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TO: B.C. Rusche

FROM: Duke Power Co.
Charlotte, N.C.
W.O. Parker, Jr.

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ENCLOSURE
Reactor Building Post-Tensioning System End Anchorage Surveillance Report...

(40 Cys. Received) Originals)

ACKNOWLEDGED

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PLANT NAME: Oconee # 3

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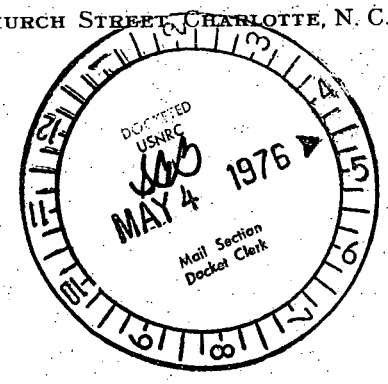
DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083



April 30, 1976

Mr. Benard C. Rusche
Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Re: Oconee Unit 3
Docket No. 50-287

Dear Mr. Rusche:

Please find enclosed forty copies of the Oconee Nuclear Station Unit 3 Reactor Building Post-Tensioning System End Anchorage Surveillance Report. This report is submitted pursuant to Oconee Nuclear Station Technical Specification 4.4.2.3 and 6.6.3.5.

Very truly yours,

W. O. Parker, Jr.

William O. Parker, Jr. By

EDB:mmb

Enclosures

4439

DUKE POWER COMPANY

OCONEE NUCLEAR STATION

UNIT 3
REACTOR BUILDING
POST-TENSIONING SYSTEM
END ANCHORAGE SURVEILLANCE

APRIL 30, 1976

1.0 INTRODUCTION

The end anchorage concrete surveillance program for the Oconee Nuclear Station, Unit 3 reactor building post-tensioning system was defined and is executed in order to assure the continued structural integrity of the Reactor Building. The program consists of periodic inspections of selected end anchorages and adjacent concrete surfaces.

The requirements for the program are detailed in Oconee Nuclear Station Technical Specification 4.4.2.3. The inspection interval, as specified therein, will be approximately one-half year and one year after the operation of the unit and will occur during the warmest and coldest part of the year. The specified surveillance was performed once on May 2, 1975 and again on January 30, 1976 and February 27, 1976. Results were compared with similar surveillance performed prior to the Reactor Building Structural Integrity Test of April 30, 1974 through May 8, 1974.

Surveillance was conducted in accordance with approved test procedure TP/3/B/0150/13, Prestressing Tendon Anchor Zone Surveillance Program, and the results of this program are reported herein.

2.0 RESULTS

2.1 END ANCHORAGE CONCRETE SURVEILLANCE

Six locations along the 90^{o} buttress were selected and examined during the Reactor Building Structural Integrity Test. These areas were selected after an overall visual inspection of the accessible buttress areas. Additionally, an overall visual inspection of the ring girder was performed to locate and map any cracks. Results of inspections made prior to the Reactor Building Structural Integrity Test and at two other periods occurring at approximately the hottest and coldest times of the year are presented on Figures 1 - 7.

2.2 TENDON ANCHOR MOVEMENTS

Position measurements for seven of the tendon anchors were made during the Reactor Building Structural Integrity Test and at the two other periods as as stated above. Results of these measurements are given in Table 1. Details of the demountable reference frames and the location of measurements are shown in Figure 8.

3.0 SUMMARY AND CONCLUSIONS

Visual inspection of the end anchorage exterior surfaces revealed no symptoms of abnormal cracking or deterioration.

Measurements of tendon anchor movement showed no abnormal motion during the surveillance program.

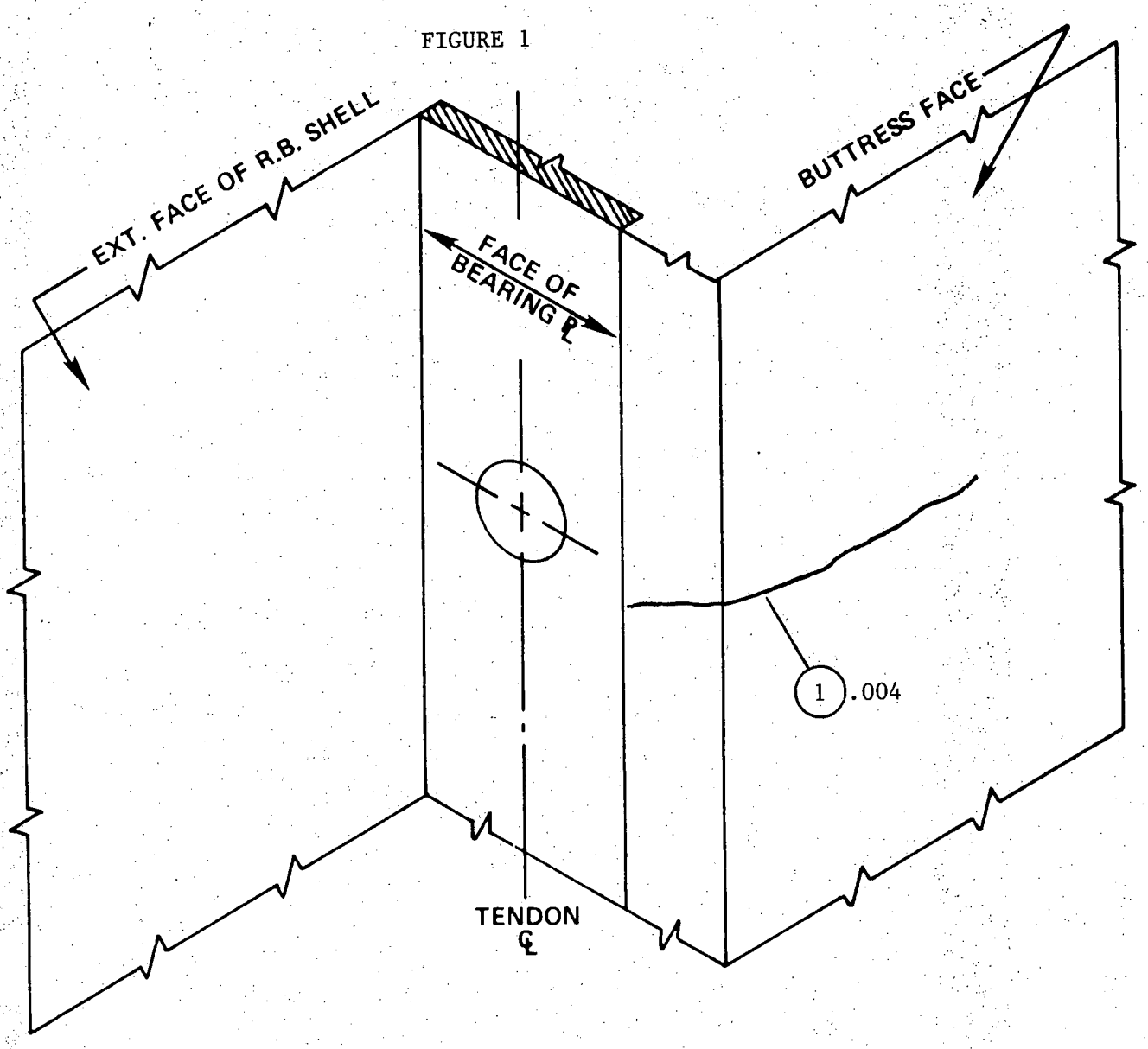
Based on the tests and inspections described herein, it is concluded that greater than normal cracking or movements have not occurred and that the functional capability of this portion of the post-tensioning system has not diminished. Therefore, the requirements of Technical Specification 4.4.2.3 have been completed.

TABLE 1

PRESTRESSING TENDON ANCHOR MOVEMENTS

Tendon	Elevation	Date	Temp. Outside °F	Micrometer Readings (Inches) 1	2	3	4
24 H 19	810' + 6"	5-8-74	70	4.918	3.897	3.694	3.489
		5-2-75	86	4.912	3.905	3.702	3.516
		1-30-76	42	4.970	3.950	3.636	3.486
24 H 34	835'	5-8-74	70	4.710	3.428	2.950	3.130
		5-2-75	86	4.720	3.436	2.957	3.139
		1-30-76	40	4.711	3.426	2.953	3.129
24 H 49	861'	5-8-74	70	4.898	2.734	2.424	3.476
		5-2-75	86	4.895	2.740	2.432	3.479
		1-30-76	36	4.820	2.739	2.439	3.485
24 H 64	885'	5-8-74	70	4.849	3.265	3.229	3.317
		5-2-75	86	4.851	3.267	3.230	3.325
		2-27-76	52	4.849	3.261	3.230	3.325
24 H 79	910'	5-8-74	70	5.153	3.373	3.250	3.490
		5-2-75	86	5.166	3.383	3.245	3.500
		2-27-76	52	5.163	3.383	3.245	3.500
24 H 94	935'	5-8-74	71	4.800	3.315	2.834	3.490
		5-2-75	86	4.799	3.368	2.875	3.493
		2-27-76	52	4.798	3.368	2.875	3.493
12 V 28	970' + 18"	5-8-74	70	3.535	5.221	5.021	
		5-2-75	86	3.540	5.230	5.030	
		1-30-76	45	3.531	5.219	5.028	

FIGURE 1



(DATA SET)
(CRACK WIDTH)

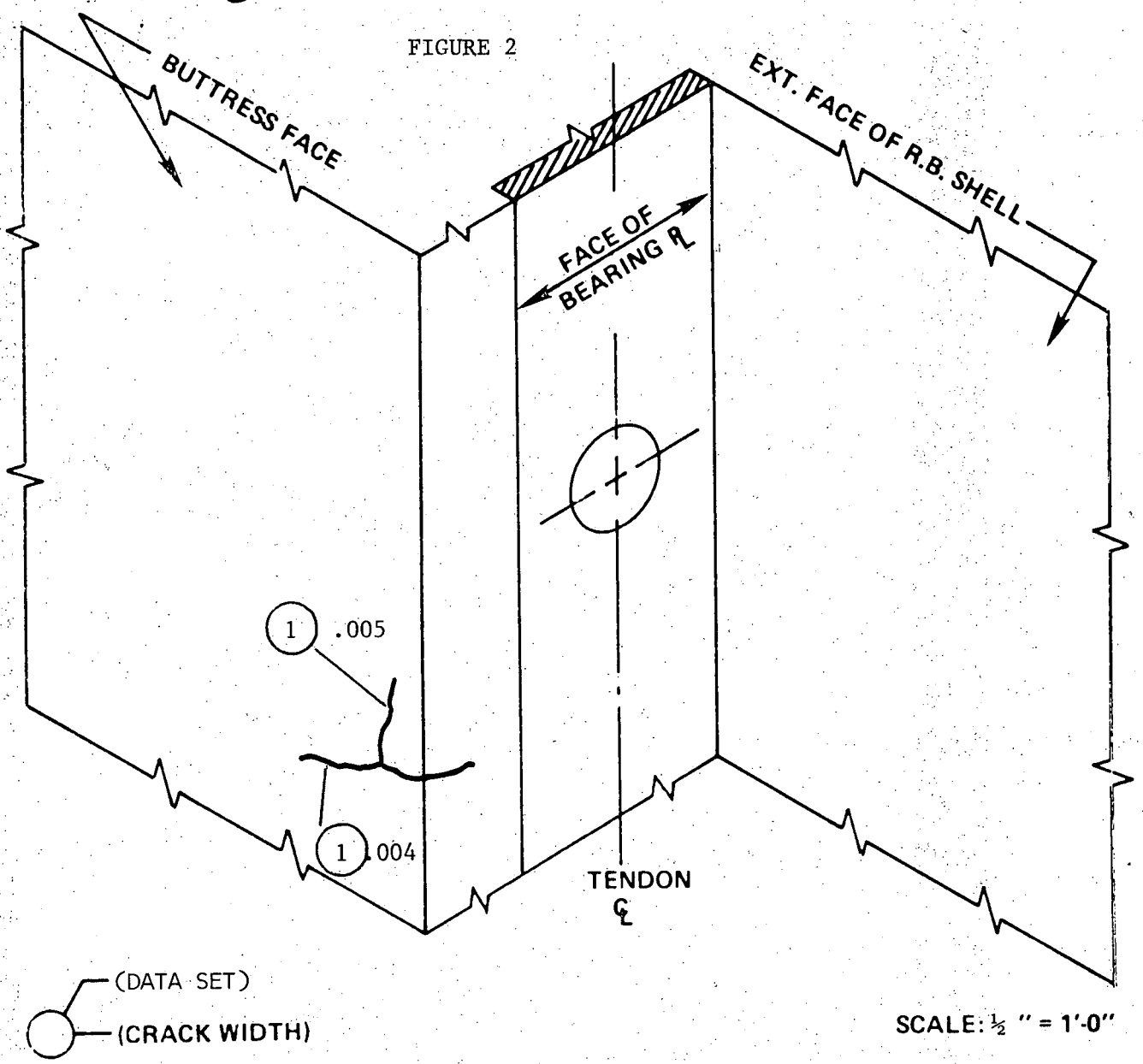
SCALE: ½ " = 1'-0"

TENDON 62 H 26

ELEVATION 821'

DATA SET	DATE	TEMP INSIDE °F	TEMP OUTSIDE °F	REMARKS
1	5-8-74	78	70	
2	5-2-75	80	86	No new cracks
3	1-30-76	61	42	No new cracks

FIGURE 2

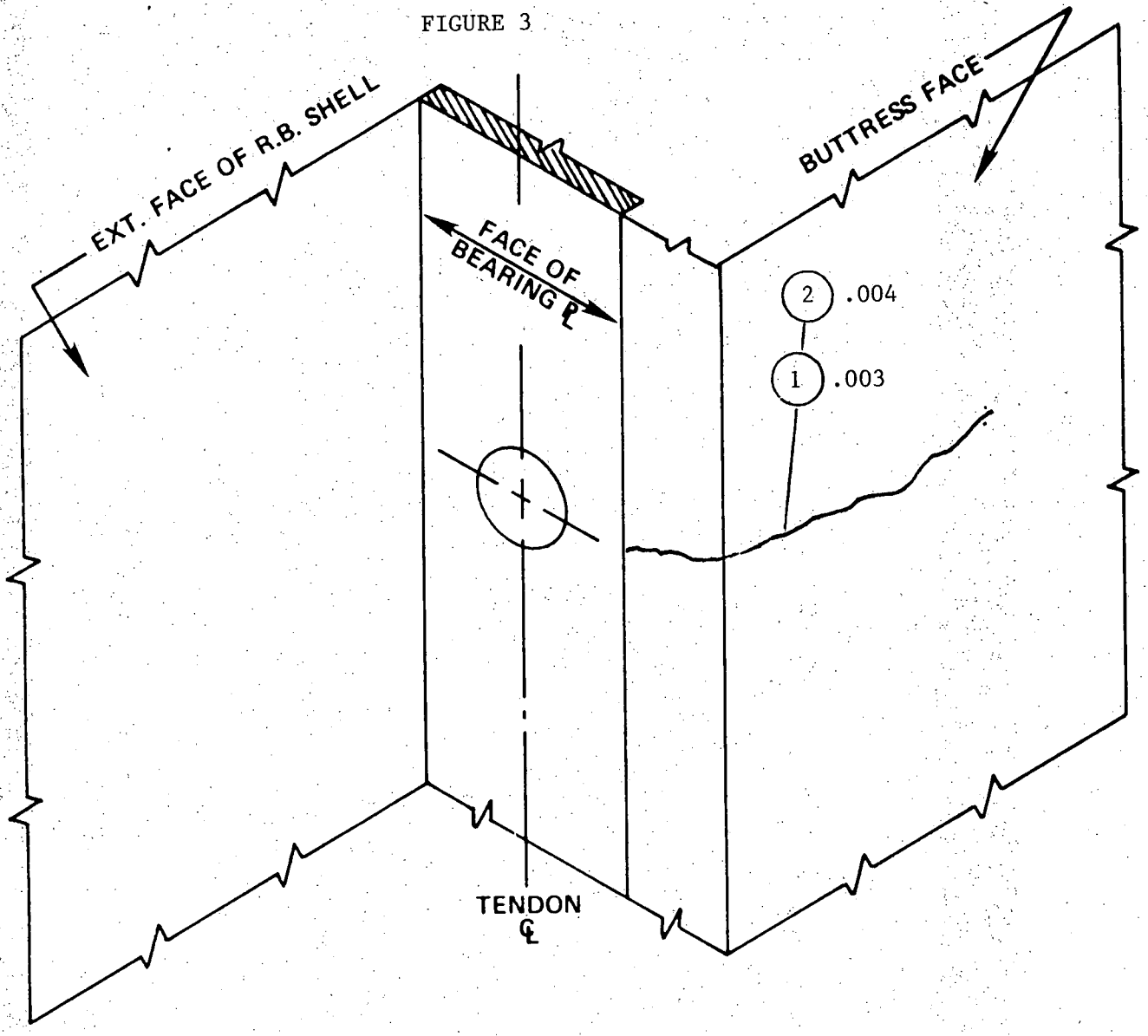


TENDON 24 H 29

ELEVATION 827'

DATA SET	DATE	TEMP INSIDE °F	TEMP OUTSIDE °F	REMARKS
1	5-8-74	78	70	
2	5-2-75	80	86	No new cracks
3	1-30-76	61	42	No new cracks

FIGURE 3



(DATA SET)
(CRACK WIDTH)

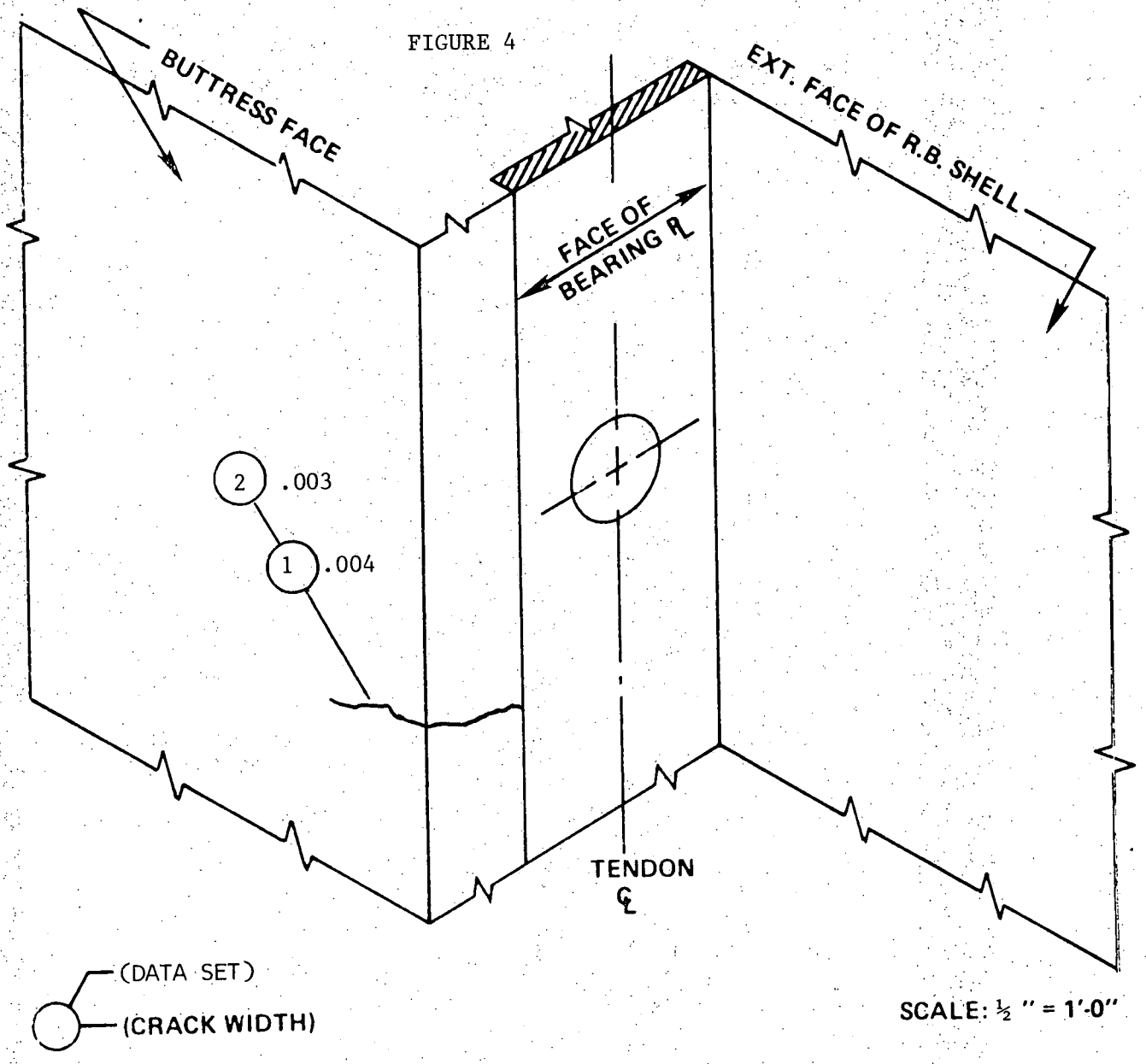
SCALE: ½ " = 1'-0"

TENDON 62 H 78

ELEVATION 908' + 6"

DATA SET	DATE	TEMP INSIDE °F	TEMP OUTSIDE °F	REMARKS
1	5-8-74	78	70	
2	5-2-75	80	86	No new cracks
3	2-28-76	63	52	No new cracks

FIGURE 4

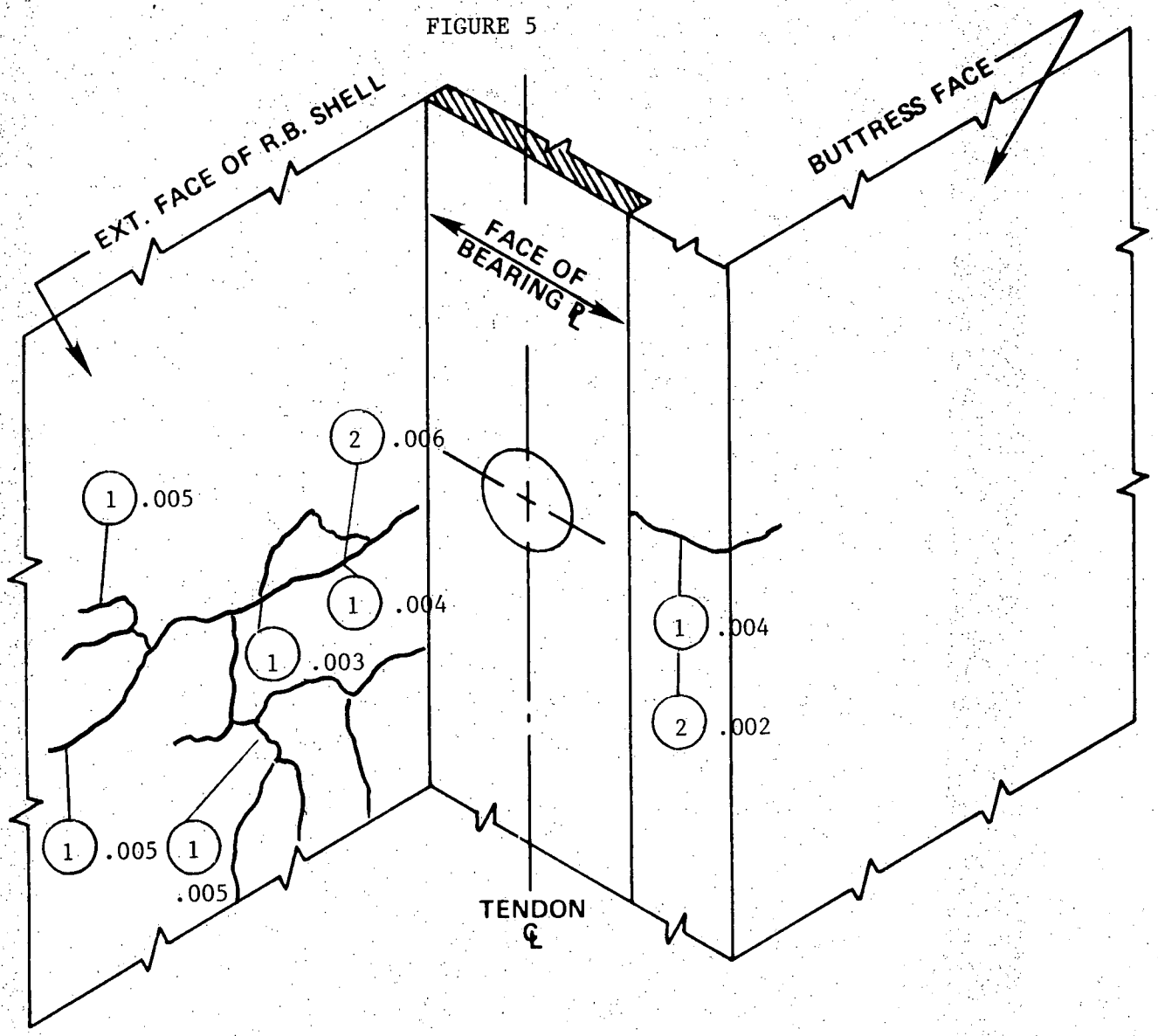


TENDON 24 H 96

ELEVATION 939' + 6"

DATA SET	DATE	TEMP INSIDE °F	TEMP OUTSIDE °F	REMARKS
1	5-8-74	78	70	
2	5-2-75	80	86	No new cracks
3	2-27-76	63	52	No new cracks

FIGURE 5



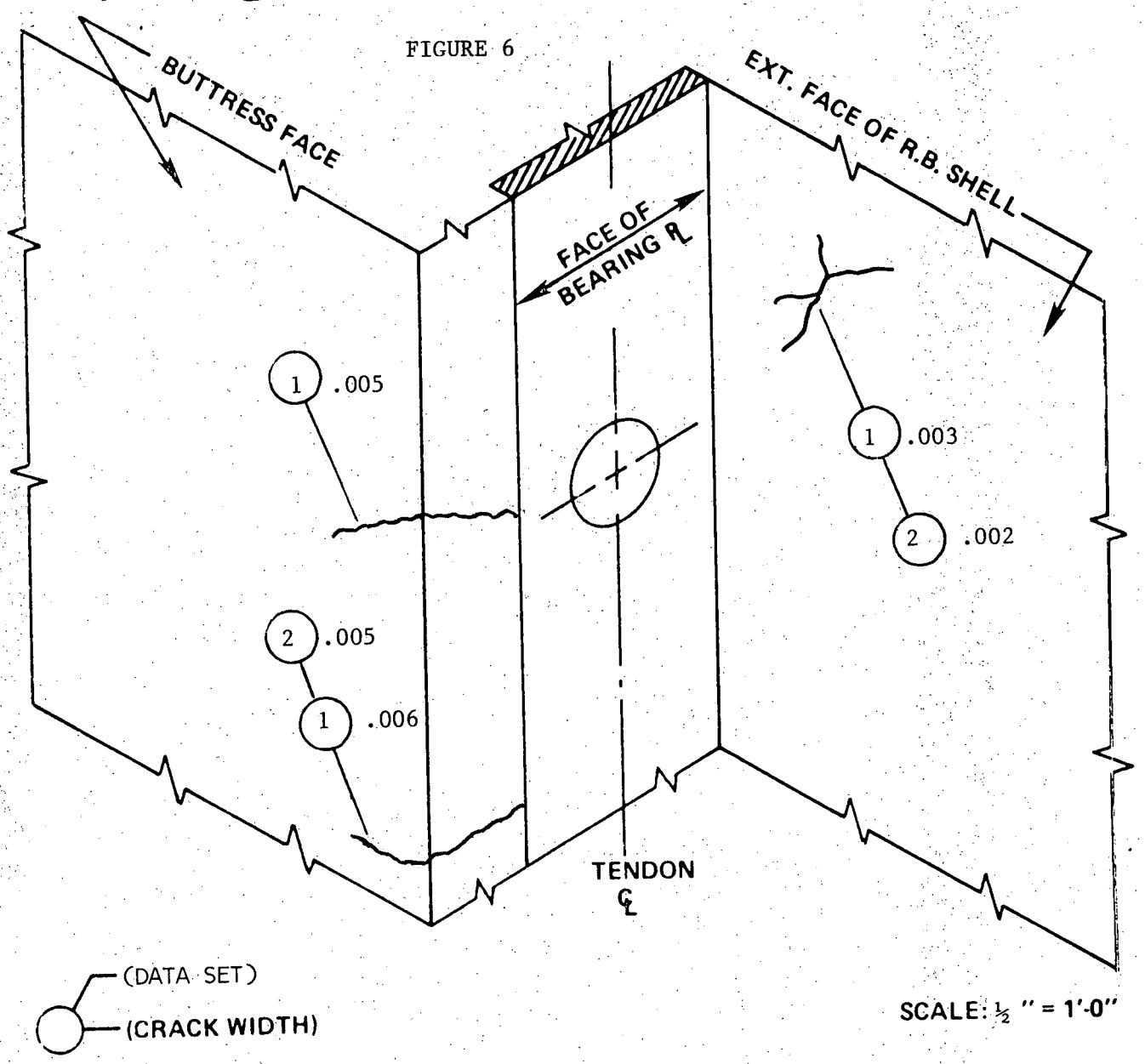
SCALE: ½ " = 1'-0"

TENDON 62 H 100

ELEVATION 944' + 6"

DATA SET	DATE	TEMP INSIDE °F	TEMP OUTSIDE °F	REMARKS
1	5-8-74	78	70	
2	5-2-75	80	86	No new cracks
3	2-27-76	63	52	No new cracks

FIGURE 6



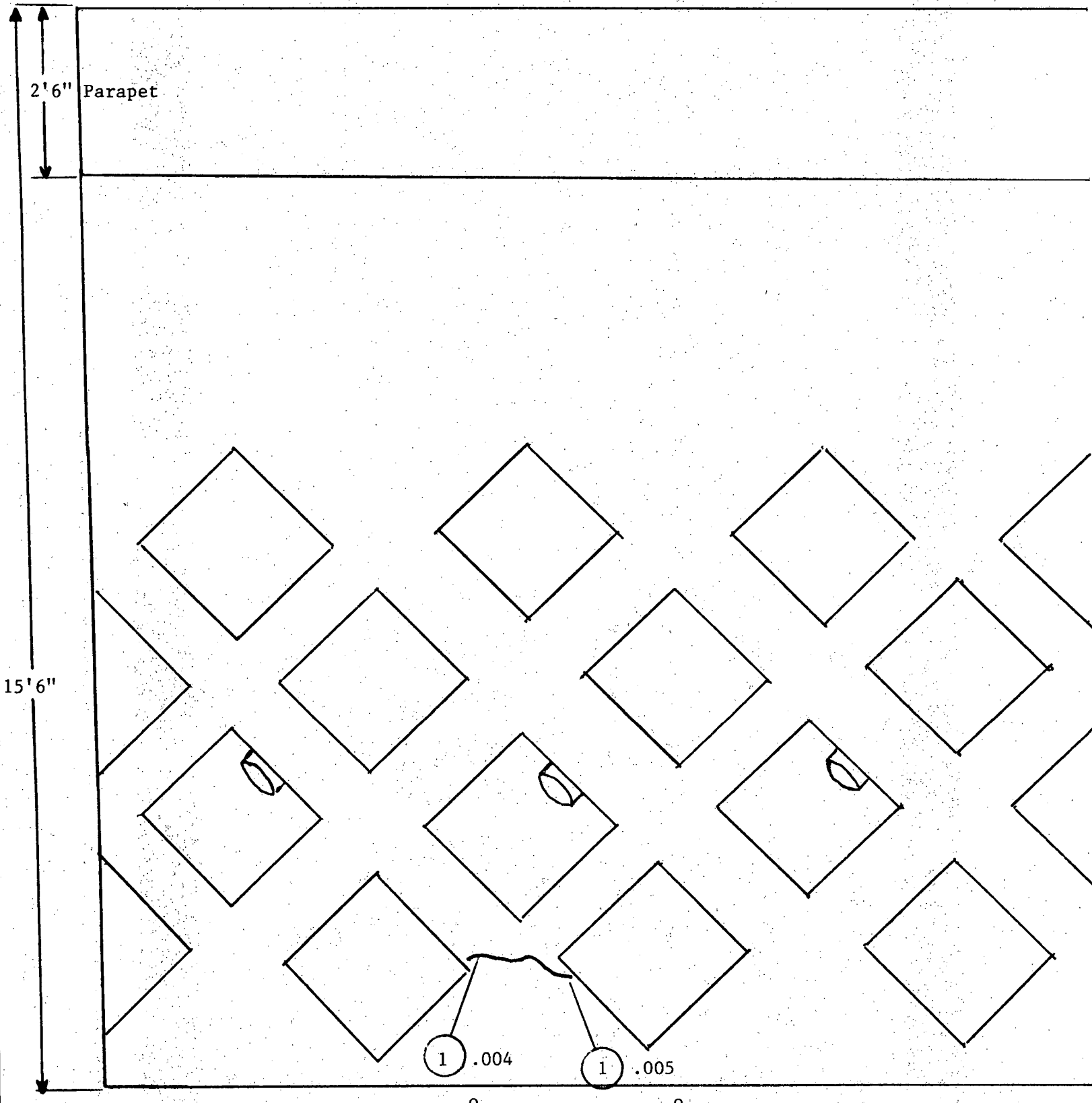
TENDON 24 H 102

ELEVATION 948'

DATA SET	DATE	TEMP INSIDE °F	TEMP OUTSIDE °F	REMARKS
1	5-8-74	78	70	
2	5-2-75	80	86	No new cracks
3	2-27-76	63	53	No new cracks

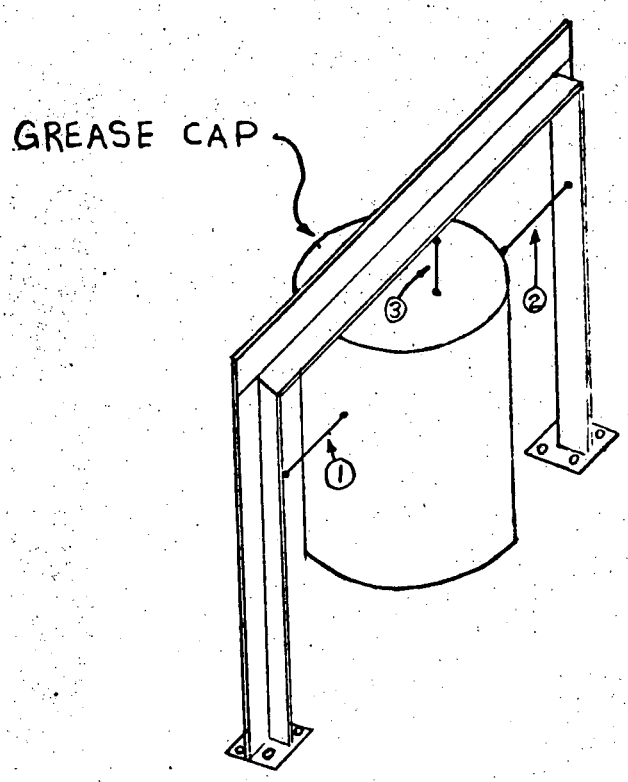
FIGURE 7

CONCRETE CRACK DATA
AT PRESTRESSING TENDON ANCHORS
ON RING GIRDER

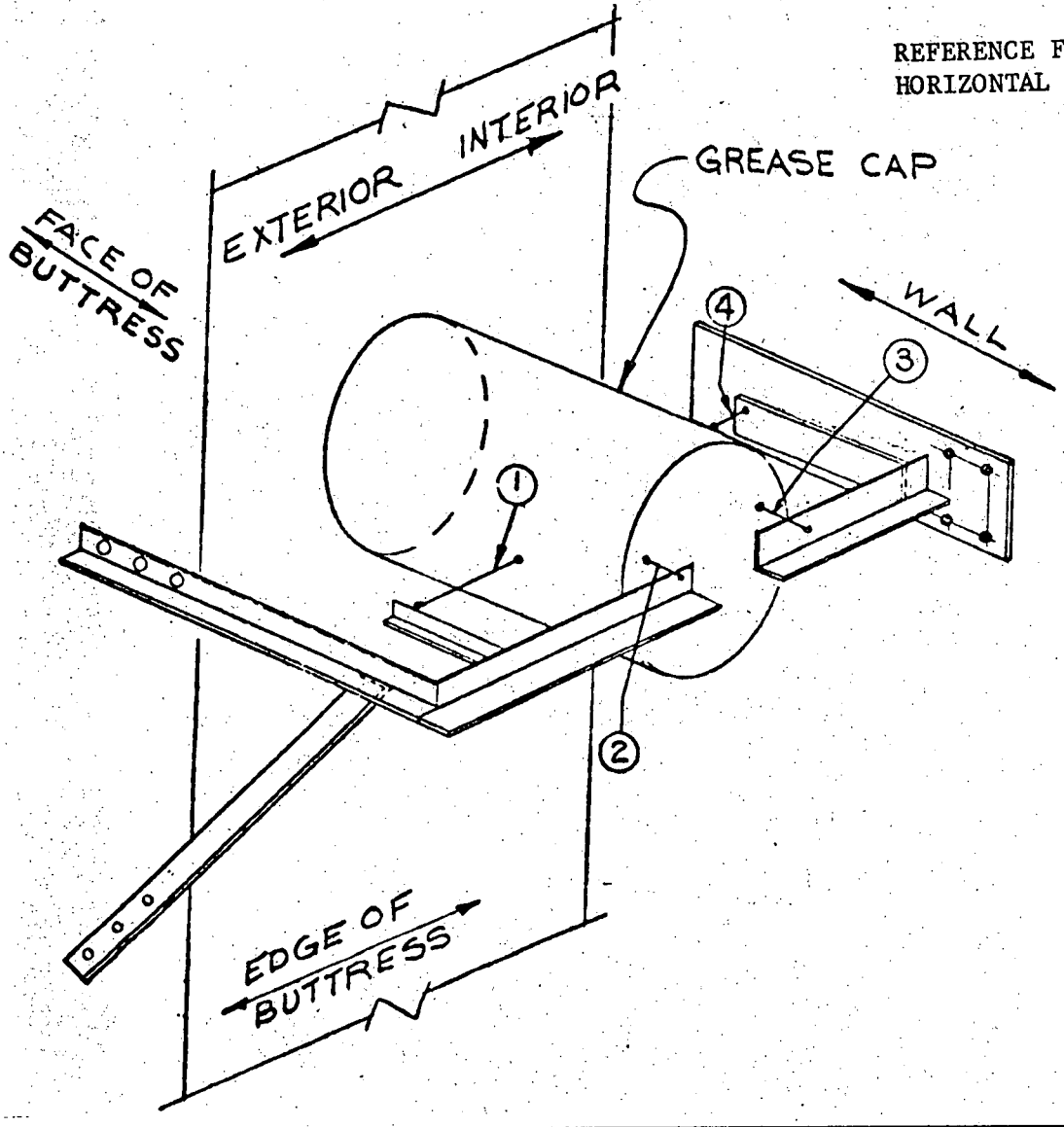


DATA SET	DATE	TEMP INSIDE ^{o}F	TEMP OUTSIDE ^{o}F	REMARKS
1	5-8-74	78	70	Crack as shown
2	5-2-75	80	86	No new cracks
3	2-27-76	63	53	No new cracks

FIGURE 8



REFERENCE FRAME FOR
VERTICAL TENDONS



REFERENCE FRAME FOR
HORIZONTAL TENDONS