

TEMPERATURE DIFFERENTIAL  
OF  
SWINGSPAN BRIDGES

Final Report

by

HOLLIS B. RUSHING  
CONCRETE RESEARCH ENGINEER

and

EARL J. LEBLANC  
RESEARCH SPECIALIST

Research Report No. 40

Research Project No. 66-1ST  
Louisiana HPR 1 (6)

Conducted by  
LOUISIANA DEPARTMENT OF HIGHWAYS  
Research and Development Section  
In Cooperation with  
U. S. Department of Transportation  
Federal Highway Administration  
BUREAU OF PUBLIC ROADS

"The opinions, findings, and conclusions expressed in this publication are those of the author and not necessarily those of the Bureau of Public Roads."

June 1969

## TABLE OF CONTENTS

LIST OF FIGURES -----	v
LIST OF TABLES -----	vii
ABSTRACT -----	ix
CONCLUSIONS AND RECOMMENDATIONS -----	xi
INTRODUCTION -----	1
METHODOLOGY -----	4
DISCUSSION OF RESULTS -----	11
SUMMARY OF RESULTS -----	15
APPENDIX -----	17

## LIST OF FIGURES

Figure No.	Title	Page No.
1	Overall View of Bridge No. 1 -----	2
2	Overall View of Bridge No. 2 -----	2
3	Overall View of Bridge No. 3 -----	3
4	Location of Thermocouple Points on Bridge No. 1 -----	5
5	Location of Thermocouple Points on Bridge No. 2 -----	6
6	Location of Thermocouple Points on Bridge No. 3 -----	7
7	Recorder Used for Recording Data -----	8
8	Thermocouple Being Placed for Soldering -----	9
9	Soldering Thermocouple to Truss Member -----	9
10	Thermocouple Covered with Epoxy Prior to Painting ---	10
11	Installing Thermocouple on Top Truss Member -----	10

## LIST OF TABLES

Table No.	Title	Page No.
1	Temperature Differentials Exceeding 15°F -----	12
2	Temperature Differentials Exceeding 10°F for Bridge No. 2 -----	14
3	Maximum Daily Temperature Differential - Bridge No. 1 -----	19
4	Maximum Daily Temperature Differential - Bridge No. 2 -----	30
5	Maximum Daily Temperature Differential - Bridge No. 3 -----	40
6	Summary of Temperature Differential Exceeding 10°F --	49

## ABSTRACT

This report describes a study performed to determine the temperature differential of the top and bottom member of one side of a swingspan bridge. Three bridges were used in the study. Bridge No. 1 was an equal-arm swingspan bridge, Bridge No. 2 was a truss swingspan bridge, and Bridge No. 3 was an unequal-arm swingspan bridge.

Thermocouples were attached at 22 locations on each bridge to measure temperature, and a strip chart recorder was used to record the data. A one-year cycle was recorded for each bridge studied.

The results of the study indicates that for Bridge No. 1 there was 144 occurrences of a temperature differential in excess of 15°F, for Bridge No. 2 there were 37 occurrences in excess of 15°F and 190 occurrences in excess of 10°F, and for Bridge No. 3 there were 93 occurrences in excess of 15°F.

These results would tend to indicate that perhaps the design criteria of 10°F differential for truss swingspan bridges and 15°F differential for other types of swingspan bridges should be revised.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

The results of this study warrant the following conclusions:

1. The design criteria of 10°F temperature differential for truss swingspan bridges appears to be low. It was found that there were 190 occurrences of a temperature differential exceeding 10°F during a one year period.
2. The design criteria of 15°F temperature differential now being used for other types of swingspan bridges is also low. It was found that there were 144 occurrences exceeding 15°F on one bridge and 93 occurrences exceeding 15°F on the other bridge in this study during a one year period.

### Recommendations

It is recommended that the information contained in this report be submitted to the AASHO Committee responsible for recommending design limits for movable bridges in order that they may consider the possibility of changing the existing limits on design for temperature differentials.

## INTRODUCTION

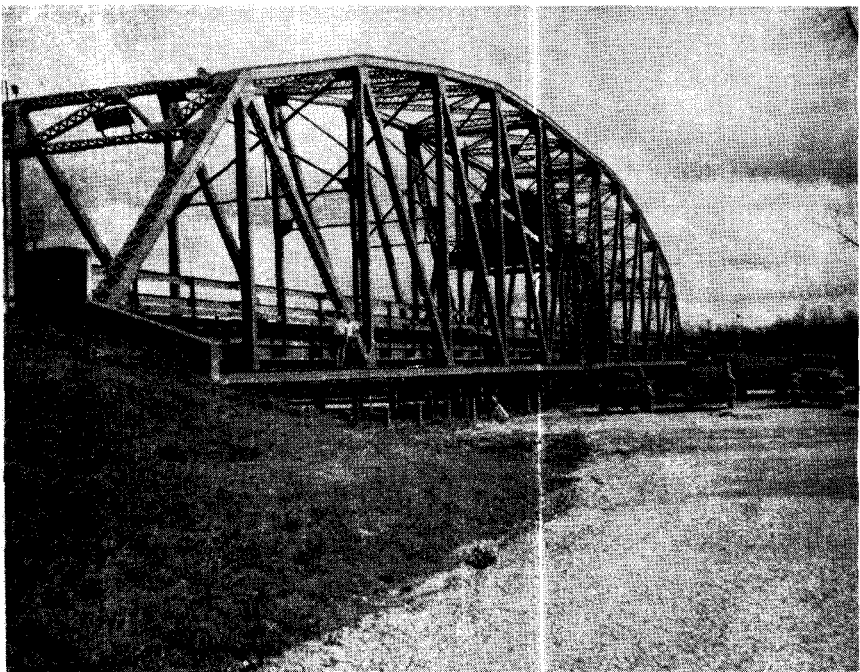
The Louisiana Department of Highways has, at the present time, approximately 67 swingspan bridges on the highway system. There are numerous problems associated with this type structure, with the major problem being warpage due to temperature variations throughout the structural members. As long as the bridge remains in a closed position, there is no problem. However when the bridge is opened to allow river traffic to pass, then the warpage occurs and it is difficult, and sometimes impossible, to swing the bridge back to the closed position.

Due to this problem, the Bridge Design Section requested that a study be undertaken to determine the actual temperature differential that occurs, in the structural members of three representative types of swingspan bridges. It was believed that the design limits now in effect on movable bridges were lower than the actual limits being experienced in Louisiana. AASHO Guide Specifications for Movable Bridges recommends a design based on a 10 degree temperature differential.

The three bridges selected for study were (1) an equal-arm swingspan bridge located on the Amite River near Port Vincent, Louisiana; (2) a truss swingspan bridge located on Bayou Dularge at Houma, Louisiana; and (3) an unequal-arm swingspan bridge located on the Houma Navigational Canal at Houma, Louisiana. Figures 1, 2 and 3 respectively show an overall view of the three bridges.

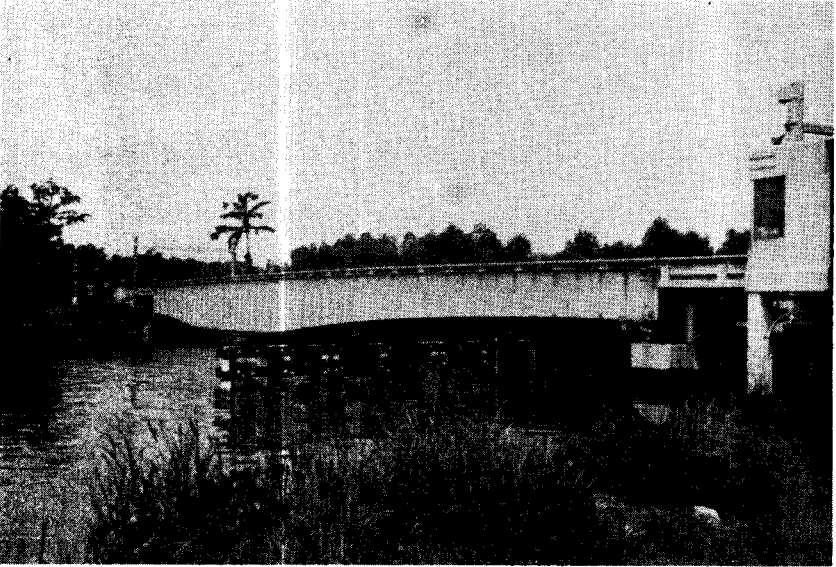


*Figure No. 1: Overall View of Bridge No. 1*



*Figure No. 2: Overall View of Bridge No. 2*





*Figure No. 3: Overall View of Bridge No. 3*

## METHODOLOGY

### Method of Recording Temperature

The critical temperature differential that has the greatest effect on warpage is the differential from top to bottom on one side of the structure. In order to measure this differential, it was decided to attach thermocouples to the top and bottom of the side structural members on each bridge. Each side of the three bridges was instrumented for temperature measurements. Twenty-two thermocouples for measuring the temperature of the steel were placed on each bridge at the locations shown on Figures 4, 5 and 6. Two thermocouples were used for measuring air temperature and were positioned at the bottom center of the bridge approximately six inches below the structure.

The temperatures were measured and recorded by means of a Honeywell Elektronik 15 Multipoint Strip chart Recorder with a continuous balance potentiometer capable of measuring and recording the magnitude of twenty-four variables independently on one strip chart. Response recording time by this recorder for each individual thermocouple point was one recording each thirty seconds; therefore all twenty-four thermocouples on each bridge were measured and recorded five times each hour for a period of one year. Figure 7 shows one of the recorders used for this study.

### Method of Thermocouple Installation

Each location designated for thermocouple points was thoroughly cleaned to the bare metal. The thermocouple wire was carefully placed in contact with the structural member and soldered securely. As a precautionary measure to insure that the thermocouple would not lose contact with the bridge member, a thin layer of light colored epoxy was used to cover the entire area that had been cleaned for the thermocouple. The entire area which had been stripped of paint was then repainted the original color of the bridge. Figures 8 through 11 show the procedure for installing the thermocouples on one of the bridges.

The first bridge instrumented was the equal arm swingspan on the Amite River at Port Vincent, Louisiana. The instrumentation was completed during the week of January 16, 1967, and recordings began on January 20, 1967. The truss swingspan bridge over Bayou Dularge at Houma, Louisiana, was completed the following week and recordings began on January 26, 1967. A complete one-year cycle of temperatures was recorded at each bridge prior to removal of the recorders. In May 1968 the third bridge was instrumented and recordings began on May 8, 1968.

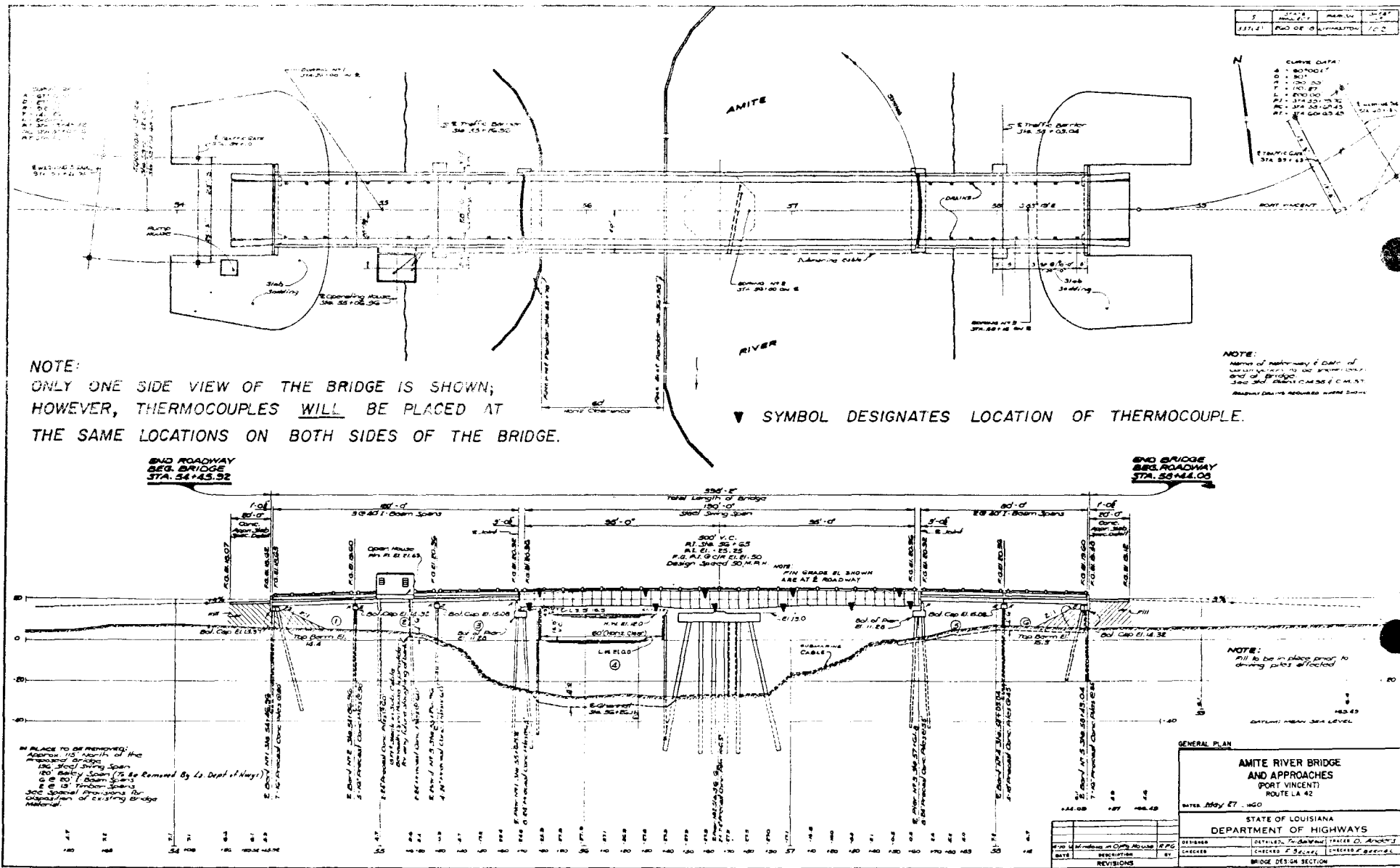


Figure No. 4: Location of Thermocouple Points on Bridge No. 1

STATE PROJ. NO.	ROUTE	SECTION	FORM	SHEET NO.
245-03-06	847	TERRIBONE	1000	4

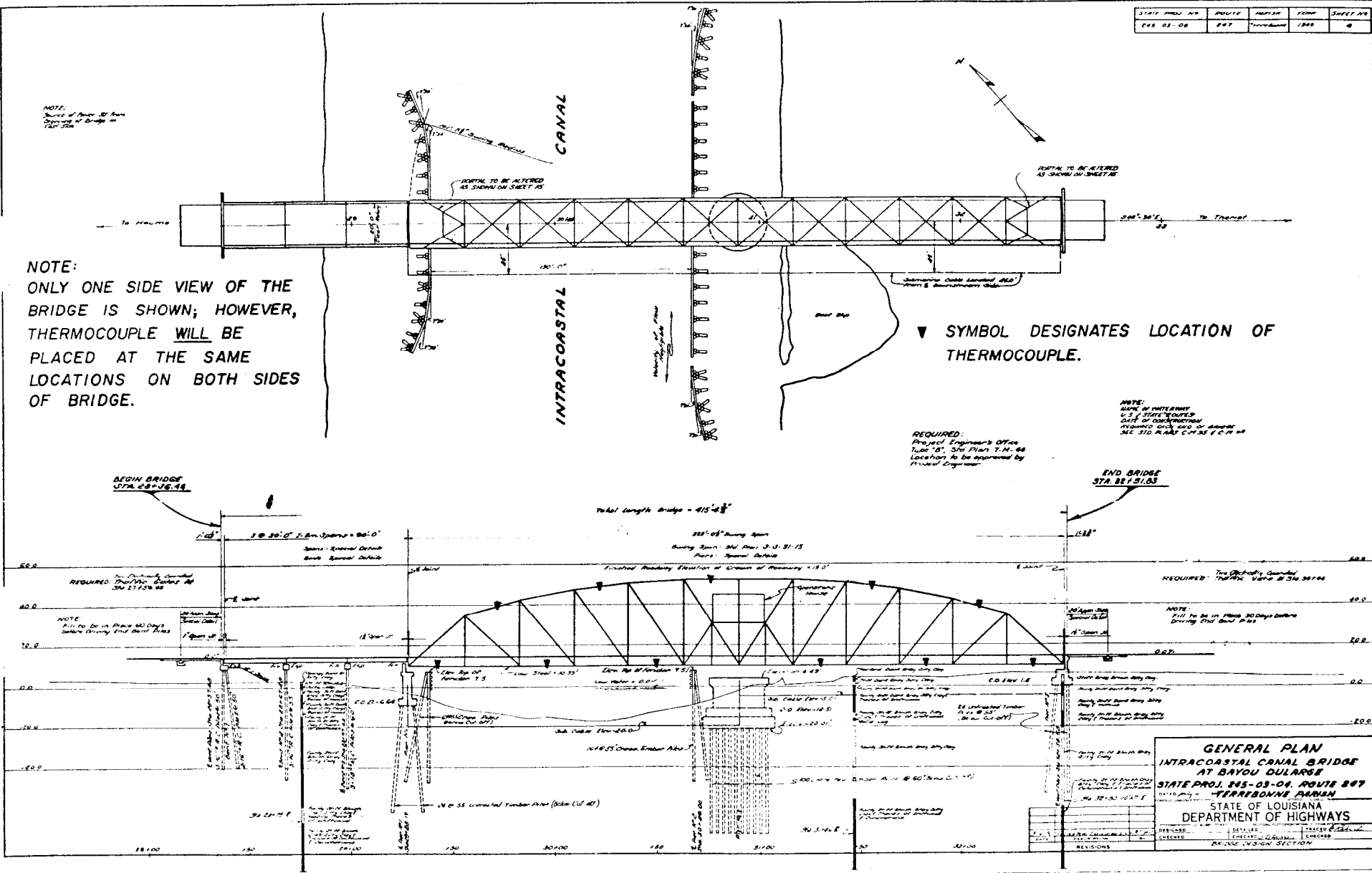


Figure No. 5: Location of Thermocouple Points on Bridge No. 2

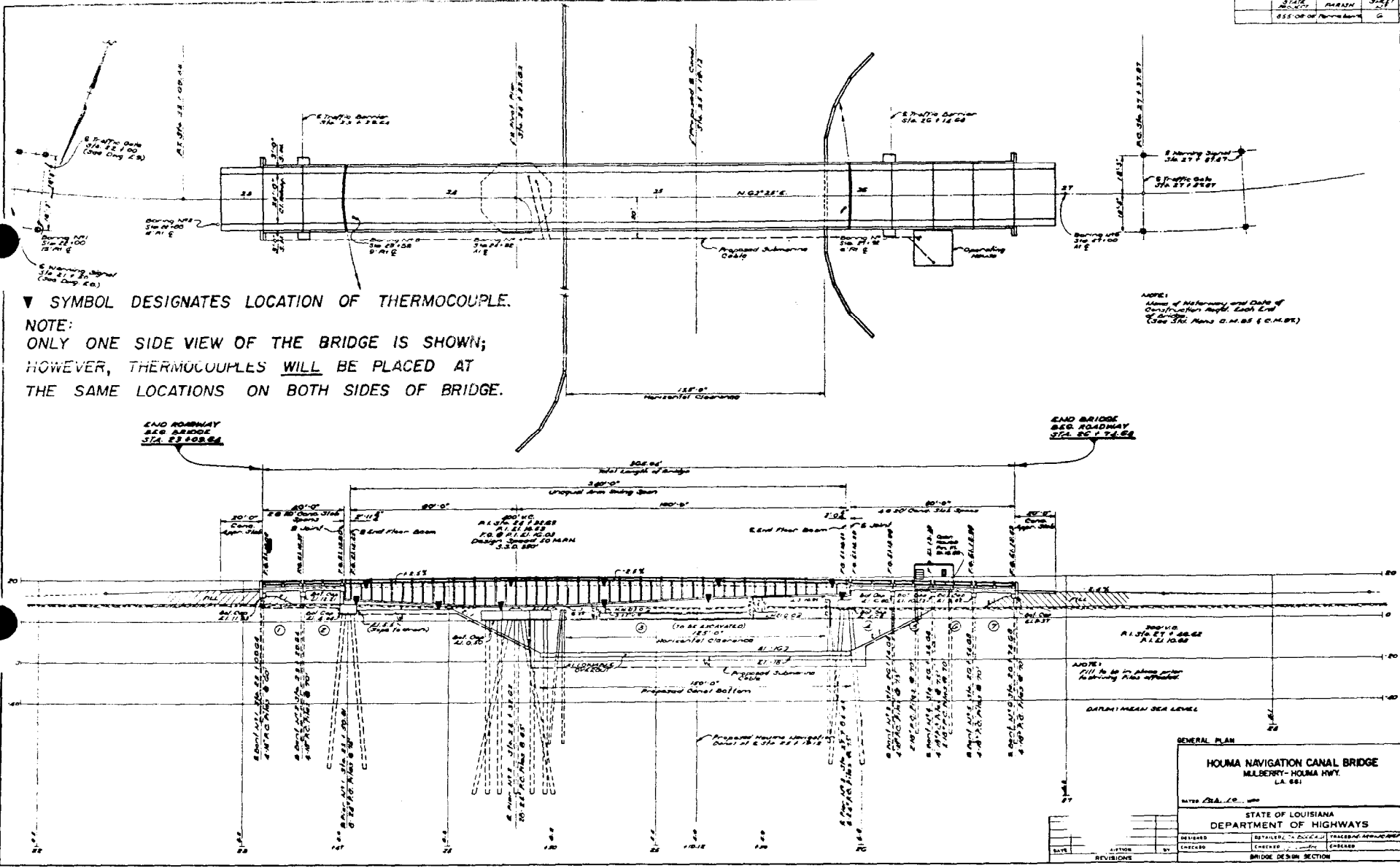
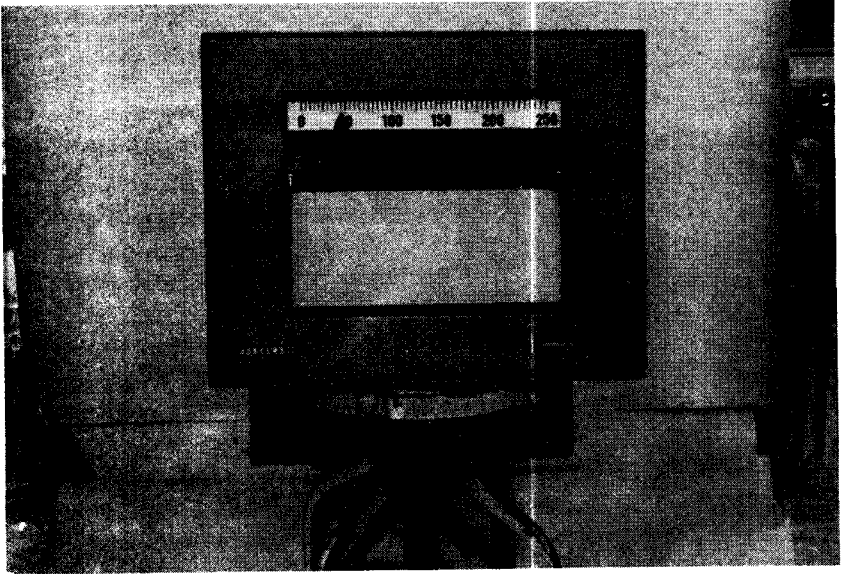
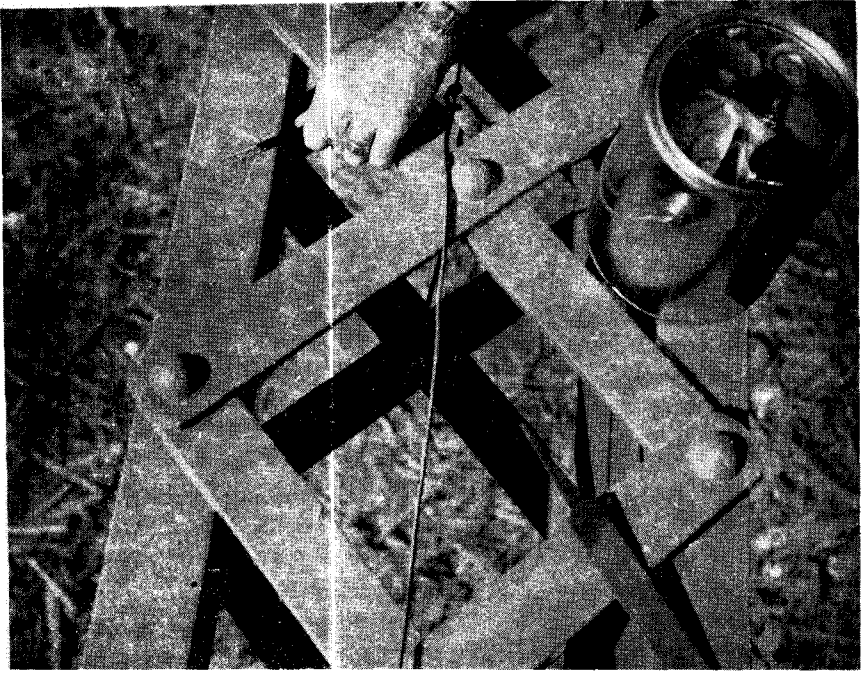


Figure No. 6: Location of Thermocouple Points on Bridge No. 3



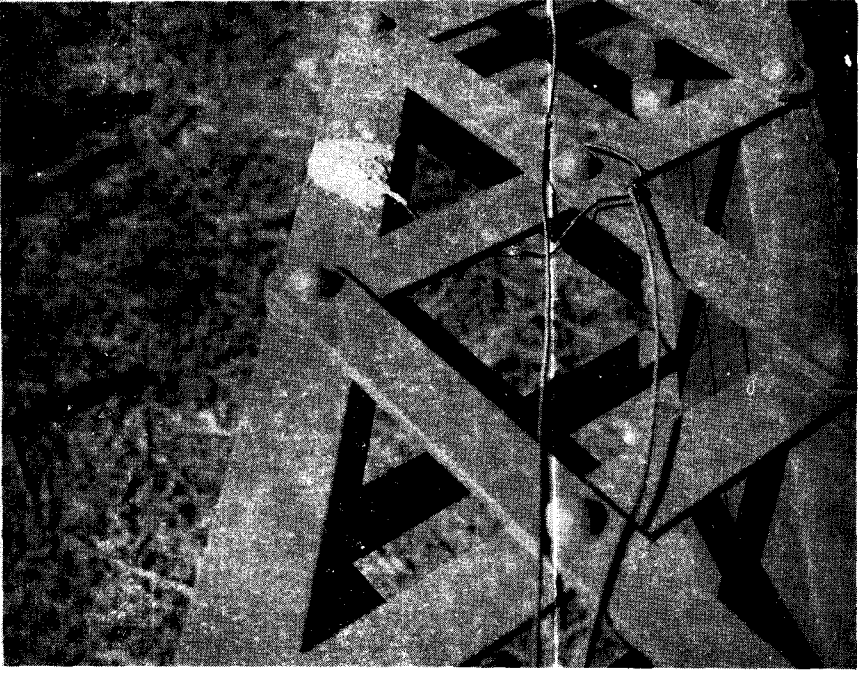
*Figure No. 7: Recorder Used for Recording Data*



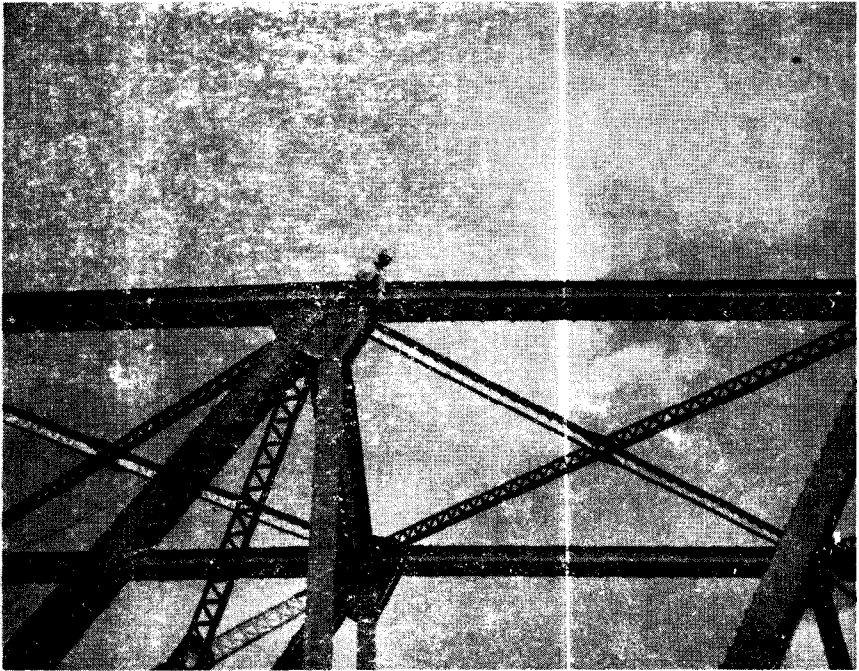
*Figure No. 8: Thermocouple Being Placed for Soldering*



*Figure No. 9: Soldering Thermocouple to Truss Member*



*Figure No. 10: Thermocouple Covered with Epoxy Prior to Painting.*



*Figure No. 11: Installing Thermocouple on Top Truss Member.*



## DISCUSSION OF RESULTS

### Data Reduction

The Honeywell strip chart recorder used in this study recorded each of the twenty-four thermocouple measurements a total of 120 times per day for a total of 2880 readings per day. Each strip chart would last for approximately ten days, resulting in 28,880 temperature measurements to be analyzed. During the one-year period, a total of 1,015,200 individual measurements were recorded.

Since the objective of the study was to determine the maximum differential between the top and bottom member of either side of the bridge, a method had to be devised to analyze the voluminous data. This was accomplished in the following manner. When a strip chart was first placed on the recorder, a base line was drawn on the chart and the correct time was written on the line. This then served as a reference point for the beginning of the recorded data. At the completion of the ten-day recording cycle, the strip chart was removed from the recorder and brought to the office for analysis. By using the time base line, each 24-hour period (beginning at 12 a.m.) was marked off on the chart in increments of one hour. Then by visually scanning the chart, the one-hour increment containing the widest spread of temperatures was selected for each 24-hour period. A further breakdown was then made to determine which of the five cycles in the one-hour period contained the greatest temperature differential between any two thermocouple points, excluding the air temperature. When the cycle was selected, all 24 temperature measurements were read from the chart and recorded in a log book, along with the time of day and date. This procedure was repeated for each 24-hour period recorded on the chart. The temperature differential for each side of the bridge was then determined by averaging the temperature measurements for the top of the member, then the bottom of the member and determining the difference. For additional information the differential between each side was also computed by averaging the top and bottom readings for each side and determining the difference.

Due to power failure on Bridge No. 1 no measurements were taken during the period from December 5, 1967, to January 21, 1968. However in order to gather information for this period, the recorder was reinstalled on December 3, 1968, and readings taken until January 21, 1969. Tables 3, 4 and 5 in the Appendix show all of the data for the three bridges studied. Table 6 in the Appendix shows a summary of temperature differentials in 3° increments from 10°F to above 24°F for each of the three bridges.

### Analysis of Data

Table No. 1 shows a summary of the occurrences during the one-year cycle when

TABLE 1

## TEMPERATURE DIFFERENTIALS EXCEEDING 15°F

Month and Year	Bridge No. 1		Bridge No. 2		Bridge No. 3		
	East Side	West Side	North Side	South Side	North Side	South Side	
February 1967	4	0	0	1			
March 1967	13	0	1	1			
April 1967	9	0	0	2			
May 1967	16	0	1	3	May 1968	10	1
June 1967	21	1	4	0	June 1968	12	0
July 1967	18	2	4	1	July 1968	11	1
August 1967	12	0	2	2	August 1968	14	0
September 1967	12	0	1	4	September 1968	10	0
October 1967	15	0	1	6	October 1968	6	0
November 1967	8	0	1	2	November 1968	6	0
December 1967	-	-	0	0	December 1968	6	0
January 1968	-	-	0	0	January 1969	5	0
					February 1969	0	0
December 1968	8	0	-	-	March 1969	5	0
January 1969	5	0	-	-	April 1969	6	0
TOTALS	141	3	15	22		91	2

the temperature differential between the top and bottom member of either side of each bridge was greater than 15°F. The 15° level was selected since this is the value being used at the present time for designing all swingspan bridges except truss spans. It can be noted that Bridge No. 1, an equal-arm swingspan, had 144 occurrences of a temperature differential greater than 15°F. Bridge No. 2, a truss swingspan, had 37 occurrences above 15°F, and Bridge No. 3, an unequal-arm swingspan, had 93 occurrences above 15°F. As stated previously, 15°F is used as the design value for all but truss swingspan bridges. In this type design, a 10°F differential is used. Table 2 gives the summary of results for Bridge No. 2, a truss swingspan, showing that 190 occurrences gave a temperature differential greater than 10°F.

It is interesting to note that the truss swingspan had a more even distribution of occurrences of differentials (above 10°F and 15°F) between the two sides than did the other two bridges. Although the orientation of Bridge No. 1 and Bridge No. 3 was 90° apart, one side of each bridge had 98% of the occurrences above 15°F differential. On Bridge No. 1, the 98% level occurred on the east side, while on Bridge No. 3 the 98% level occurred on the north side. On Bridge No. 2 the occurrences were distributed approximately 60% to 40% for the south and north sides respectively at 10°F and 15°F differentials. The only apparent reason for the uniformity between sides on the truss swingspan is that the entire structure would be subject to direct sunlight throughout the day. However the other two structures studied would have a portion of one side shaded from the sun at any particular time during the day.

The results shown in Table 6 indicate that 86% of the occurrences equal to or greater than 10°F for Bridge No. 2, are between 10°F and 15°F inclusive, and that 96% of the occurrences are between 10°F and 18°F inclusive. However for Bridges No. 1 and No. 2 the spread is much wider with only 48% of the occurrences on Bridge No. 1 falling between 10°F and 15°F inclusive, and 62% in the same range for Bridge No. 2. In order to provide a design that would encompass a minimum of 90% of the occurrences equal to or greater than 10°F, it would be necessary to design for a 21° differential on Bridge No. 1 and No. 2.

TABLE 2

## TEMPERATURE DIFFERENTIALS EXCEEDING 10°F FOR BRIDGE NO. 2

Month and Year		North Side	South Side
February	1967	8	6
March	1967	5	15
April	1967	4	9
May	1967	5	11
June	1967	13	9
July	1967	15	4
August	1967	3	14
September	1967	4	12
October	1967	4	18
November	1967	5	13
December	1967	4	3
January	1968	3	3
TOTALS		73	117

## SUMMARY OF RESULTS

The results of this study indicate the following:

1. During a one-year period, there were 144 occurrences of a temperature differential above  $15^{\circ}\text{F}$  for the equal-arm swingspan bridge studied.
2. During a one-year period, there were 93 occurrences of a temperature differential above  $15^{\circ}\text{F}$  for the unequal-arm swingspan bridge studied.
3. During a one-year period, there were 37 occurrences of a temperature differential above  $15^{\circ}\text{F}$  and 190 occurrences of a temperature differential above  $10^{\circ}\text{F}$  for the truss swingspan bridge studied.
4. The orientation of Bridge No. 1 and 3 had no effect on the distribution of occurrences greater than  $15^{\circ}\text{F}$  from one side of the bridge to the other.
5. The truss swingspan bridge had a much more uniform distribution of occurrences greater than  $10^{\circ}\text{F}$  and  $15^{\circ}\text{F}$  between the two sides of the bridge.
6. In order to design for 90% of the temperature differentials equal to or greater than  $10^{\circ}\text{F}$  for Bridge No. 1 and No. 3, the design limits would have to be  $21^{\circ}\text{F}$ .
7. In order to design for 90% of the temperature differentials equal to or greater than  $10^{\circ}\text{F}$  for Bridge No. 2, the design limit would have to be  $18^{\circ}\text{F}$ .

## APPENDIX

TABLE 3

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 1

Date	Time	Air ° Temp.	East Side		Diff.°	West Side		Diff.°	Avg. Diff.°
			Top°	Bot.°		Top°	Bot.°		
1-20-67	1:36 PM	60	67	56	11	68	61	7	3
1-21-67	1:12 PM	69	76	63	13	80	79	1	10
1-22-67	1:48 PM	70	74	65	9	76	70	6	3
1-23-67	1:36 PM	68	71	65	6	71	66	5	1
1-24-67	10:48 AM	70	74	62	12	80	79	1	12
1-25-67	11:36 AM	75	79	66	13	86	85	1	13
1-26-67	12:24 PM	78	79	73	6	83	82	1	7
1-27-67	11:48 AM	58	57	49	9	65	68	3	14
1-28-67	10:24 AM	68	70	51	19	81	81	0	20
1-29-67	12:36 PM	68	74	55	19	82	82	0	17
1-30-67	12:36 PM	71	79	69	10	85	83	2	10
1-31-67	11:36 AM	72	74	67	7	78	74	4	1
2-1-67	10:48 AM	72	74	63	11	78	76	2	8
2-2-67	11:00 AM	74	74	67	7	73	68	5	0
2-3-67	1:48 PM	49	50	49	1	50	50	0	0
2-4-67	1:00 PM	77	70	55	15	78	77	1	15
2-5-67	9:36 AM	66	65	56	9	65	69	4	6
2-6-67	10:48 AM	56	56	56	0	57	56	1	1
2-7-67	2:24 PM	55	53	43	10	62	65	3	16
2-8-67	2:48 PM	50	55	45	10	63	65	2	14
2-9-67	2:00 PM	61	68	47	21	80	79	1	22
2-10-67	1:36 PM	69	74	58	16	81	79	2	16
2-11-67	1:36 PM	76	80	67	12	86	84	2	12
2-12-67	12:12 PM	55	54	55	1	54	55	1	0
2-13-67	2:00 PM	70	75	54	21	87	86	1	22
2-14-67	1:12 PM	70	71	60	11	78	78	0	12
2-15-67	11:00 AM	75	70	61	9	74	72	2	7
2-16-67	2:00 PM	75	75	69	6	75	71	4	1
2-17-67	10:48 AM	75	77	68	9	79	66	13	0
2-18-67	-----	NO INFORMATION THIS DATE -----							
2-19-67	11:24 AM	67	70	62	8	71	68	3	4
2-20-67	4:00 PM	65	68	62	6	70	64	6	2
2-21-67	2:12 PM	66	69	51	18	77	77	0	17
2-22-67	11:36 AM	64	67	52	15	77	78	1	18
2-23-67	1:00 PM	59	63	51	12	73	73	0	16
2-24-67	11:36 AM	61	54	50	4	68	71	3	18
2-25-67	2:00 PM	54	61	47	14	70	71	1	20
2-26-67	1:36 PM	58	65	50	15	71	70	1	13
2-27-67	12:36 PM	68	68	62	6	73	70	3	7
2-28-67	2:36 PM	62	70	58	12	76	72	4	10
3-1-67	12:12 PM	65	73	57	16	82	81	1	17

TABLE 3

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 1

Date	Time	Air °	East Side		Diff.°	West Side		Diff.°	Avg. Diff.°
		Temp.	Top°	Bot.°		Top°	Bot.°		
3-2-67	1:12 PM	76	79	62	17	87	87	0	16
3-3-67	10:48 AM	74	78	66	12	86	83	3	13
3-4-67	1:36 PM	77	84	74	10	89	84	5	8
3-5-67	1:12 PM	81	84	77	7	89	87	2	7
3-6-67	11:48 AM	73	73	72	1	71	74	3	0
3-7-67	1:12 PM	63	57	63	6	80	74	6	11
3-8-67	12:36 PM	73	76	61	15	99	89	10	25
3-9-67	1:12 PM	78	80	67	13	84	79	5	8
3-10-67	2:12 PM	78	83	75	18	84	80	4	2
3-11-67	12:36 AM	81	90	73	17	97	94	3	14
3-12-67	1:12 PM	82	89	73	16	96	96	0	15
3-13-67	2:26 PM	79	90	74	16	94	91	3	11
3-14-67	11:24 AM	83	86	72	14	91	91	0	12
3-15-67	1:12 PM	87	92	78	14	98	97	1	13
3-16-67	1:24 PM	72	75	60	15	85	86	1	18
3-17-67	1:00 PM	75	79	63	16	90	90	0	19
3-18-67	12:48 PM	66	71	55	16	81	81	0	18
3-19-67	12:00 Noon	72	72	60	12	82	82	0	16
3-20-67	1:12 PM	73	79	70	9	80	75	5	3
3-21-67	1:12 PM	78	84	67	17	93	91	2	16
3-22-67	12:24 PM	74	81	61	20	90	90	0	19
3-23-67	12:24 PM	76	85	65	20	94	93	1	19
3-24-67	11:36 AM	76	83	65	18	90	88	2	15
3-25-67	-----	NO INFORMATION	THIS DATE		-----	-----	-----	-----	-----
3-26-67	1:48 PM	68	72	67	5	71	67	4	1
3-27-67	11:24 AM	83	82	66	16	93	93	0	19
3-28-67	11:36 AM	88	88	68	20	99	97	2	20
3-29-67	-----	NO INFORMATION	THIS DATE		-----	-----	-----	-----	-----
3-30-67	-----	NO INFORMATION	THIS DATE		-----	-----	-----	-----	-----
3-31-67	-----	NO INFORMATION	THIS DATE		-----	-----	-----	-----	-----
4-1-67	-----	NO INFORMATION	THIS DATE		-----	-----	-----	-----	-----
4-2-67	-----	NO INFORMATION	THIS DATE		-----	-----	-----	-----	-----
4-3-67	-----	NO INFORMATION	THIS DATE		-----	-----	-----	-----	-----
4-4-67	1:00 PM	87	101	77	24	105	102	3	15
4-5-67	10:36 AM	79	83	69	14	89	85	4	11
4-6-67	11:48 AM	83	87	72	15	93	92	1	13
4-7-67	4:00 PM	91	87	92	5	91	94	3	3
4-8-67	11:12 AM	92	96	93	3	79	85	6	13
4-9-67	11:36 AM	88	90	88	2	79	83	4	8
4-10-67	1:24 PM	80	95	76	19	100	95	5	12
4-11-67	12:00 Noon	84	95	76	19	103	95	8	13



TABLE 3

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 1

Date	Time	Air °	East Side		Diff.°	West Side		Diff.°	Avg. Diff.°
		Temp.	Tcp°	Bot.°		Top°	Bot.°		
4-12-67	-----	NO INFORMATION THIS DATE -----							
4-13-67	-----	NO INFORMATION THIS DATE -----							
4-14-67	-----	NO INFORMATION THIS DATE -----							
4-15-67	12:12 PM	78	90	73	17	93	90	3	10
4-16-67	1:24 AM	84	95	78	17	97	93	4	8
4-17-67	11:12 AM	85	99	78	21	102	94	8	9
4-18-67	10:36 AM	89	101	77	24	109	102	7	17
4-19-67	2:36 PM	82	100	74	26	105	97	8	14
4-20-67	10:00 AM	85	88	71	17	95	91	4	13
4-21-67	11:36 AM	83	92	78	14	95	91	4	8
4-22-67	11:36 AM	88	94	79	15	97	94	3	9
4-23-67	10:24 AM	84	88	76	12	93	91	2	10
4-24-67	11:36 AM	85	90	75	15	97	94	3	13
4-25-67	11:00 AM	88	89	77	12	92	88	4	7
4-26-67	4:12 PM	82	93	82	11	93	86	7	2
4-27-67	11:36 AM	70	82	68	14	86	80	6	9
4-28-67	-----	NO INFORMATION THIS DATE -----							
4-29-67	-----	NO INFORMATION THIS DATE -----							
4-30-67	-----	NO INFORMATION THIS DATE -----							
5-1-67	1:00 PM	81	88	81	7	88	83	5	1
5-2-67	2:12 PM	83	81	67	14	91	89	2	16
5-3-67	3:00 PM	58	58	57	1	58	56	2	1
5-4-67	5:12 PM	62	65	62	3	66	62	4	0
5-5-67	4:48 PM	75	81	74	7	79	72	7	2
5-6-67	11:00 AM	83	94	79	15	97	92	5	8
5-7-67	1:36 PM	87	92	74	18	99	97	2	15
5-8-67	2:00 PM	93	94	78	16	99	92	7	10
5-9-67	1:48 PM	85	96	74	22	100	97	3	14
5-10-67	3:00 PM	88	91	75	16	93	90	3	9
5-11-67	12:12 PM	87	94	80	14	96	94	2	8
5-12-67	11:48 AM	94	95	80	15	98	94	4	8
5-13-67	12:00 Noon	88	96	80	16	100	97	3	11
5-14-67	12:00 Noon	88	94	80	14	98	95	3	10
5-15-67	3:12 PM	77	80	74	6	82	71	11	0
5-16-67	1:12 PM	78	91	67	24	96	93	3	16
5-17-67	1:12 PM	80	96	66	30	100	95	5	11
5-18-67	1:24 PM	87	100	73	27	103	97	6	13
5-19-67	12:48 PM	85	95	74	21	98	96	2	12
5-20-67	11:48 AM	89	88	71	17	93	89	4	11
5-21-67	11:12 AM	73	72	67	5	75	72	3	4
5-22-67	12:24 PM	78	82	67	15	87	86	1	12

TABLE 3

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 1

Date	Time	Air ° Temp.	East Side		Diff.°	West Side		Diff.°	Avg. Diff.°
			Top°	Bot.°		Top°	Bot.°		
5-23-67	12:00 Noon	94	93	69	24	98	94	4	15
5-24-67	12:00 Noon	87	98	71	27	101	96	5	14
5-25-67	12:24 PM	87	110	72	28	104	97	7	15
5-26-67	12:24 PM	90	98	74	24	103	97	6	14
5-27-67	12:48 PM	88	103	77	26	106	98	8	12
5-28-67	11:24 AM	88	95	76	19	99	92	7	10
5-29-67	3:12 PM	87	99	88	11	97	83	14	4
5-30-67	12:48 PM	92	95	83	12	95	89	6	3
6-1-67	1:12 PM	87	102	85	17	104	93	11	5
6-2-67	1:12 PM	91	83	69	14	89	84	5	11
6-3-67	10:48 AM	83	90	75	15	96	93	3	12
6-4-67	10:48 AM	81	99	78	21	103	91	12	8
6-5-67	9:48 AM	82	102	77	25	107	98	9	13
6-6-67	10:48 AM	91	99	82	17	103	95	8	8
6-7-67	10:48 AM	86	97	80	17	99	93	6	7
6-8-67	11:00 AM	87	97	81	16	99	92	7	7
6-9-67	12:48 PM	84	103	82	21	106	89	17	5
6-10-67	10:35 AM	92	97	78	19	101	94	7	10
6-11-67	10:36 AM	90	98	79	19	100	95	4	9
6-12-67	11:48 AM	94	99	80	19	101	95	6	8
6-13-67	12:00 Noon	97	103	83	20	105	99	6	9
6-14-67	11:48 AM	102	101	82	19	103	97	6	8
6-15-67	12:00 Noon	93	98	81	17	101	95	6	8
6-16-67	12:00 Noon	90	94	79	15	100	95	5	11
6-17-67	11:36 AM	94	96	80	16	98	92	6	7
6-18-67	11:24 AM	95	98	80	18	102	97	5	11
6-19-67	1:36 PM	94	109	87	22	111	98	13	7
6-20-67	12:48 PM	94	108	87	21	109	98	11	5
6-21-67	9:48 AM	89	92	79	13	96	92	4	8
6-22-67	11:48 AM	87	95	81	14	98	95	3	9
6-23-67	11:00 AM	93	94	81	13	97	93	4	7
6-24-67	12:12 PM	90	100	82	13	105	100	5	12
6-25-67	12:00 Noon	99	98	83	15	103	100	3	11
6-26-67	12:36 PM	91	98	83	15	103	99	4	10
6-27-67	11:48 AM	100	99	82	17	104	101	3	12
6-28-67	11:36 AM	91	101	82	19	105	98	7	10
6-29-67	12:00 Noon	91	95	80	15	97	94	3	8
6-30-67	12:00 Noon	86	97	81	16	101	97	4	10
7-1-67	10:48 AM	98	92	80	12	97	93	4	9
7-2-67	11:36 AM	95	91	81	10	95	91	4	7
7-3-67	9:12 AM	85	104	85	19	107	92	15	5
7-4-67	7:00 AM	96	100	80	20	105	99	6	12

TABLE 3

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 1

Date	Time	Air ° Temp.	East Side		Diff.°	West Side		Diff.°	Avg. Diff.°	
			Top°	Bot.°		Top°	Bot.°			
7-5-67	8:12 AM	96	101	84	17	105	71	34	5	
7-6-67	1:00 PM	76	82	76	6	80	74	6	2	
7-7-67	1:36 PM	79	85	80	5	82	95	13	6	
7-8-67	9:12 AM	90	112	87	25	110	95	15	3	
7-9-67	2:12 PM	92	103	83	20	107	100	7	11	
7-10-67	2:00 PM	92	105	88	17	106	97	9	5	
7-11-67	12:00 Noon	97	104	80	24	105	98	7	10	
7-12-67	11:48 AM	96	98	82	16	102	94	8	6	
7-13-67	9:00 AM	84	90	76	14	96	90	6	10	
7-14-67	7:48 AM	83	87	69	18	94	93	1	16	
7-15-67	7:48 AM	86	92	73	19	97	92	5	12	
7-16-67	12:24 PM	85	100	93	7	96	78	18	10	
7-17-67	8:36 AM	91	98	79	19	102	92	10	8	
7-18-67	6:48 PM	87	88	78	10	91	85	6	5	
7-19-67	-----	NO INFORMATION THIS DATE								-----
7-20-67	3:36 PM	83	97	87	10	95	81	14	4	
7-21-67	2:12 PM	83	91	84	7	90	83	7	1	
7-22-67	10:48 AM	88	86	76	10	90	84	6	6	
7-23-67	12:48 PM	92	103	79	24	107	101	6	13	
7-24-67	12:00 Noon	97	97	77	20	104	100	4	15	
7-25-67	12:36 PM	89	99	80	19	105	99	6	12	
7-26-67	12:36 PM	93	97	78	19	103	99	4	13	
7-27-67	1:00 PM	93	102	80	22	107	103	4	14	
7-28-67	12:00 Noon	96	98	81	17	104	99	5	12	
7-29-67	1:12 PM	88	94	82	12	97	92	5	7	
7-30-67	12:48 PM	89	87	79	8	96	92	4	11	
7-31-67	12:36 PM	90	100	83	17	106	102	4	12	
8-1-67	11:00 AM	89	93	80	13	99	98	1	12	
8-2-67	11:36 AM	89	95	81	14	101	99	2	12	
8-3-67	1:12 PM	95	98	83	15	105	100	5	12	
8-4-67	2:36 PM	89	104	86	18	108	95	13	7	
8-5-67	2:36 PM	95	98	84	14	104	100	4	11	
8-6-67	2:36 PM	91	106	82	24	113	105	8	15	
8-7-67	3:00 PM	91	105	84	21	108	103	5	11	
8-8-67	2:36 PM	94	105	85	20	109	103	6	11	
8-9-67	1:48 PM	96	95	82	13	102	98	4	11	
8-10-67	1:48 PM	98	95	81	14	101	97	4	12	
8-11-67	1:48 PM	84	90	77	13	96	88	8	8	
8-12-67	12:48 PM	84	84	71	15	92	93	1	14	
8-13-67	11:48 AM	90	90	74	16	95	94	1	13	
8-14-67	11:24 AM	90	90	75	15	97	95	2	13	

TABLE 3

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 1

Date	Time	Air ° Temp.	East Side			West Side			Avg. Diff.°
			Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°	
8-15-67	12:24 PM	77	82	76	6	81	76	5	0
8-16-67	11:36 AM	73	76	72	4	75	71	4	0
8-17-67	12:31 PM	95	98	77	21	105	102	3	16
8-18-67	12:12 PM	93	99	77	22	108	105	3	19
8-19-67	11:24 AM	95	92	76	16	99	94	5	13
8-20-67	1:00 PM	93	93	80	13	100	96	4	11
8-21-67	1:36 PM	85	99	80	19	106	101	5	14
8-22-67	11:24 AM	97	94	80	14	98	93	5	9
8-23-67	12:00 Noon	93	93	79	14	100	94	6	11
8-24-67	12:36 PM	94	96	82	14	101	95	6	9
8-25-67	2:48 PM	80	84	76	8	85	77	8	1
8-26-67	5:00 PM	74	77	72	5	77	71	6	1
8-27-67	1:00 PM	72	72	72	0	72	72	0	0
8-28-67	4:00 PM	82	90	80	10	91	80	11	1
8-29-67	3:12 PM	86	102	82	20	107	95	12	9
8-30-67	12:48 PM	97	101	81	20	109	107	2	17
8-31-67	12:12 PM	97	100	81	19	107	106	1	16
9-1-67	12:12 PM	91	84	74	10	90	87	3	10
9-2-67	12:12 PM	88	85	71	14	95	95	0	17
9-3-67	1:36 PM	89	101	78	23	108	101	7	15
9-4-67	2:00 PM	81	92	78	14	94	88	6	6
9-5-67	10:48 AM	71	69	69	0	69	69	0	0
9-6-67	4:00 PM	75	81	75	6	82	75	7	1
9-7-67	2:12 PM	81	94	78	16	98	93	5	10
9-8-67	10:36 AM	90	89	76	13	96	94	2	12
9-9-67	10:36 AM	93	87	72	15	98	95	3	17
9-10-67	9:29 AM	92	72	68	4	89	87	2	18
9-11-67	3:12 PM	84	103	80	23	107	98	9	11
9-12-67	11:48 AM	90	91	79	12	98	96	2	12
9-13-67	12:48 PM	84	91	77	14	102	99	3	17
9-14-67	2:36 PM	82	99	82	17	101	95	6	7
9-15-67	2:36 PM	82	100	81	19	104	99	6	11
9-16-67	12:48 PM	90	92	77	15	102	103	1	18
9-17-67	12:24 PM	89	90	74	16	102	104	2	21
9-18-67	12:48 PM	88	92	80	12	96	94	2	9
9-19-67	1:24 PM	84	93	82	11	97	94	3	8
9-20-67	12:24 PM	87	90	80	10	95	93	2	9
9-21-67	2:24 PM	85	95	85	10	95	88	7	2
9-22-67	3:00 PM	85	97	85	12	100	92	8	5
9-23-67	12:12 PM	91	91	71	20	103	104	1	23
9-24-67	12:12 PM	86	91	70	21	101	102	1	21

TABLE 3

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 1

Date	Time	Air ° Temp.	East Side		Diff.°	West Side		Diff.°	Avg. Diff.°
			Top°	Bot.°		Top°	Bot.°		
9-25-67	1:12 PM	88	96	74	22	106	105	1	21
9-26-67	12:00 Noon	88	90	74	16	99	99	0	17
9-27-67	1:12 PM	91	97	79	18	104	99	5	14
9-28-67	1:24 PM	66	62	60	2	67	65	2	5
9-29-67	1:36 PM	82	83	65	18	93	95	2	22
9-30-67	11:36 AM	84	75	62	13	84	84	0	15
10-1-67	-----	NO INFORMATION THIS DATE -----							
10-2-67	11:24 AM	86	84	67	17	95	96	1	10
10-3-67	12:12 PM	85	87	71	16	97	98	1	19
10-4-67	8:24 PM	89	90	70	20	102	102	0	22
10-5-67	8:48 PM	91	93	72	21	103	103	0	20
10-6-67	8:12 PM	84	89	70	19	99	95	4	17
10-7-67	6:00 PM	88	77	68	9	84	82	2	10
10-8-67	8:24 PM	75	72	60	12	84	88	4	20
10-9-67	8:48 PM	84	87	64	23	100	99	1	24
10-10-67	9:12 PM	79	84	65	19	96	95	1	21
10-11-67	10:00 PM	81	85	67	18	97	97	0	21
10-12-67	6:00 PM	83	84	65	19	96	97	1	22
10-13-67	11:36 AM	84	87	67	20	97	96	1	20
10-14-67	12:00 Noon	84	86	69	17	95	96	1	18
10-15-67	2:00 PM	81	86	75	11	91	88	3	9
10-16-67	2:48 PM	71	72	68	4	73	69	4	1
10-17-67	12:00 Noon	74	70	60	10	82	87	5	20
10-18-67	12:36 PM	78	73	62	11	84	89	5	19
10-19-67	12:36 PM	78	76	59	17	90	92	2	22
10-20-67	12:36 PM	83	84	63	21	96	95	1	22
10-21-67	12:12 PM	81	82	59	23	94	94	0	23
10-22-67	12:36 PM	84	88	66	22	97	93	4	18
10-23-67	1:00 PM	79	83	69	14	91	91	0	15
10-24-67	12:36 PM	89	84	76	8	88	86	2	7
10-25-67	1:00 PM	75	69	61	8	84	90	6	22
10-26-67	1:12 PM	73	75	61	14	84	86	2	17
10-27-67	1:12 PM	81	80	67	13	89	90	1	16
10-28-67	12:48 PM	72	74	59	15	83	85	2	17
10-29-67	1:12 PM	84	75	71	4	80	78	2	6
10-30-67	10:00 AM	66	66	65	1	65	62	3	2
10-31-67	1:12 PM	62	63	58	5	65	62	3	3
11-1-67	4:00 PM	59	59	59	0	59	59	0	0
11-2-67	11:00 AM	75	75	56	19	85	85	0	19
11-3-67	11:48 AM	75	78	63	15	86	86	0	25
11-4-67	11:12 AM	66	61	49	12	74	77	3	21
11-5-67	11:00 AM	63	61	48	13	75	76	1	21

TABLE 3  
MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

BRIDGE NO. 1

Date	Time	Air °	East Side			West Side			Avg. Diff.°
		Temp.	Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°	
11-6-67	11:36 AM	67	65	50	15	75	79	4	19
11-7-67	11:24 AM	72	70	52	18	80	78	2	18
11-8-67	11:24 AM	70	72	53	19	81	84	3	20
11-9-67	9:36 AM	71	69	56	13	82	82	0	19
11-10-67	11:24 AM	65	68	56	12	75	75	0	13
11-11-67	10:24 AM	79	78	66	12	86	87	1	15
11-12-67	-----	NO INFORMATION THIS DATE -----							
11-13-67	11:00 AM	83	70	62	8	85	95	10	24
11-14-67	11:24 AM	80	78	61	17	89	90	1	20
11-15-67	11:24 AM	70	70	59	11	82	86	4	19
11-16-67	12:00 Noon	73	75	57	18	87	92	5	24
11-17-67	11:48 AM	75	80	59	21	88	86	2	27
11-18-67	11:12 AM	79	76	64	12	87	88	1	18
11-19-67	12:00 Noon	70	72	56	16	82	84	2	19
11-20-67	11:48 AM	72	74	58	16	79	77	2	12
11-21-67	12:12 PM	81	82	70	12	89	89	0	13
11-22-67	10:24 AM	77	74	69	5	81	82	1	10
11-23-67	10:36 AM	72	74	65	9	81	77	4	9
11-24-67	2:24 PM	75	77	73	4	79	77	2	3
11-25-67	11:36 AM	79	83	75	8	91	90	1	12
11-26-67	1:00 PM	83	85	74	11	90	88	2	9
11-27-67	11:24 AM	77	73	65	8	84	89	5	18
11-28-67	12:36 PM	55	57	55	2	57	56	1	1
11-29-67	12:24 PM	72	75	66	9	79	75	4	6
11-30-67	12:24 PM	77	79	72	7	83	78	5	5
12-1-67	11:48 AM	76	77	64	3	83	81	2	16
12-2-67	9:48 AM	73	72	69	3	74	74	0	3
12-3-67	12:12 AM	65	63	51	12	74	78	4	19
12-4-67	10:00 AM	61	73	54	19	81	79	2	16
12-3 to 1-21-68	-----	POWER CUT OFF FOR BRIDGE REPAIR -----							
1-22-68	4:00 PM	59	61	59	2	61	59	2	0
1-23-68	10:12 AM	73	64	56	8	75	77	2	16
1-24-68	10:48 AM	56	52	42	10	60	64	4	15
1-25-68	11:48 AM	63	71	48	23	80	78	2	19
1-26-68	11:12 AM	69	74	57	17	80	80	0	14
1-27-68	2:00 PM	66	72	63	9	73	69	4	3
1-28-68	11:12 AM	69	74	62	12	77	73	4	7
1-29-68	12:24 PM	71	75	66	9	78	75	3	6
1-30-68	1:12 PM	73	83	64	19	91	84	7	14
1-31-68	1:24 PM	70	74	67	7	74	69	5	1
2-1-68	10:48 AM	75	75	65	10	77	76	1	7

TABLE 3

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 1

Date	Time	Air °	East Side		Diff.°	West Side		Diff.°	Avg. Diff.°
		Temp.	Top°	Bot.°		Top°	Bot.°		
2-2-68	11:36 AM	76	62	58	4	74	78	4	16
2-3-68	11:48 AM	63	67	51	16	74	77	3	17
2-4-68	12:12 PM	74	74	54	20	82	83	1	19
2-5-68	11:48 AM	73	77	54	13	87	84	3	25
2-6-68	11:36 AM	69	65	54	11	74	79	5	17
2-7-68	11:48 AM	65	59	50	9	69	73	4	16
2-8-68	11:24 AM	57	54	41	13	64	67	3	18
2-9-68	11:48 AM	66	64	45	19	75	77	2	21
2-10-68	12:24 PM	65	70	55	15	77	76	1	14
2-11-68	10:24 AM	63	59	54	5	60	59	1	13
2-12-68	12:24 PM	61	64	45	19	75	77	2	21
2-13-68	10:36 AM	61	57	46	11	64	66	2	13
2-14-68	12:12 PM	61	63	51	12	66	62	4	7
2-15-68	3:24 PM	51	53	48	5	54	49	5	6
2-16-69	3:00 PM	47	49	46	3	49	46	3	0
2-17-68	11:36 AM	62	58	51	7	62	58	4	5
2-18-68	2:24 PM	54	57	51	6	57	55	2	2
2-19-68	11:36 AM	66	65	48	17	75	78	3	20
2-20-68	11:12 AM	71	70	51	19	78	80	2	18
2-21-68	12:48 PM	69	72	59	13	79	75	4	11
2-22-68	10:00 AM	39	39	39	0	38	39	1	0
2-23-68	3:00 PM	39	38	36	2	38	37	1	1
2-24-68	11:48 AM	58	56	44	12	66	70	4	18
2-25-68	11:24 AM	71	68	50	18	79	81	2	21
2-26-68	11:24 AM	75	70	60	10	81	84	3	18
2-27-68	11:24 AM	75	72	51	21	83	84	1	22
2-28-68	12:00 Noon	63	66	60	6	66	62	4	1
2-29-68	11:00 AM	56	50	45	5	59	63	4	13
3-1-68	12:12 PM	58	65	46	19	75	78	3	21
3-2-68	2:12 PM	63	67	60	7	66	61	5	0
3-3-68	-----	NO INFORMATION THIS DATE -----							
3-4-68	1:12 PM	65	68	49	19	79	80	1	21
3-5-68	3:00 PM	62	73	62	11	75	68	7	4
3-6-68	1:12 PM	69	78	57	21	84	76	8	12
3-7-68	12:00 Noon	69	72	56	16	80	82	2	17
3-8-68	11:12 AM	77	74	57	17	82	81	1	17
3-9-68	4:24 PM	71	76	67	9	76	68	8	0
3-10-68	3:00 PM	77	94	72	22	97	89	8	10
3-11-68	12:48 PM	77	78	71	7	79	75	4	2
3-12-68	12:48 PM	47	48	47	1	48	48	0	0
3-13-68	12:36 PM	64	61	48	13	72	76	4	19

TABLE 3  
 MAXIMUM DAILY TEMPERATURE DIFFERENTIAL  
 BRIDGE NO. 1

Date	Time	Air ° Temp.	East Side Top° Bot.°		Diff.°	West Side Top° Bot.°		Diff.°	Avg. Diff.°
----- MAKE UP DATA FOR PERIOD 12-3-67 to 1-21-68 -----									
12-3-68	2:24 PM	61	65	60	5	69	66	3	5
12-4-68	11:24 AM	72	67	53	14	77	81	4	19
12-5-68	11:36 AM	80	77	59	18	87	86	1	19
12-6-68	10:12 AM	76	76	65	11	82	82	0	11
12-7-68	11:48 AM	71	68	60	8	78	80	2	15
12-8-68	11:24 AM	59	60	46	14	71	75	4	20
12-9-68	11:24 AM	61	67	49	18	76	78	2	19
12-10-68	12:36 PM	71	78	56	22	86	85	1	19
12-11-68	11:12 AM	72	72	56	16	80	80	0	16
12-12-68	10:36 AM	71	69	67	2	73	72	1	5
12-13-68	2:36 PM	63	66	59	7	72	69	3	8
12-14-68	10:48 AM	62	57	47	10	65	70	5	16
12-15-67	11:00 AM	57	53	42	11	63	68	5	18
12-16-68	11:00 AM	65	59	41	18	67	70	3	19
12-17-68	12:12 PM	69	70	55	15	78	78	0	15
12-18-68	11:36 AM	69	70	63	7	71	68	3	3
12-19-68	11:36 AM	73	71	56	15	81	82	1	18
12-20-68	11:00 AM	68	61	56	5	65	64	1	6
12-21-68	4:12 PM	62	62	61	1	62	61	1	0
12-22-68	2:48 PM	58	59	56	3	58	57	1	0
12-23-68	12:12 PM	61	57	49	8	66	71	5	16
12-24-68	12:36 PM	62	67	50	17	78	80	2	20
12-25-68	12:00 Noon	67	70	51	19	78	80	2	18
12-26-68	11:24 AM	67	69	61	8	71	68	3	5
12-27-68	11:00 AM	70	70	67	3	70	69	1	1
12-28-68	12:24 PM	68	67	53	14	78	81	3	20
12-29-68	11:48 AM	71	70	51	19	79	81	2	19
12-30-68	2:36 PM	62	61	61	1	62	61	1	1
12-31-68	10:48 AM	58	58	57	1	59	57	2	0
1-1-69	12:12 PM	58	60	46	14	68	70	2	16
1-2-69	1:48 PM	51	52	49	3	52	50	2	0
1-3-69	2:00 PM	61	61	58	3	61	58	3	0
1-4-69	1:12 PM	51	52	45	7	58	58	0	9
1-5-69	1:24 PM	58	69	44	25	77	77	0	20
1-6-69	12:24 PM	68	70	54	16	78	78	0	16
1-7-69	1:24 PM	70	82	60	22	88	84	4	15



TABLE 3

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 1

Date	Time	Air ° Temp.	East Side		Diff.°	West Side		Diff.°	Avg. Diff.°
			Top°	Bot.°		Top°	Bot.°		
1-8-69	2:12 PM	73	78	70	8	80	79	1	6
1-9-69	10:24 AM	73	74	69	5	74	71	3	1
1-10-69	11:24 AM	57	54	45	9	64	69	5	17
1-11-69	1:24 PM	58	62	51	11	71	71	0	14
1-12-69	1:48 PM	57	65	53	12	68	64	4	7
1-13-69	12:48 PM	71	78	55	23	87	87	0	20
1-14-69	11:48 AM	70	77	55	17	80	80	0	16
1-15-69	11:36 PM	70	72	60	12	77	77	0	11
1-16-69	10:00 AM	70	66	60	6	69	67	2	5
1-17-69	12:12 PM	73	72	67	5	74	70	4	2
1-18-69	12:36 AM	65	67	64	3	66	65	1	0
1-19-69	-----	NO INFORMATION THIS DATE -----							
1-20-69	2:36 AM	62	65	60	5	67	62	5	2
1-21-69	1:36 PM	66	72	64	8	74	70	4	4

TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date:	Time:	Air ° Temp.	North Side			South Side			Avg. Diff.°
			Top °	Bot. °	Diff. °	Top °	Bot. °	Diff. °	
1-26-67	3:34 PM	75	82	82	0	77	75	2	6
1-27-67	2:00 PM	51	64	72	8	50	58	8	14
1-28-67	3:12 PM	62	83	89	6	69	56	13	23
1-29-67	3:00 PM	66	79	79	0	66	62	4	15
1-30-67	3:36 PM	73	86	85	1	74	70	4	14
1-31-67	1:00 PM	74	78	75	3	77	75	2	1
2-1-67	11:12 AM	75	80	81	1	79	76	3	3
2-2-67	10:17 AM	75	78	70	8	78	81	3	6
2-3-67	11:36 AM	47	52	51	1	50	50	0	2
2-4-67	2:48 PM	61	80	85	5	70	58	12	19
2-5-67	10:36 AM	62	65	62	3	65	64	1	1
2-6-67	12:24 PM	65	64	63	1	63	63	0	1
2-7-67	2:12 PM	49	62	74	12	51	43	8	21
2-8-67	1:24 PM	48	60	71	11	54	44	10	17
2-9-67	1:00 PM	55	73	77	4	62	49	13	19
2-10-67	3:00 PM	67	77	81	4	67	62	5	14
2-11-67	2:12 PM	83	89	90	1	80	72	8	14
2-12-67	12:12 PM	59	59	59	0	58	58	0	1
2-13-67	2:24 PM	66	80	93	13	73	57	16	22
2-14-67	3:12 PM	68	79	85	6	73	64	9	13
2-15-67	12:36 PM	73	80	76	4	75	78	3	1
2-16-67	3:24 PM	76	85	86	1	78	73	5	10
2-17-67	11:00 AM	75	82	76	6	78	78	0	1
2-18-67	3:24 PM	73	87	99	12	81	66	15	19
2-19-67	2:12 PM	74	80	81	1	76	73	3	6
2-20-67	2:00 PM	64	66	78	12	59	50	9	17
2-21-67	2:36 PM	68	73	75	2	65	61	4	11
2-22-67	2:00 PM	57	69	72	3	66	57	9	9
2-23-67	12:24 PM	58	73	86	13	68	54	14	19
2-24-67	2:24 PM	54	61	70	9	57	47	10	14
2-25-67	3:00 PM	55	73	84	11	63	53	10	21
2-26-67	3:36 PM	66	73	73	0	69	65	4	6
2-27-67	3:48 PM	60	68	73	5	67	58	9	8
2-28-67	1:36 PM	65	77	88	11	74	59	15	16
3-1-67	2:00 PM	74	91	94	3	82	68	14	18
3-2-67	2:24 PM	78	96	97	1	87	75	12	16

TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date	Time	Air° Temp.	North Side		Diff.°	South Side		Diff.°	Avg. Diff.°
			Top°	Bot.°		Top	Bot.°		
3-3-67	2:12 PM	80	94	95	1	84	76	8	15
3-4-67	3:12 PM	87	90	91	1	88	81	7	6
3-5-67	3:24 PM	76	81	77	4	78	78	0	1
3-6-67	11:24 AM	61	75	89	14	68	54	14	21
3-7-67	3:12 PM	70	83	95	12	76	62	14	20
3-8-67	3:24 PM	68	73	73	0	74	69	5	1
3-9-67	10:48 AM	81	93	92	1	86	79	7	10
3-10-67	1:48 PM	81	95	96	1	86	78	8	14
3-11-67	2:48 PM	79	95	93	2	90	81	9	8
3-12-67	----- NO INFORMATION THIS DATE -----								
3-13-67	12:24 PM	82	92	96	4	88	79	9	10
3-14-67	2:24 PM	81	93	94	1	88	80	8	10
3-15-67	1:36 PM	66	74	84	10	72	62	10	12
3-16-67	3:00 PM	74	87	97	10	83	68	15	16
3-17-67	1:36 PM	63	73	84	11	69	58	11	15
3-18-67	3:12 PM	70	85	91	6	80	70	10	13
3-19-67	2:48 PM	74	84	86	2	78	73	5	9
3-20-67	4:12 PM	79	97	103	6	90	75	15	17
3-21-67	2:48 PM	74	86	97	11	84	69	15	15
3-22-67	2:36 PM	80	91	99	8	82	71	11	18
3-23-67	4:24 PM	77	83	86	3	81	78	3	5
3-24-68	1:48 PM	73	83	83	0	78	73	5	7
3-25-67	1:36 PM	80	98	104	16	92	78	14	16
3-26-67	4:12 PM	83	96	102	6	93	80	13	12
3-27-67	2:36 PM	84	95	104	9	94	78	16	14
3-28-67	1:36 PM	79	88	95	7	85	75	10	12
3-29-67	2:36 PM	78	86	94	8	86	75	11	9
3-30-67	2:48 PM	82	96	97	1	95	83	12	8
3-31-67	3:00 PM	83	97	104	7	92	78	14	16
4-1-67	2:36 PM	85	98	106	8	95	78	17	15
4-2-67	12:48 PM	81	90	93	3	86	80	6	9
4-3-67	3:24 PM	79	95	95	0	88	78	10	12
4-4-67	2:36 PM	85	102	103	1	95	84	11	13
4-5-67	1:48 PM	82	96	103	7	92	79	13	14
4-6-67	2:36 PM	80	93	98	5	86	76	10	15
4-7-67	2:12 PM	81	94	93	1	88	81	7	9
4-8-67	3:00 PM	83	93	99	6	91	80	11	10
4-9-67	3:48 PM	81	93	97	4	90	80	10	10
4-10-67	3:36 PM	82	87	88	1	84	79	5	6

TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date	Time	Air° Temp.	North Side			South Side			Avg. Diff.°
			Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°	
4-11-67	2:12 PM	82	89	85	4	90	87	3	2
4-12-67	2:48 PM	81	93	95	2	89	83	6	8
4-13-67	3:12 PM	84	95	87	8	93	93	0	2
4-14-67	11:00 AM	86	104	105	1	97	87	10	13
4-15-67	1:36 PM	88	106	106	0	99	88	11	12
4-16-67	10:24 AM	84	94	101	7	90	79	11	13
4-17-67	2:12 PM	83	100	104	4	97	86	11	10
4-18-67	2:48 PM	85	94	93	1	90	84	6	7
4-19-67	3:36 PM	82	94	82	12	93	100	7	9
4-20-67	1:12 PM	83	96	94	2	92	86	6	6
4-21-67	2:00 PM	92	102	90	12	102	104	2	7
4-22-67	8:36 AM	84	90	79	11	91	98	7	10
4-23-67	1:12 PM	85	96	96	0	93	86	7	6
4-24-67	10:00 AM	73	82	91	9	81	71	10	11
4-25-67	8:36 AM	73	80	86	6	76	70	6	10
4-26-67	1:12 PM	80	92	98	6	90	79	11	10
4-27-67	1:36 PM	83	89	87	2	90	87	3	1
4-28-67	4:00 PM	82	96	107	11	94	78	16	16
4-29-67	1:00 PM	66	65	65	0	64	65	1	0
4-30-67	----- NO INFORMATION THIS DATE -----								
5-1-67	12:36 PM	81	87	92	5	80	70	10	15
5-2-67	4:00 PM	83	87	89	2	87	79	8	5
5-3-67	12:12 PM	83	88	93	5	90	80	10	6
5-4-67	5:12 PM	88	101	103	2	97	85	12	11
5-5-67	4:12 PM	84	96	88	8	92	98	6	13
5-6-67	12:36 PM	85	99	107	8	97	81	6	14
5-7-67	3:36 PM	81	89	77	12	91	95	4	10
5-8-67	11:36 AM	83	93	82	11	92	93	1	5
5-9-67	3:36 PM	87	99	101	2	96	88	8	8
5-10-67	10:12 AM	85	98	99	1	94	84	10	10
5-11-67	11:24 AM	86	98	99	1	93	85	8	10
5-12-67	3:00 PM	74	86	96	10	82	72	10	14
5-13-67	4:36 PM	78	88	97	9	84	73	11	14
5-14-67	3:48 PM	84	101	108	7	96	78	18	17
5-15-67	4:00 PM	85	102	106	4	99	85	14	12
5-16-67	5:12 PM	82	98	104	6	97	84	13	10
5-17-67	4:12 PM	82	96	94	2	95	93	2	1
5-18-67	2:48 PM	73	82	88	6	82	76	6	6
5-19-67	2:36 PM	79	88	99	11	88	75	13	11
5-20-67	1:12 PM	82	97	105	8	96	79	17	13

TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date	Time	Air° Temp.	North Side		Diff.°	South Side		Diff.°	Avg. Diff.°
			Top°	Bot.°		Top°	Bot.°		
5-21-67	-----NO INFORMATION THIS DATE-----								
5-22-67	2:48 PM	84	97	102	5	95	81	14	12
5-23-67	3:36 PM	89	104	109	5	104	87	17	21
5-24-67	3:36 PM	86	97	101	4	97	86	11	7
5-25-67	3:36 PM	85	100	102	2	97	86	11	9
5-26-67	2:48 PM	87	96	81	15	95	104	9	11
5-27-67	2:00 PM	85	96	100	4	96	91	5	4
5-28-67	3:12 PM	86	95	93	2	93	92	1	1
5-29-67	10:48 PM	85	95	84	11	96	103	7	10
5-30-67	2:36 PM	86	96	99	3	95	88	7	6
5-31-67	1:36 PM	89	94	100	6	93	84	9	8
6-1-67	10:12 AM	83	94	98	4	95	83	12	7
6-2-67	2:48 PM	92	101	104	3	96	86	10	12
6-3-67	3:00 PM	87	100	105	5	99	89	10	9
6-4-67	3:12 PM	88	100	94	6	98	93	5	1
6-5-67	4:12 PM	86	95	98	3	95	88	7	5
6-6-67	12:12 PM	89	104	90	14	102	102	0	5
6-7-67	12:48 PM	86	102	106	4	100	89	11	9
6-8-67	1:48 PM	86	100	102	2	100	99	1	1
6-9-67	12:00 Noon	89	98	104	6	99	88	11	7
6-10-67	3:00 PM	91	102	104	2	103	101	2	1
6-11-67	1:48 PM	87	94	80	14	100	106	6	16
6-12-67	2:36 PM	91	101	109	8	98	83	15	14
6-13-67	6:00 PM	87	97	103	6	98	89	9	6
6-14-67	11:12 PM	87	96	103	7	95	83	12	11
6-15-67	6:24 PM	88	99	108	9	96	84	12	14
6-16-67	4:36 PM	93	104	110	6	101	88	13	12
6-17-67	6:36 PM	88	106	90	16	107	109	2	10
6-18-67	6:36 PM	87	96	82	14	96	107	11	13
6-19-67	6:24 PM	87	98	84	14	97	107	10	11
6-20-67	1:12 PM§	89	103	90	13	100	107	7	7
6-21-67	11:24 AM	90	102	85	17	102	112	10	13
6-22-67	12:36 PM	92	103	103	0	100	97	3	4
6-23-67	9:48 AM	93	104	95	9	103	103	0	3
6-24-67	11:00 AM	89	103	87	16	100	98	2	6
6-25-67	10:36 AM	87	95	81	14	97	105	8	12
6-26-67	2:12 PM	86	96	83	13	96	106	10	11
6-27-67	11:48 AM	87	99	86	13	97	108	11	10
6-28-67	11:24 AM	88	99	93	6	97	100	3	2

TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date	Time	Air°	North Side		Diff.°	South Side		Diff.°	Avg.
		Temp.	Top°	Bot.°		Top°	Bot.°		Diff.°
6-29-67	9:24 AM	85	97	84	13	98	105	7	11
6-30-67	9:48 AM	88	107	88	19	107	110	3	11
7-1-67	10:30 AM	90	95	78	17	100	108	8	17
7-2-67	12:30 PM	92	102	89	13	99	106	7	7
7-3-67	11:00 AM	96	111	109	2	106	100	6	7
7-4-67	12:24 PM	90	109	95	14	108	107	1	6
7-5-67	10:24 AM	90	101	82	19	105	111	6	16
7-6-67	12:24 PM	94	109	98	11	107	102	5	1
7-7-67	3:24 PM	87	98	82	6	97	107	10	17
7-8-67	1:00 PM	89	98	81	7	105	108	3	22
7-9-67	11:00 AM	87	95	82	13	97	105	8	12
7-10-67	12:36 PM	85	100	105	5	97	87	10	16
7-11-67	10:12 AM	82	93	101	8	95	76	19	11
7-12-67	9:24 AM	86	99	103	4	98	87	11	8
7-13-67	9:12 AM	86	94	101	7	91	80	11	12
7-14-67	3:48 PM	91	104	100	4	106	94	12	2
7-15-67	3:24 PM	88	97	83	14	98	106	8	12
7-16-67	2:48 PM	85	97	95	2	96	87	9	4
7-17-67	6:24 PM	85	92	92	0	89	84	5	5
7-18-67	1:00 PM	83	91	85	6	86	84	2	3
7-19-67	10:12 AM	88	104	82	22	106	113	7	17
7-20-67	2:00 PM	88	99	86	13	96	101	5	6
7-21-67	4:12 PM	89	100	86	14	99	103	4	8
7-22-67	2:24 PM	87	101	91	10	99	101	2	4
7-23-67	10:36 AM	89	112	88	24	109	105	4	7
7-24-67	11:24 AM	88	105	93	12	103	104	1	5
7-25-67	11:24 AM	87	94	82	12	96	105	9	13
7-26-67	12:00 Noon	87	102	104	2	98	90	8	9
7-27-67	11:48 AM	90	101	93	8	99	102	3	4
7-28-67	12:00 Noon	89	97	83	14	99	108	9	14
7-29-67	9:24 AM	88	102	103	1	98	89	9	9
7-30-67	----- NO INFORMATION THIS DATE -----								
7-31-67	3:00 PM	88	103	89	14	102	106	4	8
8-1-67	11:48 AM	90	100	89	11	102	100	2	6
8-2-67	8:36 AM	95	113	110	3	108	96	12	10
8-3-67	1:24 PM	94	115	114	1	109	95	14	13
8-4-67	9:00 AM	90	106	83	23	106	114	8	15
8-5-67	9:24 AM	92	108	98	10	106	97	9	1
8-6-67	11:36 AM	88	94	75	19	100	106	6	18
8-7-67	1:00 PM	84	93	98	5	91	82	9	9
8-8-67	8:36 AM	82	93	103	10	92	80	12	12
8-9-67	10:24 AM	89	95	104	9	95	83	12	11

TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date	Time	Air° Temp.	North Side		Diff.°	South Side		Diff.°	Avg. Diff.°	
			Top°	Bot.°		Top°	Bot.°			
8-10-67	9:00 AM	86	99	105	6	97	85	12	11	
8-11-67	4:36 PM	79	84	84	0	84	80	4	2	
8-12-67	3:36 PM	82	93	103	10	92	80	12	12	
8-13-67	3:36 PM	85	95	104	9	95	83	12	11	
8-14-67	3:00 PM	78	84	82	2	82	80	2	2	
8-15-67	3:24 PM	84	97	95	2	96	87	9	4	
8-16-67	5:24 PM	95	113	117	4	110	89	21	15	
8-17-67	2:48 PM	93	108	114	6	109	91	18	12	
8-18-67	1:36 PM	86	94	86	8	97	93	4	5	
8-19-67	9:12 AM	88	100	109	9	97	83	14	15	
8-20-67	-----	NO INFORMATION THIS DATE								-----
8-21-67	4:36 PM	88	100	91	9	104	96	8	4	
8-22-67	11:24 AM	105	100	95	5	108	96	12	4	
8-23-67	12:24 PM	88	98	95	3	99	93	6	1	
8-24-67	12:36 PM	84	93	90	3	92	86	6	3	
8-25-67	1:36 PM	82	85	83	2	84	83	1	0	
8-26-67	11:48 AM	84	93	88	5	90	87	3	2	
8-27-67	2:36 PM	84	92	87	5	90	92	2	1	
8-28-67	12:24 PM	86	99	104	5	99	86	13	9	
8-29-67	3:24 PM	91	104	104	0	104	89	15	7	
8-30-67	3:00 PM	92	105	110	5	99	88	11	14	
8-31-67	4:00 PM	84	95	101	6	91	83	8	11	
9-1-67	3:48 AM	79	93	100	7	90	85	5	9	
9-2-67	1:48 PM	94	112	113	1	105	84	21	18	
9-3-67	4:00 PM	83	85	84	1	84	82	2	2	
9-4-67	2:36 PM	74	74	74	0	73	73	0	1	
9-5-67	1:00 PM	85	93	92	1	89	86	3	5	
9-6-67	2:00 PM	85	97	100	3	92	94	2	6	
9-7-67	3:36 PM	87	95	81	14	95	103	8	11	
9-8-67	10:36 AM	87	97	80	17	97	99	2	9	
9-9-67	11:12 AM	102	107	111	4	106	91	15	10	
9-10-67	-----	NO INFORMATION THIS DATE								-----
9-11-67	2:12 PM	83	95	94	1	86	80	6	12	
9-12-67	3:36 PM	90	103	104	1	100	88	12	10	
9-13-67	2:12 PM	88	99	106	7	97	85	12	12	
9-14-67	2:12 PM	87	98	104	6	99	85	14	9	
9-15-67	2:00 PM	86	96	106	10	96	82	14	12	
9-16-67	2:48 PM	86	97	106	9	94	81	13	14	
9-17-67	3:48 PM	90	94	100	6	93	86	7	7	
9-18-67	2:48 PM	87	98	103	5	97	85	12	10	
9-19-67	2:12 PM	86	94	98	4	93	87	6	6	
9-20-67	1:12 PM	87	94	96	2	93	88	5	4	

TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date	Time	Air°	North Side			South Side			Avg. Diff.°
		Temp.	Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°	
9-21-67	1:00 PM	86	97	93	4	96	91	5	1
9-22-67	3:00 PM	92	102	100	2	101	91	10	5
9-23-67	2:48 PM	87	101	109	8	98	82	16	17
9-24-67	2:48 PM	83	99	109	10	96	79	17	16
9-25-67	3:24 PM	87	97	105	8	95	78	17	15
9-26-67	1:24 PM	88	96	98	2	96	88	8	5
9-27-67	1:36 PM	88	100	105	5	101	87	14	9
9-28-67	2:00 PM	62	74	83	9	71	64	7	11
9-29-67	3:24 PM	79	82	95	13	78	64	14	18
9-30-67	3:36 PM	74	86	97	11	84	77	7	11
10-1-67	2:00 PM	80	90	98	8	90	77	13	10
10-2-67	-----	NO INFORMATION THIS DATE							
10-3-67	1:12 PM	87	93	101	8	92	83	9	9
10-4-67	1:48 PM	83	94	101	7	94	82	12	10
10-5-67	2:24 PM	87	100	108	8	97	80	17	15
10-6-67	2:36 PM	88	104	110	6	99	82	17	16
10-7-67	1:48 PM	91	106	108	2	102	84	18	14
10-8-67	10:24 AM	87	92	76	16	97	96	1	13
10-9-67	3:36 PM	73	89	98	9	80	69	11	19
10-10-67	3:00 PM	83	99	109	10	94	76	18	19
10-11-67	2:24 PM	78	92	98	6	92	77	15	10
10-12-67	4:36 PM	78	91	99	8	82	75	7	16
10-13-67	1:00 PM	95	95	98	3	94	80	14	10
10-14-67	1:48 PM	84	97	103	6	94	83	11	11
10-15-67	12:24 PM	84	90	91	1	88	83	5	5
10-16-67	1:36 PM	80	85	83	2	83	79	4	3
10-17-67	2:24 PM	71	80	87	7	78	69	9	10
10-18-67	2:36 PM	74	86	97	11	81	70	11	16
10-19-67	3:00 PM	72	87	98	11	82	66	16	19
10-20-67	3:00 PM	77	90	99	9	86	70	16	17
10-21-67	1:36 PM	80	90	98	8	89	74	15	14
10-22-67	1:48 PM	81	91	97	6	90	77	13	10
10-23-67	2:48 PM	82	98	104	6	92	79	13	15
10-24-67	2:24 PM	82	91	92	1	86	80	6	9
10-25-67	2:36 PM	72	84	96	12	82	68	14	15
10-26-67	2:36 PM	82	88	89	1	83	72	11	11
10-27-67	2:12 PM	87	90	94	4	88	82	6	17
10-28-67	1:36 PM	72	79	83	4	78	71	7	6
10-29-67	2:48 PM	78	83	84	1	82	79	3	3
10-30-67	12:00 Noon	73	72	70	2	72	70	2	0
10-31-67	12:36 PM	59	63	61	2	61	62	1	0
11-1-67	1:48 PM	71	78	81	3	76	71	5	6



TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date	Time	Air° Temp.	North Side			South Side			Avg. Diff.°	
			Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°		
11-2-67	1:12 PM	72	87	93	6	79	63	16	19	
11-3-67	1:24 PM	76	87	88	1	81	73	8	11	
11-4-67	1:36 PM	61	71	84	13	66	55	11	16	
11-5-67	1:12 PM	57	66	77	11	64	52	12	14	
11-6-67	2:24 PM	60	71	84	13	65	53	12	18	
11-7-67	2:00 PM	69	82	93	11	74	61	13	20	
11-8-67	2:00 PM	67	80	87	7	74	61	13	16	
11-9-67	1:24 PM	71	79	89	10	78	64	14	13	
11-10-67	1:00 PM	75	82	85	3	79	74	5	7	
11-11-67	1:00 PM	81	95	94	1	88	79	9	11	
11-12-67	-----	NO INFORMATION THIS DATE								-----
11-13-67	12:36 PM	87	99	101	2	94	74	20	16	
11-14-67	1:24 PM	80	92	92	0	84	78	6	11	
11-15-67	1:36 PM	69	80	90	10	76	65	11	14	
11-16-67	1:12 PM	66	79	86	7	76	63	3	18	
11-17-67	1:24 PM	78	93	96	3	35	73	12	16	
11-18-67	2:00 PM	81	90	95	5	84	73	11	14	
11-19-67	1:24 PM	71	81	87	6	75	64	11	14	
11-20-67	1:36 PM	76	92	96	4	83	70	13	18	
11-21-67	1:00 PM	76	86	86	0	80	75	5	8	
11-22-67	1:36 PM	77	83	83	0	79	77	2	5	
11-23-67	12:24 PM	79	87	86	1	81	77	4	8	
11-24-67	12:24 PM	77	81	80	1	78	74	4	5	
11-25-67	11:00 AM	81	87	67	20	88	93	5	14	
11-26-67	10:12 AM	80	83	80	3	81	79	2	2	
11-27-67	11:00 AM	80	83	86	3	82	76	6	6	
11-28-67	12:12 PM	57	59	60	1	59	58	1	1	
11-29-67	10:12 AM	76	79	75	4	79	78	1	2	
11-30-67	2:12 PM	79	89	87	2	81	75	6	10	
12-1-67	12:00 Noon	74	79	78	1	79	75	4	2	
12-2-67	11:24 AM	79	83	80	3	81	79	2	2	
12-3-67	1:12 PM	59	71	83	12	65	56	9	16	
12-4-67	2:36 PM	65	73	74	1	66	59	7	4	
12-5-67	3:00 PM	70	79	86	7	70	64	6	16	
12-6-67	12:24 PM	81	90	91	1	86	79	7	8	
12-7-67	12:24 PM	77	82	85	3	82	73	9	5	
12-8-67	12:24 PM	79	88	90	2	84	73	11	10	
12-9-67	11:00 AM	67	59	67	8	67	67	0	4	
12-10-67	11:48 AM	67	73	71	2	73	69	4	1	
12-11-67	11:00 AM	58	63	64	1	60	56	4	4	
12-12-67	2:48 PM	71	85	85	0	74	66	8	15	
12-13-67	12:36 PM	76	82	85	3	79	74	5	7	
12-14-67	1:00 PM	77	79	79	0	79	78	1	0	

TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date	Time	Air ° Temp.	North Side		Diff.°	South Side		Diff.°	Avg. Diff.°
			Top°	Bot.°		Top°	Bot.°		
12-15-67	2:36 PM	80	92	87	5	82	78	4	10
12-16-67	12:48 PM	62	67	68	1	67	63	4	3
12-17-67	1:36 PM	76	79	77	2	77	77	0	1
12-18-67	1:48 PM	76	78	75	3	77	74	3	1
12-19-67	2:36 PM	84	87	86	1	83	79	4	6
12-20-67	12:48 PM	80	87	89	2	84	78	5	6
12-21-67	11:48 AM	78	83	82	1	79	79	0	4
12-22-67	1:36 PM	54	63	74	11	59	54	5	12
12-23-67	12:48 PM	54	55	65	10	53	47	6	10
12-24-67	12:24 PM	57	67	77	10	62	47	15	17
12-25-67	3:00 PM	73	74	75	1	65	59	6	13
12-26-67	1:48 PM	59	71	82	11	64	54	10	18
12-27-67	12:12 PM	60	60	60	0	52	60	8	4
12-28-67	12:12 PM	39	43	43	0	42	43	1	0
12-29-67	1:00 PM	52	63	72	10	57	43	14	19
12-30-67	1:24 PM	61	66	73	7	64	55	9	10
12-31-67	9:36 AM	69	71	66	5	71	70	1	2
1-1-68	-----	NO INFORMATION THIS DATE							
1-2-68	11:48 AM	61	62	61	1	62	59	3	1
1-3-68	1:00 PM	78	87	86	1	62	59	3	16
1-4-68	2:24 PM	61	66	69	3	63	58	5	7
1-5-68	2:36 PM	55	56	55	1	55	55	0	1
1-6-68	11:24 AM	74	80	77	3	79	75	4	2
1-7-68	12:12 PM	52	52	52	0	52	52	0	0
1-8-68	12:24 PM	46	47	49	2	47	44	3	2
1-9-68	1:36 PM	74	76	75	1	74	73	1	2
1-10-68	12:12 PM	54	54	52	2	43	43	0	10
1-11-68	2:00 PM	42	43	43	0	43	43	0	0
1-12-68	11:48 AM	42	42	42	0	41	43	2	0
1-13-68	2:12 PM	49	51	50	2	50	50	0	1
1-14-68	2:48 PM	49	57	61	4	48	43	5	13
1-15-68	3:12 PM	46	57	62	5	46	43	4	15
1-16-68	1:48 PM	69	71	75	4	61	51	10	17
1-17-68	2:00 PM	59	71	82	11	65	51	14	19
1-18-68	3:00 PM	66	78	88	10	68	59	9	10
1-19-68	11:36 AM	68	74	88	14	72	65	7	12
1-20-68	2:24 PM	74	75	79	4	73	68	5	6
1-21-68	2:36 PM	72	77	83	6	74	66	8	10
1-22-68	2:36 PM	74	83	92	9	78	68	10	15
1-23-68	1:24 PM	67	75	75	0	70	67	3	6
1-24-68	3:00 PM	49	63	75	12	51	46	5	15

TABLE 4

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 2

Date	Time	Air ° Temp.	North Side		Diff.°	South Side		Diff.°	Avg. Diff.°
			Top°	Bot.°		Top°	Bot.°		
1-25-68	3:12 PM	62	80	82	2	67	54	13	20
1-26-68	3:24 PM	69	81	84	3	74	66	8	13
1-27-68	3:00 PM	72	74	78	4	72	68	4	2
1-28-68	1:00 PM	70	74	75	1	73	68	5	4
1-29-68	3:00 PM	73	81	82	1	78	71	7	7
1-30-68	12:48 PM	79	85	85	0	82	70	12	9
1-31-68	4:12 PM	79	88	86	2	78	74	4	11
2-1-68	9:12 AM	75	80	79	1	79	75	4	3
2-2-68	1:36 PM	64	75	87	12	69	60	9	16
2-3-68	2:36 PM	59	70	81	11	65	53	12	17
2-4-68	2:24 PM	73	74	81	7	72	68	4	8
2-5-68	1:36 PM	70	84	94	10	77	64	13	18
2-6-68	1:12 PM	62	73	83	10	68	58	10	15
2-7-68	1:48 PM	58	68	73	5	64	56	8	11
2-8-68	12:48 PM	52	62	71	9	57	46	11	15
2-9-68	1:24 PM	61	75	82	7	67	54	13	18
2-10-68	3:00 PM	62	72	72	0	64	60	4	10
2-11-68	2:12 PM	62	68	70	2	65	62	3	5
2-12-68	2:00 PM	57	67	78	11	65	51	14	15
2-13-68	2:48 PM	57	65	73	8	60	51	9	13
2-14-68	2:00 PM	56	58	59	1	57	54	3	3
2-15-68	5:00 PM	51	50	49	1	57	50	7	4
2-16-68	1:36 PM	46	49	48	1	49	47	2	1
2-17-68	10:48 AM	50	54	57	3	55	51	4	3
2-18-68	1:24 PM	46	47	47	0	47	46	1	0
2-19-68	2:12 PM	59	70	82	12	66	53	13	16
2-20-68	12:24 PM	62	70	71	1	66	60	6	8
2-21-68	12:48 PM	77	89	90	1	86	72	14	11
2-22-68	12:00 Noon	39	39	39	0	39	39	0	0
2-23-68	12:24 PM	38	38	38	0	37	38	1	0
2-24-68	2:24 PM	54	69	79	10	61	49	12	19
2-25-68	11:36 AM	60	70	70	0	68	61	7	5
2-26-68	1:24 PM	70	80	91	11	75	64	11	16
2-27-68	1:36 PM	67	82	89	7	78	63	15	15
2-28-68	12:24 PM	67	72	69	3	72	68	4	1
2-29-68	8:12 AM	52	59	47	12	59	70	11	12
3-1-68	10:00 AM	53	65	69	4	62	52	10	10
3-2-68	10:00 AM	62	70	66	4	67	65	2	2
3-3-68	9:34 AM	61	74	83	9	70	59	11	14

TABLE 5

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

BRIDGE NO. 3

Date	Time	Air ° Temp.	North Side			South Side			Avg. Diff.°
			Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°	
5-8-68	2:24 PM	82	80	83	3	84	80	4	0
5-9-68	2:00 PM	77	77	80	3	80	77	3	0
5-10-68	1:00 PM	74	76	80	4	81	80	1	3
5-11-68	2:48 PM	77	80	87	7	85	78	7	2
5-12-68	1:36 PM	77	77	87	10	88	85	3	5
5-13-68	11:00 AM	76	74	84	10	89	91	2	11
5-14-68	5:00 PM	83	95	98	3	87	79	8	14
5-15-68	12:00 Noon	81	76	93	17	95	100	5	13
5-16-68	1:48 PM	81	77	97	20	100	102	2	14
5-17-68	3:24 PM	80	88	93	5	87	78	9	8
5-18-68	-----	NO INFORMATION THIS DATE -----							
5-19-68	-----	NO INFORMATION THIS DATE -----							
5-20-68	3:48 PM	76	90	97	7	92	74	18	11
5-21-68	12:48 PM	74	69	87	18	94	96	2	17
5-22-68	11:36 AM	74	70	87	17	91	95	4	14
5-23-67	11:36 AM	75	74	87	13	90	91	1	10
5-24-68	12:36 PM	81	83	94	11	95	90	5	4
5-25-68	11:48 AM	80	75	91	16	96	99	3	15
5-26-68	11:36 AM	79	70	88	18	95	98	3	18
5-27-68	12:24 PM	79	78	91	13	95	94	1	10
5-28-68	12:12 PM	73	69	86	17	93	97	4	17
5-29-68	12:24 PM	80	72	92	20	98	102	4	18
5-30-68	12:36 PM	83	76	95	19	102	106	4	18
5-31-68	12:00 Noon	78	74	92	18	97	100	3	16
6-1-68	1:12 PM	80	80	97	17	99	95	4	8
6-2-68	12:12 PM	82	75	97	22	100	105	5	17
6-3-68	1:36 PM	81	82	103	21	105	101	4	10
6-4-68	12:00 Noon	82	77	94	17	100	103	3	16
6-5-68	11:00 AM	85	77	93	16	100	101	1	16
6-6-68	11:48 AM	82	80	94	14	99	99	0	12
6-7-68	2:36 PM	86	90	104	14	104	90	14	0
6-8-68	3:00 PM	85	93	105	12	103	86	13	4
6-9-68	1:12 PM	79	78	91	13	92	90	2	6
6-10-68	12:12 PM	83	96	82	14	98	96	2	8
6-11-68	1:00 PM	85	100	81	19	105	103	2	13
6-12-68	3:00 PM	82	85	81	4	85	81	4	0
6-13-68	2:48 PM	83	106	95	11	102	87	15	6
6-14-68	2:12 PM	84	108	90	18	106	92	14	0
6-15-68	12:00 Noon	82	97	82	15	100	98	2	9
6-16-68	10:48 AM	81	92	77	15	99	101	2	15
6-17-68	12:00 Noon	82	93	80	13	97	96	1	10

TABLE 5

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 3

Date	Time	Air ° Temp.	North Side			South Side			Avg. Diff.°
			Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°	
6-18-68	12:12 PM	85	98	83	15	101	100	1	10
6-19-68	11:48 AM	82	93	81	12	96	96	0	9
6-20-68	11:48 AM	80	84	81	3	86	84	2	2
6-21-68	6:00 PM	71	74	71	3	72	70	2	1
6-22-68	3:36 PM	81	92	86	6	88	82	6	4
6-23-68	1:12 PM	80	92	81	11	91	89	2	3
6-24-68	1:24 PM	81	91	80	11	90	87	3	3
6-25-68	2:24 PM	82	102	90	12	100	87	13	2
6-26-68	12:36 PM	86	96	79	17	100	102	2	13
6-27-68	12:00 Noon	81	90	73	17	96	97	1	5
6-28-68	12:00 Noon	83	98	75	23	103	106	3	18
6-29-68	12:48 PM	85	99	81	18	103	102	1	13
6-30-68	11:36 AM	84	95	78	17	100	102	2	14
7-1-68	10:36 AM	89	100	86	14	103	100	3	9
7-2-68	10:36 AM	82	94	80	14	99	100	1	13
7-3-68	11:36 AM	86	96	81	15	99	100	1	11
7-4-68	2:48 PM	83	95	94	1	88	79	9	11
7-5-68	10:36 AM	81	94	77	17	100	103	3	16
7-6-68	12:12 AM	83	102	83	19	104	97	7	11
7-7-68	11:24 AM	87	97	81	16	101	100	1	12
7-8-68	12:00 Noon	82	101	82	19	104	99	5	11
7-9-68	11:24 AM	81	91	83	8	95	89	6	5
7-10-68	10:00 AM	82	89	75	14	96	97	1	15
7-11-68	2:48 PM	84	104	91	13	104	89	15	1
7-12-68	2:12 PM	81	96	76	20	95	85	10	4
7-13-68	4:12 PM	82	92	90	2	86	81	5	7
7-14-68	12:12 PM	83	95	81	14	98	98	0	10
7-15-68	2:12 PM	82	98	84	14	96	87	9	1
7-16-68	12:00 Noon	80	92	79	13	94	95	1	9
7-17-68	8:36 AM	78	75	70	5	80	79	1	7
7-18-68	11:36 AM	80	90	77	13	94	93	1	10
7-19-68	12:00 Noon	83	93	79	14	96	97	1	11
7-20-68	3:36 PM	80	93	88	5	88	80	8	7
7-21-68	12:24 PM	80	90	77	13	91	92	1	8
7-22-68	-----	NO INFORMATION THIS DATE							
7-23-68	9:48 AM	83	72	78	6	85	86	1	11
7-24-68	12:48 PM	82	77	93	16	97	99	2	13
7-25-68	12:12 PM	81	78	98	20	102	101	1	14
7-26-68	1:12 PM	84	81	101	20	104	101	3	12
7-27-68	12:48 PM	87	81	104	23	109	111	2	17
7-28-68	4:12 PM	89	99	111	12	107	88	19	7

TABLE 5

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

BRIDGE NO. 3

Date	Time	Air ° Temp.	North Side			South Side		Diff. °	Avg. Diff. °
			Top °	Bot. °	Diff. °	Top °	Bot. °		
7-29-68	2:24 PM	89	88	106	18	106	97	9	5
7-30-68	12:24 PM	87	78	99	21	105	110	5	19
7-31-68	4:24 PM	88	99	101	2	95	83	12	11
8-1-68	11:00 AM	83	93	110	17	105	91	14	4
8-2-68	11:48 AM	86	80	93	13	99	99	0	12
8-3-68	11:48 AM	84	79	91	18	98	100	2	11
8-4-68	10:48 AM	81	78	89	11	95	96	1	12
8-5-68	12:24 AM	84	79	95	16	101	104	3	16
8-6-68	12:12 PM	82	81	96	15	100	101	1	12
8-7-68	1:00 PM	85	82	105	23	112	112	0	18
8-8-68	1:00 PM	87	82	100	18	105	101	4	12
8-9-68	3:48 PM	87	95	105	10	99	86	13	7
8-10-68	1:12 PM	87	84	104	20	110	111	1	17
8-11-68	12:24 PM	89	81	99	18	106	108	2	17
8-12-68	-----	NO INFORMATION THIS DATE							-----
8-13-68	12:24 PM	82	80	92	12	95	94	1	9
8-14-68	2:36 PM	81	83	96	13	96	93	3	5
8-15-68	11:36 AM	80	77	88	11	94	95	1	12
8-16-68	2:36 PM	84	84	103	19	103	98	5	7
8-17-68	1:36 PM	84	81	96	15	103	103	0	14
8-18-68	1:48 PM	87	80	100	20	107	108	1	18
8-19-68	2:48 PM	82	85	93	8	92	87	5	1
8-20-68	1:48 PM	82	81	97	16	102	103	1	14
8-21-68	1:24 PM	89	81	101	20	107	111	4	18
8-22-68	1:24 PM	79	75	89	14	95	94	1	13
8-23-68	12:00 Noon	84	81	95	14	101	102	1	14
8-24-68	12:36 PM	88	82	98	16	105	107	2	16
8-25-68	11:12 AM	83	76	86	10	93	94	1	13
8-26-68	12:36 PM	85	82	96	14	102	104	2	14
8-27-68	1:12 PM	80	75	92	17	100	105	5	19
8-28-68	12:00 Noon	79	71	86	15	98	104	6	22
8-29-68	1:00 PM	75	77	90	13	97	101	4	15
8-30-68	12:48 PM	82	77	92	15	101	103	2	17
8-31-68	12:00 Noon	82	75	92	17	100	104	4	18
9-1-68	12:36 PM	82	77	92	15	100	102	2	16
9-2-68	12:24 PM	79	77	94	17	101	103	2	22
9-3-68	2:00 PM	82	81	96	15	97	96	1	8
9-4-68	11:36 AM	81	75	83	8	88	91	3	11
9-5-68	9:12 AM	79	71	78	7	83	84	1	9
9-6-68	1:48 PM	82	77	92	15	99	100	1	15
9-7-68	12:23 PM	81	74	91	17	101	106	5	21

TABLE 5

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 3

Date	Time	Air ° Temp.	North Side		Diff.°	South Side		Diff.°	Avg. Diff.°
			Top°	Bot.°		Top°	Bot.°		
9-8-68	12:00 Noon	84	81	92	11	98	96	2	10
9-9-68	1:00 PM	87	79	96	17	104	103	1	16
9-10-68	11:00 AM	80	74	86	12	95	96	1	16
9-11-68	12:00 Noon	74	74	84	10	90	92	2	12
9-12-68	12:24 PM	73	74	81	7	85	85	0	7
9-13-68	3:12 PM	80	78	94	16	100	99	1	14
9-14-68	2:12 PM	75	79	85	6	83	79	4	1
9-15-68	10:00 AM	79	74	83	9	87	90	3	10
9-16-68	2:00 PM	75	75	78	3	77	74	3	1
9-17-68	1:12 PM	80	79	89	10	90	88	2	5
9-18-68	1:24 PM	80	73	90	17	99	104	5	20
9-19-68	11:36 AM	80	71	89	18	97	101	4	19
9-20-68	1:00 PM	80	78	94	16	104	104	0	18
9-21-68	12:00 Noon	85	77	89	12	94	96	2	12
9-22-68	12:40 PM	82	79	91	12	97	100	3	14
9-23-68	12:48 PM	78	76	91	15	100	105	5	19
9-24-68	12:48 PM	79	76	93	17	102	103	1	18
9-25-68	1:00 PM	85	77	96	19	106	108	2	20
9-26-68	3:24 PM	74	76	85	9	88	82	6	4
9-27-68	1:00 PM	78	72	85	13	96	101	5	20
9-28-68	12:24 PM	80	73	88	15	99	106	7	22
9-29-68	12:12 PM	79	73	89	16	100	106	6	22
9-30-68	12:36 PM	85	77	92	15	100	105	5	18
10-1-68	11:24 AM	81	74	88	14	94	97	3	15
10-2-68	11:24 AM	79	76	87	11	94	97	3	14
10-3-68	9:36 AM	80	71	80	9	86	87	1	11
10-4-68	1:12 PM	76	74	81	7	85	85	0	7
10-5-68	12:00 Noon	74	74	79	5	79	76	3	1
10-6-68	12:36 PM	75	68	74	6	80	83	3	11
10-7-68	1:24 PM	76	76	84	8	86	84	2	5
10-8-68	12:12 PM	79	76	87	11	93	94	1	12
10-9-68	12:00 Noon	80	74	90	16	99	102	3	19
10-10-68	1:00 PM	81	77	87	10	96	97	1	15
10-11-68	1:12 PM	82	77	87	10	95	95	0	13
10-12-68	1:12 PM	80	78	90	12	97	99	2	14
10-13-68	1:24 PM	82	78	89	11	95	97	2	12
10-14-68	12:48 PM	82	76	89	13	96	100	4	15
10-15-68	2:12 PM	79	74	86	12	95	99	4	17
10-16-68	11:36 AM	85	75	86	11	94	96	2	14
10-17-68	12:12 PM	87	76	89	13	98	102	4	17
10-18-68	12:48 PM	76	69	79	10	91	93	2	18
10-19-68	12:36 PM	70	64	76	12	88	96	8	22

TABLE 5

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 3

Date	Time	Air ° Temp.	North Side			South Side		Diff. °	Avg. Diff. °
			Top °	Bot. °	Diff. °	Top °	Bot. °		
10-20-68	1:00 PM	75	66	79	13	88	94	6	18
10-21-68	12:00 Noon	74	68	81	13	92	92	0	17
10-22-68	12:00 Noon	76	69	82	13	91	93	2	16
10-23-68	1:12 PM	79	71	87	16	98	102	4	21
10-24-68	11:48 AM	69	61	67	6	76	79	3	14
10-25-68	11:48 AM	65	56	66	10	78	83	5	20
10-26-68	1:24 PM	83	60	80	20	92	98	6	25
10-27-68	12:12 PM	73	65	82	17	92	96	4	20
10-28-68	1:24 PM	72	60	72	12	80	84	4	16
10-29-68	12:36 PM	79	59	77	18	89	97	8	26
10-30-68	12:48 PM	84	72	88	16	98	100	2	19
10-31-68	12:12 PM	81	69	83	14	90	93	3	15
11-1-68	10:12 AM	73	64	78	14	87	92	5	19
11-2-68	11:12 AM	73	69	85	16	91	94	3	15
11-3-68	12:12 PM	78	75	84	9	90	92	2	11
11-4-68	11:36 AM	58	59	61	2	62	61	1	2
11-5-68	11:24 AM	67	57	75	18	86	91	5	24
11-6-68	2:12 PM	75	70	77	7	80	77	3	5
11-7-68	11:48 AM	67	58	71	13	81	84	3	18
11-8-68	11:24 AM	59	55	65	10	70	75	5	13
11-9-68	2:24 PM	52	49	51	2	53	53	0	3
11-10-68	12:00 Noon	59	52	69	17	78	85	7	21
11-11-68	-----	NO INFORMATION THIS DATE							-----
11-12-68	1:24 PM	57	49	59	10	68	70	2	15
11-13-68	1:12 PM	61	57	69	12	75	77	2	13
11-14-68	1:36 PM	66	67	71	4	71	69	2	1
11-15-68	1:24 PM	70	68	74	6	77	79	2	7
11-16-68	12:36 PM	77	71	83	12	89	89	0	12
11-17-68	1:12 PM	72	73	79	6	80	76	4	2
11-18-68	10:00 AM	57	52	59	7	69	72	3	15
11-19-68	11:48 AM	58	48	59	11	69	74	5	18
11-20-68	11:48 AM	64	51	70	19	81	86	5	23
11-21-68	11:00 AM	70	55	70	15	82	87	5	22
11-22-68	12:36 PM	72	61	81	20	90	91	1	20
11-23-68	11:48 AM	66	64	71	7	74	73	1	6
11-24-68	10:12 AM	71	60	72	12	82	85	3	18
11-25-68	11:24 AM	61	54	70	16	79	83	4	19
11-26-68	9:36 AM	66	55	70	15	74	77	3	13
11-27-68	12:48 PM	70	71	75	4	76	75	1	3
11-28-68	12:00 Noon	65	55	66	11	76	82	6	18
11-29-68	11:00 AM	59	53	59	6	66	71	5	13



TABLE 5

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

BRIDGE NO.

Date	Time	Air ° Temp.	North Side			South Side			Avg. Diff.°
			Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°	
11-30-68	5:00 PM	56	54	55	1	54	55	1	0
12-1-68	1:36 PM	54	55	58	3	58	56	2	0
12-2-68	12:36 PM	68	62	79	17	84	85	1	14
12-3-68	2:24 PM	62	59	63	4	66	66	0	5
12-4-68	1:12 PM	62	51	64	13	73	76	3	17
12-5-68	11:24 AM	71	57	72	15	82	88	6	20
12-6-68	11:12 AM	69	61	72	11	79	83	4	14
12-7-68	1:36 PM	61	58	66	8	71	70	1	9
12-8-68	12:36 PM	49	45	57	12	65	74	9	19
12-9-68	1:00 PM	55	52	67	15	74	78	4	16
12-10-68	12:12 PM	67	56	73	17	81	84	3	19
12-11-68	11:12 AM	62	54	67	13	75	79	4	16
12-12-68	11:24 AM	66	64	68	4	69	68	1	3
12-13-68	3:36 PM	56	59	55	4	60	58	2	2
12-14-68	12:48 PM	55	48	46	2	64	67	3	19
12-15-68	12:24 PM	44	52	42	10	61	65	4	16
12-16-68	11:12 AM	44	56	40	16	66	73	7	22
12-17-68	1:12 PM	62	68	54	14	74	74	0	1
12-18-68	1:24 PM	65	68	63	5	69	68	1	3
12-19-68	11:24 AM	59	65	52	13	75	78	3	16
12-20-68	2:36 PM	60	65	61	4	66	64	2	2
12-21-68	3:18 PM	66	65	63	2	65	64	1	1
12-22-68	10:48 AM	67	67	65	2	67	66	1	1
12-23-68	12:00 Noon	51	52	44	8	61	66	5	16
12-24-68	12:24 PM	57	62	46	16	73	79	6	22
12-25-68	11:48 AM	61	66	50	16	76	80	4	20
12-26-68	11:48 AM	59	59	58	1	59	58	1	0
12-27-68	10:36 AM	69	70	65	5	74	75	1	7
12-28-68	11:00 AM	64	64	49	15	76	80	4	21
12-29-68	12:12 PM	62	69	52	17	78	84	6	21
12-30-68	10:24 AM	61	59	59	0	59	59	0	0
12-31-68	1:00 PM	55	55	56	1	56	55	1	0
1-1-69	2:12 PM	52	45	56	11	61	67	6	13
1-2-69	1:12 PM	56	55	61	6	64	63	1	6
1-3-69	2:36 PM	55	54	55	1	55	55	0	0
1-4-69	11:12 AM	44	41	46	5	51	52	1	8
1-5-69	1:36 PM	52	42	62	20	69	73	4	19
1-6-69	1:24 PM	62	54	71	17	77	80	3	17
1-7-69	12:36 PM	68	57	75	18	83	84	1	18
1-8-69	1:24 PM	66	64	74	10	78	79	1	10

TABLE 5

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 3

Date	Time	Air ° Temp.	North Side			South Side			Avg. Diff.°	
			Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°		
1-9-69	11:48 AM §	74	68	79	11	87	88	1	14	
1-10-69	12:12 PM	52	42	52	10	61	68	7	18	
1-11-69	1:36 PM	46	44	51	7	58	61	3	12	
1-12-69	1:48 PM	52	50	59	9	64	64	0	9	
1-13-69	12:12 PM	62	52	70	18	78	83	5	20	
1-14-69	12:48 PM	65	54	72	18	80	84	4	19	
1-15-69	11:48 AM	62	58	69	11	75	76	1	12	
1-16-69	11:00 AM	66	63	70	7	73	72	1	6	
1-17-69	9:24 AM	59	56	57	1	56	56	0	1	
1-18-69	11:48 AM	57	57	58	1	57	57	0	1	
1-19-69	-----	NO INFORMATION THIS DATE							-----	-----
1-20-69	11:24 AM	63	59	63	4	67	67	0	6	
1-21-69	2:36 PM	60	58	66	8	71	70	1	9	
1-22-69	11:48 AM	60	58	68	10	75	75	0	12	
1-23-69	12:12 PM	67	62	75	7	80	80	0	14	
1-24-69	11:24 AM	72	67	76	9	82	85	3	12	
1-25-69	10:24 AM	55	56	58	2	57	57	0	0	
1-26-69	11:24 AM	56	50	58	8	65	73	8	15	
1-27-69	2:12 PM	58	57	61	4	61	60	1	2	
1-28-69	12:00 Noon	67	64	75	11	81	82	1	12	
1-29-69	10:24 AM	68	62	70	8	78	79	1	13	
1-30-69	1:12 PM	69	68	74	6	77	77	0	6	
1-31-69	11:36 AM	74	68	75	7	80	70	1	8	
2-1-69	1:12 PM	75	71	80	9	84	84	0	8	
2-2-69	11:48 AM	74	69	79	10	86	88	2	13	
2-3-69	11:36 AM	56	52	56	4	63	66	3	11	
2-4-69	12:24 PM	58	50	63	13	72	80	8	19	
2-5-69	2:00 PM	59	60	66	6	65	61	4	0	
2-6-69	2:36 PM	70	66	72	6	75	76	1	7	
2-7-69	11:48 AM	74	59	73	14	83	86	3	19	
2-8-69	12:48 PM	73	66	75	9	85	89	4	16	
2-9-69	12:36 PM	61	53	67	14	78	83	5	21	
2-10-69	12:48 PM	60	58	66	8	72	74	2	11	
2-11-69	2:24 PM	70	62	75	13	83	83	0	14	
2-12-69	12:36 PM	69	64	77	7	82	86	4	16	
2-13-69	12:00 Noon	55	51	62	11	72	77	5	18	
2-14-69	3:48 PM	52	52	52	0	52	52	0	0	
2-15-69	1:24 PM	59	54	60	6	68	69	1	12	
2-16-69	11:36 AM	49	47	54	7	62	63	1	12	
2-17-69	1:12 PM	53	46	57	11	67	70	3	17	

TABLE 5

## MAXIMUM DAILY TEMPERATURE DIFFERENTIAL

## BRIDGE NO. 3

Date	Time	Air ° Temp.	North Side			South Side			Avg. Diff.°
			Top°	Bot.°	Diff.°	Top°	Bot.°	Diff.°	
2-18-69	12:12 PM	56	47	60	13	72	79	7	22
2-19-69	10:24 AM	54	50	60	10	67	71	4	14
2-20-69	1:12 PM	54	55	57	2	56	55	1	0
2-21-69	2:12 PM	57	58	58	0	56	55	1	2
2-22-69	1:12 PM	53	53	55	2	55	54	1	1
2-23-69	12:48 PM	61	58	71	13	78	80	2	14
2-24-69	12:48 PM	68	59	74	15	84	90	6	20
2-25-69	12:12 PM	65	61	71	10	84	89	5	21
2-26-69	11:48 AM	64	61	75	14	80	82	2	13
2-27-69	7:12 AM	64	57	66	9	73	75	2	12
2-28-69	7:36 AM	68	59	70	11	76	76	0	11
3-1-69	10:36 AM	61	52	65	13	77	80	3	20
3-2-69	10:24 AM	58	56	66	10	74	78	4	15
3-3-69	11:36 AM	57	52	61	9	68	72	4	13
3-4-69	11:24 AM	57	47	58	11	70	79	9	22
3-5-69	12:24 PM	55	56	58	2	58	56	2	0
3-6-69	3:12 PM	60	64	68	4	68	62	6	1
3-7-69	12:48 PM	55	54	66	8	73	78	5	18
3-8-69	12:48 PM	73	68	82	14	87	90	3	14
3-9-69	1:24 PM	53	48	58	10	64	67	3	13
3-10-69	11:24 AM	52	49	59	10	67	70	3	15
3-11-69	3:00 PM	50	56	65	10	64	59	5	1
3-12-69	12:24 PM	49	49	52	3	50	49	1	1
3-13-69	11:24 AM	62	49	68	19	79	84	5	23
3-14-69	11:12 AM	60	58	67	9	71	73	2	9
3-15-69	10:12 AM	55	53	54	1	54	54	0	0
3-16-69	12:36 PM	52	50	52	2	51	51	0	0
3-17-69	2:36 PM	54	54	55	1	54	54	0	1
3-18-69	8:24 AM	55	52	55	3	58	58	0	4
3-19-69	11:24 AM	74	60	80	20	93	100	7	27
3-20-69	12:00 Noon	72	67	81	14	89	92	3	17
3-21-69	1:36 PM	74	73	90	17	91	87	4	7
3-22-69	12:48 PM	69	70	81	11	82	80	2	5
3-23-69	12:12 PM	67	66	68	2	70	66	4	1
3-24-69	11:24 AM	68	65	74	9	86	94	8	25
3-25-69	11:12 AM	59	53	61	8	73	78	5	19
3-26-69	11:24 AM	60	55	61	6	74	84	10	21
3-27-69	11:24 AM	64	55	69	14	82	90	8	24
3-28-69	11:12 AM	69	59	74	15	87	97	10	25
3-29-69	1:00 PM	69	69	89	20	94	94	0	15
3-30-69	11:48 AM	73	64	83	19	96	103	7	26

TABLE 5  
 MAXIMUM DAILY TEMPERATURE DIFFERENTIAL  
 BRIDGE NO. 3

Date	Time	Air ° Temp.	North Side			South Side		Avg. Diff.°	
			Top°	Bot.°	Diff.°	Top°	Bot.°		
3-31-69	11:36 AM	63	61	74	13	86	88	2	19
4-1-69	11:00 AM	71	65	78	13	88	93	5	19
4-2-69	11:36 AM	76	74	86	12	92	95	3	14
4-3-69	11:24 AM	73	69	83	14	91	95	4	17
4-4-69	11:24 AM	73	72	79	7	84	85	1	9
4-5-69	3:12 PM	69	69	74	5	73	69	4	1
4-6-69	1:00 PM	74	69	84	15	90	91	1	14
4-7-69	10:12 AM	71	64	78	14	87	94	7	20
4-8-69	12:24 PM	74	74	87	13	89	90	1	9
4-9-69	12:36 PM	73	73	88	15	91	91	0	10
4-10-69	12:24 PM	75	75	84	9	86	86	0	6
4-11-69	11:24 AM	73	74	81	7	85	86	1	8
4-12-69	11:48 AM	71	72	77	5	75	74	1	0
4-13-69	12:36 PM	71	74	80	6	81	78	3	3
4-14-69	12:36 PM	76	72	92	20	97	98	1	16
4-15-69	12:24 PM	77	73	93	20	97	95	2	13
4-16-69	5:12 PM	70	68	68	0	66	62	4	4
4-17-69	10:00 AM	71	73	75	2	75	72	3	0
4-18-69	11:36 AM	69	62	75	13	84	92	8	19
4-19-69	10:48 AM	71	63	77	14	90	97	7	24
4-20-69	11:00 AM	67	61	79	18	91	96	5	24
4-21-69	10:12 AM	73	62	78	16	91	96	5	24
4-22-69	10:36 AM	77	66	84	18	96	103	7	25
4-23-69	11:36 AM	80	72	91	19	99	102	3	19
4-24-69	10:36 AM	63	62	67	5	75	78	3	12

TABLE 6

## SUMMARY OF TEMPERATURE DIFFERENTIAL EXCEEDING 10°F

Temperature Differential	Bridge No. 1		Bridge No. 2		Bridge No. 3	
	Occurrences	Percent of Total	Occurrences	Percent of Total	Occurrences	Percent of Total
10°F - 12°F	68	22	142	56	67	27
13°F - 15°F	80	26	78	30	86	35
16°F - 18°F	71	23	25	10	61	25
19°F - 21°F	61	19	8	3	28	11
22°F - 24°F	23	7	3	1	4	2
above 24°F	10	3	0	0	0	0
Total	313	100	256	100	246	100