05	0.09	p.c.	0.0	6 0.	-02	0.20	0.08					Kips	•	0	p.,1	1 ² 0.0	6 0.	03	05	03 0.0	8	6 0.0											
Actual Load		0.46	• .		0.0	7		0.06			0.29			0.22	2 :			0.30	1					Actual	Load		0.1	18 .		-0.	05		_0 . 1	8											
																																			i.										
Multiply (Kips	3/in ²)	by –	L whe	n int	tial	Zero	was re	ad w	ith t	l .est 1	load (on.	I											Multin	ly (Kips	$/in^2$)	by	1 wh	en i	nitia	1 2er	0 W89	read	with	test	load	on.	I]			I		
	-						~											• •									•																		
												Ś	STF	٩	IN		R	RE	٩D	ING	S		8	ME	ЕМВЕ	ER		LC)A	DS															
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5) (s. 1975)

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Temperatures:	Date	Time:		73	pe of Tes	t Load				Position of Gage	Temperatures:	Dat	B	Time:				Typ	e of 1	lest L	oad				Post	ition of Gage
Outside 56 G F Room 68 F Instrument 73 F	Oct.9th 1964	Initial Zero Load Reading Final Zero H	o Reading 1 g 2 Reading	. 33 Tra 05 Sus Lo	nsverse spension p ad in Pou	Load at th points nds	ree cond 3022	luctor		42	Outside 56 °F Room 68 °F Instrument 73 °F	Oct.	9th 1964	Initial Load Re Final Z	Zero ading ero Re	Reading ading	1 33 2 05	Tra sus Loa	nsvers pensic d in H	se loa on poi Pounds	d at ti nts	hres co 3022	onduct	or	0	
Gage Number	с 40 с 41 с 42	C 43C 44 C 45	5 C 46 C 47	C 48 D 9	p 10 p i	1 0 12 0 1	3 D 14 1	0 150 16	D 17		Gage Number	D 18	D 19 D 20	D 21 D 2	2 D 23	D 24 D	25 D 26									
Test Channel	39 0 1	2 3 4	5 6	78	9 10	11 12	13 1	14 15	16		Test Channel	17	18 19	20 21	22	23 2	+ 25									
Position of Gage	2 1 0	2 1 0	0 1	2 2	1 0	2 1	0	2 1	0		Position of Gage	2	1 0	01	2.	0	1 2									
Zero Reading	-010 -011 -012	-012 -015 -01	.0-004 -005	005009		07 -006 -0	06-005 -	-ooli -ooli	-006		2 Zero Reading	-003	-003 -004	-012 -009	800- 9	-009 -0	n -on									
Load Reading	-088 -123 -120	-016 -017 -00	07 004 001	-009 -013	-011: -02	2 028 -0	20-079 -	-024 009	-002		Load Reading	-040	-005 060	-007 -033	L -015	019 -0	17 -021						•.			
Difference	-078 -112 -108	-004 -002 00	3 008 006		-011 -01	15 034 -02	4 -074 -	-020 013	004		Difference	-037	-002 064	005 -022	-007	o28 \prec	x06 ~01.0	• 1								
Kips/in ²	-3.36 -2.34 -3.24	0.12 0.06	9 0.18 p.24 -	0.2L 0.12	-0.33	1.02	2,22	0.50	0.12		Kips/in ²	-1.1	-0.06 . 1.92	-0.60	-0.21	0.84	.18 -0.30									
Section	2 kn2 kn2	1x1x ¹ 8	17127	3	2x2x ¹ 8	2020	18	2222			Section	2	2x ¹ 8	1\$x1\$	دا 8	12x	1 ¹ 2x ¹ 8							-		
Cont (N ad a - t-	f ₂ f ₁ f ₀	f ₂ f ₁ f ₀	f _o f ₁	f ₂ f ₂	fl fo	f2 f1	f _o 1	f ₂ f ₁	fo			f2	f _l f _o	fo f1	f2	f _o f	12									
coefficients	.381 .481 .327	.085 .078 .067	7 .067 .078	.085 .146	.210 .12	4 .146 210	.124 .3	146 .210	.124		Coefficients	.146	.210.124	.094 .15	1.116	.094.1	51 .116									
Kips	-1.63 - -0.89 -1.06	0.01 0.0	1 p.01	0.01	-0.00	p.15	-0.28	80.0 ^{90.0}	0.01		Kips	-0.1	0.01 0.24	0.01 -0.10	•0.02	0.08	03 -0-03									
Actual Load	-3.58	0	0.02	5 m.	-0.17	-0,2	2	0			Actual Load			-0.11	L.	0.	02									
Temperatures:	Date	Time:		Ty	pe of Tes	t Load				Position of	Temperatures:	Date		Time:				Type	of T	est L	oad				Posi	tica of
Outside 76 °F	Oct.14th 1964	Initial Zero	o Reading 5	50 Tra	nsverse :	Load at co	nductor	suspensi	on po	int Gage	Outside 76 °F	Oct.1	4th 1964	Initial	Zero 1	Reading	5 50	Tran	sverse	e load	i at co	nductor	r susp	ension	o0	Gage
Room 79 P Instrument 82 P		Load Reading Final Zero I	g ć Reading	10 Lo	ad in Pou	nds 2350				12	Instrument 82 P			Final Ze	ro Rea	ading	6 40	Load	τ l in P	ande	235	0			11	2
	1		-						·					•		÷				- united		· .			1	
Gage Number	C 40 C 41 C 42	C 43C 44 C 45	5 C 46 C 47	С 48 D 9	D 10 D 1	1 0 12 0 1	.3 D 14 I	D 15D 16	D 17		Gage Number	D 18	D 19 D 20	21 0 22	2 D 23	D 24 D	25 D 26									
Gage Number Test Channel	C 40 C 41 C 42 39 0 1	C 43C 44 C 45 2 3 4	5 C 46 C 47 5 6	C 48 D 9 7 8	D 10 D 1 9 10		.3 D 14 I	D 15D 16 14 15	D 17 16		Gage Number Test Channel	D 18 17	D 19 D 20 18 19	21 D 22 20 21	2 D 23 22	D 24 D 23 24	25 D 26 25									
Gage Number Test Channel Position of Gage	c 40 c 41 c 42 39 0 1 2 1 0	C 43C 44 C 44 2 3 4 2 1 0	5 C 46 C 47 5 6 · 0 1	C 48 D 9 7 8 2 2	D 10 D 1 9 10		.3 D 14 1 2 13 2 0	D 15D 16 14 15 2 1	D 17 16 0		Gage Number Test Channel Position of Gage	D 18 17 2	D 19 D 20 18 19 1 0	0 21 D 22 20 21 0 1	2 D 23 22 2 .	D 24 D 23 24 0 1	25 D 26 25 25									
Gage Number Test Channel Position of Gage	c 40 c 41 c 42 39 0 1 2 1 0 000 003 031	C 4.3 C 4.4 C 4.4 2 3 4 C 1.1 O 2003 003 003 001	5 C 46 C 47 5 6 0 1 1 000 002	C 48 D 9 7 8 2 2 002 002	D 10 D 1 9 10 1 00 002 00	1 p 12 p 1 1 11 12 2 1 2 001 00	3 D 14 1 2 13 2 0 1 003 0	D 150 16 14 15 2 1 003 003	D 17 16 0		Gage Number Test Channel Position of Gage	D 18 17 2 002	D 19 D 20 18 19 1 0 002 004	0 21 D 22 20 21 0 1 003 001	2 D 23 22 2 . 003	D 24 D 23 24 0 1 001 0	25 D 26 25 25 2 2 2 02 001									
Gage Number Test Channel Position of Gage 2ero Reading	c 40 c 41 c 42 39 0 1 1 0 2 1 0 0 031 031 -045 -056 -057 -057 -057	C 4.3 C 4.4 C 4.4 2 3 4 C 4.1 2 1 0 003 003 001 012 010 004 004	5 C 46 C 47 5 6 · 0 1 · 000 002 4 003 018	C 4.8 D 9 7 8 2 2 002 002 002 006 020 020	D 10 D 1 9 10 1 00 002 000 -002 -00	1 D 12 D 1 0 11 12 0 2 1 2 001 00 7 042 -00	3 D 14 1 2 13 3 0 1 003 0 1 -052 0	D 150 16 14 15 2 1 003 003 017 065	D 17 16 0 000 025		Gage Number Test Channel Position of Gage	D 18 17 2 002 -039	D 19 D 20 1B 19 1 0 002 004 025 075	0 21 D 22 20 21 0 1 003 001 030 -019	2 D 23 22 2 . 003 -007	D 24 D 23 24 0 1 001 0 057 0	25 D 26 25 25 2 2 02 001 23 003									
Gage Number Test Channel Position of Gage Zero Reading Load Reading Difference	c 40 c 41 c 42 39 0 1 0 2 1 0 0 0 000 003 031 0 0 -015 -056 -057 -058 -058	C 4.3 C 4.4 C 4.4 2 3 4 C 4.4 2 1 0 0 0 0 003 003 003 001 001 001 012 0.10 002 003 003	5 C 46 C 47 5 6 0 1 4 000 002 4 003 018 3 003 016	C 4.8 D 9 7 8 2 2 002 002 002 002 006 020 0014 018	D 10 D 1 9 10 002 001 -002 -001 -001 -001	1 D 1.2 D 1 1 1.1 1.1 1.1 1.2 2 2 1 1 1.2 2 0.01 0.00 0.00 0.00 7 0.1.2 -000 0.01 -000	3 D 14 1 13 1 0 1 003 0 1 -052 0 2 -055 0	D 15 16 14 15 2 1 003 003 017 065 020 062	D 17 16 0 000 025 025		Gage Number Test Channel Position of Gage E Zero Reading H Load Reading Difference	D 18 17 2 002 -039 -011	D 19 D 20 1B 19 1 0 002 0014 0 0 025 075 071	21 D 22 20 21 21 0 1 003 001 030 -01.9 027 -020	2 D 23 22 2 . 003 -007 -010	D 24 D 23 24 0 1 001 0 057 0 056 0	25 D 26 25 2 2 2 2 2 001 23 003 21 002									
Gage Number Test Channel Position of Gage 2ero Reading Load Reading Difference Kips/in ²	c 40 c 41 c 42 39 0 1 2 1 0 22 1 0 000 003 001 -045 -056 -057 -058 -058 -1.35 -1.77 -1.71 -1.71	C 4.3 C 4.4 C 4.4 2 3 4 0 0 003 003 003 001 012 012 010 004 004 004 009 007 003 002 0.21 0.21	5 C 46 C 47 5 6 0 1 1 000 002 4 003 018 3 003 016 99 p.09 p.48	C 4.8 D 9 7 8 2 2 002 002 002 002 004 0.8 0.51 0.51	p 10 p 1 9 10 1 00 002 001 -002 -001 -004 -002 -004 -002	1 D 12 D 1 0 11 12 0 1 0 2 1 1 12 2 0 2 1 1 12 2 0 2 1 0 1 0 7 0.42 -000 0 0 1 -000 7 1.23 -0.00 0	3 D 1// 1 2 13 2 0 1 003 0 1 -052-0 2 -055-0 5 -1.65	D 150 16 14 15 2 1 03 003 017 065 020 062 0.60 1.86	D 17 16 0 000 025 025 025		Gage Number Test Channel Position of Gage 2ero Reading Load Reading Difference Kips/in ²	D 18 17 2 -039 -041 -1.23	D 19 D 20 1B 19 1 0 1 0 002 0014 025 075 023 071 0.69 2.13 1 1	0 21 D 22 20 21 0 21 0 1 0 1 003 001 002 001 030 -019 020 021 081 -0.60 -0.60 0	2 D 23 22 2 . 003 -007 -010 -0.30	D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0	25 D 26 25 25 22 22 02 001 23 003 21 002 53 0.06									
Gage Number Test Channel Position of Gage 2 Zero Reading Load Reading Difference Kips/in ² Section	C 40 C 41 C 42 39 0 1 2 1 0 22 1 0 0 1 0 000 003 031 -015 -056 -057 -045 -056 -057 -045 -059 -056 -057 -045 -058 -058 -1.35 -7.7 -1.71 -7.71 -7.71 -7.41 2½x2½x2 -1.355 -1.77 -1.714 -1.714 -1.714	C 4.3 C 4.4 C 4.4 2 3 4 0 0 0 0 0 0 1 0 0 0 1 0 1 0 1 0 1 0 1 1 0 1 </td <td>5 C 46 C 47 5 C 10 1 0 1 4 000 002 4 003 018 3 003 016 90.09 0.48 1.x1.x1</td> <td>C 4.6 D 9 7 8 2 2 002 002 002 002 004 0.18 0.51 0.51 8</td> <td>p 10 p 1 9 10 1 0 002 001 002 001 004 -002 004 -001 005 -012 22222 8</td> <td>1 D 12 D 1 1 11 12 1 12 2 1 1 2 1 2 0 2 1 0 2 001 000 7 0.02 -000 0 0.01 -000 7 1.23 -0.0 7 1.23 -0.0 -0.0 -0.0 -0.0</td> <td>3 D 1/ 1 2 13 2 1 00 0 1 003 0 1 -052 c 2 -055 0 -1.65 18</td> <td>D 150 16 14 15 2 1 N3 003 N7 065 D20 062 D.60 1.86 2x2x¹8</td> <td>D 17 16 0 025 025 0.75</td> <td></td> <td>Gage Number Test Channel Position of Gage 2 Zero Reading bifference Kips/in² Section</td> <td>D 18 17 2 -039 -041 -1.23 2</td> <td>D 19 D 20 1B 19 1 0 1 0 002 004 0025 0755 0723 0711 00-69 2.13 0.49 0.49</td> <td>20 21 D 22 20 21 0 1 003 001 030 -019 030 -019 030 -019 037 -020 081 -p.60 1½x1½</td> <td>2 D 23 22 2 . 003 -007 -010 -0.30 2-8</td> <td>D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0.</td> <td>25 D 26 25 25 22 22 22 22 22 23 21 23 21 02 23 0.06 12x¹8</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	5 C 46 C 47 5 C 10 1 0 1 4 000 002 4 003 018 3 003 016 90.09 0.48 1.x1.x1	C 4.6 D 9 7 8 2 2 002 002 002 002 004 0.18 0.51 0.51 8	p 10 p 1 9 10 1 0 002 001 002 001 004 -002 004 -001 005 -012 22222 8	1 D 12 D 1 1 11 12 1 12 2 1 1 2 1 2 0 2 1 0 2 001 000 7 0.02 -000 0 0.01 -000 7 1.23 -0.0 7 1.23 -0.0 -0.0 -0.0 -0.0	3 D 1/ 1 2 13 2 1 00 0 1 003 0 1 -052 c 2 -055 0 -1.65 18	D 150 16 14 15 2 1 N3 003 N7 065 D20 062 D.60 1.86 2x2x ¹ 8	D 17 16 0 025 025 0.75		Gage Number Test Channel Position of Gage 2 Zero Reading bifference Kips/in ² Section	D 18 17 2 -039 -041 -1.23 2	D 19 D 20 1B 19 1 0 1 0 002 004 0025 0755 0723 0711 00-69 2.13 0.49 0.49	20 21 D 22 20 21 0 1 003 001 030 -019 030 -019 030 -019 037 -020 081 -p.60 1½x1½	2 D 23 22 2 . 003 -007 -010 -0.30 2-8	D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0.	25 D 26 25 25 22 22 22 22 22 23 21 23 21 02 23 0.06 12x ¹ 8									
Gage Number Test Channel Position of Gage 2ero Reading Load Reading Difference Kips/in ² Section	$\begin{array}{c c} C & 40 & C & 41 & C & 42 \\ \hline 39 & 0 & 1 \\ \hline 2 & 1 & 0 \\ \hline 000 & 003 & 031 \\ -0.5 & -056 & -057 \\ -0.5 & -059 & -058 \\ -1.35 & -77 & -1.71 \\ \hline 2\frac{1}{2}x2\frac{1}{2}x\frac{1}{2} \\ \hline \mathbf{f}_2 & \mathbf{f}_1 & \mathbf{f}_0 \end{array}$	C 4.3C 4.4 C 4.2 2 3 4 0 2 1 0 0.03 0.01 0.02 0.10 0.04 0.09 0.07 0.03 0.277 0.201 0.21 0.00 0.01 0.11 1.51x ¹ 8 f2 f1 f0 f1 f0 f1 f0	5 C 46 C 47 5 6 9 1 1 000 002 4 003 018 3 003 016 9 0.09 0.48 1x1x ² 10 10	C 4.6 D 9 7 8 2 2 002 002 002 002 006 020 001 0.18 0.12 0.51 6 1 f f f f 1	p 10 p 1 9 10 1 0 002 001 002 001 001 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 002 001 003 001 004 001 005 001 005 001 005 001 005 001 005 001 005 001 005 001 005 001 005 001 005 001 005 001 005 001 005 001 005 001 005 001	1 D 12 D 1 11 12 2 1 2 2 0 2 1 2 001 000 7 7 0.02 -000 -000 7 1.23 -0.0 2 2.22 -0.0 -0.0 2 2.22 -0.0 -0.0	3 D 1/2 1 2 13 2 0 1 1 003 0 1 -052 0 2 -055 0 6 -05 -1.65 1.8 10 1 1 -052 0 1 -055 0	D 150 16 14 15 2 1 03 003 017 065 1.866 2.02 ¹ 1.866 2.02 ¹ 1.866	D 17 16 0 000 025 025 0.75 3 f₀		Gage Number Test Channel Position of Gage E Zero Reading Load Reading Difference Kips/in ² Section	D 18 17 2 -039 -041 -1.23 2 f ₂	D 19 D 20 18 19 1 0 002 004 0 0 025 075 0 0 004 0 0 0 0 025 075 0 0 0 004 0	221 p 22 20 21 0 1 030 -019 027 -020 081 - p.60 1½x1½ f ₀ f ₁	2 D 23 22 2 . 003 -007 -010 -0.30 2-8 f ₂	D 24 Q 23 24 Q 1 3 3 Q 1 0 1 Q 57 Q 0 5 Q 557 Q 0 5 0 1.68 0.0 1 <t< td=""><td>25 D 26 25 25 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	25 D 26 25 25 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2									
Gage Number Test Channel Position of Gage Zero Reading Load Reading Difference Kips/in ² Section Coefficients	$ \begin{array}{c c} 40 & c & 41 & c & 42 \\ \hline 39 & 0 & 1 \\ \hline 2 & 1 & 0 \\ \hline 000 & 003 & 001 \\ \hline -0.5 & -056 & -057 \\ \hline -0.5 & -056 & -058 \\ \hline -1.35 & -77 \\ \hline -1.35 & -1.77 \\ \hline 22x22x2 \\ \hline f_2 & f_1 & f_0 \\ \hline .381 & .481 & .327 \\ \end{array} $	C 4.3C 4.4 C 4.2 2 3 4 2 1 0 003 003 001 012 01.0 004 009 007 003 0.277 0.21 0.00 1xxxx8 f2 f1 f0 0.055 .078 .067	5 C 46 C 47 5 C 46 C 47 0 1 00 02 003 018 003 016 003 016 003 016 1x1x ² 100 1 1x1x ² 100 1 1x1x ²	C 4.8 D 9 7 8 2 2 002 002 002 002 004 018 0.51 0 12 7 8 f2 f2 142 0.51 5 146	p 10 p 1 9 10 p 1 1 0 0 0 002 001 001 001 004 002 001 001 004 002 001 002 004 002 001 002 004 002 001 002 004 002 002 002 004 002 002 002 004 002 002 002 004 002 002 002 004 002 002 002 004 002 002 002 004 002 002 002 004 002 002 002 004 002 002 002 004 002 002 002 005 002 002 002 004 002 002 002 005 002 002 002 004 002 002<	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3 D 1,1 1 2 1,3 1 0 1 003 0 1 1 -0.52 0 2 2 -0.55 0 -1.65 1 -0.65 -1 -0.55 2 -0.55 -0.55 -0.55 4 -0.65 -0.55 -0.55 1 -0.52 -0.55 -0.55 2 -0.55 -0.55 -0.55 1 -0.52 -0.55 -0.55 2 -0.55 -0.55 -0.55 1 -0.52 -0.55 -0.55 2 -0.52 -0.55 -0.55 2 -0.55 -0.55 -0.55 2 -0.55 -0.55 -0.55 2 -0.55 -0.55 -0.55 3 -0.55 -0.55 -0.55 4 -0.55 -0.55 -0.55 4 -0.55 -0.55 -0.55 5 -0.55 -0.55 -0.55	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	D 17 16 0 000 025 025 025 0.75 3 f ₀ .124		Gage Number Test Channel Position of Gage 2ero Reading Load Reading Difference Kips/in ² Section Coefficients	D 18 17 2 -002 -039 -0h1 -1.23 2 f ₂ .146	D 19 D 20 18 19 1 0 0022 0014 025 075 0233 0711 0.69 2.13 22.43 2.43 2.13 22.41 f. f. f.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2 D 23 22 2 . 003 -007 -010 -0.30 -0.30 -2.8 f ₂ f ₂	D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0 1.222 1 \$\$\circ\$_0\$ 1 1.68 0 1.222 1 \$\$\circ\$_0\$ 1 \$\$\circ\$_0\$ 1 \$\$\circ\$_0\$ 1 \$\$\circ\$_0\$ 1 \$\$\$\circ\$_0\$ 1 \$	25 D 26 25 25 25 2 2 2 2 2 2 2 2 2 2 2 2 2 2									
Gage Number Test Channel Position of Gage 2ero Reading Load Reading Difference Kips/in ² Section Coefficients Kips	C 40 C 41 C 42 39 0 1 2 1 0 22 1 0 0 1 22 1 0 0 0 -015 -056 -057 -058 -058 -01-35 -059 -058 -058 -1.714 22x22xxx 1 1 1.0 -0.51 -0.51 -0.51 -0.85 -0.57 -0.57 -0.57 -0.57	C 4.3C 4.4 C 4.2 2 3 4 0 22 1 0 0 003 0.03 001 001 012 0.10 004 009 00.27 0.21 0.0 1x1x ¹ 8 f2 f1 f0 0.085 .078 .067 0.02	5 C 46 C 47 5 C 46 C 47 5 6 0 1 1 000 002 4 003 018 3 003 016 9 0.09 0.48 1 x1x ² 1 f ₀ f ₁ 7 .067 .078 0.01	C 4.8 D 9 7 8 2 2 002 002 002 002 00.1 0.18 0.51 0.51 8 1 1 1 1 6.025 1.146 0.045 0.045	10 1 9 10 1 0 002 001 002 001 001 001 002 001 001 001 002 001 001 001 002 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 1 fc 1 fc 0 001 0 001	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3 D 14 1 2 13 2 0 1 03 0 1 -052 0 2 -055 0 4 1.65 1 -052 0 0 1 br>1 -052 0 0 0 1 -052 0 0 0 0 1 -052 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D 150 16 14 15 2 1 23 003 17 065 1.66 2x2x ¹ 5 f ₂ f ₁ 146 .210 0.09 0.39	D 17 16 0 0000 025 0025 025 00-755 3 £0 .124 00-009 3		Gage Number Test Channel Position of Gage 2 Zero Reading 2 Load Reading Difference Kips/in ² Section Coefficients Kips	D 18 17 2 -039 -041 -1.23 2 f ₂ .146	D 19 D 20 18 19 1 0 002 004 025 075 023 071 2.43 0.69 2.43 62.18 f1 f. .210 .124 0.15 0.220 .124 0.45 0.216	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2 D 23 22 2 . 003 -007 -010 -0.30 -0	D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0 1.220 1.68 1 1.201 1.094.14 1.201 1.094.14	25 D 26 25 D 26 25 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2									
Gage Number Test Channel Position of Gage Zero Reading Load Reading Difference Kips/in ² Section Coefficients Kips Actual Load	$ \begin{array}{c cccc} c & 40 & c & 41 & c & 42 \\ \hline 39 & 0 & 1 \\ \hline 2 & 1 & 0 \\ \hline 000 & 003 & 001 \\ \hline -0.15 & -056 & -057 \\ \hline -0.45 & -059 & -058 \\ \hline -135 & -77 \\ \hline -135 & -77 \\ \hline -135 & -171 \\ \hline 2\frac{1}{2}x2\frac{1}{2}x\frac{1}{x} \\ \hline f_2 & f_1 & f_0 \\ \hline -381 & .481 & .327 \\ \hline -0.51 & -0.55 \\ \hline -0.55 & -0.57 \\ \hline -1.93 \\ \end{array} $	C 4.3°C 4.4 C 4.4 2 3 4 0 2 1 0 0 003 003 001 001 012 C10 004 009 007 003 0.277 0.21 0.00 1x1x ¹ 8 f2 f1 f0 0.085 0.78 0.65 0.02 0.005 0.005 0.005 0.005	5 C 46 C 47 5 C 46 C 47 5 6 0 1 2 00 002 4 003 018 3 003 016 9 0.09 0.48 1x1x1x1 1 fo f1 7 .067 .078 0.04 0.06	C 4.8 D 9 7 8 2 2 002 002 002 002 001 0.18 0.51 0.12 0.51 0.51 8	10 1 9 10 1 0 1 0 002 001 002 001 001 001 002 001 001 001 002 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001 001	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	D 150 16 14 15 2 1 03 003 017 065 1060 1060 2x2x ¹ 5 f ₂ f ₁ 146 .210 0.09 0.39	D 17 16 0 025 025 025 0.75 3 f ₀ .124 0.09		Gage Number Test Channel Position of Gage E Zero Reading Difference Kips/in ² Section Coefficients Kips Actual Load	p 18 17 2 -039 -041 -1.23 2 f ₂ .146 -0.16	D 19 D 20 18 19 19 1 0 002 004 025 075 023 071 00.69 2.13 2.13 2.13 62x ¹ 8 f1 f.0 .210 .124 0.15 0.25 0.23 0.15 0.26	0 21 D 22 20 21 0 1 00 1 003 001 030 -019 027 -020 081 -0.60 1 1 12x12 - - 1 12x12 - - 0.03 - 0.03 -0.00 - 0.03 -	2 D 23 22 2 . 003 -007 -010 -0.30 -0.30 -2.8 f2 .116 -9.03 9	D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0 1.220 1 5.094.15 0 0.16 0	25 D 26 25 C 2 2 2 C 2 2 C 2 C									
Gage Number Test Channel Position of Gage 2ero Reading 1oad Reading Difference Kips/in ² Section Coefficients Kips Actual Load	$\begin{array}{c c} 40 & c & 41 & c & 42 \\ \hline 39 & 0 & 1 \\ \hline 2 & 1 & 0 \\ \hline 000 & 003 & 001 \\ \hline -045 & -056 & -057 \\ \hline -045 & -056 & -058 \\ \hline -0.51 & -0.51 & -0.57 \\ \hline -0.51 & -0.57 \\ \hline -0.51 & -0.57 \\ \hline -1.93 \end{array}$	C 4.3C 4.4 C 4.2 2 3 4 2 1 0 003 003 001 012 01.0 004 009 007 003 0-27. 0-21 0-00 1x1x ¹ 8 f2 f1 f0 0.052 0.02 0.02 0-01 0.02 0.02 0-05 0	5 C 46 C 47 5 C 46 C 47 5 6 0 1 1 000 002 4 003 018 3 003 016 9 0.09 0.48 1 0.07 1 0.07 1 0.07 0.067 0.064 0.066	C 4.8 D 9 7 8 2 2 002 002 002 004 004 0.8 0.51 0.51 8 12 12 12 12 12 12 12 0.01 0.02 0.01 0.01	p 10 p 1 9 10 p 10 1 0 002 001 -002 -001 -002 -001 -004 -002 -001 -002 -004 -002 -001 -002 -004 -002 -001 -002 -004 -002 -002 -001 -004 -002 -001 -002 -005 -003 -002 -002	1 1 1 1 1 1 1 1 1 1 2 1 2 1 2 01 00 0 7 0.2 -00 9 0.01 -00 7 1.23 -0.0 2 1 -0.0 1 1.46 21.0 2 1.18 -0.0	3 D 1/ 1 1 33 C 1 003 C 1 -052 C 2 -055 C 4 -055 C -1.65 -	D 150 16 14 15 2 1 23 003 17 065 20 062 20 062 20 062 20 062 1.866 20 21 1.866 20 05 0.39 0.39	D 17 16 0 000 025 025 025 0.75 3 fo .124 0.09		Gage Number Test Channel Position of Gage 2 Zero Reading Load Reading Difference Kips/in ² Section Coefficients Kips Actual Load	D 18 17 2 -039 -041 -1.23 2 .146 -0.18	D 19 D 20 1B 19 1 0 002 001 0 0 025 075 073 071 0.469 2.13 0 0 02.18 f1 f0 0.12 0.12 0.20 1.24 0.12 0.23 0.23 0 0	21 D 22 20 21 1 00 1 003 001 030 -019 027 -020 011 -0.20 031	2 D 23 22 2 003 -007 -010 -0.30 -0.30 -2.8 f ₂ t116 -5.03	D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0. 1.200 f ₀ f ₃ .094.12 0.16 0. 0.1	25 D 26 25 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2									
Gage Number Test Channel Position of Gage 2ero Reading Difference Kips/in ² Section Coefficients Kips Actual Load	c 40 c 41 c 42 39 0 1 2 1 0 22 1 0 0 0 1 22 1 0 0 0 0 -04.5 -056 -057 -058 -058 -058 -1.35 1.77 -1.714 2±x2±x± f2 f1 f0 -381 .481 .327 -0.57 -0.57 -1.93 -1.93 -1.93 -1.93	C 43C 44 C 44 2 3 4 2 1 0 003 003 001 002 010 004 009 007 003 0.27 0.21 0.00 1.515 8 f2 f1 f0 0.02 0.02 0.01 0.02 0.05 1.515 0.55	5 C 46 C 47 5 C 46 C 47 5 6 0 1 1 000 002 4 003 018 3 003 016 9 0.09 0.48 1x1x ¹ 7 .067 .078 0.04 0.06 0.06	C 4.8 D 9 7 8 2 2 002 002 002 002 00.12 0.51 8 12 f2 f2 f2 12 0.32 0.51 0.51 14 6 0.01 0.05 0.02 ith tost 0.01 0.02 0.02	p 10 p 1 9 10 1 0 1 002 002 002 0002 001 001 001 0002 001 002 001 1 fc 0.02 0.02 1 fc .12 0.02 0.02 0.02 0.02 0.02	1 D 12 D 1 11 12 2 1 2 0 2 1 2 0 7 0.02 0.01 -000 7 1.23 0.02 0.01 2 2.22 4 .14.6 3 0.18 -0.0	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	D 150 16 14 15 2 1 03 003 17 065 20 062 2000 1.860 2x2x ¹ f ₂ f ₁ 146 .210 0.039 0.39	p 17 16 0 025 025 025 0.75 3 f ₀ .124 0.09		Gage Number Test Channel Position of Gage Cero Reading Load Reading Difference Kips/in ² Section Coefficients Kips Actual Load	D 18 17 2 -039 -041 -1.23 f ₂ .146 -0.18 -0.18	D 19 D 20 18 19 1 0 002 004 025 075 023 071 0.69 2.13 2.13 2.13 2.13 2.13 0.15 0.26 0.23 by -1 when	22 p 22 20 21 0 1 03 001 030 019 030 019 027 -020 081 -p.60 1≵x1≵ f ₀ f ₁ .094 .15 0.08 0.00 -0.0	2 D 23 22 2 2 -003 -007 -010 -0.30 -0.00 -	D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0. 1.68 0. 1.68 0. 1.220 1.094 .15 0.16 0.	25 D 26 25 22 22 23 003 21 002 53 0.06 12x ¹ 8 12x ¹ 8	est 1								
Gage Number Test Channel Position of Gage 2ero Reading 1oad Reading Difference Kips/in ² Section Coefficients Kips Actual Load	$\begin{array}{c c} 40 & c & 41 & c & 42 \\ \hline 39 & 0 & 1 \\ \hline 2 & 1 & 0 \\ \hline 000 & 003 & 001 \\ \hline -045 & -056 & -057 \\ \hline -045 & -056 & -058 \\ \hline -0.51 & -0.51 & -0.57 \\ \hline -1.93 \\ \hline 1n^2 & by -1 \ \text{when} \end{array}$	C 43C 44 C 44 2 3 4 2 1 0 003 003 001 012 010 004 009 007 003 0.27 0.21 0.00 1x1x ¹ 8 f2 f1 f0 0.02 0.02 0.01 0.02 0.02 0.01 0.05	5 C 46 C 47 5 C 46 C 47 5 6 0 1 1 000 002 4 003 018 3 003 016 9 0.09 0.48 1 x1x ¹ f ₀ f ₁ 7 .067 .078 0.06 0.06 0.06	C 4.8 D 9 7 8 2 2 002 002 002 004 004 0.8 0.51 0.51 8 12 12 0.51 8 0.51 0.51 0.51 9 0.01 0.02 0.01 10 0.01 0.00 0.01 11 10 0.01 0.02	p 10 p 1 9 10 p 10 1 002 001 -002 -001 -002 -004 -002 -001 -004 -002 -001 -004 -002 -001 -004 -002 -001 -004 -002 -001 -005 -003 -002 10ad on. -002	1 p 12 p 1 11 12 2 1 2 01 0 2 1 02 0 1 2 01 0 1 0 1 0 1 0 1 0 1 1 2 0 1 1 2 1 1 2 0 1 1 2 0 1 1 2 0 1 1 2 0 1 1 2 0 1 2 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 <t< td=""><td>3 D 1/ 1 1 33 C 1 003 C 1 -052 C 2 -055 C 4 -057 C -1.65 -</td><td>D 150 16 14 15 2 1 23 003 17 065 2000 1.866 2020 1.866 2021 1.866 2021 1.866 2021 1.866 2021 1.866 2021 1.866 0.39 0.39</td><td>D 17 16 0 000 025 025 0.75 3 f₀ .124 0.09 0</td><td></td><td>Gage Number Test Channel Position of Gage Zero Reading Load Reading Difference Kips/in² Section Coefficients Kips Actual Load</td><td>D 18 17 2 -039 -041 -1.23 52 .146 -0.18 (1n²)</td><td>D 19 D 20 18 19 1 0 002 004 025 075 023 071 0.69 2.13 0.69 2.13 0.15 0.20 0.124 0.15 0.26 0.23</td><td>22 D 22 20 21 0 1 03 001 030 -019 027 -020 081</td><td>2 D 23 22 2 . 003 -007 -010 -0-30 -0-30 -2-8 f2 f2 f2 f2 f2 f2 f2 f2 f2 f2 f2 f2 f2</td><td>D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0. 1.68 0. 1.220 f₀ f₃ .094.12 0.16 0. 0. 0. 0. 0.</td><td>25 D 26 25 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2</td><td>est 1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	3 D 1/ 1 1 33 C 1 003 C 1 -052 C 2 -055 C 4 -057 C -1.65 -	D 150 16 14 15 2 1 23 003 17 065 2000 1.866 2020 1.866 2021 1.866 2021 1.866 2021 1.866 2021 1.866 2021 1.866 0.39 0.39	D 17 16 0 000 025 025 0.75 3 f ₀ .124 0.09 0		Gage Number Test Channel Position of Gage Zero Reading Load Reading Difference Kips/in ² Section Coefficients Kips Actual Load	D 18 17 2 -039 -041 -1.23 52 .146 -0.18 (1n ²)	D 19 D 20 18 19 1 0 002 004 025 075 023 071 0.69 2.13 0.69 2.13 0.15 0.20 0.124 0.15 0.26 0.23	22 D 22 20 21 0 1 03 001 030 -019 027 -020 081	2 D 23 22 2 . 003 -007 -010 -0-30 -0-30 -2-8 f2 f2 f2 f2 f2 f2 f2 f2 f2 f2 f2 f2 f2	D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0. 1.68 0. 1.220 f ₀ f ₃ .094.12 0.16 0. 0. 0. 0. 0.	25 D 26 25 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	est 1								
Gage Number Test Channel Position of Gage 2ero Reading Difference Kips/in ² Section Coefficients Kips Actual Load	C 40 C 41 C 42 39 0 1 2 1 0 000 003 001 -045 -056 -057 -045 -056 -057 -045 -059 -058 -1.35 ^{1.77} -1.71 22x22x2 f2 f1 f0 .381 .481 .327 -0.51 -0.57 -1.93 in ²) by -1 when	C 43C 44 C 45 2 3 4 2 1 0 003 003 001 012 010 004 009 007 003 0.27 0.21 0.00 1515 8 f2 f1 f0 0.02 0.02 0.01 0.05 initial Zero	5 C 46 C 47 5 C 46 C 47 5 6 0 1 1 000 002 4 003 018 3 003 016 9 0.09 0.48 1 x1x ¹ f ₀ f ₁ 7 .067 .078 0.04 0.05 Was road w	C 4.8 D 9 7 8 2 2 002 002 002 004 00.12 0.51 8 12 f2 f2 f2 0.51 8 0.012 0.51 8 0.02 0.05 100 0.05 1.146 0.01 0.02 0.01 1th tost 0.01 0.01	p 10 p 1 9 10 1 0 1 002 001 -002 -002 -001 -001 -001 -0.22 -0.22 -0.22 -0.22 1 f1 fc -0.22 -0.22 -0.22 -0.22 -0.22 0.02 -0.02 -0.02 10ad on. -0.02 -0.02	1 1 12 1 1 1 12 2 1 2 1 2 01 0 2 1 1.23 0 1.23 0 1.23 0 1.23 0 1.23 0 1.2 1.23 0.0 2.222 0 1.2 1.23 0.0 2.16 0.0 0.18 -0.0	3 D 1/ 1 1 00 1 003 C 1 -052 C 2 -055 C -1.65 1 -052 C 2 -055 C -1.65 1 -052 C -1.65 1 -052 C -1.65 -	D 1.50 16 14 15 2 1 2 1	p 177 16 0 025 025 025 025 025 0.75 3 f ₀ .124 0.09 0 0 0 0 0 0 0 0 0 0 0 0 0		Gage Number Test Channel Position of Gage Position of Gage Load Reading Uniference Kips/in ² Section Coefficients Kips Actual Load Multiply (Kips/	D 18 17 2 -0.02 -0.39 -0.11 -1.23 22 .146 -0.18 -0.18 -0.18 ER	D 19 D 20 18 19 1 0 002 004 025 075 023 071 0.69 2.13 2.13 2.13 2.13 0.15 0.26 0.23 by -1 when	22 P 22 20 21 0 1 03 001 030 019 227 020 081 -p.60 12x12x fo f1 0.08 0.00 0.00 -0.0 initial ADS	2 D 23 22 2 003 -007 -010 -0.3	D 24 D 23 24 0 1 001 0 057 0 056 0 1.68 0. 1.220 1.68 0. 1.220 1.094.12 0.16 0. 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0	25 D 26 25 22 22 23 CO3 23 CO3 21 CO2 53 C.C6 53 C.C6 55 C.C6	est 1								

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Temperatures: Date Time: Position of Temperatures: Date Time: Type of Test Load Position of Type of Test Load Gage Gage 0 1 51 °F 72 °F 76 °F 51 °F Oct.6th 1964 Initial Zero Reading 8 30 Load Reading 8 45 Longitudinal load at ground wire Outside Oct.6th 1964 Initial Zero Reading 8 30 Longitudinal load at ground wire sus-Outside 72 °P Load Reading Room Load Reading suspension point Room 8 45 pension point 3 1 76 °F 2505 -2 Instrument Final Zero Reading 2505 Instrument Final Zero Reading Load in Pounds Load in Founds D 18 D 19 D 20D 21 D 22 D 23 D 24 D 25 D 20 Gage Number c 40 c 41 c 42 c 43 c 44 c 45 c 46 c 47 c 48 p 9 p 10 p 11 p 12 p 13 p 14 p 15p 16 p 17 Gage Number 17 | 18 22 Test Channel 19 20 21 23 24 25 Test Channel 39 0 2 4 5 6 7 8 9 10 11 12 13 15 16 1 3 14 2 0 1 2 0 1 Position of Gage 2 1 0 2 1 0 0 1 2 2 1 0 2 1 0 2 1 0 Position of Gage 2 11 0 Zero Reading -003 003 004 001 001 000 000 001 002 001 002 002 002 002 002 001 001 001 002 000 -002 000 005 003 002 000 Zero Reading 272 170 006 -127 -240 Load Reading Load Reading -018 -008 039 024 207 198 169 022 11:2 089 006-006 -016 -010 005 -063 -134-055 009 004 019 036 Har -020 -010 037 271 169 005 -129 -240 026 Difference 210 195 165 018 002-007 -018 +014 004 -063 -135-059 Difference 007 004 014 033 140 089 -1.89 0.12 -0.30 0.15 -3.87 -0.21 -0.42 8.13 -7.20 5.85 p.54 -1.77 0.12 0.99 2.67 Kips/in² Kips/in² 0.06 0.42 0.78 6.30 4.95 -0.54 4.05 0.21 h.11 5.07 Section 2 2 2 2 prt Lxix¹8 1512 8 222 8 2x2x¹8 22228 2x2x18 1/21/22-8 12x12x18 Section £2 f₁ fo f2 \mathbf{f}_1 fo fo $\mathbf{f}_1 \mathbf{f}_2$ ſ2 ſ1 fo f2 f1 fo 12 ſı fo ſl t, ſı f_2 f. ſ1 12 12 fo Coefficients Coefficients .151 .116 .094.151 .116 .381 .481 .327 .085 .078 .067 .067 .078 .085 .146 .210 .124 .146 210 .124 .146 .210 .121 146 .210.124 .094 1.61^{0.05} 10.03 +0.22 0.14 2.83 -0.01 -b.23 0.03 0.3 0.02 1.07 -0.06 0.76 Kins 0.84 Kips 0.01 -0.85 p.05 2.40 0 0.04 0.03 0.14 0.0 0.77 b.36 p°od 6.84 0.04 -0.06 -1.35 0.11 1.31 Actual Load Actual Load -0.01 1.55 -1.34 Position of Date Type of Test Load Type of Test Load Time: Temperatures: Date Time: Position of Temperatures: Gage Gage Longitudinal load at ground wire 0 # o_F o_F Oct.17th 196h Initial Zero Reading 11 35 oF oF Initial Zero Reading 11 35 Longitudinal load at ground wire Outside Oct.17th 1964 Outside 57 73 n 57 11 42 suspension point Load Reading 11 42 Load Reading Room Room 73 76 14 Load in Pounds 2455 -2 76 Pinal Zero Reading _2 Instrument Final Zero Reading Load in Pounds Instrument 2455 | c 40 | c 41 | c 42 | c 43 | c 45 | c 46 | c 47 | c 48 | D 9 | b 10 | b 12 | b 13 | b 14 | b 15 b 16 | b 17 D 18 D 19 D 20D 21 D 22 D 23 D 24 D 25 D 20 Gage Number Gage Number 17 18 19 20 21 22 23 24 25 15 16 Test Channel Test Channel 39 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 0 2 2 0 2 l 0 0 1 2 2 1 0 2 1 0 2 ٦ 0 2 1 0 0 1 2 1 1 Position of Gage Position of Gage 93 Zero Reading 002 002 002 002 002 001 004 003 000 002 001 001 001 002 001 000 000 000 001 003 000 001 001 004 002 003 001 Zero Reading Mcroinch 026-103 -223 035 008-068 +154 -068 002 -034 013 015 134 069 -041 --018 056 311 189 222 205 172 011 000 -010 -009 -005 Load Reading Load Reading 055 310 187 025 -103 223 035 068 Difference 169 011 +001 +011 -013 -007 006-070 +156 -070 001 -008 010 015 132 -043 -021 221 201 Difference -2.10 -0.24 0.45 2.04 0.75 -6.69 -0.23 -2.10 -0.63 -30 .33 -0.33 6.03 Kips/in² Kips/in² 5.61 5.07 +0.03 0.18 4.68 b.03 0.30 3.96 1.29 1.65 43.09 1.0 .63 22238 2222-8 2x2x¹8 22222 1x1x¹8 lzlz¹8 122122-8 Section 2222-8 1 1 2 1 2 1 8 Section fo $\mathbf{f}_1 \mathbf{f}_2$ $\mathbf{f}_2 \quad \mathbf{f}_1$ f2 [1] f1 fo fl f1 \$2 f2 f1 fo f_2 fl fo fo fo 12 \mathbf{f}_2 f1 fo f_o f2 fo Coefficients Coefficients .327, 085 .078 .067 .067 .078 .085 .146 .210 .124 .146 210 .124 .124 .094.151 .116 381 481 146 .210 .146 .210.124 .094 .151 .116 -0.05 -0.31 -0.26 0.07 0.2 0.09 -1.01 0.02 +0.13 0.87 .02 2.91 0.03 0 0.04 b.83 Kips 0.c2 -0.99 Kips 0 -p.03 0.85 0.29 .66 -0.19 b.20 .53 1.81 -1.18 Actual Load 0.01 -0.03 -1.56 -0.01 1.15 -0.12 7.10 Actual Load Multiply (Kips/in2) by -1 when initial Zero was read with test load on. Hultiply (Kips/in2) by -1 when initial Zero was read with test load on. STRAIN READINGS 8 MEMBER LOADS

Date Position of Time: Time: Type of Test Load Temperatures: Date Type of Test Load Position of Temperatures: Gage Gage 57 °F 73 °F 76 °F 0 1 57 73 76 °F Oct.17th 1964 Initial Zero Reading 11 35 combined longitudinal and transverse load Outside Oct.17th 1964 Initial Zero Reading 11 35 Combined longitudunal and transverse load Outside 11 55 at ground wire suspension point o_F o_F Load Reading Load Reading Room Room 11 55 at ground wire suspension point Load in Pounds 2455 longit. 1100 transv. 2 d -2 Instrument Final Zero Reading Instrument Final Zero Reading Load in Pounds 2455 longit. 1100 transv. Gage Number c 40 c 41 c 42 c 43 c 44 c 45 c 46 c 47 c 48 p 9 p 10 p 11 p 12 p 13 p 14 p 15 16 p 17 Gage Number D 18 D 19 D 20 21 D 22 D 23 D 24 D 25 D 26 3 22 25 Test Channel 39 0 1 2 5 6 7 9 10 13 12 13 15 16 Test Channel 17 18 19 20 21 23 24 L 8 14 2 2 1 0 1 1 l 2 2 Position of Gage 1 0 0 2 2 0 2 1 0 2 1 0 2 l 0 0 0 1 Position of Gago Zero Reading 002 003 001 001 002 000 200 000 000 001 004 003 000 001 001 004 002 002 002 002 002 001 004 003 000 002 001 nches Zero Reading -057 -015 088 324 189 028 -087-222 031 182 155 123 018 005 006 005 -065 -158 -072 021 -008 -027 010 Load Reading -005 -001 151 076 Load Reading Difference 181 151 120 -059 -018 087 323 187 027 -087-222 034 đ 018 004 007 003 -067 -160 -074 020 -012 -024 010 -009 -003 119 075 Difference -2.23 -0.36 +6.66 42.01 0.30 2.25 9.69 0.81 4.53 0.54 -b.09 40.54 -0.21 Kips/in² 5.43 b.60 Kips/in² 3.60 0.12 -4-80 -0.72 0.09 4.47 2.61 5.61 -2.61 1.02 1.77 2 22 2 2 x lxlx¹8 ixix¹8 2228 22228 22228 Section 12x12x18 1/21/218 2x2x¹8 Section fo ſ2 ſ1 fo f2 fl fo fo f1 f2 f₂ f₁ fo $f_2 | f_1$ fo f2 fl fo fl fo ſı f_2 ſ1 \mathbf{f}_2 f_o f2 Coefficients Coefficients .327 085 .078 .067 .067 .078.085 .146 .210 .124 .094.151 .116 381 481 .146 210 .124 .146 .210 .124 .146 .21d.124 .094 .151 .116 -0.23 -0.01 0.31 -0.08 0.04 0.94 0.28 0.91 0.09 1.01 2.18 0.000.00 -0.11 0.05 Kips 2.07 1.18 0.09 Kips 0.01 1.01 0.12 b.02 b.32 0.85 0.26 Actual Load 5.43 0.05 -0.02 -0.05 1.85 -1.14 -1.61 -C.C8 1.26 Actual Load Date Time: Type of Test Load Position of Position of Temperatures: Type of Test Load Date Time: Temperatures: Gage Gage 0 1 °F °F °F Q Oct.17th 1964 Zero control reading Outside 57 73 Initial Zero Reading 11 35 Zero control reading 57 °F Oct.17th 1964 Initial Zero Reading 11 35 Outside Load Reading Room 73 °F Load Reading 11 Room Load in Pounds No load -2 12 11 Final Zero Reading 12 11 Instrument 77 Final Zero Reading No load Instrument Load in Pounds D 18 D 19 D 20D 21 D 22 D 23 D 24 D 25 D 2 c 40 | c 41 | c 42 | c 43 | c 45 | c 45 | c 46 | c 47 | c 48 | p 9 | p 10 | p 12 | p 13 | p 14 | p 15 p 16 | p 17 Gage Number Gage Number Test Channel 17 18 19 20 21 22 23 24 25 15 16 6 8 9 10 רר 12 13 14 39 0 2 3 4 5 7 Test Channel 1 2 2 0 1 0 0 1 2 2 1 0 2 1 0 2 1 0 Position of Gage 2 11 0 0 1 2 0 2 1 Position of Gage 1 003 001 000 000 001 001 002 002 002 001 004 003 000 002 001 Zero Reading 002 001 001 002 000 000 Zero Reading 001 CO4 003 004 002 002 000 000 000 000 001 002 -001 003 001 005 004 000 002 002 000 +001 002 003 002 -001 000 005 002 000 Load Reading 002 000 Load Reading 000 004 4002 002 -002 -002 -002 -001-003 +001 -001 001 000 Difference 1001 002 001 -003 000 005 000 ų -001 000 001 -001 -002+002+003 Difference 000 -C.03 0 0.03 0.06 0.09 0 -0.03 -0.06 -p.06 0.03 0 0.06 0 Kips/in² 0.12 d.03 Kips/in² 0.06 0.06 0 0.15 -0.09 0.03 -0.03 -0.09 -0.03 b.03 **5.**06l -0.06 1x1x¹8 22228 2x2x¹8 2228 1/221/22-8 12x12x18 1x1x¹8 Section 222222x2 Section 2x2x¹8 ſl f1 f2 ſ1 f1 fl fo ſ f_2 fl f1 f2 f2 fo 12 fa f₂ \mathbf{f}_2 fo fo f_o f_2 ſl fo f2 1o fo Coefficients Coefficients .094.151 .116 381 .481 .327 085 .078 .067 .067 .078 .085 346 ,210 .124 146 210 .124 .146 .210 .124 .146 .210.124 .094 .151 .116 0.02 0.01 0 Ó 0.01 -b.01 0 0 0 ٥ 0.01 Kips 0.01 Kips 0.01 0 Ω 0 ٥ -6.07 0 0 -b.oi 0.01 0.05 .01 0.04 0 -0.01 -0.03 -0.02 -0.01 -0.01 -0.01 0.02 Actual Load Actual Load Multiply (Kips/in2) by -1 when initial Zero was read with test load on. Hultiply (Kips/in2) by -1 when initial Zero was read with test load on. STRAIN READINGS MEMBER LOADS 8

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Temperatures:	Dat	e		Time:					Type	e of 1	lest	Load					1	Posit	ion of Gage	Te	mperatures:	Dat	e		Tin	e:					Ty	pe of	Test	t Loa	d					Post	Ltion Gr	of
Outside 49 0	F Oct.	8th 19	64	Initia Load B	l Zer	o Read	ling 2	10	Trar	nsvers	se lo	ad at	grou	nd wi	re si	ispens	ion	9	8-	Ou	tside 49 °F	Oct	. 8th :	1964	Ini	tial d Rea	Zero	Readi	ng	2 10	Tre	nsve:	rse l	oad a	at gro	und w	ire s	uspen	sion	°ſ		-6-
Instrument 75	P			Final	Zero	Readin	ຮື		Load	i in P	Pound	3	16	05				41_	2	In	strument 75 or				Fin	al Ze	ro R	ading	3 .		Lo	ad ir	1 Pour	nds	1609					11		2
Gage Number	c 40	C 41	C 42	c 43c 4	4 C 4	5 C 46	5 C 47	c 48	D 9 I	0 10 I	בנ מ	D 12 D) 13	D 14	D 15	16 D	17			Ga	ge Number	D 18	D 19	D 20	cp 21	D 22	D 2	B D 2/	D 2	5 D 2												
Test Channel	39	0	1	2 3	4	5	6	7	8	9	10	n	12	13	14	15 :	16			Te	st Channel	17	18	19	20	21	22	23	24	25												
Position of Gage	2	l	0	2]	0	• 0	1	2	2	1	0	2	1	0	2	1	0			Po	sition of Gage	2	1	0	0	1	2	. 0	1	2												
Zero Reading	000	000	001	000 00	3 000	000	-201	000	-001	001.0	202	000 0	200	000	-002	000 0	01			pea	Zero Reading	000	201	000		-007	-002	201	002	-002												
5 Load Reading	017	068	066	007 -00	12-208	-010	-008	-001	-009	002	204	026 0	x04	042 -	-004	015-0	10			ofne	Load Reading	018	-013	-045	-01	3-004	002	-012	008	004							,					
Difference	017	068	067 -	007 -00	5-008	-010	-007	-001	-008	001	203 +	026 0	204	oht -	002	015	ш			Mc	Difference	018	-014	-045	-013	2 003	001	-013	000	6 006	•											·
Kips/in ² x (-1)	-0.51	-2.04	2 . 01	0.1	5 0.2	4 0.30	0.21	0.03	0.24	0.03	0.09	0.78	-12 -	23	•06	0.45	.33				Kips/in ² x (~1)	-0.51	0.42	1.35	0.30	5 -0.09	p.12	0.39	-0.18	-0.18												
Section	2	fre Sar	:	lxl	x ¹ 8		1×1x ¹	в	20	x2x ¹ 8		25	22x ¹ 8		25	228				0	Section	2	x2x¹6	3	נ	∳u]∳	18	. 3	lýzlý	x18												
	f2	fl	fo	f ₂ f ₃	fo	fo	f1	f2	f 2	f1	fo	f2 1	:	fo	f2	f1 .	fo				•	f2	fl	fo	fo	fj	f2	fo	f1	f2									ĺ	{		
Coefficients	.381	.481	.327	085 .07	8.06	7.06	.078	.085	.146	.210	.124	.146.2	210 .	124 .	146.	210	124				Coefficients	.146	.210	.124	.094	.151	ı	5 .09/	.151	.116												
Kips	-0.19	-0.99	.66	0.02	0.0	2 0.0	2 0.02	o [`]	0.04	-0. 0.01	.01	0.11).03 -0	.15	0.01	0.10 ⁰	.04				Kips	-0.0	0.09	0.17	0.0	3 -p.01	-0.01	0.04	0.0	-0.02												
Actual Load		-1.84		0.0	05		0.04		0	•02			0.07		(. 15					Actual Load		0.18			0.01			≂0•0	L												
Temperatures:	Dat	e	T	Time:					Туре	of I	est	Load					T	Posit	ion of	Ten	peratures:	Dat	6		Tim	91				an a statement	Tyj	ne of	Test	Loa	d		and the Parliage			Posi	.tion	of
Outside 57 9	Ploct	17th 1	962	: Initia	1 Zer	oRead	Ling]	1 35	Tran	svers	e los	d at	grour	nd wij	re			զ	Gage	Out	side 57 °F	Oct.	17th	1964	Ini	ial	Zero	Readi	ng	31 35	Ire	nsvo	rae lo	oad a	at gro	und w	ire s	ispen	sion	01	Ga	.ge
Room 73 ° Instrument 76 °	7			Load R Final	eadin Zero	g Readir	y Ig	2 09	susp Load	ensio i in F	n po: Pound	int s 1	100					_لد 	2	Roc In:	om 73 °P strument 76 °P				Loa Fin	d Rea al Ze	ding ro Re	ading		12 09	poi Los	.nt 1d in	Poun	da .	1100	,				1 L	<u></u> 2	<u>!</u>
Gage Number	C 40	C 41	c 42	c 43c 4	4 C 4	5 C 46	5 C 47	с 48	D 9 I) 10 I) 11	0 12 D	13	ם בע	D 15	16 D	17			Gag	ze Number	D 18	D 19	D 20	p 21	D 22	D 23	D 24	D 2	D 20			ļ	ļ	ļ							
Test Channel	39	0	1	2 3	4	5	6	7	8	9	10	n	12	13	14	15 2	16			Tes	t Channel	17	18	19	20	21	22	23	24	25				ļ								<u></u>
Position of Gage	2	1	0	2]	0	· 0	1	2	2	1	0	2	1	0	2	1	0			Pos	ition of Gage	2	1	0	0	1	2	0	1	2				<u> </u>		ļ						
2 Zero Reading	001	007	cic3	000 000	1 00:	1 004	302	002	905-	002	002	031 0	04 (003 0	000	002	202			hes	Zero Reading	002	003	001	001	002	003	000	000	000				·								
5 Load Reading	-034	-047	-047	-004-00	3 -002	2 005	002 -	007	-003	-011 -	011	014-0	07 +	035	CI 5	C18	207			ofue	Load Reading	-021	006	035	020	-004	001	021	005	-003												
Difference	-035	-051	-050	-001-00	1: -00;	3 001	000 -	CC9 -	-005	-013 -	013	013-0	21 k	038 +	015	016	006			fder	Difference	-023	003	031	1 019	-006	003	021	005	-003			Ľ			L			·			·
Kips/in ²	-1.05	-1.53	1.50	0.12	-0.0	9 p.03	0	0.27	-C.15 	-0 .39	•39	-0 -39	•33 -	.ц-Р	<i>•b5</i> p	•48 ⁰	.18				Kips/in ²	-0.69	0.09	1.02	0.5	7 -0 . 18	0.05	0.63	0.1	5.09												
Section	2	2x22x2		J×J	x ¹ 8		1x1x1	8	2:	222 ¹ 8		2	<u>محک</u> 8		ź	2x ¹ 8					Section	2	x2x¹6	3	1	jal ja	18	,	. <u>1</u> 713	х јя												
	f2	fl	fo	f ₂ fj	fo	fo	fl	f2	f2	fl	fo	f2 1	51	fo	f2	f1	r _o					f2	fl	fo	fo	f1	f2	fo	fl	f2												
Coefficients	.381	.481	.327	085 .07	8.06	7 .06	.078	.085	.146	.210	.124	.146 2	210	124 .	146	210 .	124			ľ	Coefficients	.146	.210	.124	.094	.151		5 .091	.151	.116												
Kips	-0.4	0574	-0.15	.01 -0.0	10.0	0	0	0.02	0.02	0.06	0.05	-p. 0.06	.07	.14 C	0.07	10	02				Kips	0.10	0.02	0.1	30.05	0.03	0.0	0.06	0.0	2 p.01												<u>.</u>
Actual Load		-1.63		-0.0	03		-0.02		-	0.15		-0	•15		(0.05				_	Actual Load		0.05	5		0.03			0.0	7			****			•						
												•									-																					
Hultiply (Kips	 /in ²)	by -l	when	initia	Zoro	W83	road w	ith t	ost l	oad o	n.									-	Hultiply (Kips	 /in ²)	by -	1 whe	n int	tial	Zero	was	read	with	test	load	on.				L		1			
·												STF	RAI	ÍŇ	F	REA	١D	ING	S	ε	MEMB	ER		L	ЭА	DS			×													
																															`											



Perseatures:	Date	Time:	Type of	'est Load	Position of	Temperatures:	Date	Time:	Type of Test Load	Position of
Cutside 46 °F	Oct.5tb 1964	Initial Zero Re	eading 6 10 Longitudin	al load at conductor suspension	Oll Gage	Outside 46°F	Oct.5th 1964	Initial Zero Reading 6 10	Longitudinal load at conductor suspe	nsion Of Gage
Room 66 °F Instrument 72 °F		Load Reading Final Zero Read	ding 6 55 point Load in	Pounds 2305	1 2	Room 66 [°] F Instrument 72 [°] F		Load Reading 6 55 Final Zero Reading	point Load in Pounds 2305	1 2
Gage Kumber	E1 E2 E3	E4 E5 E6 F	E 7 E 8 E 9 E 10 E 11	5 12 E 132 14 E 15 E 16 E 17 E 1	.8	Gage Number	E 19 E 20 E 21	e 22 e 23 e 24 e 25 e 26e 27	E 28 E 29 E 30 E 31 E 32E 33 E 34 E 3	5 E 36
Test Channel	0 1 2	3 4 5	6 7 8 9 10	11 12 13 14 15 16 17	·	Test Channel	18 19 20	21. 22 23 24 25 26	27 28 29 30 31 32 33 34	35
Penition of Gage	0 1 2	0 1 2	0 1 2 2 1	0 0 1 2 0 1 2		Position of Gage	0 1 2	0 1 2 0 1 2	2 1 0 0 1 2 0 1	2
3 Zero Reading	011 009 010	006 008 005	004 003 002 004 006	006 006 003 008 005 006 006		3 Zero Reading	008 005 008	207 008 002 009 010 007	026 026 029 025 011 029 010 029	009
Lead Fonding	043 -092 -223	1449 1435-087 -	488 -486 182 -063-118 -	273 381 348 -048 -416-367 149	,	H Load Reading	303 146 102	453 452-079 -503 -405 171	221 107 -008 404 346 -071-372 -379	171
Difference	032 -101 -232	443 427 -092 1	492 -489 180 -067 -124 -	279 375 345 -056 -421-373 243		Difference	293 고:0 092	146 442-083 -513 -416 162	214 100 -017 397 338 -076-380 -386	164
Kigu/In ²	-3.03	3.29 -2.76	-11.67 -2.01 -8	·37 11.22 10.35 -12.63 4.1	xs	Kips/in ²	4.20	13.38 -2.49 +12.48 13.26 -15 39 1.86	6.42 -0.51 10.14 -11.40 3.00 11.51 -2.28 -11.5	4.92
									21.21.31 21.21.2	<u>л</u> .
Section	2½x2½x216	lâxlâx*8	12x12x*8 22x22x*		· · · · · · · · · · · · · · · · · · ·	Section	22x22x-16	T\$XT\$X_8 T\$XT\$X_8	· · · · · · · · · · · · · · · · · · ·	,
Coofficients	f_0 f_1 f_2	f_0 f_1 f_2 f_1	f_0 f_1 f_2 f_2 f_1	\mathbf{f}_{0} \mathbf{f}_{0} \mathbf{f}_{1} \mathbf{f}_{2} \mathbf{f}_{0} \mathbf{f}_{1} \mathbf{f}_{2}		Coefficients	f ₀ f ₁ f ₂	f_0 f_1 f_2 f_0 f_1 f_2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	f2
COSTILCISION	.232.392 .276	.074 .151 .116	.094.151 .116 .276 .392.	232 .094 .151 .116 .094 .151 .110	5	000112020000	.232 .392.277	.094 .151 .116.094 .151 .116	.277 .392 .232 .094 .151 .116 .094 .151	1,116
Kips	-1.19	1.31 -0.32	-2.22 -0.56 -1 -39 0.63 -1.16	•95 1.15 1.56 -1.19 1.15 -0.20 -1.69 0.50		Kips	2.04 0.76	1.26 2.00 -1.45 1.89 0.56	1.77 -0.12 1.53 -1.07 1.17 1.12 -0.27 -1.75	0.58
	2 80	2.02	-2 c8 _2 c7	2 57 -2.38		Antonia Yand		0.07		
Actual Load	-2 .09	2.92	-2.50 -3.57	2.51 -2.530		Actual Load	<u> </u>	2.97 -2.78	2.62 2.50 -2.24	
Temperatures:	Date	Time:	Type of 2	est Load	Position of Gage	Temperatures:	Date	Time:	Type of Test Load	Position of Gage
Cutside 72 °F Reom 74 °F	Oct.14th 1964	Initial Zero Re Load Reading	ading 7 15 Longitudin 7 20 point	al load at conductor suspension	1	Outside 72 °F Room 74 °F	Oct.14th 1964	Initial Zero Reading 7 15 Load Reading 7 20	Longitudinal load at conductor suspen	l 1
Instrument 82°F	1 1	Final Zero Read	ling Load in 1	ounds 2255		Instrument 82 °F		Final Zero Reading	Load in Pounds 2255	
Gage Number	E1 E2 E3	E4 E5 E6 E	57 E8 E9E10E11	: 12 E 13 E 14 E 15 E 16 E 17 E 1	8	Gage Number	E 19 E 20 E 21	E 22 E 23 E 24 E 25 E 26E 27	E 28 E 29 E 30 E 31 E 32E 33 E 34 E 3	E 36
Test Channel	0 1 2	3 4 5	6 7 8 9 10	11 12 13 14 15 16 17		Test Channel	18 19 20	21 22 23 24 25 26	27 28 29 30 31 32 33 34	35
Position of Gage	0 1 2	0 1 2	0 1 2 2 1	0 0 1 2 0 1 2	<u> </u>	Position of Gage	0 1 2	0 1 2 0 1 2	2 1 0 0 1 2 0 1	2
3 Zero Reading	006 004 005	003 003 002 0	003 003 002 002 001	02 002 003 000 002 002 00	ц 	2 Zero Reading	003 002 002	-002 003 003 004 003 004	005 005 004 004 003 004 002 002	003
Lead Poading	035 -030 - 222	157 156 -100 -5	508 -496 191 -076 -135-	76 375 345 -058 -425 -369 13	5	Load Reading	284 158 101	466 452 -093 -536 -432 172	147 112 026 388 337 -072 401 -393	174
g Difference	029 -084 -227	454 453 -102 -5	511 -499 189 -078 -136 -	276 373 342 -058 -427 -371 13	¥	Difference	281 156 099	466 449 -096 -540 -435 168	142 107 022 384 334 -076-403 -395	171
Kiyo/in ²	0.87 -6.61	13.62 -3.00	5.33 5.67 4.08			Kips/in ²	8.43 2.97	14.47 -16.20 5.04	3.21 11.52 -2.28 -11.8	5-13
Section	2½x2½x ³ 16	12x12x ¹ 8	$1_{2}^{1}x1_{2}^{1}x^{1}8$ $2_{2}^{1}x2_{2}^{1}x^{3}$	$.6 \qquad 1_2^1 \times 1_2^1 \times 1_8 \qquad 1_2^1 \times 1_2^1 \times 1_8$		Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	lýxlýx ¹ 8 lýxlýx ¹ 8	$2\frac{1}{2}x^{2}\frac{1}{2}x^{3}16$ $1\frac{1}{2}x\frac{1}{2}x^{1}8$ $1\frac{1}{2}x\frac{1}{2}x^{1}$	c ¹ 8
	f_0 f_1 f_2	f_0 f_1 f_2 f_1	f_0 f_1 f_2 f_2 f_1	f_0 f_0 f_1 f_2 f_0 f_1 f_2			f ₀ f ₁ f ₂	f ₀ f ₁ f ₂ f ₀ f ₁ f ₂	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	f2
Coefficients	.232,392 .276	.094 .151 .116 .	.094.151 .116 .276 .392.	32 .094 .151 .116 .094 .151 .116		Coefficients	.232 .392.277	.094 .151 .116.094 .151 .116	.277 .392.232 .094 .151 .116 .094 .15	1.116
Kips	-D.99 -1.89	1.28 -0.36	-2.26 -0.65 -1.60	1.93 1.55 -1.21 0.47 h.05 -0.20 -1.68		Kips	1.95 1.83	1.32 -0.33 -1.97	1.18 p.15 1.51 -1.14	p.60
				0.10 -2.12						2
Actual Load	-2.68	2.97	-3.04 -4.10	2,40 -2,42		Actual Load	4.60	3.17 -2.91	2.059 2.034	
			· .							
Multiply (Kips/	in ²) by -1 whe	n initial Zero wa	as read with test load o	L	.1	Hultiply (Kips/	in ²) by -1 when	initial Zero was read with	test load on.	
									· ·	
					INCO					
				SIMAIN READ	11100	a weine		JAUS		Barran I Fau
l						/				1



and the second second	

Permanabarear	Dat		1 25						Tere:	- of 2	ont. L						p	itic		Ter			Data		m;					[freat	Lord					Post	tion of
Outside 71 °F	Oct.	- .71,+7, 70/	.). Tr		Zoro	Von B	n 7 7	15									0) M	Gage	10.	oporacaros	71 Q.D	Ont 1	+h 306		143 I 143 I	<i>a</i>	D	. 7 1	e	pe or	1650	Loau	-1			7	0	Gage
Room 74 or Instrument 81 or			Le Fi	ad Rea nal Zo	ading ero Re	eading	7	35	at c Loa	onduct. d in P	ongit or su ounds	spensio 2255 :	ana t n poi longit	ransv nt • 23	erse 50 t	loaa ransv.	. ı	_ il	2	Roc	on strument	74 °F 81 °F	0000	011 270	Lo Fi	ad Rea nal Ze	ding ro R	ading	ng 1 1 7 3	.5 (Com 15 at Lo	conduc ad in	tor: Foun	ds 225	sion 5 lor	n tea point ngit.	2350	transv	1	2
Gage Number	El	E 2 E	3 E 1	Е 5	E 6	E 7	E 8	Е 9	E 10	е п Е	12 E	133 1/	E 15	E 16	E 1	7 E 18				Gag	ge Number		E 19 F	20 E	21E 22	E 23	E 24	E 25 I	265 2	27 E 28	E 29	E 30	E 31	E 32	5 33 E	34 E	35 E 3	\$	
Test Channel	0	1 2	3	4	5	6	7	8	9	10 :	11):	2 13	14	15	16	17				Tes	st Channel	L	18	19 20	21	22	23	24 2	26	27	28	29	30	31	32	33	34 35		
Pesition of Gage	0	1 2	0	1	2	0	1	2	2	1 (2	0 1	2	0	1	2	ļ		_	Pos	ition of	Gage	0	1 2	0	1	2	0	1 2	2	1	0.	0	1	2 (0	1 2		
3 Zero Reading	006	004 00	5 00	3 003	005	003	003	002	002	001 0	0 20	02 00	000	002	002	001	<u> </u>		_	ches	Zero Rea	ding	003 0	02 00	2 -202	003	CO3	004 0	03 00	4 005	005	004	004	003	004 0	202	002 003		
Lend Rending	173	134 -03	1 24) <u>1</u> 11	-091	-449	-447	171	-236	-337-4	02 3	66 35:	2-061	-540	376	132				roin	Load Rea	ding	167 -0	04 -03	6 1715	428-	-084	511 -3	81 16	5 245	256	128	403	336 -	-059 -3	395 -	358 191		
Difference	167	130 -03	6 43	7 411	-093	-451	-450	169	-238	-338-4	04 3	54 349	-062	-7775	-378	131	ļ			Mici	Differer	208	164 -0	06 +03	8 414	425-	-087	515 -3	84 16	1 240	291	124	399	333 -	-063 -3	397 -	360 188		
Kipo/in ²	5.01	3.90	3.3	12.3	-2.79 3	13.53	13.50	5.07	7.14 -3	-12.	.12 10.	92 92	7	13.20	<u>u.</u>	3.93 34	 				Kips/in ²	?	4.92	.18 1	12.4	-2 12•7	.61	-hi 5.45	•52 4.	.63 ⁷ .20	8.72	3.72	1.97	9.99	נו- 89.	1.91 -1	5.61 0.80		
Section	2	}x2}x ³ 16		lįxlį:	x ¹ 8	1	jx1 jx	18	22	222x31	6	$l_2^{1} \times l_2^{1}$	18	1	.bal	x ¹ 8					Section	•	2 ¹ 2>	2 ¹ 2x ³ 16	1	jx1jx	8	12	1 ¹ 2x ¹ 8	2	¹ 2x2 ¹ 2x ³	16	ıį	xlźx	8	1źx	12x ¹ 8		
	fo	f ₁ f ₂	ſ	ſ1	f2	fo	fl	f2	f2	r _l r	o f	o fl	f2	fo	ſl	f2					aac		f _o i	1 f2	fo	t1	f2	fo	1 12	£1 ي	fl	fo	fo	fl	f2	fo	f1 f2		
Coefficients	.232	.392 .27	6.0	4.15	1.11	.074	.151	.116	.276	.392.2	32 .0	94 .15		.094	.151	.116		-	1.		CCELLICI	Lents	.232	392.27	.094	.151	.116	094 .1	.51 .13	.6 .277	•392.	232	.094 .	151 .	. 116	094.	151.116		
Kips	1.16	1.53 -0.3	0 1.2	1.8	7 0.32	-1.27	2.04	0.59	1.97	3.98	32	1.58 .03	-0.21	1.25	-1.7	1 0.46					Kips		1.14	•07 	1 1.17	1.93	0.30	-1. -45	74 0.5	2.00	3.42	0.86	1.12	1.50 -0	-1.	12	•63 •63		
Actual Load		2.39		2.7	9	-	2.72		-6	8.77		2 . La)		-2.5	0			-		Actual I	load	٥.	76		2.80		-2	63		6.28			2.40		-2	•10·		
Temperatures:	Dat	c	Ti	me:					Туро	T lo s	est L	oad					Pos	itio	n of	Tem	peratures	:	Date		. Ti	ne:				Ty	pe of '	rest	Load					Posi	tion of
Outside 70 °F	oct.	llth 1961	i Ir	itial	Zero	Readi	ng 7	15	Zero	contr	ol re	sding					0	Ϋ́	uage	Out	side	70 °F	00t.14	th 196	4 In	itial	Zero	Readir	g 71	5 Zei	ro con	trol	readi	ng				01	Gage
Instrument 81 °F			Fi	nal Zo	ero Re	eading	7	55	Load	i in Po	ounds	N	load				1	_ IL	_2	Ins	atrument	éi °f			Fi	nal Zo	ro Re	ading	75	5 Io	nd in 1	Poun	da	No	load			11	=2
Gage Number	Εl	E 2 E	3 E 1	E 5	Е 6	E 7	E 8	Е9	E 10	e 11 e	12 E	1.32 V	E 15	E 16	E 1	7 E 18	1			Gag	ge Number		E 19 E	20 E	21E 22	E 23	E 214	E 25 E	265 2	7 E 28	E 29	E 30	E 31	E 32	33 E	34 E	35 E 3	·	
Test Channel	0	1 2	3	4	5	6	7	8	9	10	11 2	2 13	ນ,	15	16	17				Tes	t Channel		18	19 20	21	22	23	24 2	5 26	27	28	29	30	31	32 3	33	34 35		
Position of Gage	0	1 2	0	1	2	0	ı	2	2	1 (0 1	2	0	1	2				Pos	ition of	Gage	0	1 2	0	l	2	0	1 2	2	1	o [.]	0	1	2 ()	1 2	·	
3 Zero Reading	006	004 0	05003	003	005	003	003	CO2	002	001 0	02 C	02 00	3 000	0,02	p02	001				ches	Zero Rea	ding	CO3 0	02 00	2 -002	003	003	004 0	03 00	4 005	005 (004	004	003	co4 c	x2 0	02 003		
Lond Reading	017	017 0	14 05	1 015	011	-007	011	007	004	002 0	15 C	04 00	7 004	504	017	003				roine	Load Rea	ding	010 0	07 01	5 -014	010	009	003 0	34 03	3 002	015 (017	015	001	015 0	017 0	15 015		
Difference	008	013 0	29 01	8 012	009	010	co3	005	005	001 0	13 C	62 00	4 004	002	015	002		_		Micı	Differen	.C6	007 0	05 01.	3 -012	007	-006	007 0	u oc	9 003	010	013	800	002	011 0	015 0	10 009		. :
Klys/in ²	0.24	0.39	27 27	4 0.36	0.27	-0.30	0.24	0.15	0.05 p	0.03	³⁹ o.	0.1	0.12	0.05	0.45	0.06					Kips/in ²		0.21	.15 0.	-0.36 39	0.21	0.18	.21 p.	33 0.2	7 0.09	0.30	0.39	-D D.24	•06 C	.33	45 0	.30		
Section	2	1.222x ³ 16		lźxlź:	×18	1	jx1 jx	18	2 <mark>1</mark> 2	x22x ³ 10	5	l ₂ xl ₂ :	18	1	j:tlj	x ¹ 8					Section		2 ¹ 2x	2½x ³ 16	1	ixlixl	8	12	1 ¹ 2x ¹ 8	2	1x21x3	16	12	xlįxl	8	1½x	1 ¹ 2x ¹ 8		
	fo	f ₁ f ₂	f	f1	r ₂	fo	ſl	f2	f2	f _l f	, 1	0 f1	f2	fo	fl	f2							f _o í	1 f2	fo	fl	ſ2	f _o i	1 f2	ſ2	fl	fo	fo	fl	f2 1	ro	f ₁ f ₂		
Coefficients	.232	.392 .27	6.09	4.15	1.116	. 074	.151	.116	.276	.392.2	32 .0	94 .15	. 116	.09%	,151	.116					Coeffici	.ents	.232 .	392.27	7 .094	.151	.116	094 .]	51 .11	.6 .277	.392	232	.094 .	151 .	.116 .0	394 .	151.116		
Kips	0.06	0.15 0.	0.0	5 0.05	0.03	0.03	0.04	0.02	0.02 c	0.01	⁰⁹ 0.	.01 0.0	2 0.01	0.01	0.07	0.01					Kips		0.05	.00 p.1	1 ^{-0.03}	0.03	0.02	•C5 b.	05 0.0	3 0.02	0.12	•09	0. 02	•01 c	0.04	04 0	.05		
Actual Load		0.28		0.13	3		0.03		c	.12		0.0	4		0.09	9					Actual I	oad	c	.22		0.02		0,	06		0,19		· 0	•05		0	.12.		
· .																																							
Kaltiply (Mips/	l in ²)	by -1 wh	cn ir	itial	Zero	was r	ead in	ith t	est le	ord on	•			l				·			Multiply	(Kips/	1 in ²) by	-l wh	en ini	tial 2	ero v	as rea	d with	test	load o	n.]			I	
											S	TRA	IN	F	RE	ADI	NG	SS		8	ME	MBE	ER	L		S													
L																														·			<u>, </u>					•	

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Pauronstrunger	Dat		T	mi							(D)										1		[p_4	-									C	+ 1 an						Positi	
remperatures:	Dat			1100:				•	Typ	C 01	rest	Load						Pos	Sition Out	n of Gage	110	emperatures:	Dat	e ort 70()	1	Tue:				10.00		/pe o		. 108			- 200 - +			On	Gage
Room 68 °F Instrument 70.5 °F	Oct.	9th 19	264	Initia Load R Final :	L Zero zading Zero R	Readi	.ng 12 .] S	18	Tran susp Loa	svers ensio 1 in	e loa n poi Pound	id at ints Is	thre 30	e cor 22	nduct	tor		1	- 1	2	Ot Ro In	utside 56 °F oom 68 °F nstrument 70.5 °F	OCT.	ALU TAOU	1 I F	nitia oad R inal	i Zen cadin Zero	o Readi Readi	.ding .ng	1 10	5 112 3 SU L	apens ad i	ion p n Pou	oints nds	3	022	10000	or.		1	-=2
Gage Humber	E 1	E 2	E 3 I	54 E	5 E 6	E 7	E 8	Е 9	E 10	с 11	E 12	E 13	s 14	E 15	E 16	5 E 1	7 E 1	.8			Ga	age Number	Б 19	E 20 E	21E 2	2 E 2	3 E :	24 E 2	5 E 2	26E 2'	7 E 28	3 E 2	9 E 3	0 E 3	51 E 3	125 33	E 34	E 35	E 36		
Test Channel	0	1	2	3 4	5	6	7	8	9	10	п	12	13	14	15	16	17	7			Te	est Channel	18	19 20	21	. 22	2	24	25	26	27	28	29	30	31	32	33	34	35	·	
Pesition of Gage	0	1	2	0 1	2	0	1	2	2	ı	0	0	1	2	0	1	Q^2				Po	osition of Gage	0	1 2	0	1	2	0	1	2	2	1	0.	0	1	2	0	1	2		
2 Zero Reading	-008	-004	000 -	-002 -0	000	-005	-007	-004	-005	-017	-016	-020	-023	-020	-016	-01;	3 -01	8	1		hes	Zero Reading	-009	-007-01	o	8 -00	900	o7 -∝	15 - 01	10-00'	7 -01:	L	5 -01	s -01	.0-011	014	-007	-017	-022		
Lead Reading	-168	-230 -	-206 -	-013 0	14 -00	6-035	-015	-005	180	215	141	-006	-023	-022	-018	-00	601	5			oinc	Load Reading	153	191 20	7 03	0 -01	1 -01	.6 -03	.0 -0	1-02	L -22	3 -22	5 -16	3 -02	7-014	02l	-022	-054	-035		
Difference	-160	-226	-206 -	-011 0	18 -00	6-030	-008	-002	185	232	157	014	000	-002	-002	00	7 00)3			lier	Difference	162	198 21	7 01	8	2 - 00	19 -a	5 -03	31-01	4 -21	2 -21	9 -15	1 -01	.7-003	-010	-015	-037	-013		
Kips/in ² x (-1)	1.80	6.78	5.18	0.33	p.18	0.90	0.24	0.06	.55	-96	.71	.42	0	0.06	0.06	0.21	-0.09	2			<u>-</u>	Kips/in ² x (-1)	-4.8	5.94	-0. 51	54	6 0.2	7 0.2	5 0.9	73	6.30	5 6.5	4.5	3 0.5	10.09	D.30	0.45	1.11	0•39		
Section	2	1 2x22x	16	12x1	kr ¹ 8 ·	1	jx1 jz	18	2 ¹ /2	x2 ¹ / ₂ x ³	16	12	را تعقیل	8	1	i İzri	x ¹ 8					Section	2	2x22x316		12/212	x ¹ 8		12x1	2x18		22x22	x ³ 16		1221	1212	1	źxlźx	8		
	fo	f	c1	fo f1	fa	fo	f	c1	fa	£1	fo	fo	f1	f ₂	fo	f1	f2		İ.	T			fo	f1 f2	f	, f1	1	fo	n	f2	ſ2	n	fo	fo	f1	f2	fo	fl	£2		
Coefficients	.232	392	276	.094 .1	51.11	6.074	.151	-116	.276	.392.	232	.094	151	.116	.091	.151	.116	5		-		Coefficients	.232	.392.27	7.0	4.15	1.1	16.09	, .15	1.11	6 .27	7 .39	2,232	. 091	.15	ι . 11 <i>ί</i>	.094	.151	.116		
Kips	1.12	2.70	.71	0.03	p.02	0.09	0.04	0.0	1.53	2.73	09	2.01	0	0.01	0.01	h.03	0.01			1-		Kips	1.13	-2.43	80-0.	0.0	1 0.0)3 0.0	20.11	4 0.0	1.70	5 2.5	1.0	9 0.0	0.0	л 0.0	0.04	0.17	0.05		
					<u>. </u>	0.07		0002	T				l							-I			 -		1						1	<u></u>		-							
Actual Load		5•53		-0.0	3		0.14			5.35			-0.03		-	-0.03					<u> </u>	Actual Load		-5.36		-0.	01.		0,2	1	1	5.4	3			.0		0.20			
Temperatures:	Dat	e		Time:					Typ	∋ of S	Test	Load						Pos	itior	1 of	Te	emperatures:	Dat	6	T	ime:					T3	rpe o:	f Tes	t Loa	.d					Positio	on of Gage
Cutside 71 °F Room 74 °F	Oct.	lith 1	964	Initial Load Re	Zero	Readi	ng	7 15 7 42	Tran	svers	se lo on po	ad at ints	thre	e co	nduct	tor		1		<u>,</u> 2	OL Ro	utside 71 °F	Oct.J	Lith 1961		nitia oad R	l Zen eadin	o Rea	ding ng	715 742	Tr Bu	ansve spens	rse 1 ion p	icad a	at thi	ree co 2350	nduc t	or		ıL	-=2
Coop Number	F 7	F 2			- 15 c	eauring		FO	EJOI	2 22	Found	5	رد <i>ء</i> ارد	50 E 3 E	F 14	1. 1					-	Number	5 10	F 20 F	2115 2	2 2 2 2	ale	N.E.	5 8 2	AF 2	7 E 26	E 2		0 5 3	n E 3	25 33	E 34	E 35	E 36		
bage number	51	52			, 15 0		50		5 10				20		7.5		1 2 2	1		+	-			20 20					25	26	27	20	20	30	27	32	33	34	35		
Test Channel	0	1	2	3 4	- 5	8	1	8	9	10	ш	12	13	14	15	10				–		est Channel	18	19 20				24	25	20	21	20	27	10		1-		7.4	2		
Position of Gage	0	1	2	0 1	2	0	1	2	2	1	0	0	1	2	0	1	2			_	Pc	osition of Gage	0	1 2	0	1	12				2	1	<u> </u>					1	~		
3 Zero Reading	006	004	005 0	003 00	3 002	003	003	002	002	201	002	002	003	000	002	002	2 00	<u> </u>			schea	Zero Reading	003	002 00	2 -0	02 003	00	3 00	4 003	004	005	005	001	+ 00	4 003	004	002	002	003		
Lead Reading	+145	206	186 0	125 -00	1 013	110	013	003	-152-	188 -	106 -	019	-001	-001	002	016	5 -00	1 	_		roir	Load Reading	-110	-150 -13	38 -0	23 011	1 01	0 -01	6 025	020	108	203	120		5-010	030	028	043	022		
g Difference	139	202	181 0	022 -00	1 011	003	010	001	-154 -	-189-:	108 -	021	-004	-001	000	01	00	1			ME	Difference	-113	-152 -11	<u>-0</u> -0	21 01	00	702	0 022	016	103	198	122	2 01	1-013	026	026	ohi	019		
Kip:/in ²	1.17	6.06	.43	-p.2	1 p.33	0.24	0•30	0.03	••62 ≶	.67	3.24	.63).12 -	0.03	0	0.4	-0.06 2	<u>'</u>				Kips/in ²	3 39	4.50	20	63 D•33	0.2	-0.6	0.6	6 0.1	3.09 8	5.91	13.00	0.3	3	0.7	0.78	1.23	0.57		
Section	2	2x22x3	16	12x1	x ¹ 8	1	źx1źz	18	22	2 ¹ 2x ³	16	120	1 ¹ 2x ¹	8	1	żxlź:	x ¹ 8					Section	2	\$72}x ³ 16		1½x1½	х ₇ 8		lýxlý	1x18	:	22722	x ³ 16		1221	_{يم} ا	1	źxlźr	8		
	fo	f1	f2	f _o f _l	f2	fo	fl	f2	ſ2	r ₁	fo	fo	fl	f2	fo	fl	f2				[0.001.2	fo	f1 f2	f	, f1	f	2 fo	f1	f2	f2	fl	fo	fo	fl	f2	fo	ŋ	£2		
Coefficients	.232	.392 .	276 .	094 .1	51 .II	6.094	.151	.116	.276	392.	232 .	094	151	.116	.094	151	.116	•				COSTILCTEURS	.232	.392.27	7 .0	.15	1.1	.6.09	.15	1 . 11	6 .27	7 .39	2.232	.091	, .15	116	.094	.151	.116		
Кірз	0.97	2.38		0.07	0.04	0.02	0.05	∞.	1.28	2.22	•75	. 06	0.02	0	0	0.0	0					Kips	0.78	1.79	16	06 0.0	0.0 স	2	6 0.]	0.0	b. 86	2.3	2 0.8	0.0	30.0	⁵ 0.0	0.07	p.19	0.07		
Actual Load		4.85		0.	58		0.07		-	4.25		~	0.08			0.0	6					Actual Load		-3.73		0			0.3	lo		4.0	3		0.0	6		0.33			. 1
													•					1			-		1						• •										·		
	2				7.040		and		ort l	and on												Miltiply (Kipa	$\frac{1}{(\ln^2)}$	by -1 wi		itial	Zer	o was	read	with	test	load	on.				L				
Sultiply (Kips/	1n~)	oy -1	wnen	101718	Lero	W33 · L	eau m	reu f	.est 10	Jau 01												(Hip)	,																		· .
											S	STF	RAI	Ņ	F	RE	AD	NN(GS		8	MEMBI	ER	L	OA	DS															:

Temperatures:	Date	e	1	Time:					Ту	pe of	Test	Load						Posi	ition	10	Temperatures:	Date			Fime:					Ty	pe of	Test	Load			1.17 .		F	csition of
Cutaide 50 °F Noom 71 °F Instrument 76.5 °F	Oct.	6th 196	4	Initia Load F Final	al Zer leadin Zero	o Read g Readir	ling ng	735 805	Lon sus Lo:	gitud pensi ad in	inal on po Poun	load int ds	at gi 29	round 505	wire			0 1	Ga	1ge 2	Outside 50 °F Room 71 °F Instrument 76.9F	Oct.6t	h 196	54	Initia Load H Final	l Zer cadin Zero	o Read g Readin	iing ng	735 805	Lor sur Lo	ngitud spensi ad in	inal on p Pour	load oint ds	at g	round 2505	wire			Gage
Gage Number	E 1	E 2 E	3 1	54 E	5 E	6 E 7	ES	E 9	E 10	E 11	E 12	E 13	5 14	E 15	E 16	E 17	E 1	в		\Box	Gage Number	E 19 E	20 E	21E :	22 E 2	3 E 2	4 E 2	5 E 2	6E 27	E 28	E 29	E 30	E 31	E 32	3 33	E 34	E 35 E	36	
Test Channel	0	1	2	3 4	4 5	6	7	8	9	10	11	12	13	14	15	16	17	-			Test Channel	18 3	19 2	0 2	1 22	23	24	25	26	27	28	29	30	31	32	33	34 3	15	
Position of Gage	0	1	2	0 1	L 2	0	1	2	2	1	0	ο	1	2	0	1	2				Position of Gage	. 0 . 1	L	2 0	1	•2	0	1	2	2	1	° 0	0	1	2	0	1 2	:	
2 Zero Reading	000	<u> 000 -0</u>	01 -	-002	xx3 -0	02-001	1 -003	003		003	000	000	-001	000	-003	-002	-00	2			2 Zero Reading	-002 -0	03	002 -0	0 - 1 0	00-10	000	000	-003	-006	-002	-001	-001	001	003	-004.	000 -0	02	
E Lord Reading	007	114 2	48	-376 -3	377 0	81 425	427	-148	167	209	308	-258	-247	041	285	272	-08	9			Load Reading	-285 -1	50 -]	153 -3	156 -3	30 059	374	331	-123	-280	-166	-071	-352	-303	070	321	349 -1	42	
Difference	007	भटद	49	-374 -3	374 0	83 43:	3 430	-151	168	206	308	-258	-246	ohi	268	271	-08	7			Difference	-283 -1	47 - J	151 -3	157 -3	79 069	2 374	331	-120	-274	-164	-070	-351	-304	067	325	349 -1	40	
Mager/in ² x (-1)	-0 . 2	3.42	47	11.22 11.	-2-L	9 -12.	-12.9 99	4.53	5.04	6.18	9.24	7•74	7.38	1.23	-6°67	-8.22	2.61				Kips/in ² x (-1)	8.49	41 4.	•53	65 11.	-1.80 37 -	11.22	-9.93	3 3.60	8.22	4.92	2.10	0.53	9.12	2.01	7•75 -1	.0.17	20	
Section	2	1222x31	6	$l_2^l x l$	L ¹ 2x ¹ 8		lźxlź	x ¹ 8	2	≟x2⋛x	316	13	xlźx ¹	L8	1	źrlż	1 ₈				Section	2½×	22x31	.6	12x12	×78		lźx1ź	x ¹⁸	2	2x22x	316	1	lxllx	18	12:	xl ¹ 2x ¹ 8		
	fo	fl f	2	f _o f _]	L 12	fo	fl	f2	f2	f ₁	fo	f.	ſl	f2	fo	r1	f2					fo f]	l I	2 1	0 [1	£2	fo	n	f2	£2	r1	fo	fo	fl	f2	fo	ſ1 ſ2	:	
Coefficients	.232	.392 .2	76	.094 .1	151 .1	16.09	14.151	116	.276	.392	.232	.094	.151	.116	.09!,	.151	.116				Coefficients	.232 .	392.2	77 .0	94 .15	1.11	6.094	.151	.116	.277	.392	.232	.094	.151	.116	.094	.151.11	.6	
Kips	-0.05	1.34 -2.0	\$7	1.06	-D.:	-1.2	-1.96	0.53	-1.39	2.12	2.14	0.73	1.11	0.14	19.61	a.24	0.30				Kips .	1.97 1.	73	.25	.00	-0.2	-1.06	1.50	0.42	2.28	1.93	0.49	0.99	1.38	-().23	0•92 _1	.58 0.	48	
Actual Lozd	-3	. 4:6		2	•47		-2.65	5	-	5.95	•		1.70		-	1.74					Actual Load	ь.	95		2.	50		-2.1	L.		4.70			2.14		-2	•02		
Temperatures:	Date	C	T	Time:		armiy yes			Ty	pe of	Test	Load			and Children			Posi	ition	of	Temperatures:	Date			lime:		<u> </u>			Ty	pe of	Test	Load	. ,			<u></u>	P	Position of
Outside 54 °F Room 71 °F Instrument 76 °F	0ct.1	17th 199	54	Initia Load A Final	ul Zer Readin Zero	o Read g Readir	ling] Ng	10 42 10 52	Lon sus Los	gitud spensi ad in	linal ion po Poun	load dint	at g 2455	round	wire	•		0 1		2	Outside 54 °P Room 71 °F Instrument 76 °F	Oct.17	th 19	964	Initia Load R Final	l Zer cadin Zero	o Read g Readin	ling ng	10 42	Lor sue Lo	ngitud spensi ad in	inal on po Poun	load oint ds	at gi 2459	round	wire			
Gage Number	Е1	E 2 E	3 5	54 E	5 E	6 E 7	E 8	E 9	E 10	Е 11	E 12	E 13	E 14	E 15	E 16	E 17	E 1				Gage Number	E 19 E	20 E	21E :	22 E 2	3 E 2	4 E 2	5 E 2	6E 27	E 28	E 29	E 30	E 31	E 32	8 33	E 34	E 35 E	36	
Test Channel	0	1	2	3 4	. 5	6	7	8	9	10	11	12	13	14	15	16	17				Test Channel	18 :	1.9 2	0 2	1 22	23	24	25	26	27	28	29	30	31	32	33	34 3	5	
Position of Gage	0	1	2	0 1	1 2	0	1	2	2	1	0	σ	1	2	0	1	2				Position of Gage	0 :	1	2 0	1	2	0	1	2	2	1	0 [`]	0	1	2	0	1 2	:	
2 Zero Reading	002	-002 00	33	005 0	01-0	02 -00	1	2 002	000	000	,000	002	004	003	003	001	-002				Zero Reading	-002 0	01 0	x01	03 000	003			5 007	-005	-009	-007	-008	-010	-008	-010-	010 -0	55	
d Lead Reading -	019	-114-20	56	402 4	.00 -1	24 -47	0 -461	163	-178	-228	-324	271	261	-045	-311;	-292	C81				Load Reading	280 1	55 3	158 3	77 39	-083	-1128	-375	118	193	200	065	352	308	085	-370	395 II	±6	
Difference -	021	-113 -:	269	397 3	99 - 1	52 -46	9 -452	2 262	-178	-228	-324	269	257	-042	-317	-293	C83				Difference	282 1	54]	157 3	80 39	-031	-420	-373	3 125	202	209	072	360	318	-077	-360	385 1	52	
Kips/in ²	0.63	3.39	77	1.91	-3.) -1년-0	-13.80 7	5 - 4.83	5.34 -	6.37	9•72	8.07	7.71	.26	9.51	8.79	2.49				Kips/in ²	8.46 4	.62 4.	.71	40 11.9	-2.52 m	-12.3	41.19	3.75	6.06	6.27	2 . 16	0.80	9.54	2.31	10.80 _1	1.55	53	
Section	2	1x21x ³ 1	6	lįxl	1228		1½x1½	x ¹ 8	2	1x21x	3 ₁₆	1^1_2	xlźx	-8	1	jx1 jx	18				Section	2200	2 ¹ 2x ³ 1	.6	1½x1½	x ¹ 8		12x12	x ¹ 8	2	źx2źx	³ 16	1	žx1žx	. ¹ 8	lź	xlźx ¹ 8		
	fo	f ₁ f	2	f _o f ₁	f2	fo	f1	f2	f2	fl	fo	fo	ſ1	f2	fo	fl	ſ2					f _o f	r t	2 f	0 f]	. f2	fo	IJ	f2	ſ2	fl	fo	fo	fl	f2	r _o	fl f	:	
Coefficients	.232	.392 .2	76 .	.094 .1	.51 .1	16 .05	1.151	.116	.276	.392	.232	.094	.151	.116	.094	.151	.116				Coefficients	.232 .	392.2	.0	94 .15	1 .U	6.094	.151	.116	.277	.392	.232	.094	.151	.116	.094	.151.11	.6	
Kips	-0.1	•33 •2•	2 <u>1</u> 1	.12	81 0.	35	2-2.10	C.56	1.48	2.69	2.26	0-76	1.17	0.15	0.89	1.32	0.29				Kips	1.96 1.	81 1.	.31 1.	07	-0.25	-1.16	1.69	0.44	1.68	2.46	0.50	1.02	1.44	0.27	1.02	1.75	53	
Actual Load		-3.72		2.	58		-2.86	5	-	-6. 43			1.78		-	1.92	L		lanat		Actual Load	5.	08		2,.;	;8		-2.41			4.64	<u> </u>		2.19			2.24		
																					•																	-	
Kultiply (Kips/	1_2 in ²) 1	by ~lw	hen	initia	l Zer	o was	read	rith f	L test]	load	on.	L,		1				L		-	Multiply (Kips/	in ²) by	-l w	then i	nitial	. Zero	was	read	with	test	load	on.	1						
											S	STF	RAI	N	R	ĒΑ	١D	NG	S		& MEMB	ER	Į	_04	ADS	S 													

	1						···		-				<u> </u>																												
Temperatures:	Dat	e 		fime:					T	ype of	f Test	Load						Posi	tion Ga	of ge	Temporatures:		Date			fime:	. • * •				Тур	e of	Test	Load						Positior C	n of Jage
Cutside 54 OF Room 71 OF Instrument 76 OF	Cct.	17th 19	64	Initia) Load Re Final 2	L Zer Badin Zero	o Rea g Readi	ding ng	10 4	2 Co 0 lo L	mbine ad at cad ir	d long grour Poun	situdi 1d wir ds 245	nal a e su: 5 lo:	and t spens ngit.	ransv ion p 110	verse boint X0 tr	ansv.	1	L:	2	Outside 54 Room 71 Instrument 76	°F C °F	ct.]	17th 19	54	Initia Load R Final 1	l Zero eading Zero I	> Read 3 Readin	ing g	10 ½2 11 00	Com lca Los	d at g d in	loné groun Poun	itudi d wir ds 24	nal a e sua 55 lo	nd tr pensiongit.	absvo on po llo	irse int X tran	157 .	1	=2
Gage Humber	E 1	E 2 E	3 E	4 E :	5 E	6 E	7 E 8	6 E	9 E 1	рЕП	E 12	E 13	E 14	E 15	E 16	E 1'	7 E 1	e			Gage Number '	E	19	E 20 E	21E :	22 E 2	3 E 2	E 25	E 2	55 27	E 28	E 29	E 30	E 31	E 32	5 33	E 34	E 35 E	36		
Test Charnel	0	1 2	2	3 4	5	6	7	8	9	10	ш	12	13	14	15	16	17				Test Channel	:	18	19 20) 2	L 22	23	24	25	26	27	28	29	30	31	32	33	34	35		
Position of Gage	0	1 2	2	0 1	2	0	1	2	2	1	0	ο	1	2	0	1	2	1			Position of Gag	ge	0	1 2	2 0	1	2	0	1	2	2	1	0.	0	1	2	0	1	2		
3 Zero Reading	002	-001 00	3 0	05 00	1 -00	12 -00	01 -00	2 00	2 000	COL	200	002	004	003	003	001	-002				Zero Readin	ng -	200	001 00	01-0	03 000	001	-002	-006	-007	009	-009	-007	-008	-01.0	-008	-010	-010 -	005		
Load Reading	058	-001-15	8 3	97 38	2 -10	07 -49	54 -45	4 15	8-269	-343	-1400	258	257	-055	-330	-305	072	-			Load Readin	ng	198	052 07	76 3	24 357	-077	-376	-331	100	255	292	117	349	298	-088	-373	-379	716		
Difference	056	000-16	1 3	92 38	1 -10	05 -49	53 -45	2 15	6-269	-344	-400	256	253	-058	-333	-305	074				Difference		200	051 07	15 3	27 357	-078	-374	-325	107	264	301	121	357	308	-080	-363	-369	151		1
Kiys/in ²	1.68	0 1.ô	3 3	76	-3.1 43	5 · -13,	-13.5	64.6	8.07	-10.3	12.0	7.68	7.59	- •74	9.99	9.18	2.22				Kips/in ²	6	.00	1.53 2.	29	81 10.7	2.3	11.22	9.75	3.21	7.92	9.03	3.72	10.71	9 . 24	1 2.40	0.89	1.07	•53		
Section	2	2x22x ³ 16	5	$l_2^l \chi l_2^l$	10 ² 8		l ₂ xl	la ¹ 8	:	2 ¹ / ₂ x2 ¹ / ₂ x	, ³ 16	12	ajxı	8	1	şx1ş:	x ¹ 8		· •		Section		2)	x2 ¹ 2x ³ 16	5	12x12:	x ¹ 8	L	jxlj:	x1.8	2	x2 ¹ 2x ³	³ 16	1	źx1ź	18	ıż	xl ¹ 2x ¹ 8			
	fo	f ₁ f ₂	2	r _o f ₁	f2	fo	fl	f2	f2	fl	fo	fo	ſı	f2	fo	ſl	f ₂					ſ	。	r1 r2	1	5 f1	£2	fo	ŗ1	f2	£2	fl	fo	fo	ţ1	f2	fo	fl	2		
Coefficients	.232	.392 .27	76 .	094 .1	51 .1	16.0	94.15	1.11	6.27	6 .392	2.232	.094	151	.116	.094	.151	.116				Coefficient	ts .	232	.392.27	.0	94 .15	1.11	5,094	.151	.116	.277	.392	232	.094	.151	.116	.094	.151.1	16		
Kips	0.39	°	34 1	.11	-0.3	-1.2	2.0 28	5 0.5	-2.24 14	4.05	2.79	0.72	1.14	- 2020	0.93	1.38	0.26				Kips .	1	•39	0. <u>60</u> 0.0	52 0.	92	2.27	1.05	1.47	0.37	2.20	3.54	.\$6	1.01	1.39	0.28	1.03	1.68	53		
Actual Load	-	- 0. 95		2.4	7		-2.7	9		-9.08			1.56			2.05					Actual Load	đ	2	.61		2.2	7	-	-2.16			5.60		-	2.12		-	2.18			
Temperatures:	Date	3	1	limo:					T	pe of	Test	Load						Posi	tion d	of	Temperatures:		Date		1	ime:					Тур	e of	Test	Load					1	Position	of
Cutside 55 or Room 71 or Instrument 76 or	Oct.1	7th 1961		Initial Load Re Final 2	Zer adin ero l	o Read Z Readin	ding : ng :	10 42 11 28	Z	ero co Dad in	mtrol Poun	readi ds	ing No	load				0) 11	Ga	ze . 2 ;	Outside 55 Room 71 Instrument 76	oF oF oF	t.1	7th 196	L 1	Initial Soad Re Final 2	L Zero Pading Lero H	Read Readin	ing g	10 42 11 28	Zer	o con d in	trol Poun	readi ds	ng No i	load				°L.	age 2
Gage Number	El	E 2 E	3 E	4 E 5	E	5 E '	7 E 8	3 E 9	9 E 10) E 11	E 12	E 13	5 14	E 15	E 16	E 17	7 E 18				Gage Number	Е	19	E 20 E	21E :	22 E 2	B E 21	E 25	E 20	E 27	E 28	E 29	E 30	E 31	E 32	S 33	в 34	E 35 E	36.	<u> </u>	
Test Channel	0	1 2		3 4	5	6	7	. 8	9	10	11	12	13	14	15	16	17				Test Channel	:	18	19 20) 2	. 22	23	24	25	26	27	28	29	30	31	32	33	34	35		
Position of Gage	0	1 2	: () 1	2	, o	1	. 2	2	1	0	0	1	2	0	1	2				Position of Gag	ge (0	1 2	: 0	1	2	0	l	2	2	1	0.	0	1	2	0	1	2		
3 Zero Reading	002	-001 00	0 53	05 00:	1 -00	2 -00	a00	2 002	. 000	001	000	002	004	003	003	001	-002			.	2 Zero Readin	ng -C	02	001 0	01	03 000	001	-205	-006	-007	-009	-309	-007	-208	-010	-008	-010	-010	205	_	
Load Reading	-012	-013 -01	1 3 -	011-01	1-01	9 -02	4 -02	1 -01	4-011	-010	-013	-015 -	-013	-013	-016	-013	-019				Load Readin	ng 🧝	20	-014 -0	10 -0	23-01L	-015	015	-028	-024	031	-026	-023	028	-031	-028	-027	-028	<u>2</u> 23		
Difference	-014	-012 -03	16 -	016-018	3 -01	7 -02	3 -00	9-01	6-011	-011	-013	-017	-017	-015	-019	-014	-017				Difference	~	18	-015 -0	11 -0	20-014	-016	-013	-022	-017	-022	-017	-016	-020	-021	-020	-017	-018 -	51 8		
Kips/in ²	-0. <u>1</u> 42	·36	-0 48	.48 -0.5	-0.5 54	1	-0.2	7-0.4	-0•3. 8	3 -0.33	0.39	0.51	0.51	0.48	0.57	-0.42	0.51				Kips/in ²	-0.	54	0.45 -0.	-0.	60 -0.42	-0.48	-0.39	0.66	-0.51	0.66	0.51	0.48	0.60	0.63	-0.60	0.51	-0.54	54		
Section	2	x21x ³ 16		$l_2^l x l_2^l$	x ¹ 8		12212	1,x ¹ 8		22x22x	316	122	1 ^j x ¹	8	l	jxl jo	¹ 8				Section		2]	x22x ³ 16	;	12×12	, 18	1	jxl j:	c ¹ 8	2	p22x3	16	1	źx1źx	18	112	xlårje			
	fo	f1 f2		f. f1	f2	ro	fl	f2	f2	f1	r.	fo	f ₁	f ₂	fo	fl	f2					r	。	f1 f2	f,	, f1	f2	fo	ſı	f2	£2	ſl	fo	fo	fl	f2	fo	fl f	2		T
Coefficients	.232	.392 .27	6.0	794 .1 5	1.1	16.0	94.153		5.276	5.392	.232	.094 .	151	.116	•091;	.151	.116			-	Coefficient	ts -	232	.392.27	7.0	94 .15	1.11	5.094	.151	.116	.277	.392	232	.094	.151	.U.6	.094	.151.1	16		
Kips	-0.11	0.14	13	•05 -0.0	-0.0	6	60.0	4-0.0	6-0.0	-0.13	0.09	0.05	0.08		•05	0.06	0.06				Kips		.13	0.18 -0.	09	06 -p.06	-0.06	-0.04	0.10	-0.06	-0.18	0,20	0.11	0.06	0.10	-0.07	0.05	-08	.06		
Actual Load	-	0.38		-0.1	9		-0.1	6		-0.31		ŕ	0.19		-	0.17		х.			Actual Load	.d		0.40		-0.18			-0.20)	-	0.49		-	0.23		-	0.19			
																																	-								
Kultiply (Kips/	1 in ²) 1	oy -1 wh	ien j	nitial	Zer	o kas	read	uith	test	load	on.			1				L			Multiply (M	 Kips/in	²) 1	y −1 wi	nen i	nitial	Zero	was 1	read	with 1	test .	Losd d	on,	l		1			I.		
											S	TR.]	F	REA	٩DI	NG	S		B MEM	IBEF	२	L	.OA	DS															
																																									

Temperatures: .	Date	Time:		Type of Tes	st Load		Position of	Temperatures:	Date	Time:		Type of Test	t Load		Position of
Cutoido 48 °F Room 68 °F Instrument 72 °F	Oct.8th 1961	Initial Zer- Load Readin Final Zero	o Reading 540 g 6.00 Reading	Transverse I suspension p Load in Pop	icad at ground wire mints inds 1605		Cage	Outside 48 °F Room 68 °F Instrument 72 °F	Oct.Sth 1964	Initial Zer Load Readin Final Zero	o Reading 5 40 g 6 CO Reading	Transverse lo point Load in Pour	ad at ground m nds 1605	vire suspension	Gage
Gage Number	E1 E2 E	3 E 4 E 5 E 6	6 E 7 E 8 E 9	9 E 10 E 11 E 1	12 E 132 14 E 15 E	16 E 17 E 18		Gage Number	E 19 E 20 E 2	1E 22 E 23 E 2	LE 25 E 26E 27	E 28 E 29 E 30	0 E 31 E 32E 3	3 E 34 E 35 E 31	
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	L 12 13 14 1	5 16 17		Test Channel	18 19 20	21 22 23	24 25 26	27 28 29	30 31 32	33 34 35	
Position of Gage .	0 1 2	0 1 2	0 1 2	2 1 0	0 1 2 0	1 2		Position of Gage	0 1 2	0 1 2	0 1 2	2 1 0	0 1 2	0 1 2	
3 Zero Reading	005 001 00	L 000 000 -C	00 000 000	000 -004 001	-001 001 001 0	01 -002 000		2 Zero Reading	002 002 001	L 002 002 000	001 000 000	002 003 001	003 001 00	1 000 000 002	
I Icad Poading	112 149 13	7 018 006 -00	07 000 -020 -003	3 -122 -150-105	-018 -003 -009 -0	11 -019-008		d Load Reading	-109 -128-127	-048 -039 008	033 046 -005	136 135 103	012 000 00	8 010 020 012	
Difference	110 148 13	5 018 006 -00	000 -020 -003	3 -122 -146-106	-017 -004 -010 -0	12 -017-008		Difference	-111 -130 -128	3 -050-041 008	032 046 -005	134 132 102	009 -001 00	7 010 020 010	
Kip:/In ²	3.30 3.40	3 0.54 -0.18	0 -0.09	+3.66 +3.3	.8 -0.12 -0.30	36 -0.24 -0.51		Kips/in ²	-3.90	-1.50 0.24	0.96 1.38	4.02 3.06	0.27 0.03 0.2	0.30 0.30	
Section	2½x2½x ³ 16	12x12x18	l ¹ 2x1 ¹ 2x ¹ 8	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	lįxlįx ¹ 8	lįzlįx ¹ 8		Section	22x22x316	12x12x ¹ 8	12x12x ¹ 8	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	12x12x18	lźxlźx ¹ 8	I
	f _o f ₁ f ₂	f_0 f_1 f_2	f _o f ₁ f ₂	f_2 f_1 f_0	f_0 f_1 f_2 f_0	f1 f2		-	f ₀ f ₁ f ₂	f ₀ f ₁ f ₂	f_0 f_1 f_2	f2 f1 f0	f_0 f_1 f_2	10 17 12	
Coefficients	.232.392 .27	.094 .151 .11	.6 .094.151 .116	.276 .392.232	.094 .151 .116 .0	94,151 .116		Coefficients	.232 .392.277	.094 .151 .110	.094 .151 .116	.277 .392.232	.094 .151 .11	6 .094 .151 .116	
Kips	0.77 1.74	0.05 -0.02	2 -0.09	-1.01 -0.7	1 -0.02 -0.0	0.03		Kips	-1.53	0.11 0.03	0.21	1.11 0.71	0	0.03 0.03	
		10002	10 1 70.00	T*•14		10.04	I		-0.77 +1.06	+0.19	0.09 +0.02	1.59	0.03 0.0	2 0.09	
Actual Load	3.64	0.06	-0.10	-3.49	-0.10	-0.14		Actual Load	-3.36	-0.30	0.28	3.37	0.05	0.15	
Temperatures:	Date	Time:		Type of Tes	t Load		Position of Gage	Temperatures:	Date	Time:		Type of Test	Load		Position of
Reom 71 °F	Oct.17th 195	Load Reading	Reading 10 42	2 Transverse 1 D point	.oad at ground wire	suspension	1	Outside 55 °F Room 71 °F	Oct.17th 1964	Initial Zero Load Reading	Reading 10 42	Transverse 1 suspension p	oad at ground oint	wire	01
		Final Zero n		Load in Pou	nds 1100			Instrument 76 °P	<u> </u>	Final Zero R	eauing	Load in Poun	ds 1100	.	
Gage Mumber	EI E2 E	E4 E5 E6	E7 E8 E9	E 10 E 11 E 1	2 E 132 14 E 15 E 1	L6 E 17 E 18		Gage Number	E 19 E 20 E 21	E 22 E 23 E 24	E 25 E 26E 27	E 28 E 29 E 30	E 31 E 32E 33	E 34 E 35 E 36	
Test Ghannel		3 4 5	6 7 8	9 10 11	12 13 14 15	5 16 17		Test Channel	18 19 20	21 22 23	24 25 26	27 28 29	30 31 32	33 34 35	
Position of Gage	0 1 2	0 1 2	0 1 2	2 1 0	0 1 2 0	1 2		Position of Gage	0 1 2	0 1 2	0 1 2	2 1 0	0 1 2	0 1 2	
Zero Reading	002 -001 003	205 001 -202	2 -001 -002 002	2 000 001 000	002 004 003 0	03 001 -002		Zero Reading	-002 001 001	-003 000 001	002 006 007	-009 -009 -007	-008 -010-008	-010 -010 -005	
Load Reading	074 108 096	003 -016 -013	3 -011 -010 -00	-100-118 -084	-015 -004 -013 -01	18 -012 -016		E Load Reading	-033 -098-081	-051 -036 002	022 018 -019	025 083 050	-012 -021-012	-020 -007 -001	
E DILIGIOLGO	0/2 109 093	-0.02 -0.17 -011	-010 -008 -008	3-00 -2.52	-017 -008 -016 -03	21-013-014		Difference	-081 -099-082	-048 -036 001	024 024 -012	034 092 057	-004 -011-003	-010 003 -004	<u></u>
Kips/in ²	2.16 2.7	-0.51	- 0.30 - 0.1 3	-3.57	-0.51 -0.48	-0.39		Kips/in ²	-2.43 -2.46	-1.08	0.72 -0.36	2.76	0.12 -0.09	0.09	
Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	12x12x ¹ 8	1½x1½x ¹ 8	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	12x12x ¹ 8	l ¹ 2xl ¹ 2x ¹ 8		Section	2½x2½x ³ 16	l ¹ 2xl ¹ 2x ¹ 8	1½x1½x ¹ 8	222222x316	12x12x ¹ 8	lźxlźx ¹ 8	
Coefficiente	f_0 f_1 f_2	$f_0 f_1 f_2$	f_0 f_1 f_2	f_2 f_1 f_0	f_0 f_1 f_2 f_0	f ₁ f ₂			f _o f ₁ f ₂	f ₀ f ₁ f ₂	f ₀ f1 f2	f ₂ f ₁ f ₀	fo f1 f2	fo fl f2	
	.232.392 .276	.094 .151 .11	6 .094.151 .116	.276 .392.232	.094 .151 .116 .09	4.151 .116		Coefficients	.232 .392.277	.094 .151 .116	.094 .151 .116	.277 .392 .232	.094 .151 .116	.094 .151.116	
Kips	0.50 1.28 0.7	0.01 -0.01 -0.08	0.02	0.83 -0.59	0.05 -0.04	5 -0.05 -0.06		Kips	+0.56 1.16 -0.68	-0.14 0	0.07 -0.04	0.28 1.08 0.40	-0.05	0.03 0.01	
Actual Load	2,56	-0.13	-0.09	-2.82	-0.15	-0.17	t	Actual Load	-2.39	-0.30	ريمي بلاده	1.76	-0.07	-0-03	k
Kultiply (Kips/	in ²) by -1 whe	n initial Zero	was read with t	est load on.		l		Multiply (Kips,	/in ²) by -1 when	initial Zero	was read with t	est load on.			
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									,						
					STRAIN	READI	NGS	ုၾ MEMB	ER LO	DADS					
								J	******						

Type of Test Load Date Temperatures: Time: Date Fesition of Position of Temperatures: Timer Type of Test Load Gage Gage 44 °F 67 °F 74 °F 44。F 67。F 74。F Cutside Oct.5th 1964 Initial Zero Reading 7 55 Longitudinal load at conductor suspension 0 || Cutside Oct.5th 1964 Initial Zero Reading 7 55 Longitudinal load at conductor suspension 01 8007 Load Reading 8 15 point Load Reading Room 8 15 point Load in Pounds 11 Instrument Final Zero Reading Load in Founds 2305 ιL . 2305 2 Final Zero Reading Instrument F 19 F 20 F 21 F 22 F 23 F 24 F 25 F 26 F 27 F 28 F 29 F 30 F 31 F 32 F 33 F 34 F 35 F 36 Gage Number Gage Humber F1 F2 F3 F 5 F 6 F 7 F L F 8 F 9 F 10 F 11 F 12 F 13 F 14 F 15 F 16 F 17 F 18 31 32 33 34 35 0 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Test Channel 1 2 3 Ŀ 5 6 7 8 9 10 11 12 13 14 15 Test Channel Position of Gage 0 1 2 0 7 2 2 0 2 2 ٦ 0 2 1 0 Position of Gage 0 1.1 2 2 1 0 0 3 2 2 3 0 2 1 0 0 11 2 l 0 7 000 -002 -001 -002-001 000 -002-002 000 -002 -003 -002 -col; 000-col 000 -co3 000 000 000 001 000 002 000 -003 001 000 002 000 000 001 2001 2002 1002 Zero Reading 000 000 Zero Reading 255 071 214 -161 -167 -085 231 051 223 135 237 213 -131 -254 122 020 095 187 140 -038 -200-057 -251 -035 Load Reading 252 166 -024 116 032 227 -319-251 -077 -021 11.8 276 Load Reading Ma 094 187 138 -138 -200-058 5 -019 151 278 259 071 215 -181 -164 -085 -212 079 221 135 -237 -214-131 -256 -122 023 252 168 -023 118 033 227 -317-249 -077 251 -035 Difference Difference -5.43 3.66 4.14 1.74 5.04 3.54 -5.61 -6.81 +8.34 -2.13 2.55 -4.05 6.42 7.68 -47 0.57 1.05 -2.37 Kips/in2x (-1) 47.56 Kips/in²x (-1) -4.14 0.69 4.53 -6.45 4.92 -5.63 7.11 -2.82 6.00 -0.99 +7.77 7.53 3.93 51 6.36 2.31 $2\frac{1}{2}x^{2}\frac{1}{2}x^{3}$ 16 lxlx¹8 lxlx¹8 $2\frac{1}{2}x^{2}x^{3}16$ Section lxlx¹8 lxix¹8 21x21x316 1x1x18 23x23x³16 1x1x¹8 1x1x¹8 lxlx¹8 Section $\mathbf{f}_0 \quad \mathbf{f}_1 \quad \mathbf{f}_2$ f_l f_o f₂ f₁ fo fo f1 f_2 f2 fl fo ſ, fl £2 f_2 ſı fo fl fo fo f f_2 fl f_2 f2 fl fo fo fl f2 f2 f2 fo Coefficients Coefficients .067 .078.085 .277 .392 .232.035 .078 .067 .067 .078 .085 .035 .078.067 .035 .078 .067 .232 .392 .277.085 .078 .067 .067 .078.035 .277 .392 .232 .057 .078 .035 .232 .392 .277 2.13 1.47 -0.16 -0.44 0.28 p.58 0.22 0.15 1.75 -0.30 +0.4 0.16 +1.93 -þ.17 0.36 **b.**Ш 0.20 -0.27 0.50 Кірз Kips -0.13 0.38 -b.24 0.28 0.47 b.19 -0.08 0.64 0.20 0.66 0.33 41.78 •75 0.48 +0.52 -1.26 Actual Load -3.48 -0.84 1.12 -3.55 0.96 Actual Load 3 .44 -0.96 0.90 3.92 -0.99 1.31 Position of Date Type of Test Load Position of Type of Test Load Time: Date Time: Temperatures: Temporatures: Gago Gage Initial Zero Reading 8 10 Longitudinal load at conductor suspension 70 °F °F Oct.lith 1964 01 70 °F 75 °F 81 °F ol Cutside Initial Zero Reading 8 10 Longitudinal load at conductor suspension Cutside Oct.14th 1964 75 81 Load Reading 8 31 point Room Room 75 Instrument 81 Load Reading 8 31 point ıL og Final Zero Reading 2255 Instrument Load in Pounds 1 Load in Pounds 2255 -2 Final Zero Reading F 19 F 20 F 21F 22 F 23 F 24 F 25 F 26F 27 F 28 F 29 F 30 F 31F 32 F 33 F 34 F 35 F 36 Gage Number F1 F2 F3 F4 F5 F6 F 7 F 8 F 9 F 10 F 11 F 12 F 13 F 1/F 15 F 16 F 17 F 18 Gage Number 27 28 29 30 31 32 33 34 35 14 15 16 17 19 20 21 24 25 26 Test Channel 0 1 2 3 4 5 6 7 8 9 10 11 12 13 Test Channel 18 22 23 2 2 1 0 0 1 1 1 2 1 0 0 11 2 Position of Cage 0 l 2 2 1 0 0 1 2 2 11 0 Position of Gage 0 1 2 2 1 0 0 2 2 0 000 Zero Reading 000 000 000 000 Zero Reading 000 235 049 -145-084 -173 -283 -050 -227 186 130 071 011 -011 -261-129 302 001 268-320 278 358 273 129 203 262 117 137 163 087 -259 -119 -081 -079 -083-196 Load Reading Load Reading 300 Lor 011 -041 -261-129 137 163 087 235 049 -145 084 -173 -283 -050 -227 186 130 071 004 268 020 278 158 273 129 203 262 117 ä -259 -119 -081 -079 -083-196 302 Difference 300 Difference -7.83 4.11 .61 -0.60 -4.74 .35 -5.19 -1.50 5.58 2.13 3.87 7.86 0.33 -3.57 +2.40 -5.88 7.05 0.09 Kips/in² Kips/in² 4.89 -6.81 9.00 -0.34 3.51 41.23 -2.43 -2.52 -8.19 3.9d 8.04 -7.77 1.47 6.09 2.49 9.06 8,19 2¹/₂x2¹/₂x³16 2¹/₂x2¹/₂x³16 1x1x18 1x1x¹8 1x1x18 lx1x18 2½x22x³16 1x1x18 lxlx¹8 1x1x¹8 1x1x¹8 Section 2 2 2 2 2 2 2 3 16 Section f1 f2 fl f₂ f₁ fo f2 fl fo fo $f_2 | f_1 | f_0$ f₁ f₂ f_2 f₁ fo f2 f fo fo f2 fl fo fl f2 fo f1 1°0 f₁ f₂ f2 fo f2 f_ Ccefficients Coefficients .067 .078 .035 .277 .392 .232 035 .078 .067 .067 .078 .085 .392 .232 .035 .078.067 .067 .078 .085 .232 .392.277 .035 .078 .067 .067 .078.035 .277 .232 .392 .277.085 .078 .067 0.19 2.18 -0.12 0.18 0.08 -0.61 0.28 0.22 0.38 0.55 -1.20 -1.20 0.03 -0.05 -0.32 0.30 -1.10 -0.20 40.1:6 Kips Kips <u>þ.</u>52 0.38 0.30 2.09 1.38 -0.10 0.55 L0.26 0.61 0.13 -b.99 2.23 0.65 0.88 0.86 1.29 -3.39 -1.30 3.64 -0.97 -0.78 Actual Load -3.87 Actual Load 4.35 -1.02 1.37 "iltiply (Kips/in") by -I when initial Zero was read with test load on Kultiply (Kips/in2) by -1 when initial Zero was read with test load on. LOADS MEMBER 8 READINGS STRAIN

Termoratures:		Dat	e]	Timo:				Ty	lo eq	Test	Load				· ·		Parit	ion of	- 1-	Tennaratures:	Dat	e		Tine:				Typ	т 10 п	'est I	lond					Pesitio	n of
Cutside 70 Noom 75 Instrument 81	°F °F °F	00 t .]	lutn 1	961	Initi: Load I Final	il Zer Readin Zero I	o Read S Readin	ing 8 10 8 49 g	Co: 5 at Lo	nbined conduc ad in	longi ctor s Pound	tudin uspen 2255	ll ar sion long	nd tra point git. 2	nsve: 350	rse lo trans	oad V•	0 1	Gage) 1 1	Cutside 70 ^O F Room 75 ^O F Instrument Sl ^O P	Oct.	llth]	1964	Initial 2 Load Read Final Zer	lero Rea Ling ro Readi	ading ing	8 10 8 15	Comb at c	bined : conduc d in P	longi tor s Cunda	tudin uspen 2255	al and sion] long:	tran xint .t. 2	sverse 350 tr	load ansv.	0	Gage = 2
Gage Number		Fl	F 2	F3	F 4 F	5 F 6	F7	F8 F	9 F 1	0 F 11	F 12	F 13	F 14	F 15	F 16	F 17	F 18			0	Gage Number	F 19	F 20	F 21	F 22 F 23	F 24 F	25 F 2	6F 27	F 28	F 29	F 30	F 31F	32 F	33 F	34 F 3	5 F 36		
Test Channel		0	1	2	3 4	5	6	7 8	9	10	ш	12	13	14	15	16	17		1	r -	Test Channel	1.8	19	20	21 22	23 2	24 25	26	27	-28	29	30	31	32 3	3 34	. 35		
Position of Ca	gə	0	1	2	2 1	0	0	1 2	2	1	0	2	1	0	0	1	2			- -	Position of Gage	0	1	2	2 1	0 () 1	2	2	1	0	2	1	0 0	1	2		
2 Zero Readi	ng	000	000	000	000 00	000	000	000 000	000	000	000	000	000	000	000	000	000			- Lod	Zero Reading	000	000	000	000 000	000 00	000 000	000	000	000	000	000	000 (x0 00	x) 00	0 000		
C Load Readin	ng	213	-105	148	096-05	5 -083	382	320 1.06	5 -34	2 -299	-338	-492	062	-332	127	087	-062			- ioi	Load Reading	020	- 380	-030	127 -370-	248 31	1 209	074	491	105	291	066	368 -	.65 2	39 22	1 -075		
Difference		213	-105	148	096-05	5 -083	3 382	320,106	5 -342	2 -299	-338	-492	062	-332	127	087	-062			1	Difference	020	880	-030	127 -370-	248 31	1 209	074	491	105	291	066 -	368 -	.65 2	39 22	1 -075		
Kips/in ²		6.39	3.15	با وازناد	2.88	-2.49	9	9.60	-10.:	26 B.97	10.11	14.76	1.86	.9.96	3.81	2.61	1.86				Kips/in ²	0,60	2.64	.90	3.81 -11.1	7.74	6.27 22	2.22	14.73	3.15	8.73	1.98	1.04 	S5 7.	6.6	42 . 25		
Section		2	 }x2.2x ³	16	lxl	د ¹ 8		lxlx ¹ 8		22x22x	316	L	xlx ¹	8	1	lxlx ¹ 8	3				Section	2	2x22x	316	lxlx ¹ 8		lxlx	18	2 <mark>1</mark>	c2½x ³ 1	.6	lx	lx ¹ 8		lxlx	18		
		fo	f1	f ₂	f ₂ f	l fo	fo	f_1 f_2	f2	f1	fo	f ₂	ſı	fo	fo	fl	f2					fo	f1	ſ2	f ₂ f ₁	f _o f	, f ₁	f2	£2	f1	fo	f2	fl	r _o f	0 f1	f2		1
Coefficien	ts	.232	.392	.277	.Cas .or	78 .05	7.067	.078.03	5.27	7 .392	.232	.035	.078	.067	.067	.078	.085				Ccefficients	.232	.392	.277	.085 .078	.067 .0	067 .07	8.085	.277	.392	.232	.035 .	078 .	0. 767	67 .07	8 .085		1
Kips		1.48	1.23	1.23	0.25	-0.17	7 0.77	0.75	-2.8	-3.52	2.36	1.26	0.15	-0.67	.26	0.20	0.16			-	Кірз	0.14	1.05	0.25	0.32 -0.87	0.50	0.49	0.19	4.09	1.24	2.02	0.17 0.17	• ⁸⁶ •0	.33 0.1	48 0.5	2-0.19		
Actual Leas	d		1.48		-0.0			1.79		-8.72	£	-	1.78			0.30					Actual Lozd		0.94		-1.05		1.43			7-35		-1	v 02		0.8	ì		
Temperatures:		Dat	e		Time:				Ty	pe of	Test	Load						Posit	ion of	1	Temperatures:	Dat	6		Time:			-	Typ	e of T	'est I	load					Positio	n of
Cutside 68 Room 75 Instrument 80	°F °F	Oct.	lith :	1964	Initia Load I Final	nl Zer Readin Zero	o Read g Readir	ing 810 ng 905) Ze S Lo	ero con ad in	n trol Pound	readin 3 l	ng No lo	ad				° 1	Gage		Cutside 68 °F Room 75 °F Instrument 80 °F	Octa	lith 1	.96 ¹ 1	Initial 2 Load Read Final Zer	lero Rea Ling ro Readi	ading ing	8 10 9 05	Zer Loa	o cont d in P	trol : ounds	readin 9	ng Mgo.lo	ad			0	Gago 2
Gage Number		Fl	F 2	F3	F 4 F	5 F 6	F 7	F 8 F	9 F 1	.0 F 11	F 12	F 13	7 1.	F 15	F.16	F 17	F 18				Gage Number	F 19	F 20	F 21	F 22 F 23	F 24 F	25 F 2	6F 27	F 28	F 29	F 30	F 31F	32 F	33 F	34 F 3	5 F 36		
Test Channel		0	1	2	3 4	5	6	7 8	9	10	11	12	13	14	15	16	17				Test Channel	18	19	20	21 22	23 :	24 25	26	27	28	29	30	31	32 3	3 34	35		
Position of Ga	ge	o	1	2	2 1	0	0	1 2	2	1	0	2	1	0	0	l	2				Position of Gage	0	1	2	2 1	0 0) 1	2	2	1	0	2	1	0 0	1	2		
2 Zero Readi	ng	000	000	000	000 0	00 000	000	000 000	x0 00	000 000	000	000	000	000	000	000	000			104	Zero Reading	000	000	000	000 000	000 C	00 000	000	000	000	000	000	000	00 00	xo 000	000		
	ng	012	023	004	007 C	13 006	5 011	007 00	07 OX	05 008	013	010	011	013	013	020	800		_		5 Load Reading	003	011	003	006 002	009 0	16 006	033	024	028	000	004	016 0	21 -X	4 00	2 019		
Difference		012	023	004	007 0	1 3 006	5 011	007 00	07 X	008	013	010	011	013	013	020	800			105	Difference	003	110	003	006 002	009 0	16 006	033	024	028	000	004	016	21 -00	14 00	2 019		
Kips/in ²		0.36	0.69	0.12	0.21	9.18 39	3	0.21	0.	0.22	p.39	0.30	0.33	0.39	0•39	0.60	0.24			-	Kips/in ²	0.09	0.33	0.09	0.18	0.27	46 0.1	8 0.99	0.72	p.84	0	0.12	о • µ8 с	-0.1 •63	2 0.0	5 0.57		
Section		2	łwe ła	³ 16	lxl	x ¹ 8		lxlx ¹ 8		22x22x	316		xlxl	8	3	lxlx ¹ 6	3				Section	2	1 2x22x	316	lxlx ¹ 8	3	lxlx	18	2 ¹ 22	2½x ³ 1	.6	lx	1x ¹ 8		כוגו	1 ₈		
		r _o 1	f ₁	f2	f ₂ f	1 fo	fo	f ₁ f ₂	f	fl	fo	f2	ſl	fo	fo	f1	f2			- -		fo	f	f2	f ₂ f ₁	f _o f		f ₂	f2	fl	fo	f ₂	ſ	f _o f	o f1	f ₂		
Coefficien	its	.232	.392	.277	.035 .0	78.06	7 .067	.078.03	5 .27	.392	.232	.035	.078	.067	.067	.078	.085		_	-	Coefficients	.232	.392	.277	.035 .078	.067 .	.07	18.085	.277	•392	.232	.035 .	078 .	067 .0	67 .07	78 .08		
Кірз		h-08	p.27	0.03	0.02	0.0	0.02	0.02	0.	оц р.с9	0.09	0.03	0.03	0.02	0.02	0.05	0.02				Kips	0.02	0.13	0.02	0*05	0.02	03 0.0	1 0.08	0,20	0.33	0	0.01	0.04	-04	.01 0	0.05		╈
Actual Loa	d		0.38		0.	.06		0.06		0.22	4		0.08			0.09				-	Actual Load "	r	0.17	L	0.04		0.1	2		0.53		L (0.09		0	.ou		
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		2																		_						-												
Hiltiply (Xipo/	in')	b7 -1	When	initia	1 Zerc	N33 1	readmant	1-resi	1030	011.										Eultiply (Kips,	/in ²)	by -1	when	initial :	lero wa	s read	with	test	load d	on.							
												STI	R۵	ιN	ļ	RE.	AD	ING	S	8	в мемв	ER		LC	ADS											,		
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Companyaturaa	1	Data		-	10.2					1.0																					· · · · · ·											
Dit 14. 70	0	Dane			11001					Type	e or t	est 1	Load						Pos	itior C	n of Lage	Te	emperatures:	Dat	te		Tin	.91					Тур	c of ?	fest	Load						Position of
Room 70	oF	ct.l)th 19	64	Initi Load	al Zer Readir	•o Read 9g	ling	10 39	Tran Susr	svers	e loa n poi	id at ints	three	e con	ducto	or		01]		Cu Ro	itside 52 0	F Oct.	10th	1964	Ini	tial	Zero	Readi	ng 1	35	Tre	nsvei	se l	oada	t th	ree co	nduct	or		
Instrument 73	F				Final	Zero	Readin	ng		Load	i in F	ounds	3		3022				1	L	2	In	istrument 73	F			Fin	a nea al Ze	ro Re	ading	1	0 59	Load	d in	Pound	oints Is	3	3022				1 2
Gage Number		Fl	F 2 F	3 F	4 F	5 F 6	F 7	F 8	F 9	F 1.0	F 11	F 12	F 13	ร ม	F 15	F 16	F 17	F 18	3			Ga	nge Number	F 19	F 2	20 F 2	1F 22	F 23	F 24	F 25	F 26	F 27	F 28	F 29	F 30	F 31	1 32	F 33	F 34	F 35	36	
Test Channel		0	1	2	3 4	5	6	7	8	9	10	ш	12	13	14	15	16	17				Te	est Channel	18	19	9 20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Position of Gag	çe	0	ı	2	2 1	0	0	1	2	2	l	0	2	1	0	0	1	2				Po	osition of Gage	0	1	2	2	ı	0	0	1	2	2	1	0	2	1	0	.0	1	2	
2 Zero Readin	g	002	003	xxo 0	or (001	L 002	002	002	004	004	005	203	005	003	004	003	001	004				head	Zero Reading	004	00	4 001	4 002	001	001	001	002	CO2	002	C02	002	003	002	001	002	003	003	
E Load Readin	g –	535	182 -	519 0	63 -00	09-065	021	039	021	024	268	319	054	025	040	081	045	-043				oinc	Load Reading	272	-07	5 60	502	6 014	044	-079	-056	-053	-311	-175	-127	021	019	034	-116	-01:2	110	
Difference	-	537	179 -	519 C	62 -01	10 -06	7 019	C37	017	020	263	316	049	022	036	078	044	-047				liter	Difference	268	-07	9 60	1 -030	013	043	-080-	-058	-055	-313	-177	-129	018	017	033	-118	-045	107	
Kips/in ² x	(-1)	6.11	15	57	86 0.3	30 2.0	1-0.57	1.11	-0.51	5.6c	7.89	7.48	1.47		08	2.34	1.32	1.41					Kips/in ² x (-3)_8.ch	2.3	7	0.90		1.29	2.40	1.74	.65	9•39	5.31	3.87	0.51	0.51	L0.00	3.54	-3	.21	
Section	-	21		6	1~1-	1.			0	- 1			۱ ۱. ۲				. 1		I				Section		1	316	<u> </u>	1~1~1	•		ا بار رو			2.3	6	1	·	, (1		ماردهم		<u>II</u>
				-		~ °			°	22 	,×22×°.	10	נ 1					8 1					Beccron		1	-1			°			>		. xgs	.0	L 1		, ,				
Coefficient	з –	r		2 f	2 fj	L ^f o	fo	f1	^f 2	f2	fl	fo	f2	ſ1	fo	fo	fl	f2					Coefficients	fo	fl	f2	f2	f1	fo	fo	ſl	f2	f2	fl	fo	f2	fl	fo	fo	f ₁	2	
	!·	232	392	277.0	85 .07	78 .06	7 .067	.078	.035	.277	•392	232	.035	.078	.067	.067	.078	.085						.232	•39	2.277	.035	.078	.067	.067	.078	.085	.277	•392	.232	.035	.078	.067	•067	.078	085	
Kips	3	•73	•11 4	30	0.0	2 0.1	10.04	-0.09	0.04	0,17	3.09	2.20	0.13	0.05 	.07	5,16	0.10	0.12					Kip3	1.86	0.9	3 	0.0	0.03	0.09	0.16	0.14	5.1 4	2.59	2.08	0.90	0.05	-0.C	-0.07	0.24	0.11	•27	
Actual Load		5	•92		-0.0	X1		-0.17		-	5.46		-	0.25		-	0.14						Actual Load		-5.9	n		-0.04			0.44			5.57			-0.16	5		0.08		
Temperatures:	[Date		- T	Pimo:					Type	of Te	est L	oad						Posi	ition	of	Ter	mperatures:	Dat	e		Tim	3:					Турс	of I	est]	Load					F	osition of
Cutside 68	°F O	t.Ц	th 196	4	Initia	1 Zer	o Read	ing {	B 10	Tran	sverse	load	d at a	condu	ctor	susp	ensid	, ac	01	G.	age	Cut	tside 68 °F	Oct.	lith	1964	Init	tial 2	Zero I	Readin	ug 8	10	Tran	svers	e loa	id at	thre	e con	ducto	r		Gage Oll
Instrument 80	o _F				Final	Zero I	g Readin	g	50	Load	t .in Po	ounds	23	50					11	;	2	Roo	om 75 °F strument 80 °F	,		,	Load	d Read	ding ro Rea	ading	8	50	susp Load	ensio l in F	n poi Pounds	lnts s	2	350		-	•	1 2
Gage Number		F 1	F2F	3 F	4 F	5 F 6	F 7	F 8	F 9	F 10	F 11 1	7 12	F 13	F 14	25	F 16	F 17	F 18				Gag	ge Number	F 19	7 2	0 F 21	1F 22	F 23	F 24	F 25	F 261	r: 27	F 28	F 29	F 30	F 31	F 32	F 33	F 34	F 35 F	36	
Test Channel		0	1 :	2	3 4	5	6	7	8	9	10	11	12	13	14	15	16	17				Tes	st Channel	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Position of Cage	e	0	1 :	2	2 1	0	0	1	2	2	1	0	2	1	0	0	1	2				Pos	sition of Gage	0	1	2	2	1	0	0.	1	2	2	1	0	2	1	0	0	1	2	
2 Zero Reading	g (200	000 0	00 00	00 00	0000	000	000	000	000	000	000	000	000	0 00	000	000	000				hea	Zero Reading	000	000	0 000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	200	
7 Load Reading	g l	177 -	171 l	64 -	003 02	4 04	-001	-027	-005	-034	-198 -	195 -	-109	-013-	063	-127	-021	-158				oinc	Load Reading	-540	08	7+157	116	000	-011	101	024	077	253	155	085	029	-018	-013	088	021 -	999	
Difference	1	±77 -	171 1	64 -	203 02	14 049	-001	-027	-005	-034	-198 -	195 -	-109	-103-	063	127	-021	-158				Ider	Difference	-540	081	7-157	146	000	-011	101	024	077	253	155	085 -	-029 -	018	-013	088	021 -	99	
Kips/in ²	· u	.31	.13	-0.	²⁹ 0.7	2 2.4	1.03	0.81	1-15	L.02	5_01	.85	3.27	39	-89	8.81	0.63	4.74					Kips/in ²	74.0	2.63	1, 7	4.38		0.33		0.75		.59		2.55		0.54	0.20	2.64	-63	.97	
			. 7			,	10.05	<u> </u>	/11/		2024			Ē	,	T	,	L	1					- 10.2	I	74.13		10	L	3.03	Ĕ	10.		4.05		0.87	<u>ن</u> ــــــــــــــــــــــــــــــــــــ	-0.39	ſ	1		
Section		2½	2½x)10	5	xlxl	- 1 8		lxlx ¹ 8	в .	2칠	ندرة تركينا الملاحة	.6	1	xlx ¹ 8	3	1	xlx ¹	8		r			Section	2	2022	x ² 16]]	1x1x18	3]	xlx ¹ 8	3	2½x	2½x ² 1	6.	1:	x1x-8		1	xlx ⁴ 8		·····
Coefficients	3	t _o 1	1 ^f 2	2 f	2 ^f 1	. ro	ro	fl	f2	f ₂	fl	fo	f ₂	ſ	fo	fo	fl	£2			ŀ		Coefficients	fo	fl	f2	f2	.f ₁	fo	fo	ſı	f2	f2	fl	fo	f2	fl	fo	fo	f _l f	2	
		232 .	392 .2	277.0	35 .07	8.06	7.067	.078	.035	.277	.392 .	232	.085	.078.	067	.067	.078	.035]			.232	•39	2.277	.085	.078	.067	.067	.07e	085	.277	•392	.232	.035	.078	.067	.067	.078 .	085	
Kips	3	32	•01 3.	-0- 86	0.0	6 0.10	0	0.06 -	0.01	-28	2.33	•36	5. 28	0•03 ••0	.13) . 26	0.05	0.40			ĺ		Kips	-3.76	1.02	2-1.31	p.37	o [.]	0.02	0.20	0.06	.20	10	1.82	0.59	0.07	-0.0L:	0.03	3.18	0.05	25	
Actual Load		5	.17		0.1	5	-	0.07		-3	3•97		-	0•րր		-	0.71				ĺ		Actual Load	••	-4.05	5		0.35			0.46			4, . 51		-	-0.14		_	.02		
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Multiply (Mi	1p3/1n	²) бу	-1 m	en 1	itial	Zero	1 113 r	ead n.	ith t	est-1	oad-oi	.			1								Nultiply (Kips	/in ²)	by -	1 when	n ini	ial 2	Zero	as r	ad w	ith t	est]	load d	on.							
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		·*						÷.;							*********].																					

Temperatures: Date Time: Type of Test Load Position of Position of Temperatures: Date Time: Type of Test Load Gage Gago 50 °F 73 °F 77 °F Oct.6th 1964 Cutside Initial Zero Reading 6 56 Longitudinal load at ground wire oF oF oF 0 1 Oct.6th 1964 Initial Zero Reading 6 56 0Ì Cutside 50 Longitudinal load at ground wire suspension suspension point Room Load Reading 7 10 Room 73 Instrument 77 Load Reading 7 10 point Instrument 11 Final Zero Reading Load in Pounds -2 2505 1 Load in Pounds 2505 Final Zero Reading Gage Number Fl F 2 F 3 F4 F5 F6 F7 F 8 F 9 F 10 F 11 F 12 F 13 F 14 F 15 F 16 F 17 F 18 Gage Number F 19 F 20 F 21 F 22 F 23 F 24 F 25 F 26 F 27 F 28 F 29 F 30 F 31 F 32 F 33 F 34 F 35 F 36 Test Channel 0 32 33 34 35 1 2 9 10 11 18 19 22 23 24 25 26 27 28 29 30 31 3 L 5 6 7 8 12 13 14 15 16 17 Test Channel 20 21 Position of Gage 0 1 2 2 1 2 1 0 2 l 0 0 l 2 7 0 0 2 1 Position of Gage 0 1 2 2 1 0 0 2 1 2 1 0 2 0 0 1 2 012 014 009 010 010 Zero Reading 019 015 015 015 016 016 014 016 014 014 014 014 014 011 012 009 009 007 008 010 010 008 011 010 011 012 011 012 015 015 013 Zero Reading 291 072 267 -087 185 137 297 176 038 315 184 083 018 125 -077 251 086 190 Load Reading Load Reading -266 -174 -015 -091-016 -192 285 220 072 003 -215 -338 -198-042 -144 11.7 134 072 204 058 -013 -229 -352 -214-056 +158 072 006 -136 -089 181 244 076 Difference -278 -188 -034 -106-031 -207 269 Difference 280 060 258 096 192 145 187 166 030 304 174 132 119 -059 đ. -5.64 .18 -6.21 6.12 2 -P-39 -10.56 +1.68 1.77 -4.35 1.98 9.12 2.16 -4.08 .43 2.28 3.96 1.80 -2.88 Kips/in² Kips/in² -2.67 6.34 +1.02 -0.93 -6.87 5.76 5.61 0.90 5.22 0.18 7.32 8.Ch 1.2 3.57 8.40 7.74 22x22x316 lxlx¹8 22x22x316 1x1x18 lxlx¹8 lxlx¹8 21x21x316 1x1x¹8 lxlx¹8 Section 21x21x316 lxlx¹8 lxlx¹8 Section fo $f_1 | f_2$ fo f1 f2 f1 fo f1 f₂ f₁ ſ f1 f2 fl fo f2 fl fo f2 f_o \mathbf{f}_2 fo f2 fo fo f₁ f_2 f1 f2 f₂ f₁ f₀ fo f2 fo Coefficients Coefficients .232 035 .078 .067 .067 .078 .085 .232 .392 .277 .085 .078 .067 .067 .078.035 .035 .078 .067 .067 .078.085 .277 .392 .277 .392 .232 .035 .078.067 .067 .078 .085 .232 .392.277 -2.21 0.27 -0.12 0.18 0.71 2.1 -b.32 -b.11 2.45 0.26 0.15 +0.29 p.39 2.53 b.50 0.36 0.19 0.13 -b.25 Kips Kips 2.05 0.02 -0.18 0.57 1.93 -0.28 -2.70 b.28 0.38 -C.07 0.54 2.03 0.45 0.08 1.1.2 -0.78 Actual Load 1-17 -5.26 -1.00 0.69 1.88 0.85 5.08 -C.18 1.12 Actual Load -0.99 Date Type of Test Load Temperatures: Time: Fosition of Position of Date Time: Type of Test Load Temperatures: Gage Gago 47 or or or Oct.17th 1964 Longitudinal load at ground wire 47 °F 70 °F 73 °F Cutside Initial Zero Reading 8 44 0 1 0 Cutside oct.17th 1964 Initial Zero Reading 8 44 Longitudinal load at ground wire Room 70 Load Reading 9 06 suspension point Room Load Reading 9 06 suspension point 11 Final Zero Reading 2455 Instrument 73 Load in Pounds ٦ ---- 2 Final Zero Reading 2455 Instrument Load in Pounds Gage Number FI F2F3 F4 F5 F6 F7 F 19 F 20 F 21F 22 F 23 F 24 F 25 F 26F 27 F 28 F 29 F 30 F 31F 32 F 33 F 34 F 35 F 36 F8 F 9 F 10 F 11 F 12 F 13 F 14 F 15 F 16 F 17 F 18 Gage Humber Test Channel 0 6 7 29 30 31 32 33 34 35 1 2 9 10 11 13 14 15 16 17 19 21 22 23 24 25 26 27 28 3 L 5 8 12 Test Channel 18 20 2 0 0 1 2 Position of Gage 0 1 2 2 1 0 0 1 2 2 1 0 2 l 0 0 3 2 Position of Gage 0 1 2 2 11 0 0 1 2 2 1 0 1 000 001 4001 -001 -001 000 -001 000 000 001 1001 001 +002 000 -001 000 001 001 000 -001 000 -001 000 001 Zero Reading 000 002 -001 001 001 003 000 -001 000 Zero Reading 000 000 000 233 112 097 335 118 117 -026-211 -109 147 174 094 152 091 -085 -081-200 249 183 035 -210-163 -226 -236 -060 -183 128 328 -034 -222-152 Load Reading 293 082 032 333 003 Load Reading 5 118 117 -025 -211-108 147 173 094 1153 -084 -080-200 250 183 035 -211-164 227 234 660 182 128 081 031 55 328 -036 -221-153 232 115 097 336 Difference 293 -090 Difference 333 003 -2.52 4.59 6.00 5.49 -6.33 -6.81 +1.8d 3.84 9.99 0.09 9.84 -4.59 3.45 10.08 3.51 -6.33 4.41 2.82 0.93 Kips/in² Kip3/in² 7.50 5.19 8.79 1.05 -7.02 p.91 -2.70 -2.40 4.92 -5.46 2.43 -6.63 6.96 3.54 -3.24 2¹/₂x2¹/₂x³16 lxlx¹8 2¹/₂x2¹/₂x³16 lxlx¹8 $2\frac{1}{2}x^{2}\frac{1}{2}x^{3}16$ 1x1x18 lxlx¹8 lxlx¹8 Section 21x21x316 lxlx¹8 1x1x18 lxlx¹8 Section fl $\mathbf{f}_0 \mid \mathbf{f}_1 \mid \mathbf{f}_2$ fl fl f₂ 1° 1° f1 f2 f_2 f1 fo fo f1 £2 f₂ f₁ fo ſ2 r₁ fo fo f2 f_1 fo fo f₁ f₂ f2 fo f1 f2 f2 fo Coefficients Coefficients .392 .232 .035 .078 .067 .067 .078 .085 .277 .035 .078 .067 .067 .078.085 .232 .392 .277.035 .078 .067 .067 .078.035 .277 .392 .232 .035 .078.067 .067 .078 .035 .232 .392.277 1.39 0.81 0.27 0.42 -1.75 -1.58 -0.14 -0.49 0.30 0.40 0.24 0.08 +1.80 -0.21 0.40 0.26 2.79 0.04 -b.c9 -0.31 Kips 0.19 0.50 Kips -2.ch 0.09 0.60 -b.37 -þ.75 +1.93 2.31 0-16 -0.19 2.72 -0.52 Actual Load -4.59 -0.80 1.01 -5.26 -1.11 0.53 -0.77 0.98 0.94 Actual Load 5.07 -0.92 4.99 Miltiply (Mips/in2) by -1 when initial Zero was read with test load or Kultiply (Kips/in2) by -1 when initial Zero was read with test load on. STRAIN READINGS & MEMBER LOADS

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Temperatures:	Date	Time:		Type of Test	Load		Position of	ì	Temperatures:	Dat	e	Time:		Type of Test	Load			Fosition o
Cutside 47 op Room 70 °F Instrument 73 °F	Oct.17th 1961	Initial Zero Load Reading Final Zero R	Reading 8 lik 9 2l; eading	Combined longi at ground wire Load in Pound	itudinal and tra suspension poi s2455 longit. 1	ansverse load int 1100 transv.		ge	Cutside L7 °F Rcom 70 °F Instrument 73 °F	0ct.	17th 1964	Initial Zer Load Readin Final Zero	o Reading 8 Lul g 9 21 Reading	Combined lor load at grou Load in Poun	ngitudinal and und wire suspens ds 21455 longit.	transv sion p 1100	erse oint transv.	
Gage Number	F1 F2F3	F4 F5 F6	F7 F8 F9	F 10 F 11 F 12	F 13 F 14F 15	F 16 F 17 F 18			Gage Number	F 19	F 20 F 21	F 22 F 23 F :	24 F 25 F 26F 27	F 28 F 29 F 3	0 F 31F 32 F 33	F 34	F 35 F :	36
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17	'-		Test Channel	18	19 20	21 22 2	3 24 25 26	27 28 29	30 31 32	33	34 3	5
Position of Cage	0 1 2	2 1 0	0 1 2	2 1 0	2 1 0	0 1 2			Position of Gage	0	1 2	2 1 0	0 1 2	2 1 0	2 1 0	0	1 2	
Zero Reading	000 001 -00	001 001 000		001 001 001	-002 000 -001	000 001 001			Zero Reading	000	000 000	002 -001 00	01 001-003 000	-001 000 000	-001 000 -001	000	001 00	0
7 Load Reading	-047 -087 -063	103 -089 -205	246 177 02	3 -298-278 -326	-275 -065 -207	084 046 008			Load Reading	222 -	035 192	-044 -229 -17	76 226 093 037	454 057 253	-061-239 -114	137	152 06	3
Difference	-047 -088 -061	2-102 -088 -205	247 177 023	3 -299 -279-327	-273 -065 -206	084 045 007		1	Difference	222 .	035 192	-046 -228 -1	7 225 096 037	456 057 253	-060 -239-111	137	151 06	3
Kips/in ²	-2.64 -1.41 -1.80	-3.06 -6.15	7.41 5.31 0.69	-8.97 -9.81 -8.37	-1.95	2.52 0.21 1.35			Kips/in ²	6.66	1.05 5.76	-1.38 -5.3	6.75 2.88 1.1	13.68 7.53	-1.80 -3.3	4.11	4.53 1.8	9
Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	1x1x ¹ 8	lxlx ¹ 8	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	lxlx ¹ 8	lxlx ¹ 8			Section	2	2x21x ³ 16	lxlx ¹ 8	lxlx ¹ 8	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	lxlx ¹ 8]]	Lxlx ¹ 8	
	$f_0 f_1 f_2$	f_2 f_1 f_0	f_0 f_1 f_2	f_2 f_1 f_0	f_2 f_1 f_0	f_0 f_1 f_2				fo	f ₁ f ₂	f_2 f_1 f_1	f_0 f_1 f_2	f ₂ f ₁ f _o	f ₂ f ₁ f ₀	fo	f1 f2	
Coefficients	.232 .392 .27	7.035 .078 .067	.067 .078.035	.277 .392 .232	.085 .078.067	.067 .078 .085			Coefficients	.232	.392.277	.085 .078 .0	67 .067 .078.035	.277 .392 .23	2.035 .078 .067	.067	.078 .0	35
Кірз	-0.33 -0.5	-0.26 -0.41	0.50 0.41 0.00	2.48 -3.28	0.70 -0.15	0.17 0.02			Kips	1.55	0.41	0.12 -0.1	36 0.22 0.0	3.82 0.66 1.75	-0.15 -0.22	0.28	0.35 0.1	6
Actual Load	-1.88	-0.88	0.97	-8.04	-1.26	0.30			Actual Load		2.74	-1.01	0.76	6,23	-0.93		0.79	
Temperatures:	Date	Time:	1	Type of Test 1	Load		Position o	of [Tennaratures:	Dat	e	Time:	.1	Type of Test	Load			Position of
Cutside 49 op Room 70 oF Instrument 73.5 op	Oct.17th 1964	Initial Zero Load Reading Final Zero Re	Reading 8 44 eading 9 43	Zero control Load in Pounds	reading ₅ No load			36	Cutside 49 °F Room 70 °F Instrument 73.5 °F	Oct.	17th 1964	Initial Zer Load Readin Final Zero	o Reading 8 44 3 Reading 9 43	Zero control	reading is No load	 L		
Gage Number	F1 F2F3	F4 F5 F6	F7 F8 F9	F 10 F 11 F 12	F 13 F 14F 15	F 16 F 17 F 18		-	Gage Number	F 19	F 20 F 21	F 22 F 23 F :	24 F 25 F 26F 27	F 28 F 29 F 3	0 F 317 32 F 33	F 34	F 35 F 3	16
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17			Test Channel	18	19 20	21 22 2	3 24 25 26	27 28 29	30 31 32	33	34 3	;
Position of Gage	0 1 2	2 1 0	0 1 2	2 1 0	2 1 0	0 1 2			Position of Gage	0	1 2	2 1 0	0 1 2	2 1 0	2 1 0	0	1 2	
2 Zero Reading	000 001 -001	-001 -001 000	-001 000 000	001 001 001	-002 000 -001	000 001 001			Zero Reading	000	000 000	002 -001 00	1 001 -003 000	-001 000 000	-001 000 -001	000	001 00	5
T Load Reading	-014 -015 -023	-019 -026 -025	-020-024 -015	-012 -013 -012	-016-015 -013	-034 -033 -013			d Load Reading	001	-017 -021	-015 -008 -03	14 -018 -030 044;	-032 -023 -038	-034-038 -035	-033 -	-033 -03	
Difference	-014 -016 -022	2-018 -025 -025	-019-024 -015	-013 -014 -013	-014 -015-012	-034 -034 -014			5 Difference	001	-017 -021-	-017 -007 -03	15 -019 -027-044	-033 -023 -038	-033 -038-034	-033	-034 -03	o
Kips/in ²	-0.48 -0.48 -0.66	-0.54 -0.75	0.72	-0.39 -0.39	0.42 0.36	1.02 -0.42 -1.02		_	Kips/in ²	0.03	-0.63	0.51 -1.0	-0.57 -0.81	-0.99 -1.11 2 -0.69	-1.14	-0.99	-0.9	0
Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	lxlx ¹ 8	lxlx ¹ 8	2½x2½x ³ 16	lxlx ¹ 8	lxlx ¹ 8		_	Section	2	¹ / ₂ x2 ¹ / ₂ x ³ 16	lxlx ¹ 8	lxlx ¹ 8	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	lxlx ¹ 8]]	xlx ¹ 8	
	f _o f ₁ f ₂	f ₂ f ₁ f ₀	f _o f ₁ f ₂	f ₂ f ₁ f _o	f ₂ f ₁ f ₀	f _o f ₁ f ₂		_		fo	f ₁ f ₂	f ₂ f ₁ f	\circ f ₀ f ₁ f ₂	f ₂ f ₁ f ₀	f ₂ f ₁ f _o	fo	f ₁ f ₂	
Coefficients	.232 .392 .27	7.085 .078 .067	.067 .078.035	.277 .392 .232	.035 .078.067	.057 .078 .085			Coefficients	.232	.392.277	.035 .078 .0	67 .067 .078.085	5 .277 .392 .23	2.035 .078 .067	.067	.078 .0	35
Kips	-0.10 -0.19	-0.05 -0.05	0.04 0.06	-0.11 -0.09	-0.04 0.04 -0.02	-0.07 -0.04 -0.08		_	Kips .	0	0.20	0.04 -0.02	0.04 -0.06	-0.26 -0.27	-0.09 -0.0	-0.07 7	0.08 0.08	8
Actual Load	-0.47	-0.16	-0,16	-0.36	-0.10	-0.19		_	Actual Load		-0.37	-0.13	-0.21	-0.81	-0.25	-	0.23	
															·			-
	1n ²) by -1 whe	n initial Zero	was read with	test load on.		<u> </u>	L	-	Eultiply (Kips	/112	by -1 when	n initial Zer	o was read with	test load on.		<u> </u>		
· · · · · · · · · · · · · · · · · · ·	• •								transative (refu	/								-
				:	STRAIN	READ	INGS		ଞ୍ଚ MEME	BEF	R LC	DADS						

Date Type of Test Load Temperatures: Time: Position of Temperatures: Date Time: Type of Test Load Position of Gage Outside 47 oF Room 68 oF Instrument 72 oF Gage Oct.8th 1964 Initial Zero Reading 6 15 Transverse load at ground wire 0 1 °F °F Oct.8th 1964 Initial Zero Reading 6 15 Ostaide 47 Transverse load at ground wire suspension point 0 Load Reading 6 35 suspension point Load in Pounds Room 68 Load Reading 1605 Final Zero Reading 1 IL 6 35 ----2 Instrument 72 °F 11 Final Zero Reading Load in Pounds - 2 1605 F 19 F 20 F 21 F 22 F 23 F 24 F 25 F 26 F 27 F 28 F 29 F 30 F 31 F 32 F 33 F 34 F 35 F 36 Gage Number F 1 F 2 F 3 FL F 5 F 6 F 7 F8 F 9 F 10 F 11 F 12 F 13 F 14F 15 F 16 F 17 F 18 Gage Number Test Channel 0 1 2 6 7 10 12 13 14 15 16 17 Ł 5 8 11 3 9 Test Channel 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 Position of Gage 0 1 2 2 1 0 0 1 2 2 ٦ 0 2 l 0 0 1 2 Position of Gage 0 3 2 2 0 1 0 l 2 1 0 2 2 1 0 2 1 0 Zero Reading 005 004 007 002 003 001 001 4002 000 4001 001 000 000 000 000 001 001 000 001 000 001 -001 000 Zero Reading 000 000 000 000 000 000 000 001 002 -002 -001 -001 001 015 009 026 156 189 0/13 005 -026 006 013 005 009 052 025 --045 Load Reading -316 092+301 199 -087 369-034 -010 019 -027 -013-023 147 -111 -069 014 020 022 -067 -027 068 Load Reading 5 der 088-308 041 002 -027 005 017 009 027 155 189 013 005 009 051 024 -045 Difference -321 Difference 198 -- 687 368-033 -010 019 -027 -013 023 147 -111 -069 013 018 024 -066 -026 067 -2.64 0.81 0.51 -0.81 +5.67 -0.15 1.53 1.35 1.23 2.61 4.47 +0.54 1.98 -2.01 Kips/in² x (-1) 9.63 0.99 -0.57 2.07 0.39 -p.27 -4.65 Kips/in² x (-1)-5.94 -0.15 0.39 -0.72 p.30 0.69 19.24 0.06 -11.04 0.81 3.33 -0.39 b.78 +0.72 2¹/₂x2¹/₂x³16 2¹₂2¹₂³16 lxlx¹8 1x1x18 lxlx¹8 1x1x18 lxlx¹8 22x22x316 lxlx¹8 lix1x18 22x22x316 Section 1x1x¹8 Section fl f1 f2 f fo £, f2 f, f2 f2 ſl fo r° f1 f2 f_2 fl fo fl fl fo $\mathbf{f}_1 | \mathbf{f}_2$ fo \mathbf{f}_1 f2 f_2 f₁ f_o fo fl f2 f_2 fo \mathbf{f}_2 fo Coefficients Coefficients .232 .392 .277 .085 .078 .067 .067 .078.035 .277 .392 .232 .035 .078.067 .057 .078 .085 .232 .277 .392 .232.035 .078 .067 .067 .078 .085 .035 .078 .067 .067 .078.085 .392 .277 -1.03 -0.11 0.06 -0.04 0.23 1.31 +0.01 0.05 0.03 -0.10 0.11 0.48 -0.17 0.06 1.02 0.09 -0.04 1.23 +0.04 Kips þ.13 -1.82 Kips 2.23 2.55 0 40.01 0.03 -b.c2 -b.02 -0.06 -1.38 -3.05 0.02 0.06 -0.03 +0.05 h.30 -0.06 Actual Load 3.75 -0.05 -0.07 -3.36 -0.05 Actual Load -3.41 0.07 0.14 3.01 -0.12 0.02 Type of Test Load Position of Temperatures: Date Time: Temperatures: Date Time: Type of Test Load Position of Gage °F °F °F Gago Oct.17th 1964 Initial Zero Reading 8 44 Transverse load at ground wire suspension 0 : 47 °F 70 °F 73 °F Cutside 47 Initial Zero Reading 8 14 Cutside Oct.17th 1964 oll Transverse load at ground wire suspension Room 70 Load Reading 934 point Room Load Reading Instrument 73 Final Zero Reading .1 934 point Load in Pounds 1100 Instrument Final Zero Reading Load in Pounds 1100 F 8 F 9 F 10 F 11 F 12 F 13 F 14F 15 F 16 F 17 F 18 F1 F2F3 FL F5F6F7 F 19 F 20 F 21F 22 F 23 F 24 F 25 F 26F 27 F 28 F 29 F 30 F 31 F 32 F 33 F 34 F 35 F 36 Gage Number Gage Number 1 6 7 8 10 11 12 13 14 15 16 17 ٥ 2 4 5 9 Test Channel 3 Test Channel 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 1 2 2 1 0 0 1 2 2 1 0 2 ĩ 0 0 1 2 Position of Gage Ω Position of Gage ٥ 1 2 2 1 0 0 l 2 2 2 0 l 2 l 0 1 0 Zero Reading Zero Reading 000 002 -001 001 001 -003 000 -001 000 000 +001 000 -001 000 001 000 000 000 282 +123 267 -020 -015 003 -018 -034 -022 -039+136 +142 -010 -001 000 -090 -051 012 Load Reading Load Reading 258 146-265 030 001-059 -004 -027 -037 057 047 017 +044 +066 -055 029 -014 -096 282 +124 268 -019 -014 003 -017 -034 -022 -040 137 +143 -008 -001 001 -090 -052 017 Difference Difference -258 146 -265 028 002+060 +005 +024 -037 058 047 017 +043 +066 -054 029 -015 -096 -2.70 1.2 8.46 3.72 B.OL -0.57 -1.20 -4.29 -þ.03 0.09 -1.02 4.38 .84 1.74 -1.80 -1.98 0.87 -0.45 0.03 1.56 Kips/in² +0.72 0.51 Kips/in² 0.42 -b.51 -0.66 24 1.41 -1.62 7.74 -7.95 0.06 -1.11 1.29 +0.15 22x22x316 1x1x18 lxlx¹8 22x22x³16 22x22x³16 1x1x¹8 21x21x316 lxlx¹8 1x1x¹8 Section lxlx¹8 1x1x18 lxlx¹8 Section ' f₂ fl \mathbf{f}_1 fo f_o f₁ f2 f_2 fo f2 fo f1 f_2 f2 ſ₁ fo fo f₁ f₁ f₂ \mathbf{f}_2 f1 fo fo ſ1 f2 $\mathbf{f}_2 \mid \mathbf{f}_1 \mid \mathbf{f}_0$ f_2 f1 fo fo $f_1 | f_2$ f_ Coefficients Coefficients .067 .078 .03 .232 .392 .277 .085 .078 .067 .067 .078.035 .277 .232 .035 .078.067 .392 .277 .392 .232 .035 .078 .067 .067 .078 .085 .232 .392 .277 .035 .078 .067 .067 .074.035 1.18 0.10 -0.33 -1.00 -1.46 0.01 -p.08 0 0.05 ..72 b-07 0.12 -0.06 0.48 0.12 -þ.15 0.06 +0.24 Kips 0 0.12 Kips 1.97 -h.n2 -0.03 0.06 1.61 0.55 -b.11 2.22 0.03 -2,20 0.01 0.04 1.79 .17 Actual Load 2.73 -0.07 -0.17 -2.94 -0.02 -0.20 Actual Load -2.27 -0.04 -0.16 1.15 -0.37 -0-22 fultiply (Kips/in2) by -1 when initial Zero was read with test load on Fultiply (Kips/in2) by -1 when initial Zero was read with test load on. STRAIN READINGS 8 MEMBER LOADS



Temperatures:	Date	Time: Type of Test Load 1964 Initial Zero Reading 7 28 Load Reading 7 32 suppretion point					Fosition of	Temperatures:	Time:	Ty	pe of Te	Position of					
Outside 13 OF Room 70 F Instrument 74 F	Oct.19th 1964	Initial Zero F Load Reading Final Zero Rea	Reading 728 732 ading	Longitudinal suspension p Load in Pour	. load at ground point ds 2455	l wire		Outside 43 ^o F Room 70 ^o F Instrument 74 ^o F	Oct.19th 196	Initial Zero Load Reading Final Zero Ro	Reading 7 eading	28 Lor sus Los	gitudína pension ad in Po	al load a point unds	t ground 2455	Wire	
Gage Number	F1 F2 F	F 10F 11 F 12F	F 19 F 20 F 21	F 28 F 29 F 3	E1E2.E3	E 10 E 11 E 12		Gage Number	E 19 E 20 E 2	1 E 28 E 29E 30							
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17		Test Channel	18 19 20	21 22 23							ŀ
Position of Gage	0 1 2	2 1 0	0 1 2	2 1 0	0 1 2	2 1 0		Position of Gage	0 1 2	2 1 0							
g Zero Reading	001 002 002	000 001 002	001 001 001	002 002 002	002 000 000	002 001 000	,	Zero Reading	001 001 00	2 002 002 003							
Load Reading	-312 -153-098	-225 -159-218	324 -003 322	359 101 156	-014 -114 -271	-178-233 -331		Load Reading	293 161 16	2 207 213 071							
Difference	-313 -155-200	-225 -160-220	323 -004 321	357 099 154	-016 -114 -271	-180-234 -331	· ·	E Difference	292 160 160	205 211 068			ļ				
Kips/in ²	-9.39 -2.00	-6.75 -6.60 -4.80 9	-D.12 7.69 9.63	2.97	-3.42 -8.13	5•40 +7•02 +7•02		Kips/in ²	8.76 4.80	6.15 6.33 2.cl							
Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2½x2½x ³ 16	2½x2½x ³ 16	2222222x316	2½x2½x ³ 16	212x212x ³ 16		Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16							
Goofficients	f_0 f_1 f_2	f_2 f_1 f_0	f_0 f_1 f_2	f_2 f_1 f_o	f _o f ₁ f ₂	f_2 f_1 f_0		Coefficients	f ₀ f ₁ f ₂	f_2 f_1 f_0							
	.232 .392 .27	.276 .392 .232.	.232 .392 .276	.276 .392.232	.232 .392 .276	.276 .392 .232		000111010000	.232 .392 .27	6 .276 .392 .232							
Kips	-2.18 -0.8	1.86	-0.05 2.25 2.66	2.96 1.16 1.07	-0.11 -2.24	-1.49 -2.30 -2.75		Kips	2.03 1.88 1.3	3 1.70 0.47 2.48	•						
Actual Load	-4.83	-5.27	L.86	5.19	-3.69	-6.54		Actual Load	5.24	4.65							
Temperatures:	Date	Time:	· · · · ·	Type of Test	Load		Fosition of	Temperatures:	Date	Time:		Туј	os of Te	st Load			Position of
Outside 43 °F Room 69 °P Instrument 73 °F	Oct.19th 196	Initial Zero F Load Reading Final Zero Rea	Reading 750 805 ading	Longitudinal suspension p Load in Pour	load at ground pint ds 2455	wire		Outside 13 °F Room 69 °F Instrument 73 °F	Oct.19th 1964	Initial Zero Load Reading Final Zero Re	Reading 7 a 8 ading	50 Long 55 Susj Los	citudina Mension) Nd in Po	l load a point unds	t ground . 2455	wire	
Gage Number	F1 F2 F3	F 10F 11 F 12F	F 19 F 20 F 21	F 28 F 29 F 30	E1E2 E3	E 10 E 11 E 12		Gage Number	E 19 E 20 E 2	1 E 28 E 29E 30					Π.		
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17		Test Channel	18 19 20	21 22 23							
Position of Gage	0 1 2	2 1 0	0 1 2	2 1 0	0 1 2	2 1 0		Position of Gage	0 1 2	2 1 0							
2 Zero Reading	001 000 00	1 001 001 002	001 000 002	001 000 002	002 000 000	000 002 003		Zero Reading	004 002 00	2 001 001 002							
Load Reading	-331 -190 -05	9-242 -176 -210	310 006 331	362 093 169	-017 -114-275	-191 -234 -335		Load Reading	302 162 16	9 201 218 058							
Difference	-332 -190 -05	0-243 -177 -212	309 006 329	361 093 167	-019 -114-275	-191 -236 -338		E Difference	298 160 16	7 200 217 056							
κipo/in ²	-9.99 -1.8	-7.29 -6.36 0 -5.31	9.27 9.87	no.83 5.01 7 2.79	-0.57 -8.15	5.73 -10.1 -7.08		Kips/in ²	8.94 4.80 5.0	6.00 6.51 1.68							
Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2½x2½x ³ 16	2½x2½x ³ 16		Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2½x2½x ³ 16	ti di ta		•				
	f _o f ₁ f ₂	f_2 f_1 f_0	f_0 f_1 f_2	f_2 f_1 f_0	f_0 f_1 f_2	f ₂ f ₁ f ₀		0	f _o f ₁ f ₂	f ₂ f ₁ f ₀							
Coefficients	.232 .392 .270	.276 .392 .232	.232 .392 .276	.276 .392.232	.232 .392 .276	.276 .392 .232		Coefficients	.232 .392 .27	6 .276 .392 .232							
Кірз	2.31	2.01 1.47	2. 35 0.07	2.99 1.16	-1.34	1.58 2.77 2.36		Kips	2.08 1.88	1.66 0.39							
		<u>u 72.000</u>	2.15	1.05	-0.0]			Actual Load	5.34	L.60			I 1				
Actual Load	-5.05	-5.56	4.95	5.24	-3.71	-6.71											
Hiltiply (Kips,	in) by -1 who	en initial Zero v	was read with	test load on,	1		<u> </u>	Kultiply (Kips,	in ²) by -1 wh	en initial Zero	was read w	th test	load on	•	l		
					0				interna di	~ ~ ~ ~							
							IMCC I		11111								
					SIRAIN	READ	1105	a weind		UAD3							

																					_																					
Temperatures:	Date Tine: Oct.19th 1964 Initial Zero Rea Load Reading								Туре	e of T	'est	Load						Post	ition G	of	Т	Temperatures;	Dat	50		Time	:					Typ	e of	Test	Load						Positi	on of. Gage
Cutside 43°F Room 70°F	Oct.	19th 196	54	Initia Load R	l Zero eading	Read	ing 7 7	28 39	Comb at g	ined : round	long: wire	itudir susp	ensi	nd tr on po	ansv int	erse	load	01		= 2	0	Outside 43 °F Room 70 °F	Oct	. 19th	1964	Init Load	ial : Rea	Zero ding	Read	Ing	7 28 7 39	Comb at g	ined	longi lwira	itudir	nal an pensi	nd tra on pc:	ansver int	rse lo	ad	ıL	2
Instrument 74 F			-	Final	Zero I	leadin	g		Load	l in P	ound	s 2455	lon	git.	1100) tran	nsv.		1		=	Sage Number	5 19	E 20	E 21	F 28	E 29	E 30		<u></u>		100			<u> </u>	101 201	ngit.		<u>tren</u>	57.	T	T
Gage Number	F1	F2 F	3	F 10F		2F 19	F 20	F 21	F 28	F 29	F 30	El	E 2	E 3	E 10	OEI	1 E 1	1				Teet Channel	18	19	20	21	22	23												-		
Test Glainer	0			3 4	>	6	17	8	9	10	ш	12	13	14	15	10	17		ľ		-		10		2	~		~												-+		
Position of Gage	0	1 2		2 1	0	0	1	2	2	1	0	0	1	2	2	1	0			 	1	Position of Gage	0	1	2	~	1				·											
g Zero Reading	001	002 00	22 00	00 00.	2 226	276	001	301	1002 17.06	002	276	266			271	1357	400	-		<u> </u>	Inche	Lord Reading	21/1	001	002	278	311	133														
Difference	1030	-000 -00	7-3	22 -27	6 -327	215	-032	194	500 504	C61	314	061:	001	-159-	276	+352	-420				tlero	Difference	213	056	074	276	309	130										1				-
E Difference		2.61	-9	•66	-9.5	53	0.53		5.12	9	.42		0.03		8.28	3	12.3			+	-	Ving/in ²		1.68	0.00	8.28	0.07	3.90								 .						1
	+1.17	′ _ ₽•	1	+3 • i	34	6.15		5.79]	1.92		1.92		4.77		†10.	pp	<u> </u>	l	<u> </u>	-		P-39		2.22		9021	2	· · · ·		I		L	L		1	1	1	l.	-	ł.	
Section	2	x2 ¹ x ³ 16		2½x2	2x ³ 16	2	1x21x ³	16	22	⊲²x ³ 1	.6	2 ¹ 2x	2½x ³]	L6	2	2x22x	3 ₁₆		·····			Section	2	2x22x	°16	2	a22x	216 			·	 		·	<u> </u>							
	fo	f ₁ f	2	f ₂ f ₁	fo	fo	fl	f2	f2	fl	fo	fo	fl	f2	f2	fl	fo					Coefficients	fo	fl	f2	f ₂	fl	fo														
Coefficients	.232	.392 .2	76.	276 .3	92 .2	32.232	.392	.276	.276	.392.	232	.232	.392	.276	,276	.392	.232					occilicionos	.232	.392	.276	.276	.392	.23	4													
Кірз	-0.27	-1.02	-2 39	•67	27 2.2	1.50	0.37	1.60	4.17	0.75	2.19	0.45	0.01	1.32	2.30	0 -1.a1	-2.3	4				Kips	1.4	0.66	0.62	2.29	3.62	0.91														
		7 49	-				· · ·						0.86			-9.3	י ז	1				Actual Load		2.76			6.82															
Actual Load		-1.00		• O •	- 1 ·		2012			1 014			0.00			/6/	-	<u> </u>				-			.				<u> </u>													
Temperatures:	Dat	e	T	Time:					Тур	e of (fest	Load						Pos	itior	n of	1	Temperatures:	Da	ta		Tim	9:					Typ	to e	Ţest	Load						Posit:	ion of Gage
Outside 43 °F	œt.	19th 19	54	Initia	1 Zer	o Read	ling 7	50	Comb	Dined	long	itudi	nal a	ind tr	ansu	verse	load	0		Gage		Outside 43 °F	Oct.	1 9th	1964	Init	tial 1 Rea	Zero	Read	ing	7 50	Com	ined groun	long d wir	itudi e sus	nal a	ind tr ion pc	ansve int	vse la	oza		
Instrument 73 P		VI 2012/11/11		Final	Zero	g Readin	ug í	50	Loa	d in	Pound	is 245	5 lor	ngit.	110	00 tr	insv.			= 2	1	Instrument 73 °F				Fin	al Ze	ro li	eadin	g	1 50	Loa	d in	Poun	ds 24	155 Ia	mgit.	110	0 trai	25V.		- <u> </u>
Gage Number	Fl	F 2 F	' 3	F 107	11 F	127 19	F 20	F 21	F 28	F 29	F 30	E 1	E 2	E 3	El	0 E 1	J E J	2				Gage Number	E 19	E 20	E 21	E 28	E 29	E 30	-		<u> </u>			<u> </u>	ļ	_						
Test Channel .	0	1 2		3 4	. 5	6	7	8	9	10	п	12	13	14	15	16	1	/				Test Channel	18	19	20	21	22	23						ļ	ļ	ļ	ļ!					
Position of Gage	0	1 2		2 1	. 0	0	1	2	2	1	0	0	1	2	2	1	0				ŀ	Position of Gage	0	1	2	2	ı	0														
2 Zero Reading	201.	000 0	01	001 0	01 X	02 001	200	002	001	000	002	062	000	000	000	0 00	2 00	3			chos	Zero Reading	004	002	<u></u> 200	001	001	00	2						<u> </u>							
Load Reading	-065	-112: -0	09 -	336 -2	86 -3	20 208	-01.9	203	511	066	342	063	-003	-160	-270	6 -35	4-41	4			roln	Load Reading	228	064	075	288	320	13	+	<u> </u>			ļ		_		ļ		<u> </u>			<u> </u>
Difference	-066	+114 +0	10 -	-337 -2	87 -3	22 207	-019	201	510	066	340	061	-003	-160	-270	6 -35	6 -41	7	_	1	1:0.0	Difference	224	062	073	287	319	13	2	ļ	<u> </u>	ļ	<u> </u>			+	<u> </u>					
Kips/in ²	-1.98	+3•42 3 +0	- <u>1</u> -30	.0.11 -8.	.61	6.2	- p. 57	6.03	15.3	1.96	.0.20	1.83	-0.09	-4.80	0.2	-10.	-112. 68	51				Kips/in ²	6.7	2 1. 86	2.19	5,01	9.57	3.5							_	ŀ						
Section	2	1x22x310	5	2270	2½x ³ 16		łx2łx	316	22	x2 ¹ 2x ³	16	22	2 ² 2x ³	16	2	22:222	316					Section	2	1x22x	3 ₁₆	2	222	316		· ·				•								
		6		6 6	f.		6	fa	£2	L.	fo	fo	f1	f2	f2	f	fo		1		-		fo	ſı	61	f2	fr	fo	1				1		\mathbf{T}	1	Τ					
Coefficients	10	- 1 -	2	12 11	L 1-0		1	-2	-2	-1	-0	-0	202	276	276	20	2 23					Coefficients	.232	. 392	.276	.276	.392	.21	12	+		1			+	+	†					
	.232	-392 -2	276	.276	392 .2	32.23 21	-0.2	.276	1.270	.392	2.37	.2.52	-0.0	1	2.2	8	2.5	0	-		-		-	0.7	3	2.38		0.9	2						+	+	+					
Kips	-0.1	6	•08	-3.	37	1.2	4	1.66		0.78		0.43		1.33		-4.3	9		1		· _	Kips -	1.5	6	0.60		3.75			l	1		1		+-		<u> </u>		L		l.	l
Actual Load		-1.89		-8,	40		2.8	3		7.38			-0.9	4		-9.3	7					Actual Load		2.8	7		7.05														-	
																														_	_											
Bultinly (Kips	/in	by –] ;	hen	initi	al Zer	o was	read	with	test	load	on.										- -	Kultiply (Kips	/in ²) by -	1 whe	n ini	tial	Zer) was	read	with	test	load	on.				I		l		
(impo	,,																					···· · · ····		-																		
												~-				_	- .	~ ! ^ !	inc	~				5	17	ገለበ	ne															
STRAIN READINGS									5				`													<u></u>					<u></u>											
·				and the base of the second																																						



Temperatures:	Date		Time:	1		Туре	e of T	est L	est Load load at ground wire suspens.			······································	Pos	ition	n of	Te	mperatures	;	Date		Ti	me:					Туре	of Te	est I	Load					Po	sitic	n of			
Outside 43 °F Room 70 °F	Oct.19)th 1961	Initia Load I	l Zer Readin	o Read	ing	728 742	Trans	sverse t	load	at gr	ound 1	mire :	sus pe	nsion	0		age	· Ou Ro	itside oom	43 °F 70 °F	0ct.1	9th 196	i Ir La	itial ad Rea	Zero	Readi	ng 7 7	28 42	Transpoint	verse	a 10a	d at g	ground	wire	sus j	ensio	0 1) 	uage
Instrument 74 F		[Final	Zero	Readin	g]		Load		cunds	110	0		1	1		1	1	1n	istrument	74 °F	E 10 E	20/12 0	12	nal Ze	ero k	eading			Load	in Po	ounds	3			<u> </u>			<u> </u>	
Gage Number	F1 F	° 2 F 3	F 10F	11 F	127 19	F 20	F 21	F 28	F 29 1	F 30	ElE	2 . E	3 E :	10 E	ЦЕ1	2			Ga	ige number		E 19 E	20 6 2	1 8 2	SE 2	18 30														
Test Channel		1 2	3 4	+ 5	6	7	8	9	10 1	<u>n </u> :	12 1	3 11	4 15	5 1	.6 17	<u> </u>	-		Te	est Channel	•	18	19 20	2	. 22	23										_				<u> </u>
Position of Gage	0	1 2	2 1		0	1	2	2	1	0	0 1	2	2	1	. 0		-		Po	sition of	Gage	0	1 2	2	1	0														i
Zero Reading	001 (200 2002	000 0	01 00	02 001	001	001	002	002	002 0	02 00	0 00	0 00	2 00	01 000	<u> </u>		-	nche	Zero Rea	ding	001 (001 00	2 00	2 002	003	8													
J Load Reading	289 -1	116 288	-058 -1	18 -13	38 -274	139	-237	093	072	054 0	207 21	8 10	5 -09	8 -11	17 -081				crot	Load Rea	ding .	+075 +0	094 -07	3 04	9 103	069	2				_								+	
ž Difference	288 -1	118 286	-058 -1	19 -11	20 -275	135	-238	091	070	052 0	12	5),	-h-0	0 -11 0	10 -051	4 1			<u>.</u>	Differen		+076 +0	295 -08	04	7 101	056		·												
Kips/in ²	8.64	8.58	-в.	57	-8.25	5	-7.14		2.10	2	•55	3.	15	<u>-3.</u> 9	54	·		1		Kips/in ²		2.28	-2.4		3.03	1.090	<u> </u>													1
Section	2 ¹ 2x2	.,2x316	2½×2	2 ¹ 2x ³ 16	2	1x21x	316	2 ¹ 2x	<2 ¹ 2× ³ 1	6	2½x2½	x ³ 16		2½x2½	x ³ 16			· · · ·	ľ.	Section		2 2 2x	2 ¹ 2x ³ 16		23x23	c ³ 16		.`												
Contratorta	f _o f	f ₁ f ₂	f ₂ f ₁	1 fo	f _o	f1	f ₂	f2	fl	fo	f _o f	1 f;	2 ^f 2	fl	f ₀					Coeffici	onta	fo	f1 f2	f2	fl	fo														
	.232 .3	192 .276	.276 .	392 .2	32.232	.392	.276	.276	.392.	232 .	232 .3	92 .2'	76.27	6 .39	2 .232	2			l.	00011101	enva	.232 .	392 .27	6 .27	6.39	.23														
Kips	2.00	·39 2·3	p.48	-0.9	97 7.91	1.62	1.97	0.75	0.82	.36	1.59	39	7 0.8	3	39 0.51	7				Kips		0.53	1.12	0.3	9	0.46	5													
				451_		·	1-0/1			Ť			1			1				Actus] I				1	2 01	1	J						<u> </u>					1	I	-4
Actual Load	2.5	98	-2.	85		-2.26	5	:	1.93		2,	.85		-2.	79	<u> </u>				WCCUAT 1	oau				c 604															
Temperatures:	Date Time: Type							Type of Test Load Fosition of Gage						Te	mperatures	:	Date		Ti	me:					Туре	of Te	est I	load				-	Po	sitio	n of					
Outside 13 °F	13 °F Oct.19th 1964 Initial Zero Reading						50	Trans	sverse	load	i at gr	ound .	nj.rc	sus po	ension	0	G	age	Ou	tside	13 °F	0ct.19	th 1964	Ir	itial	Zero	Readi	ng 7	50	trans	verse	load	latg	round	e suspension)]	Jage	
Instrument 73 °F	69 ^o F Load Reading 73 ^o F Final Zero Reading						54	L L 2							2	= Instrument 73 °P						Final Zero Reading 7 54						in Po	ounds	1	100				1	.]l	= 2			
Gage Number	FlF	2 F 3	FIOF	11 F :	127 19	F 20	F 21	F 28	F 29 I	7 39 1	5 1 E :	2 . E	3 E 1	LO E	11 E 1	2			Ga	ige Number		E 19 E	20 E 2	1 E 2	8 E 29	左 30														
Test Channel	0	1 2	3 4	. 5	6	7	8	9	10 3	u :	12 13	3 14	, 15	5 1	6 17				Te	est Channel		18	19 20	2]	. 22	23														
Position of Gage	0	1 2	2 1	. 0	0	1	2	2	1	0	0 1	2	2	1	0				Po	sition of	Gage	0	1 2	2	1	0										· .				.
2 Zero Reading	001 00	01 001	001 0	01 00	02 001	000	002	001	000 C	x02 (C	02 00	ю 🕫	0 00	0 002	2 003				thes	Zero Rea	ding	004	005 00	2 003	. 001	002														
Load Reading	291 -12	25 292	-056 -1	18 -1	33-276	244	-248	088	074 C	71 0	85 11	4 10	6 08	9 -1	14-073				orto	Load Rea	ding	-072	092 -08	6 083	. 101	071									•					
Difference	290 -12	25 291	-057 -1	19 -13	35-277	344	-250	087	074 C	x69 (x83: 11	4 10	6 08	19 -1:	16-076			<u> </u>	1(Le)	Differen	çe	-076 -	094 -08	8 080	100	069														
Kips/in ²	8.70	•75 8•73	1.71	-4.0 57	05 −3.31	4.32	7.50	2.61	2.22 2	.07	B .1	2 3.1	-2.6 .8	17 -13.1	42°55 78					Kips/in ²		-2.28	.82	4 2.1	10 3.00	2.07														
Section	2 ¹ / ₂ x2	2x ³ 16	2 ¹ / ₂ x2	2 ¹ / ₂ x ³ 16	2	1 2x22x	316	2½x	~23x31	6	22x22	x ³ 16	2	21x21	x ³ 16					Section		2½x	2 ¹ 2x ³ 16		22222	3 ₁₆														
	r _o f	1 f2	f ₂ f ₁	f fo	fo	ſl	f2	f2	fl	fo	ro r	1 f2	2 f 2	fl	fo					001-1		fo	f ₁ f ₂	f ₂	fl	fo														
Coefficients	.232 .3	92 .276	.276 .3	392 .2	32.232	.392	.276	.276	.392.:	232 .	232 .3	92 .2'	76.27	6 .39	2 .232					00811101	ents	.232 .	392 .27	6 .2	6.39	2 .23														
Kips	2 02 1	•47	0.47	0.	94	1.69	2 07	0.72	0.87	0.48	- P.	34 O.8	-0.7	4	36 0.5	3	1			Kips			1.11	0.6	6	0.4	8			-									+-	
·	2.002	<u>k •</u> #1	+1.	40	-1.92	<u> </u>	2.01		0.01		50											-0 <u>-53</u>			11011	·	+	l						L		<u>l</u>				
Actual Load	2	•97	2.	.81	-	-2.30			2.07		2.8	30		~2 o	63					Actual L	oad	-	2037		د ده ۲	L			•											
Multiply (Kips)	in) by	· -l whe	 n initia	al Zer	o was	read	with t	est 1	load o	<u>n.</u>						I				Multiply	(Kins)	/in ²) b	y –1 wi	en in	itial	Zero	was r	ead w	ith t	est 1	oad o). n.				····-		<u> </u>		
	• •	·. ·																			,																			
										~	\			~	r ^ -	210				۰ ۸ 				^ ^	<u> </u>															
										5	NR	All	N	К	EAI	אוט	IGS	>	Q	MF	INB	EK	L	UΑ	υS															
																											~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~													

Temperatures:	Date	Time:		Type of Test	Load		Fosition of	Tenperatures:/	Date	Time:		Type of Tes	st Load		Position of
Outside 43 °F	Oct.19th 1964	Initial Zero	Reading 8 11	Transverse 10	oad at ground win	re suspension	OII Gage	Outside 43 °F	Cct.19th 1964	Initial Zero	Reading 8 11	Transverse	load at ground	wire suspension	0 Gage
Instrument 73 °F		Final Zero R	eading	Load in Pour	ds 1100		11.2	Instrument 73 of		Final Zero Re	ading	Load in Pou	inds 11.00		1 2
Gage Number	F1 F2 F3	F 107 11 F 1	27 19 F 20 F 2	L F 28 F 29 F 3	0 E 1 E 2 . E 3	E 10 E 11 E 13		Gage Number	E 19 E 20 E 21	E 28 E 29E 30					
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17		Test Channel	18 19 20	21 22 23					· · ·
Position of Gage	0 1 2	2 1 0	0 1 2	2 1 0	0 1 2	2 1 0		Position of Gage	0 1 2	2 1 0					
2 Zero Reading	-017 007 004	-010 015 -009	018 -006 015	-023 -017 048	3 002 000 -007	-005 000 001		2 Zero Reading	-003 -001 007	-005 -002 002					
E Load Reading	280 -134 292	-061 -118-138	279 138 -232	060 053 118	8 032 110 100	-092 -116 -076		Load Reading	-077 -095 -086	072 095 068					
Difference	297 -141 288	-051 -133-129	-297 144 -247	083 070 070	030 110 093	-086 -116 -077		Difference	-074 -094 -093	077 097 066					
Kips/in ²	8.91 8.6	-1.53 -3.87 1 -3.99	4.32	2.19 2.10 2.10	2.40 3.30 2.79	2.58 -2.31 -3.48		Kips/in ²	-2.22 2.82	2.31 1.98 2.91					
Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2½x2½x ³ 16	2½x2½x ³ 16	2½x2½x ³ 16	2½x2½x ³ 16	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	-	Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16					
Coefficients	fo fl f2	f ₂ f ₁ f ₀	f _o f _l f ₂	$f_2$ $f_1$ $f_0$	f _o f ₁ f ₂	f ₂ f ₁ f ₀		Coefficients	f _o f _l f ₂	f ₂ f ₁ f ₀				<u> </u>	<u> </u>
	.232 .392 .276	.276 .392 .23	2.232 .392 .270	6 .276 .392.232	.232 .392 .276	.276 .392 .232		£	.232 .392 .276	.276 .392 .232					
Kips	2.07 2.31	-0.42 -0.90 -1.57	-2.07 -2.0	0.69 0.49 5 0.82	0.56 1.29 0.77	0.71 -0.54		Kips	-0.52 -0.77	0.63 0.46					
Actual Load	2.79	2.89	-2.43	2,00	2,62	-2,61		Actual Load	-2.40	2.23					
Temperatures:	Date	Time:		Type of Test	, Load		Fosition of	Temperatures:	Date	Time:		Type of Tes	st Load		Position of
Outside 43 °F	Oct.19th 1954	Initial Zero	Reading 7 50	Zero control	reading		0 Gage	Outside 43 °F	Oct.19th 1961	Initial Zero	Reading 7 50	Zero contro	ol reading		0 Gage
Instrument 73 F		Final Zero B	cading 818	Load in Peur	nds No load		1 1 2	Instrument 73 °F		Final Zero Re	ading 818	Load in Fou	inds No Isad		1 2
Gage Number	F1 F2 F3	F 10F 11 F 1	2F 19 F 20 F 2	1 F 28 F 29 F 3	0 E 1 E 2 . E 3	E 10 E 11 E 12		Gage Number	E 19 E 20 E 21	E 28 E 29E 30					
Test Channel	0 1 2	3 4 5	6 7 8	9 10 11	12 13 14	15 16 17		Test Channel	18 19 20	21 22 23					
Position of Gage	0 1 2	2 1 0	0 1 2	2 1 0	0 1 2	2 1 0		Position of Gage	0 1 2	2 1 0	-				
2 Zero Reading	001 000 001	001 001 002	001 000 002	001 000 002	002 000 000	000 002 003		2 Zero Reading	004 002 002	001 001 002					
E Load Reading	-002 -017 003	3 001 -005 -001	-002 007 -005	-030 -021 041	1 -003 -005 -006	-007 -006 -004		J Load Reading	-002 -001 -002	010-006003					
Difference	-003 -017 002	2 000 -006 -003	-003 007 +007	-031 -021 CL6	5 -005 -005-006	-007 -008 -007		Difference	-006 -003 -001	-011-007 -005	*				
Kips/in ²	-0.51	0 -p.05	0.21	-p.53 1.30 1 -p.63	-0.15 +0.18	-0.21 -0.21		Kips/in ²	p.18 0.12	-0.33 -0.15 -0.21					
Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2½x2½x ³ 16	2½x2½x ³ 16	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2½x2½x ³ 16	2½:2½x ³ 16		Section	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16	2 ¹ / ₂ x2 ¹ / ₂ x ³ 16		-			
	f _o f ₁ f ₂	f ₂ f ₁ f _o	f _o f ₁ f ₂	f ₂ f ₁ f _o	f _o f ₁ f ₂	f ₂ f ₁ f ₀		Cootheiarte	f _o f ₁ f ₂	$f_2$ $f_1$ $f_0$					
Coefficients	.232 .392 .276	.276 .392 .23	2.232 .392 .27	6 .276 .392.232	.232 .392 .276	.276 .392 .232		Coefficients	.232 .392 .276	.276 .392 .232					
Кірз	-0.02 0.02	0 -0.02 -0.07	0.08	-0.26 0.32 6 -0.25	-0.03 -0.05	0.05		Kips	-0.04 -0.04 -0.03	-0.09 -0.03					
Actual Load	-0.20	-0.09	0	-0.19	-0.14	-0.20		Actual Load	-0.11	-0,20					
												1			
Biltiply (Kips/	in ) by -1 whe	n initial Zero	was read with	test load on.	<u> </u>			Kultiply (Kips)	/in ² ) by -1 who	n initial Zero	was read with	 test load on		l	I
	-														
					SIRAIN	READ	INGS	O WEWB		JAUS					
								<u> </u>	- <u></u>	±4.481.0884					

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APPENDIX C





