

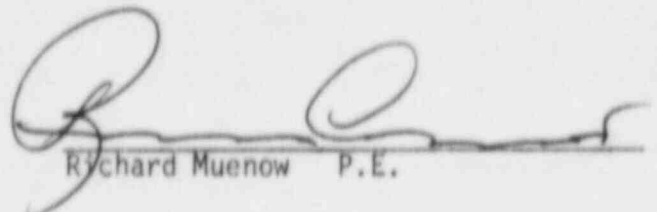
Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

NONDESTRUCTIVE TEST EVALUATION
OF BASE CONCRETE AT WATERFORD NO. 3
LOUISIANA POWER AND LIGHT COMPANY

by

muenow and associates, inc.
charlotte, north carolina



Richard Muenow P.E.

JUL 1984

8410300215 841026
PDR ADOCK 05000382
A PDR

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

NONDESTRUCTIVE TEST EVALUATION
OF BASE MAT CONCRETE AT WATERFORD NO. 3
LOUISIANA POWER AND LIGHT COMPANY

by

muenow and associates, inc.
charlotte, north carolina

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

WATERFORD NO. 3 - LP & L
NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE

TABLE OF CONTENTS

	PAGE NO.
I. INTRODUCTION	1
II. SCOPE	2
III. SUMMARY OF TEST RESULTS	2-4
IV. TEST PROCEDURES	5
TEST PROCEDURE CALIBRATION	
a) INSTRUMENTATION	6-7
b) DAILY FUNCTION	8-10
c) DRAWINGS NUMBERED 1, 2, 3, 4, 5, 6	10-15
V. BASE MAT INSPECTION LOGISTICS	16
a) TEST LOCATIONS	17-21
b) DRAWINGS NUMBERED 7, 7a, 8, 8a, 9, 10, 11, 12, 13, 15	
VI. TEST LOGISTICS	
a) SPECIFIC METHOD OF BASE MAT INSPECTION WITH 45° TRANSDUCER	22-27
b) SPECIFIC METHOD OF BASE MAT INSPECTION WITH 60° TRANSDUCER	28-32
VII. TEST DATA	
a) CONCRETE QUALITY	33-35
b) EXPLANATION OF RANDOM REFLECTORS	35-36
c) TABULAR AND GRAPHIC TEST DATA FOR 45° TRANSDUCER - BASE MAT	37-270 *
d) TABULAR AND GRAPHIC TEST DATA FOR 60° TRANSDUCER - BASE MAT	283-333
e) TABULAR AND GRAPHIC TEST DATA FOR 45° TRANSDUCER - EVALUATION OF SURFACE INDICATIONS ON RCB WALL	334-345
f) DRAWING NUMBER 14	
VIII. APPENDIX NO. 1 PROGRAM FOR NDT EVALUATION	346-348
IX. APPENDIX NO. 2 TEST PROCEDURE	349-357
X. APPENDIX NO. 3 DAILY CALIBRATION RECORDS	358-379
XI. APPENDIX NO. 4 RESUME OR QUALIFICATIONS AND EXPERIENCE - MUENOW AND ASSOCIATES, INC.	380-390

*Note each report contains an extra set of RCB test data on pages 271 to 282

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

NONDESTRUCTIVE TEST EVALUATION
OF BASE MAT CONCRETE AT WATERFORD NO. 3
LOUISIANA POWER AND LIGHT

BY

RICHARD A. MUENOW, P.E.

INTRODUCTION

An investigation, utilizing the technique of low frequency pulse echo concrete nondestructive evaluations (NDT), was conducted at Waterford No. 3 of the Louisiana Power and Light Company, during the period June to September, 1984. Our investigation had the specific purpose of determining depth, orientation and width of possible internal discontinuities in certain areas of surface cracking visually apparent on the surface of the base mat. All field work and data interpretation was supervised by Richard Muenow of Muenow and Associates, Inc.; a resume of experience is attached as Appendix No. 4. The specific program for NDT evaluation is included in Appendix No. 1.

SCOPE OF BASE MAT NDT EVALUATION

As a result of the July 10, 1984 meeting, including the NRC, LP&L and EBASCO, it was decided that a NDT evaluation of possible internal discontinuities associated with certain areas of base mat surface crack indications be conducted. Our program of evaluation utilized the pulse echo technique of concrete inspection which is described in following sections of this report. Our investigation included the use of straight beam transducers and transducers with receiving angles

of 45 and 60 degrees. 0 degree transducers define certain values associated with propagation of sound through the base mat concrete. The 45 and 60 degree transducers, using that data, evaluate the presence and location of internal discontinuities propagating downward from the base mat surface. The program included the evaluation of 25 surface indications, oriented generally in an East-West direction of the west side of the Reactor Containment Building (RCB). One surface indication oriented northwest-southeast and propagating outward from the northwest quadrant of the RCB was also tested on the west side. On the east side of the RCB, 12 surface indications oriented generally east-west and 3 surface indications oriented northeast-southwest were tested. In addition, 4 indications were evaluated on the surface of the RCB exterior wall in the northeast quadrant. A calibration area was established in the northwest corner of the base mat. This calibration area served as our standard for daily verification for test evaluation of the pulse echo instrumentation.

SUMMARY

Based upon our nondestructive testing program at Waterford No. 3, the most significant findings are as follows:

1. Base mat cracks, specifically identified for evaluation during this investigation, are essentially vertical in orientation. There is no evidence of diagonal (shear) cracks; either occurring singularly or as a connection between two individual cracks within the areas investigated. Crack depth is variable, and ranges from less than one foot in depth, to as low as the reinforcement mat on the bottom of the base mat.

2. All cracks are tight and are estimated less than 7 mils in width. On the surface, crack width measurements appear to be in the range of 3 to 5 mils. No significant seepage of water from the cracks was found during the time period of our investigation.
3. Test data indicates there were no significant voids and/or honeycombs found in the mass of the base mat and concrete consolidation is adequate and good.
4. 25 surface indications, oriented essentially East/West, and 1 surface indication oriented northwest/southwest were evaluated on the west side of the RCB; of this number, 10 including the diagonal surface indicator revealed noncontinuous and variable depth internal discontinuities to the region of the lower layer of reinforcement steel.
5. 12 surface indications, oriented essentially East/West, and 3 surface indications, oriented northeast/southwest were evaluated on the East side of the RCB; of this number, 9 including 2 of the diagonal surface indicators; revealed noncontinuous and variable depth internal discontinuities to the region of the lower layer of reinforcement steel.
6. NDT tests under the RCB indicates the presence of 7 internal discontinuities with sufficient length and aerial surface to be

mapped; all 7 are classed noncontinuous and variable depth extending to the region of the lower layer of reinforcement steel. Six of the internal discontinuities coincide with visual surface cracking on both the east and west sides of the RCB. The seventh indication does not extend beyond the RCB diameter. Location of cracks under the RCB were identified to be in the vicinity of surface indications as visually mapped in 1977.

7. 4 surface indications in the northeastern quadrant of the RCB wall were evaluated; of this number no internal discontinuities greater than 1 foot in depth were indicated.
8. Test data indicates that base mat concrete ranges in strength from 5000 to 7000 plus PSI and exhibits good to excellent density characteristics.

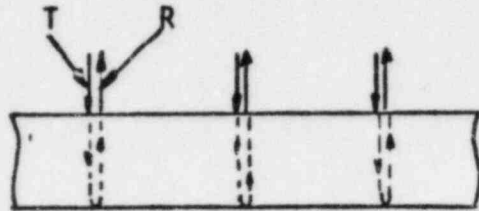
TEST TECHNIQUE

The theory of pulse echo nondestructive testing for the evaluation of concrete and concrete structures is based upon Snell's Laws of Reflection and Refraction. This law states that as mechanical energy (sound waves) propagate through a medium, a portion of the energy will be reflected as changes in density are encountered. These changes in density can occur as the opposite side of the structural member, internal discontinuities such as cracks, voids, honeycomb and lack of consolidation within the concrete mass and/or associated with the reinforcement steel system. Data from the pulse echo NDT system will identify internal discontinuities as to nature and characteristics and will delineate aerial extent and depth within individual members. A value of pulse velocity is also obtained, which is a measure of speed with which a sound wave propagates through a medium. This value of pulse velocity is then correlated to a coefficient of concrete uniformity and insitu compressive strengths (PSI). For test procedure see Appendix No. 2.

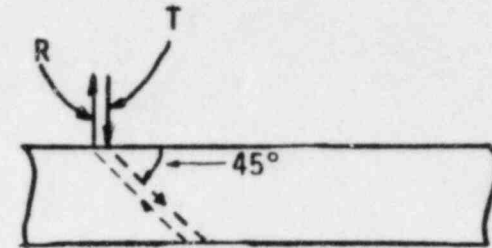
VARIATIONS TO STANDARD TEST PORCEDURE UTILIZED AT WATERFORD NO. 3

Pulse echo investigations to determine crack depth and orientation are conducted with transducers designed for that specific inspection requirement. The Waterford No. 3 base mat study utilized transducers with receiving angles of 0 to 60 degrees as measured from the perpendicular. These transducers are constructed with a piezoelectric ceramic crystal mounted inside a stainless steel housing at the specific angle of refraction which depends upon the velocity of sound propagation through the concrete and transducer housing. Drawing Number 1 illustrates the fuction of each transducer employed; 0°-45°-60° as measured from the perpendicular.

MUENOW AND ASSOCIATES, INC. CHARLOTTE NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3



Function of
 0° Transducer



Function of
 45° Transducer



Function of
 60° Transducer

Scale 1cm=1'

DRAWING NO. 1

MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

Utilizing pulse echo test technique for determining depth and orientation of internal discontinuities is accomplished by determining an average time of propagation, such as microseconds per unit measure of travel for the particular concrete under investigation. Then by triangulation a calculated point location of an internal reflector is established relative to a series of fixed points located on the base mat surface. This data is then, if necessary, subjected to a data processing program which performs a regression analysis, curve fitting and separates multiple reflectors occurring from a single test location based upon times of arrival. A regression analysis was not performed on the data included in this report because of the well defined nature of the raw data. See Drawing No. 2 for illustration of test technique for both 45° and 60° transducers.

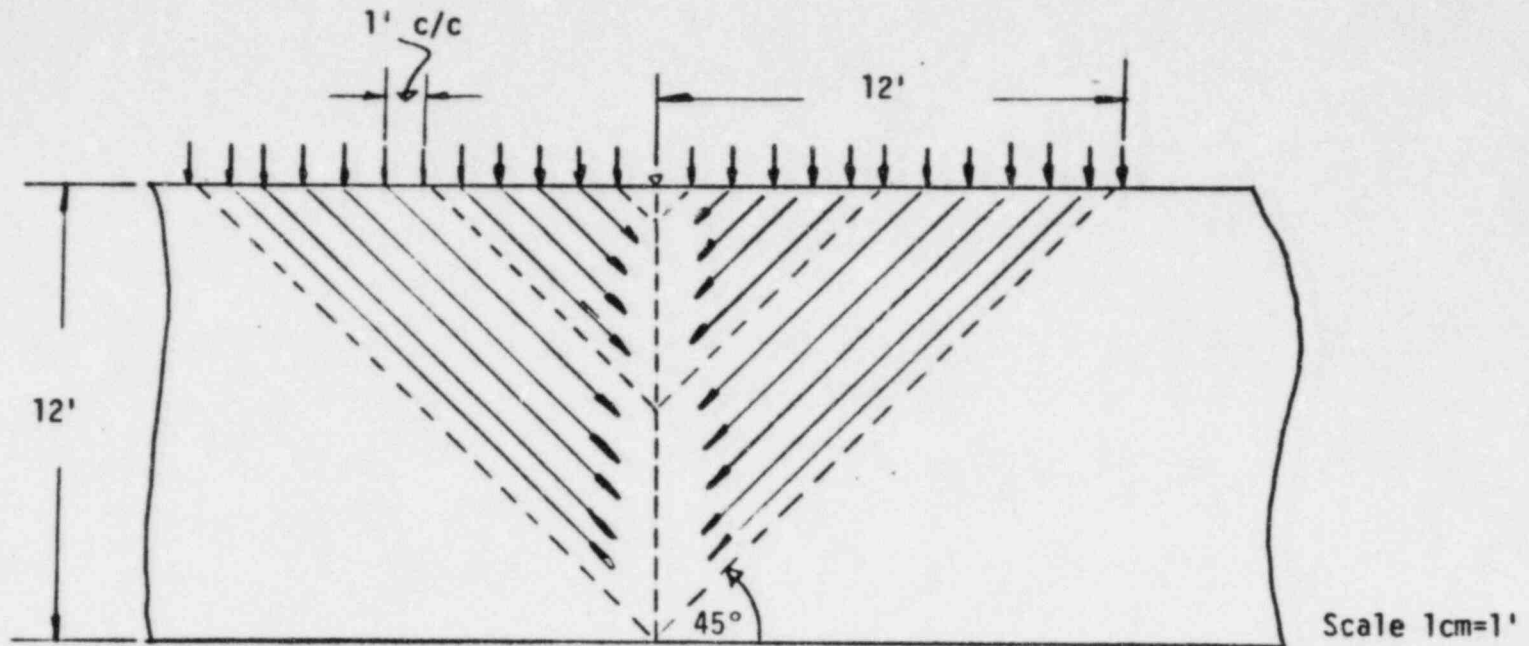
TEST PROCEDURE CALIBRATION INSTRUMENTATION - DAILY FUNCTION

INSTRUMENTATION

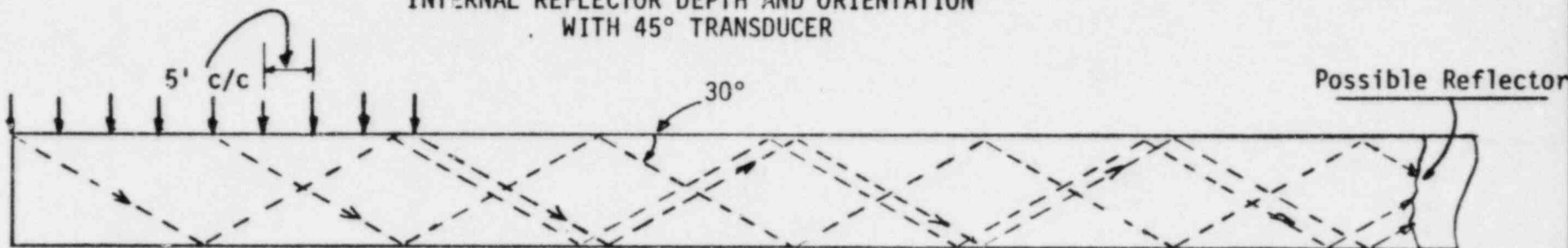
Portions of the pulse echo equipment which are used for timing are calibrated by an authorized agency and are traceable to the Bureau of Standard under the following specifications: TM504, TG501 Opt. 1, SG503, DM501, PG506, B012690, B010277, B0052314, B0093084 and B031780. Pulse echo instrumentation used at Waterford No. 3 were calibrated prior to site work and were recalibrated during the field work on July 26, 1984. See drawing number 13 for location of calibration area.

DAILY FUNCTION

Daily calibration of instrumentation was accomplished by a series of test patterns designed to evaluate timing and amplifier circuits for reliability and reproducibility. One series of tests, for the 45° transducer, analyzed a



TEST TECHNIQUE FOR DETERMINING
INTERNAL REFLECTOR DEPTH AND ORIENTATION
WITH 45° TRANSDUCER

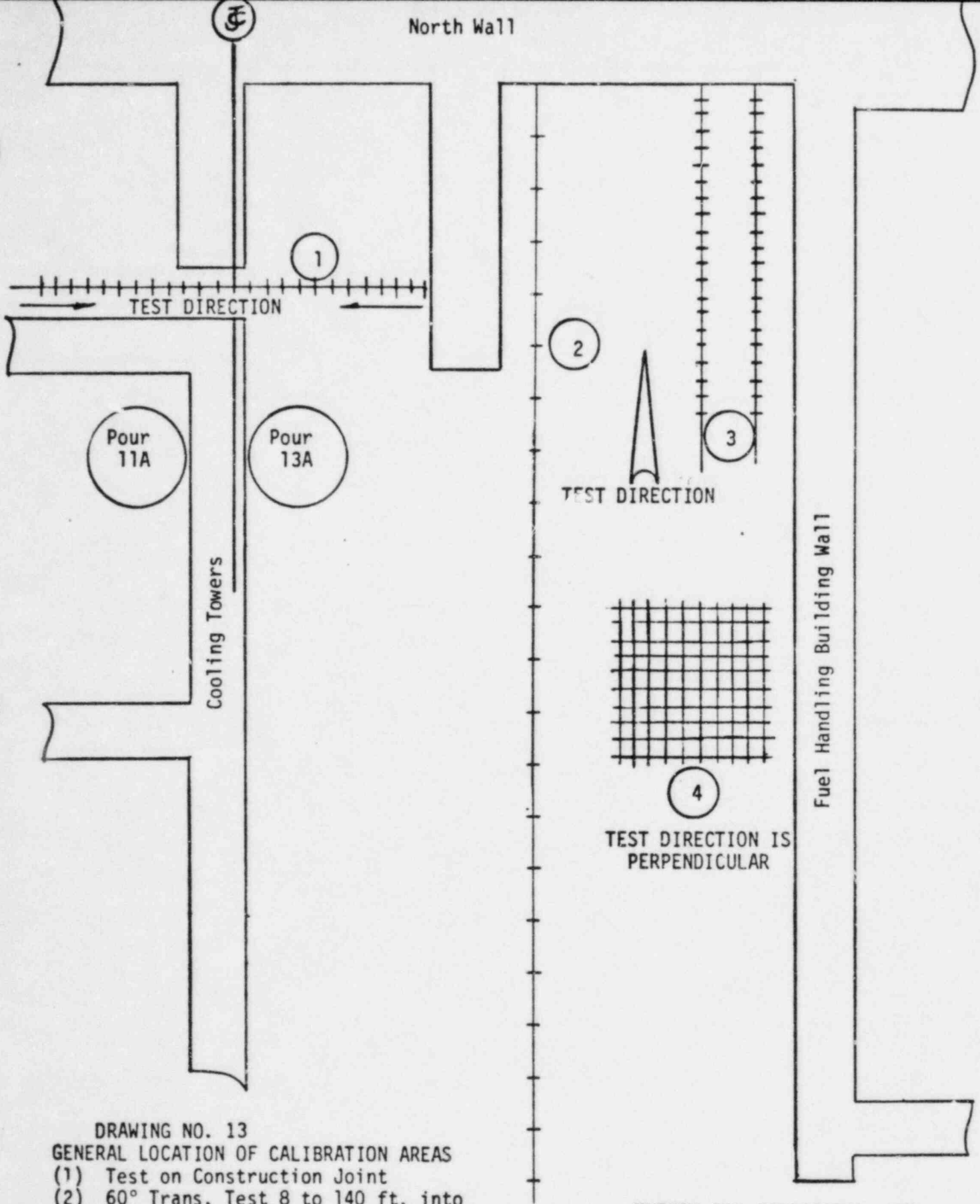


TEST TECHNIQUE FOR DETERMINING
INTERNAL REFLECTOR DEPTH AND ORIENTATION
WITH 60° TRANSDUCER

DRAWING NO. 2

MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD No. 3

North Wall



- DRAWING NO. 13
GENERAL LOCATION OF CALIBRATION AREAS
- (1) Test on Construction Joint
 - (2) 60° Trans. Test 8 to 140 ft. into Base Mat Edge
 - (3) 45° Trans. Test into Base Mat Edge
 - (4) 100 Test Location Survey

MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

signal transmitted into and reflected from a construction joint with a typical "key" configuration. A second series of tests, for the 45° transducer, analyzed a signal transmitted into and reflected from the edge of the base mat for horizontal distances to 20 feet. See Drawing Nos. 3 and 4 for 45° transducer calibrations.

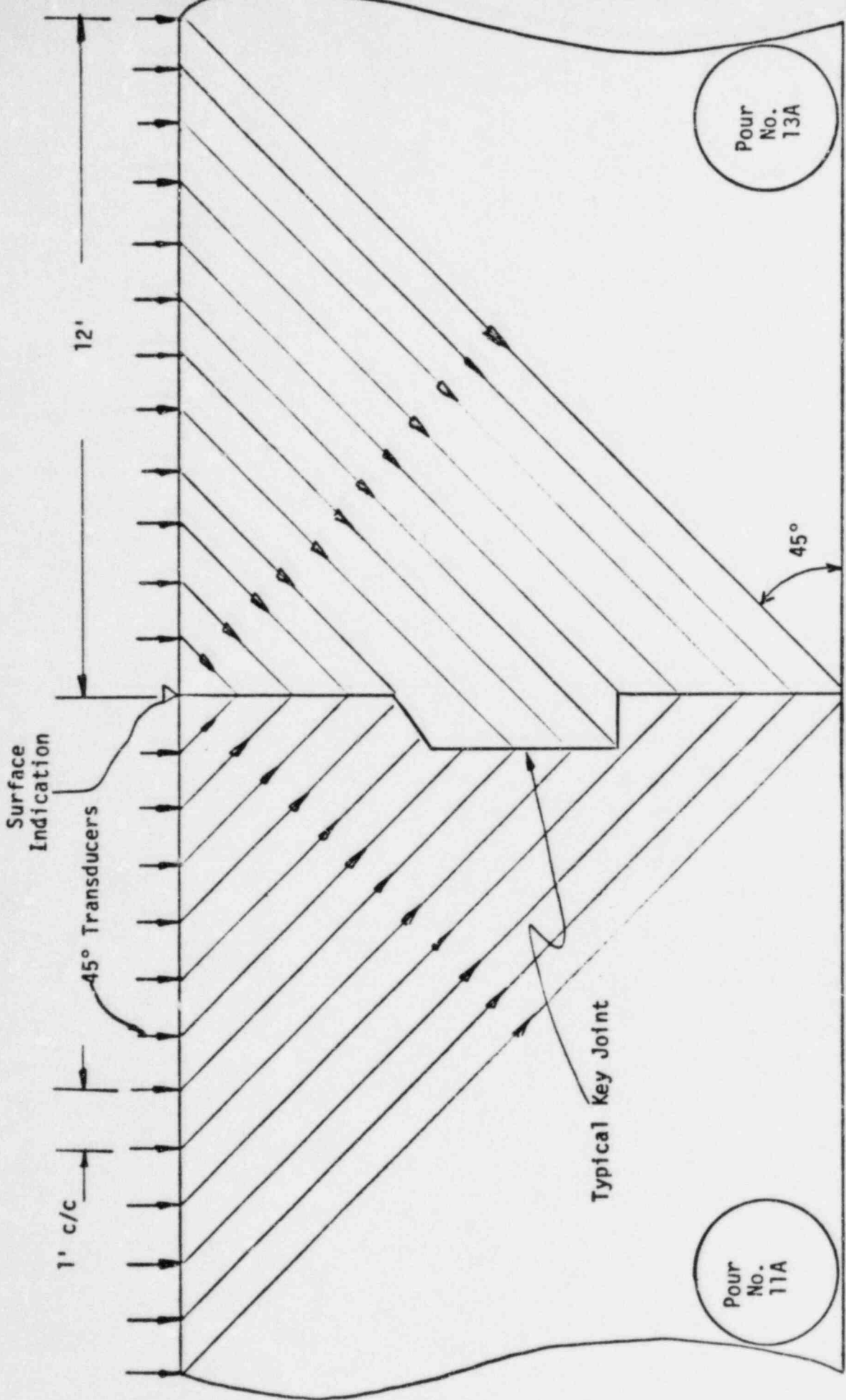
A third series of tests, involving the 0° transducer, analyzed a series of 100 test locations to determine the range of propagation times (microseconds per unit of measure) which could be expected in a 1200 cubic foot volume of base mat concrete. This series of pulse echo tests established the average sound propagation transit time for all subsequent calculations. The average transit time utilized for Waterford No. 3 studies was 71.2 microseconds per foot, rounded to 71, with one standard deviation was 3.11. See Drawing No. 5 for 100 test location transit time variability.

Daily calibration was accomplished with the 60° transducer for timing and amplifier circuits involving reliability and reproducibility. The 60° transducer series of tests analyzed a signal transmitted into and reflected from the base mat edge at distances from 8 to 140 feet; see Drawing No. 6 for an illustration of test parameter. See appendix number 3 for daily calibration records.

BASE MAT INSPECTION

TEST LOCATIONS

Relating back to the basic purpose of our investigation, as stated in the introduction portion of this report; "determine depth, orientation and width

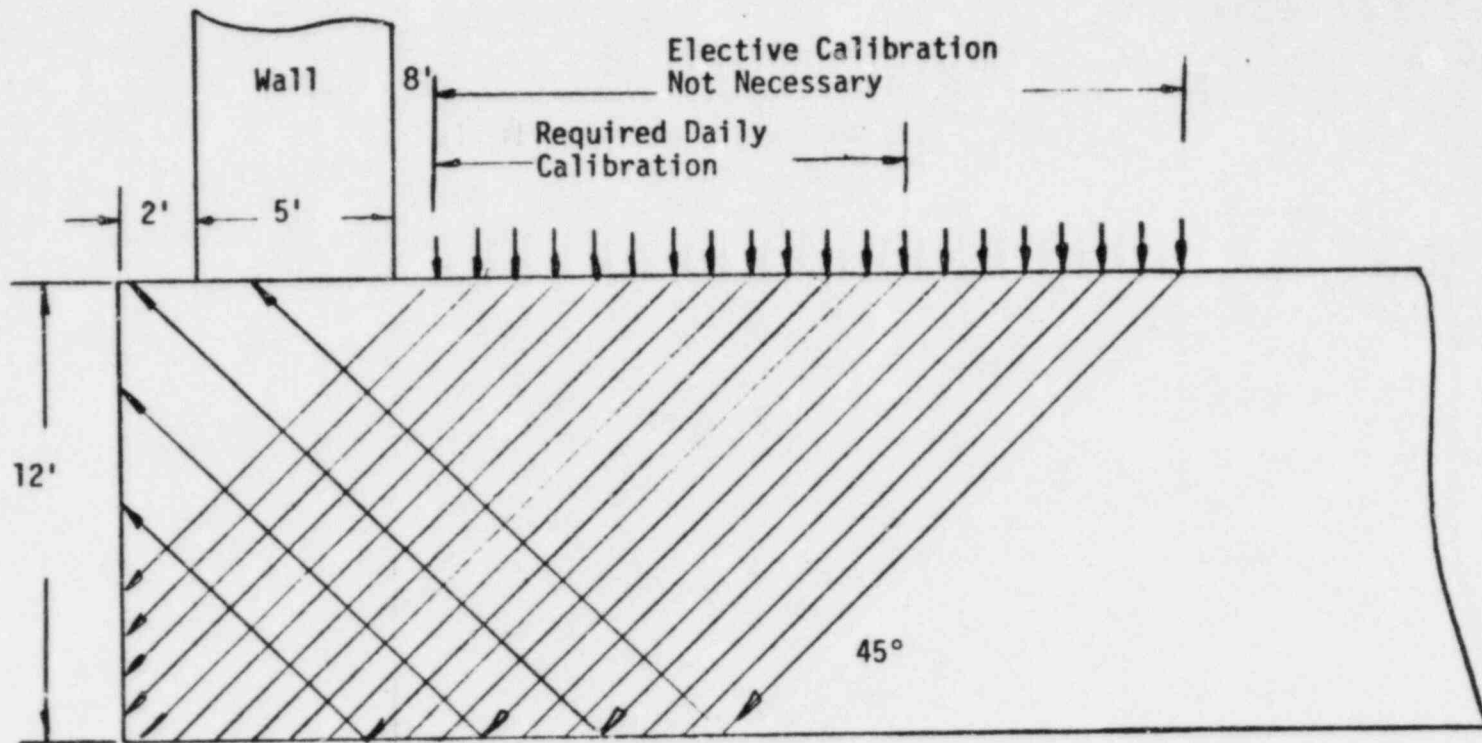


DETAIL CALIBRATION TEST PROCEDURE
 FOR EVALUATION OF CONSTRUCTION
 JOINT WITH KEYWAY FOR 45° TRANSDUCER

Scale 1cm=1'

DRAWING NO. 3

MUENOW AND ASSOCIATES, INC.
 CHARLOTTE, NORTH CAROLINA

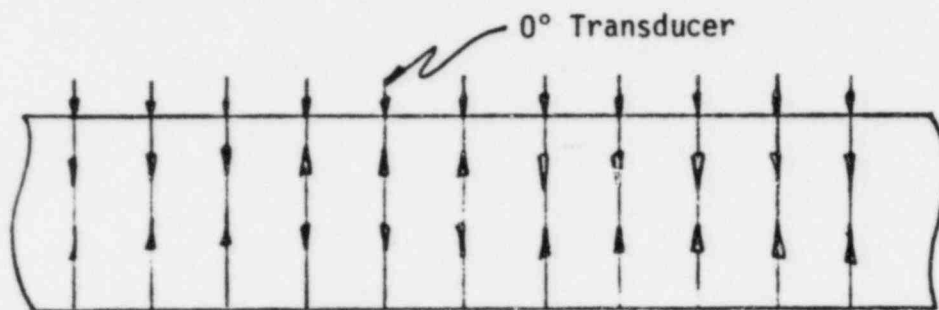


DETAIL CALIBRATION TEST PROCEDURE
 FOR EVALUATION OF BASE MAT
 EDGE TESTS WITH 45° TRANSDUCER

DRAWING NO. 4

MUENOW AND ASSOCIATES, INC.
 CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3

	1	2	3	4	5	6	7	8	9	10
A										
B										
C										
D										
E										
F										
G										
H										
J										
K										



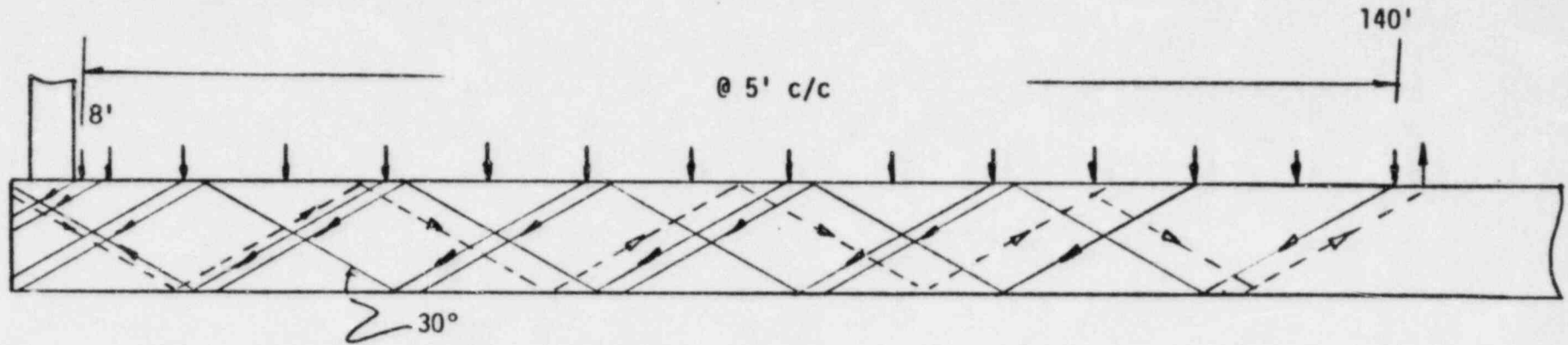
Line No.	Average Microsecond Transit Time / ft.
1	79 80 81 77 74 73 69 68 67 69
2	74 67 68 69 70 72 68 69 71 73
3	69 70 69 70 69 68 69 70 71 72
4	71 71 70 71 68 70 77 73 72 71
5	73 80 67 72 73 74 74 74 73 70
6	74 68 68 71 70 73 73 73 74 68
7	73 70 69 68 71 74 68 68 76 70
8	71 72 70 71 74 73 67 69 75 68
9	69 70 80 68 68 72 68 70 68 69
10	68 71 74 71 71 69 68 71 70 70

Average transit time per ft. 71.2 ms
 Maximum transit time per ft. 80.0 ms
 Minimum transit time per ft. 68.0 ms
 Standard Deviation 3.1 ms
 Coefficient of Variation 4.0

ms = Microseconds

100 TEST LOCATION PROGRAM TO DETERMINE
 THE AVERAGE TRANSIT TIME IN MICROSECONDS PER FOOT
 WITHIN A 1200 CUBIC FOOT VOLUME OF BASE MAT CONCRETE

DRAWING NO. 5



14

DETAIL CALIBRATION TEST
 PROCEDURE FOR EVALUATION
 OF BASE MAT EDGE TESTS
 WITH 60° TRANSDUCERS FOR
 DISTANCES OF 8 TO 140 FEET

DRAWING NO. 6

MUENOW AND ASSOCIATES, INC.
 CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3

of possible internal discontinuities in areas of surface cracking visually apparent on the surface of the base mat", test locations were established mainly to evaluate surface indications oriented in an East/West direction in base mat concrete placements designated 7A-8A-5A-2-6-1-7B-8B and 5B. See LP&L Figure 2.5-118 - Concrete base mat placement dates designated drawing number 15. Additional test locations, to those already identified, were established in base mat concrete placements 7B and 5B to evaluate the depth, orientation and width of internal discontinuities in the vicinity of surface indications radiating out from the RCB in a diagonal direction. Surface indications in placement number 7B are generally in a southwest/northeast orientation while the one surface indication evaluated in placement 5B was oriented in a northwest/southeast direction.

As a further study, four surface crack indications located in the northeastern quadrant of the RCB wall were evaluated for depth and orientation. This test series was conducted indentially to those tests on the base mat with the singular exception that the transducer was placed a distance equal to wall thickness, as initially slip form cast, away from the surface indication.

See the following drawings for description:

Drawing No. 7 - Location of Surface Indications and
Identification System for West Side of RCB

Drawing No. 7a - Location of Surface Indication and
Identification for West Side of RCB

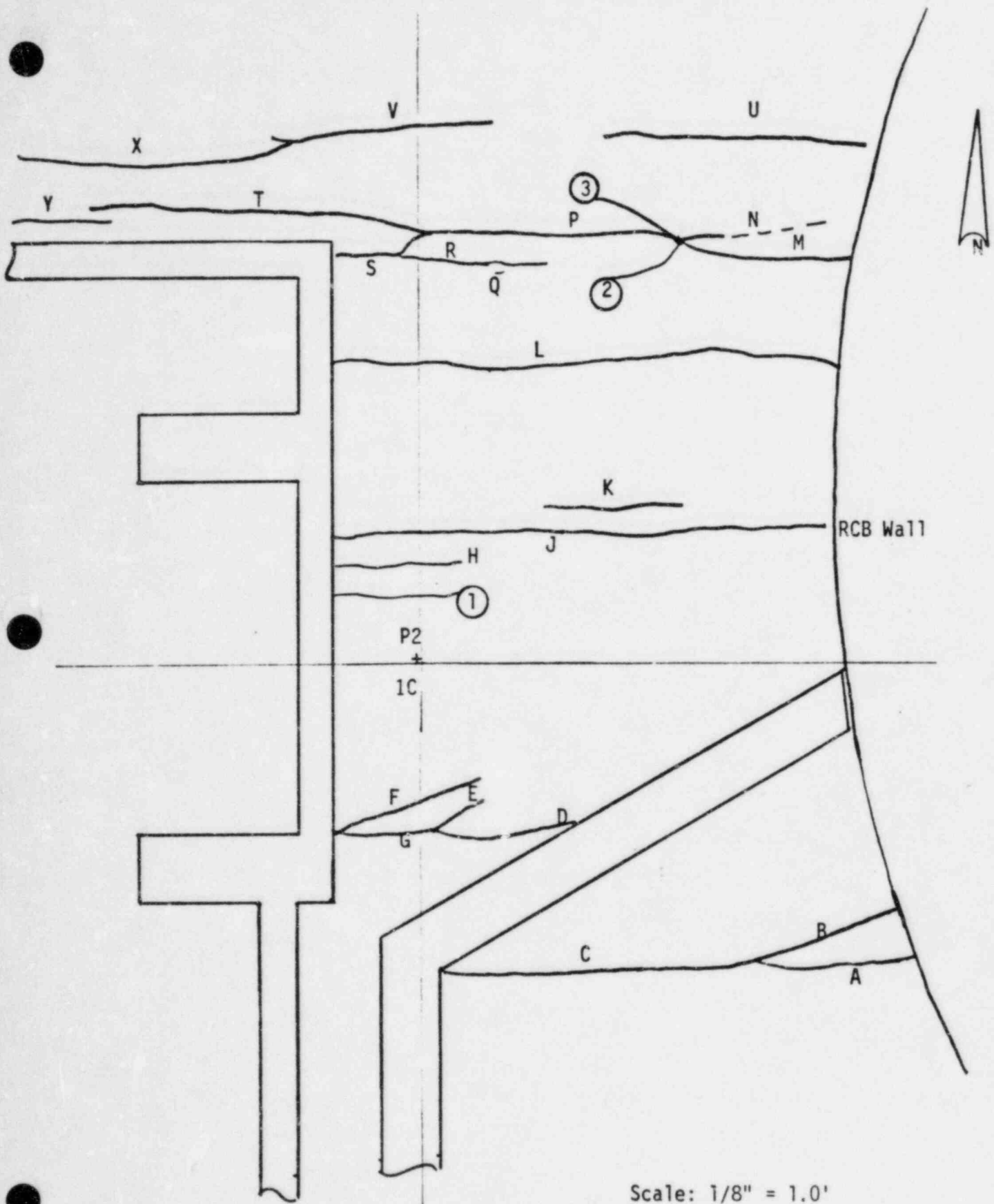
Drawing No. 8 - Location of Surface Indications and
Identification System for East Side of RCB

Drawing No. 8a - Location of Surface Identifications and
Identification System for Diagonal
Indications for East Side of RCB

PRECISION STATEMENT

There are two levels of precision involved with a nondestructive evaluation of concrete structures. One level, concerning electronic timing, amplifiers and general performance, is covered by a calibration program conducted by authorized maintenance facilities traceable to the Bureau of Standards. The second level concerns the recognition that sonic energy propagates in an ever increasing cone shaped configuration and reflected energy is received from a surface as opposed to a point. At a frequency of 50 KHz the sonic divergence cone is approximately a 1 foot diameter cone for 7 to 8 feet of propagation. With the 45 degree evaluation this equates to virtually no divergence at the top of the slab, and approximately 2 feet divergence at the bottom of the slab. In terms of data interpretation, this means that any internal discontinuities between 10 and 12 feet below the base mat surface will be located within that 2 foot diameter circle.

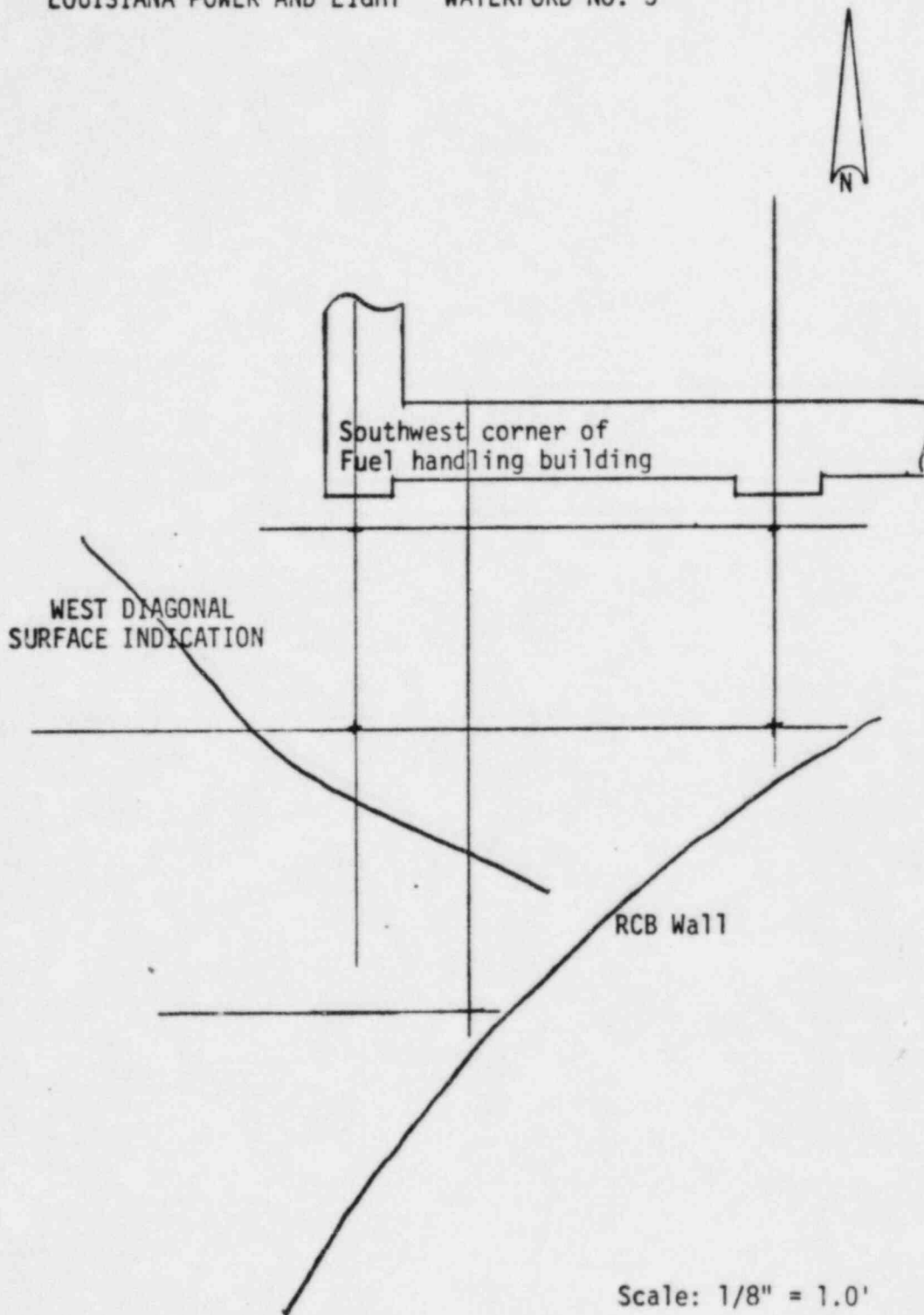
With the 60° transducer the precision with which an internal discontinuity can be located depends upon a 4 to 5 foot diameter circle, at distances involved with this investigation, but is enhanced by the additional data interpretation of frequency content and amplitude. In terms of data interpretation, this means



Scale: 1/8" = 1.0'

DRAWING NO. 7
LOCATION OF SURFACE INDICATIONS AND IDENTIFICATION SYSTEM
WEST SIDE OF RCB

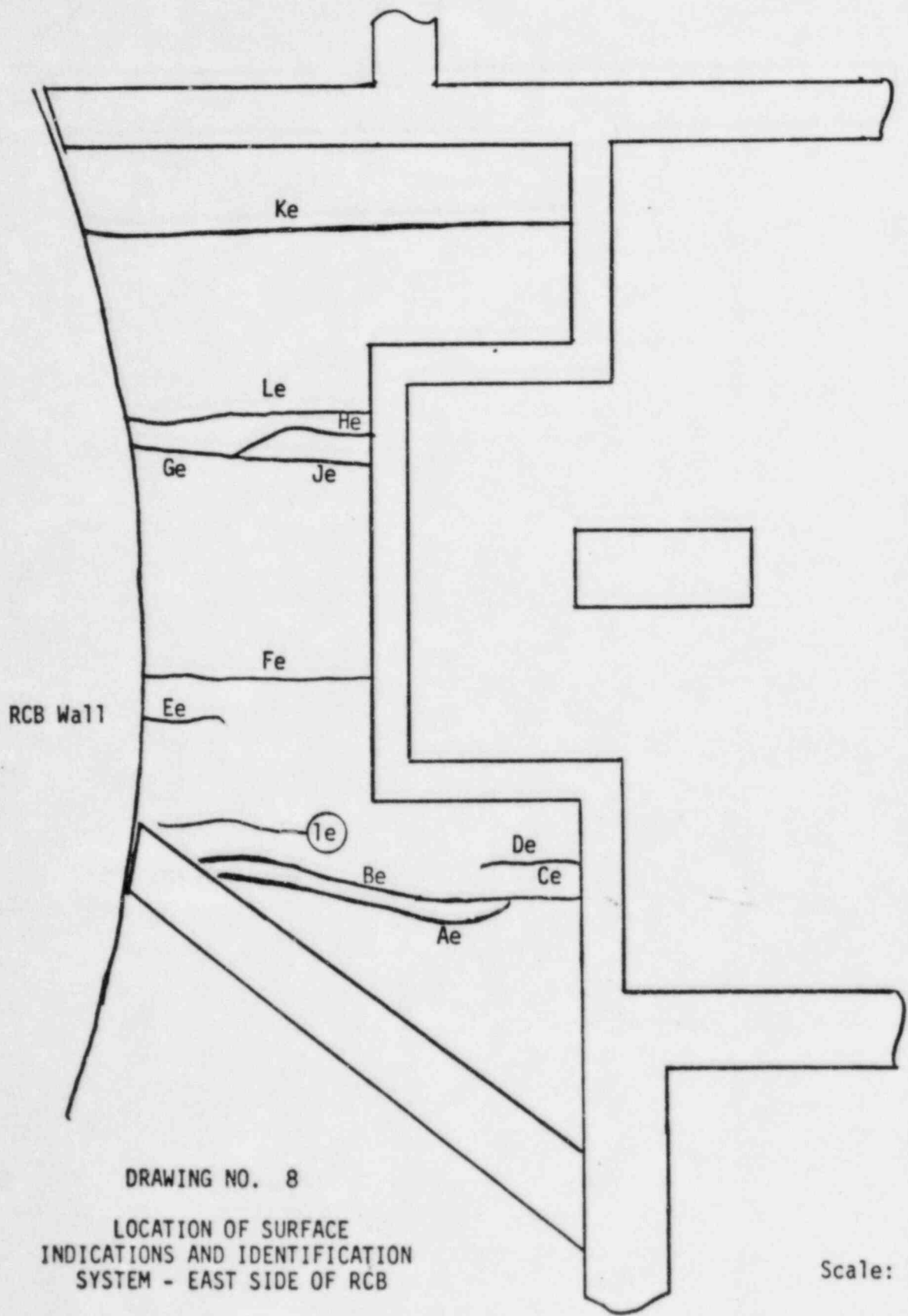
MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3



Scale: 1/8" = 1.0'

DRAWING NO. 7a

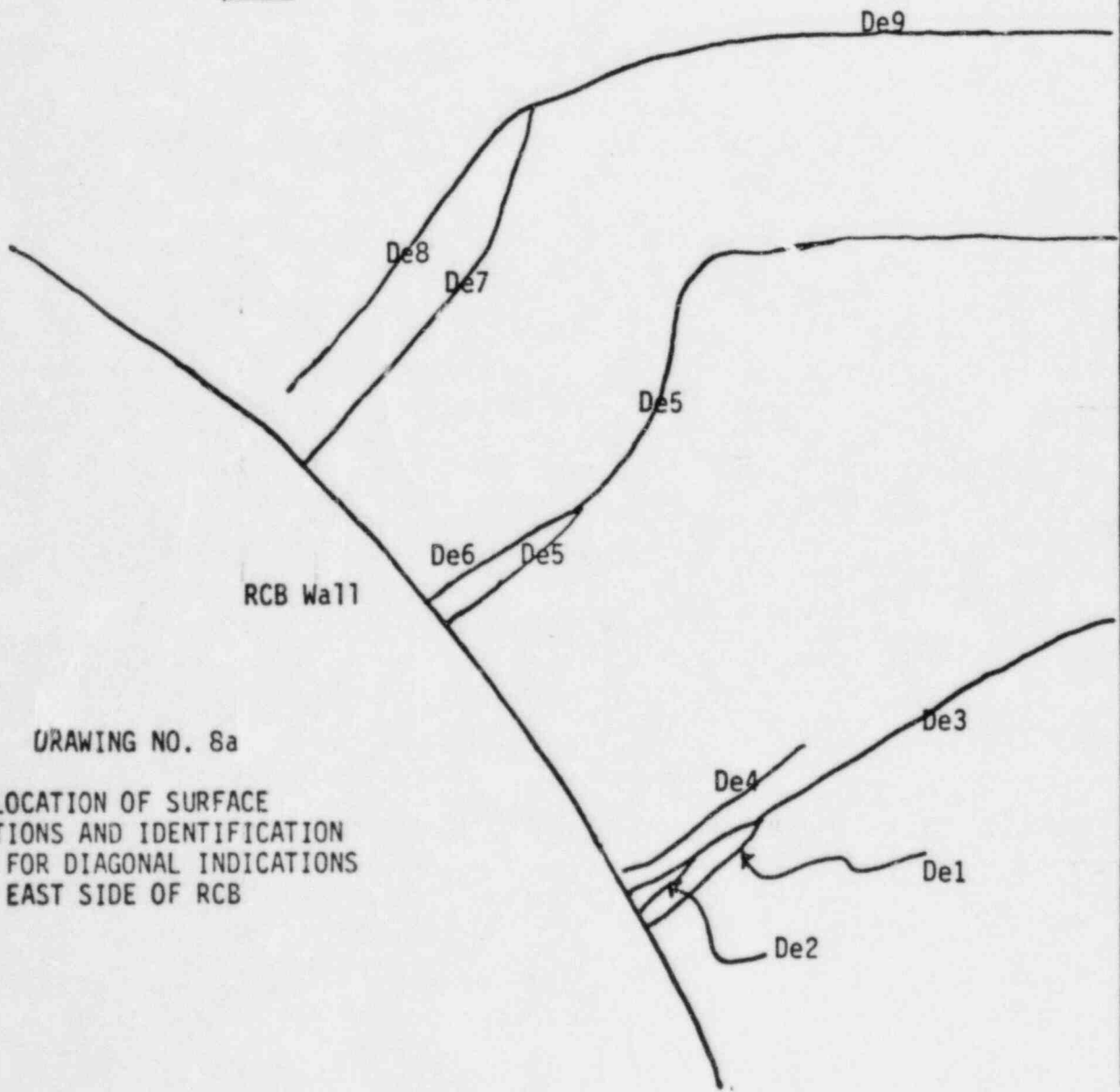
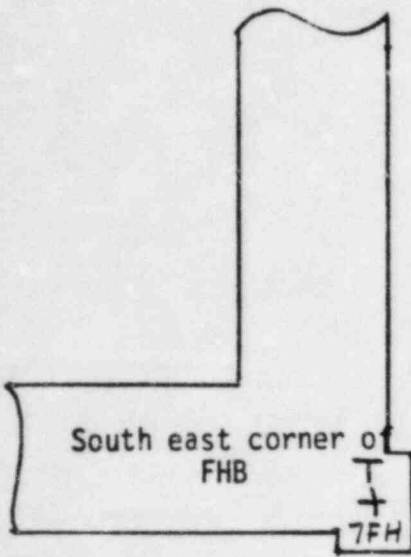
LOCATION OF SURFACE INDICATION
AND IDENTIFICATION SYSTEM
FOR DIAGONAL INDICATION
WEST SIDE OF RCB



DRAWING NO. 8

LOCATION OF SURFACE
INDICATIONS AND IDENTIFICATION
SYSTEM - EAST SIDE OF RCB

Scale: 1/8" = 1.0'



DRAWING NO. 8a
LOCATION OF SURFACE
INDICATIONS AND IDENTIFICATION
SYSTEM FOR DIAGONAL INDICATIONS
EAST SIDE OF RCB

Scale: 1/8" = 1.0'

that any internal discontinuity within the 12 foot base slab is located within that 4 to 5 foot diameter circle, and is further defined as to physical characteristics by the frequency component and amplitude.

FREQUENCY CONTENT AND AMPLITUDE

Low frequency sonic testing, pulse echo, is accomplished with energy containing a wide frequency band; usually approximately 1 to 100 KHz. Frequency shifts and attenuation of this sonic energy is affected by physical characteristics of the particular concrete within which it propagates. However, experience has shown, that most concrete having densities in the range of 150 pounds per cubic foot and having attained compressive strengths excess of 4000 to 4500 PSI have very similiar acoustic characteristics. In addition, experience has shown that not only does internal reflector surface size control the amplitude of the reflected energy; but additionally, reflector size will also cause frequency shifts (alterations) in the frequency component of the reflected energy. In terms of data interpretation this means that for a 4 foot diameter reflector a 100% amplitude energy level is recorded and calibrated from tests against the edge of the base mat for any specific path length. In conjunction with this, the frequency content will vary with reflector surface; the higher frequencies attenuating from 100 KHz to 20 KHz for a reduction of 50% in the reflector surface area, corrected for path distance.

This measurement techniques have been verified by concrete removal and coring at Marble Hill, Callaway, Peach Bottom, Comanche Peak and Monticello.

SPECIFIC METHOD OF BASE MAT INSPECTION WITH 45° TRANSDUCER

The basic concept of determining depth and orientation of internal reflectors by time measurements and geometric triangulation is best illustrated by referring to drawing number 2; "Test Technique for Determining Internal Reflector Depth and Orientation with 45° Transducer", and drawing number 9; which details the layout of test points, on the surface of the base mat, in relation to individual surface indications.

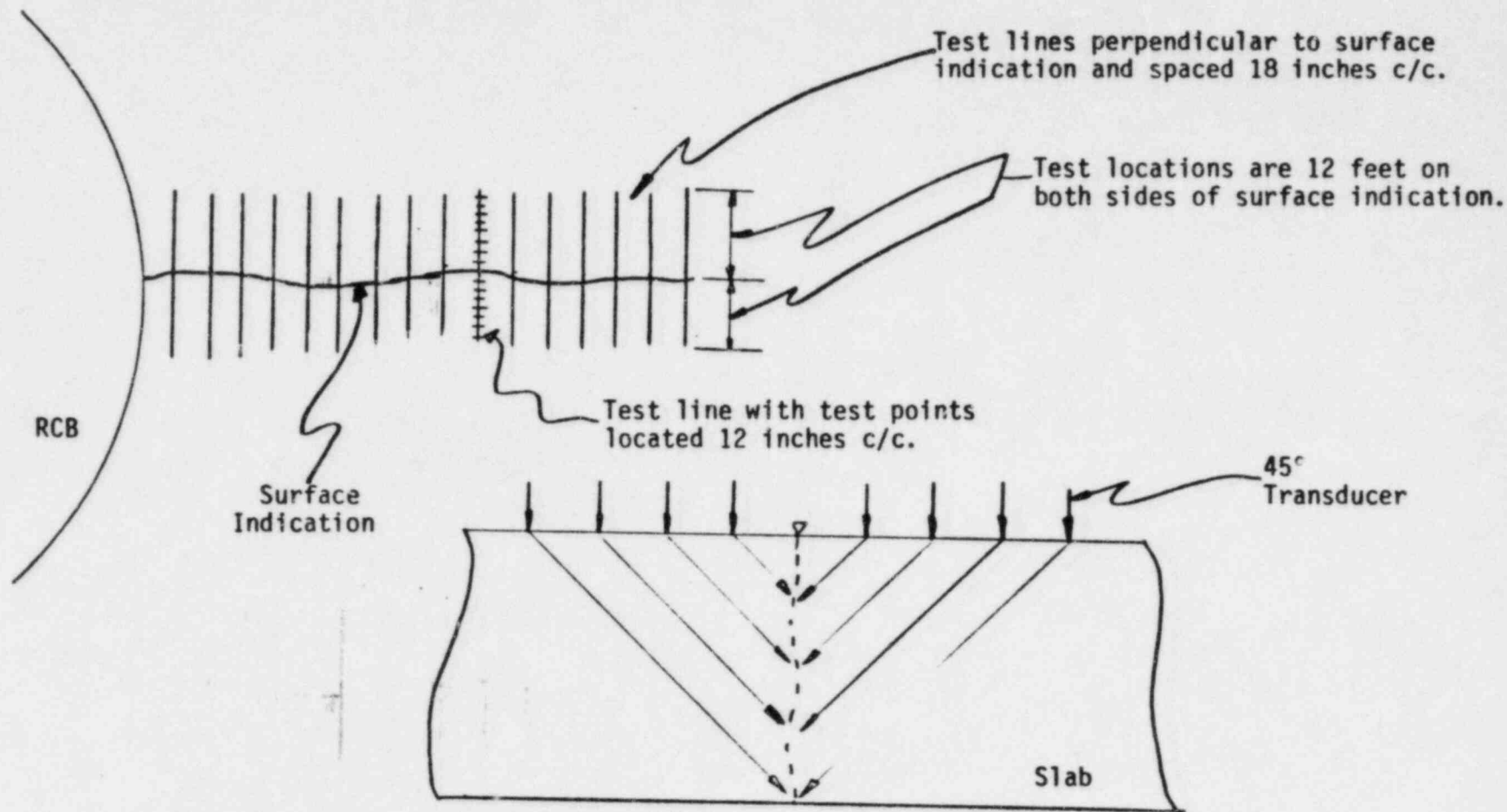
A step by step description of this method is as follows:

1. By visual means, all surface indications on the base mat, are outlined in detail and identified for the permanent record.
2. Each surface indication is measured for horizontal length and distances away from nearby reference points; such as the RCB and column line intersections.
3. One surface indication is then chosen for an evaluation of possible internal discontinuities related to its visual appearance. Selecting the initial surface indication for evaluation is usually based upon isolation (not associated with any other surface indications) and as short as possible in horizontal length.
4. The chosen indication is then outlined in paint or other semi permanent material.

5. Lines are established on 18 inch centers perpendicular to the surface indication for the horizontal length of the indication. These lines extend outward from the surface indication in both directions for a distance equal to the thickness of the member under test. In the case of Waterford No. 3, the nominal thickness of the base mat is 12 feet; so the individual test lines extended outward in both directions from the surface indications 12 feet. Along this 12 foot test line individual test points are established on 1 foot centers. For clarification refer to drawing number 9.

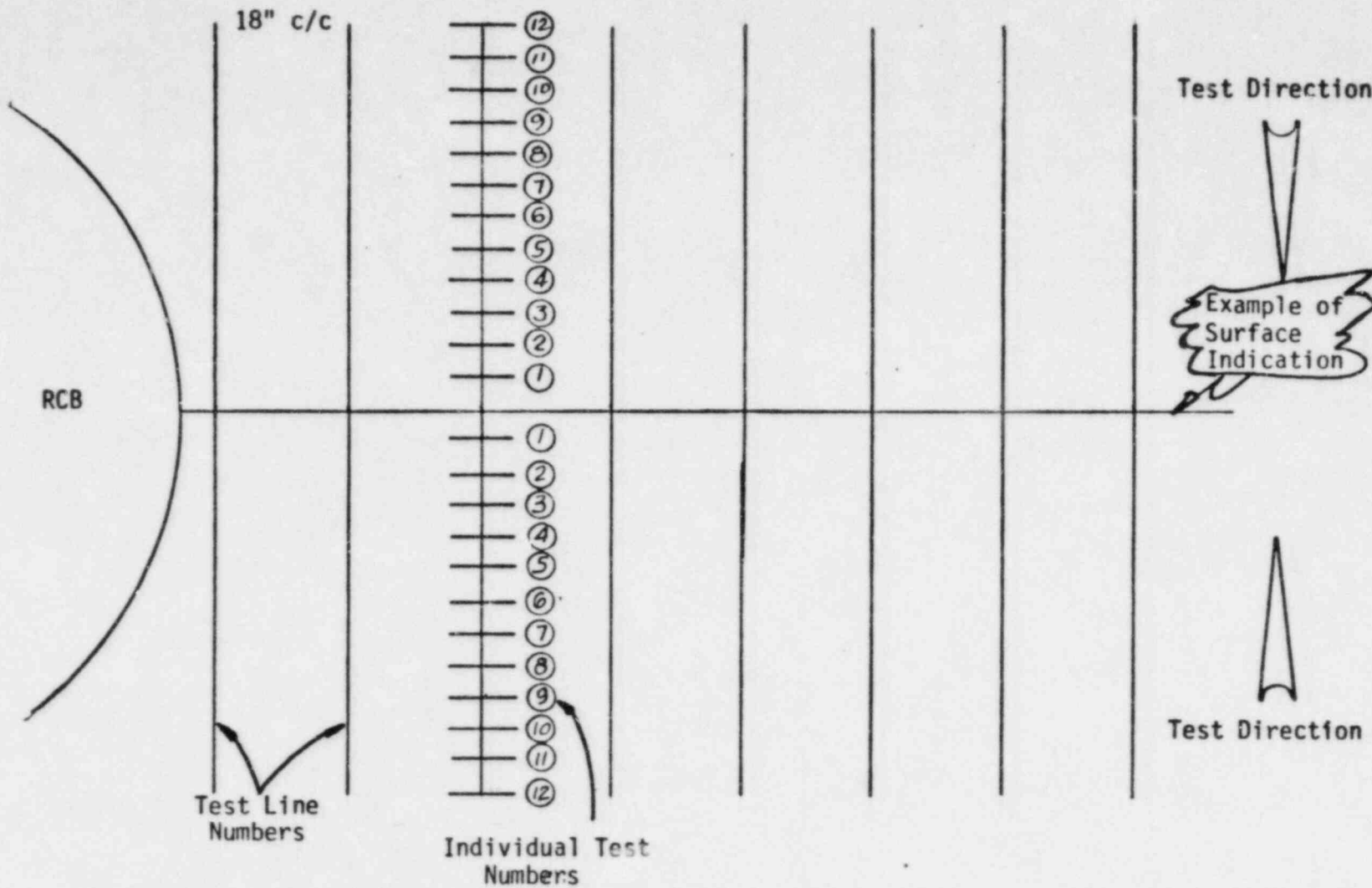
6. All measurements of the surface indication and individual test numbering sequence are made from the RCB outward, and are designated as tests from NORTH to SOUTH or SOUTH to NORTH. See drawing number 10.

7. For the first test on any test line the 45° transducer is placed on the appropriate test mark being aimed towards the surface indication; the sonic wave producer is then located the same distance away from the surface indicator and within a 4 inch diameter circle from the center of the 45° transducer. Our test procedure calls for placement within 1 inch; the variation was necessary at Waterford No. 3 because we used more powerful sonic wave procedures (heavier springs) which caused long term ring down time and by increasing the distance between transducer and hammer the ring down did not interfere with the data processing.



24

DRAWING NO. 9
TYPICAL TEST PATTERN TO DETERMINE
DEPTH AND ORIENTATION OF INTERNAL REFLECTORS



DRAWING NO. 10
 LOCATION AND NUMBERING SEQUENCE FOR PULSE ECHO
 TEST POINTS ON SURFACE INDICATIONS

8. The test is performed by "firing" the sonic wave producer and interpreting the data which appears on the storage CRT of the pulse echo equipment. Data from any individual test point is processed and recorded manually. At some point in time, usually after several test lines have been evaluated on the same surface indication, the information is subjected to data processing to identify trends and patterns and random reflectors.
9. Depending on the depth and orientation of an internal discontinuity, more testing may be conducted from the opposite side of the surface indication on any given test line. In the case of Waterford No. 3, tests on any given test line in a NORTH to SOUTH direction resulted in sufficient data of extremely high confidence, based on reproducibility; so that only 50 percent of the SOUTH to NORTH test locations had to be evaluated for confirmation of test indications. However, as a result of repeated reproducibility testing, at least 75 percent of the SOUTH to NORTH test locations were evaluated.
10. As the testing progressed and the volume of data increasing revealed multiple internal reflectors from many individual test points, the frequency of data processing increased to twice daily for identification of trends, patterns and random reflectors.
11. Testing continued on a systematic basis from one test point to another and from test line to test line. This procedure was interrupted whenever data processing requires confirmation of random internal reflectors.

12. Test data from the 45° transducer test program is presented in the form of four items, as follows:

- a) Crack Depth and Orientation Data Sheet - This table of data gives the actual microsecond reading from any individual test point to reflectors within the base mat.
- b) Crack Depth and Orientation Calculations - This is a computer print out of the actual microsecond reading at individual test points, horizontal and vertical coordinates to that reflector and the degrees of angle that a line connecting that point and the surface indication will make with a perpendicular plane originating at the surface indication.
- c) Crack Depth and Orientation Graphing - This is a computer print out of each individual horizontal and vertical coordinate with an engineering judgement of crack depth and orientation drawn in on each graphic representation. The horizontal line at depth 10 feet locates the top of bottom reinforcement steel.
- d) Identification of Random Internal Reflectors - This is a tabulation of crack and reflector identification with an engineering judgement as to origin of reflecting surface.

SPECIFIC METHOD OF BASE MAT INSPECTION WITH 60° TRANSDUCER

The basic concept of determining depth and orientation of internal reflectors by time measurements and geometric triangulation with a 60° transducer is illustrated by referring to the following drawings;

Drawing No. 2 - Test Technique for Determining Internal
Reflector Depth and Orientation With
60° Transducer

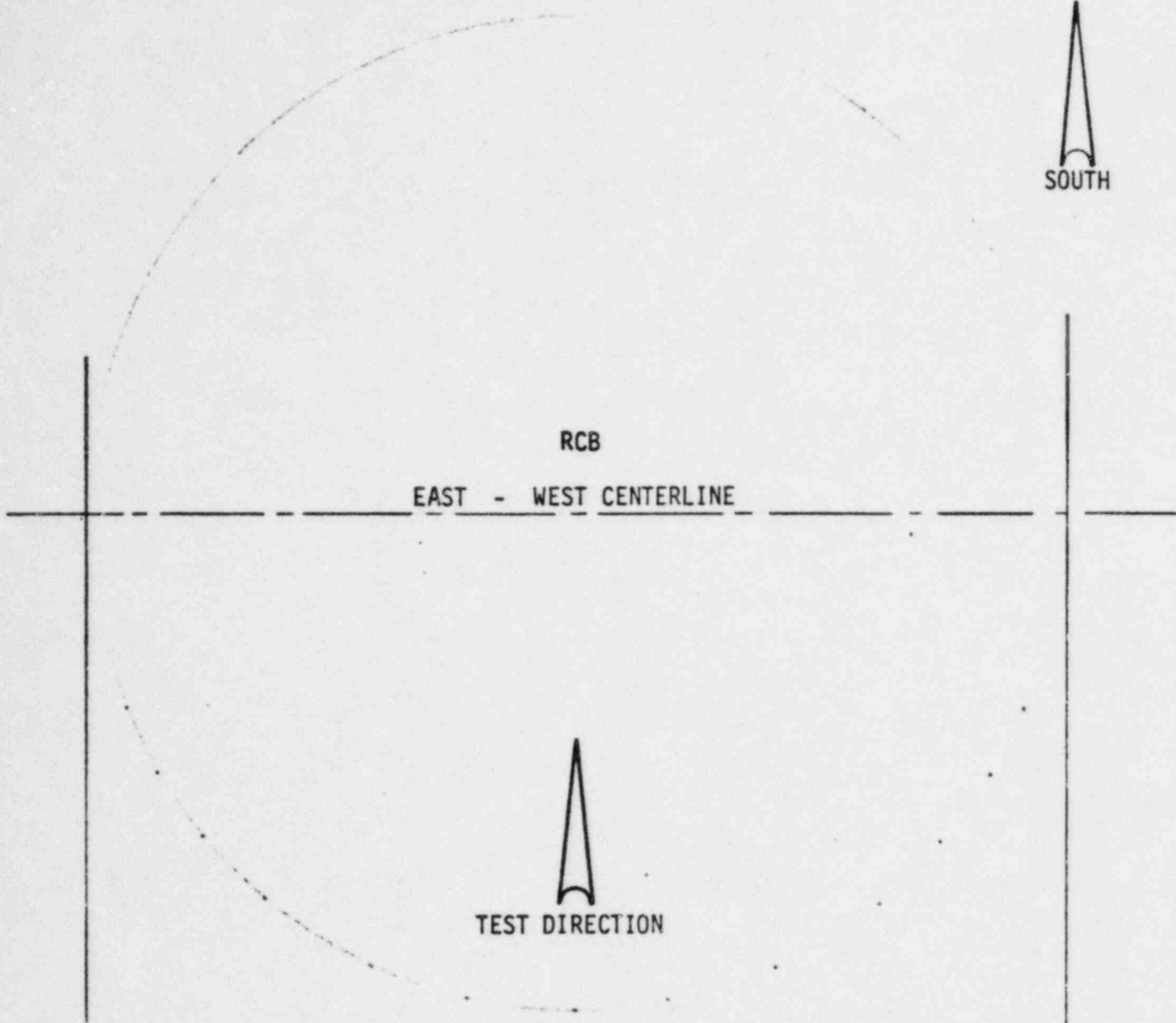
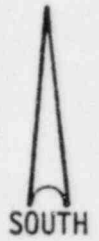
Drawing No. 11 - Test Locations for 60° Transducer

Drawing No. 12 - Test Line Identification for Crack Depth
and Orientation Data Sheet With 60° Transducer

A step by step description of this method is as follows:

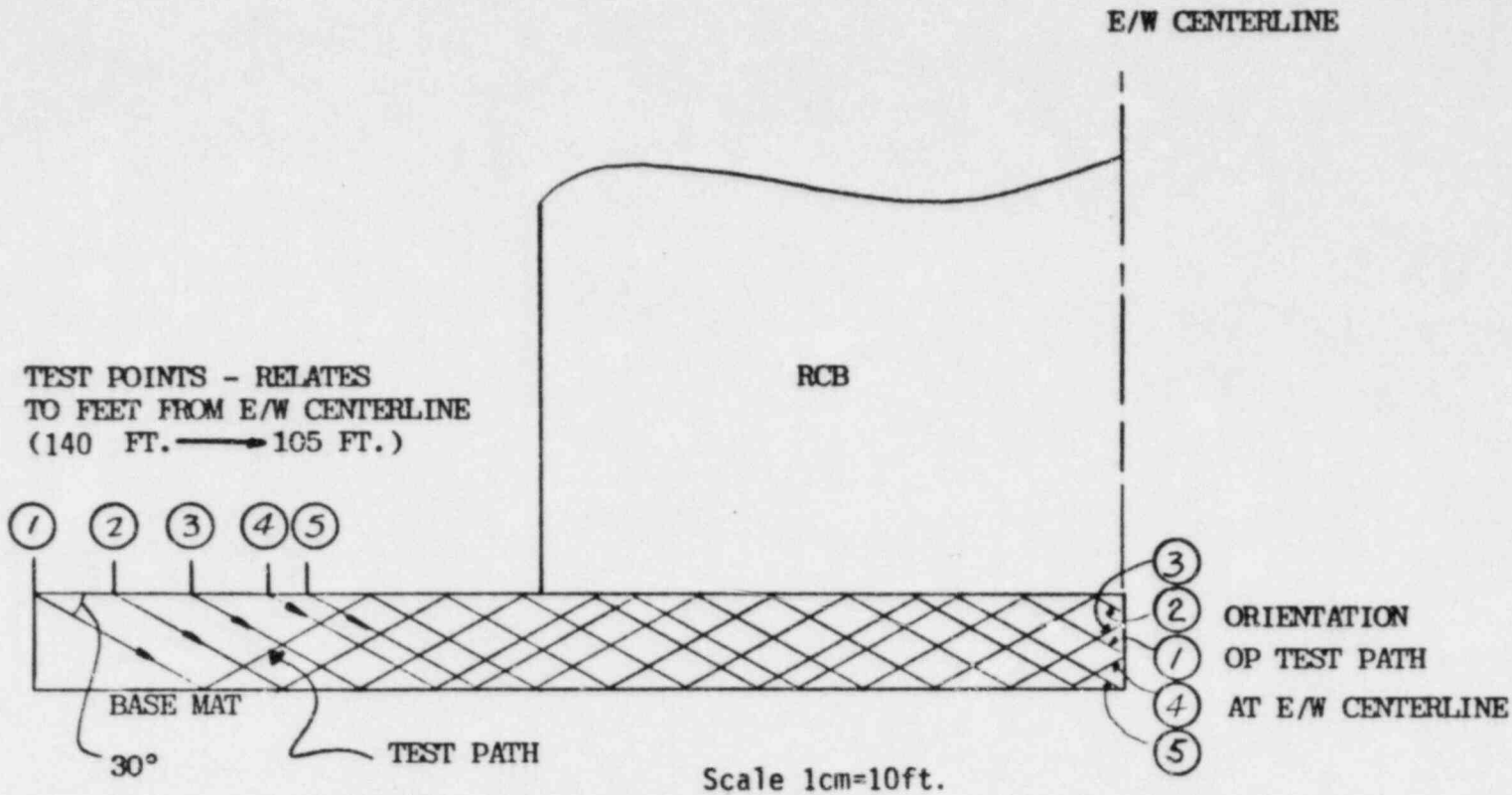
1. A grid system of test locations is established and assumed to be perpendicular to the internal discontinuities which are to be identified. Location of these test points is contingent on "space available" in an area continuously open allowing for a grid system which will be both perpendicular to and parallel with the intended internal discontinuities to be identified.
2. In the case of Waterford No. 3, the test grid points were established on the base mat inside the fuel handling building at a horizontal distance of 105 to 140 feet, on 5 foot centers, away from the East/

MUENOW AND ASSOCIATES, INC.
 CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3



TEST LINE IDENTIFICATION FOR CRACK DEPTH
 AND ORIENTATION DATA SHEET WITH 60° TRANSDUCER

105	+	+	+	+	+	+	+	+	+	+	+	+	+		
110	+	+	+	+	+	+	+	+	+	+	+	+	+		
115	+	+	+	+	+	+	+	+	+	+	+	+	+		
120	+	+	+	+	+	+	+	+	+	+	+	+	+		
125	+	+	+	+	+	+	+	+	+	+	+	+	+		
130	+	+	+	+	+	+	+	+	+	+	+	+	+		
135	+	+	+	+	+	+	+	+	+	+	+	+	+		
140	+	+	+	+	+	+	+	+	+	+	+	+	+		
	0e	30e	40e	50e	60e	70e	75e	77	75	70	65	60	50	40	0



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

DRAWING NO. 12

West center line of the RCB and extending the entire diameter of the RCB on a variable spacing.

3. Note - 60° transducers are used in this test application rather than 45° transducers, because of decreased attenuation characteristics due to shortened paths of sound energy propagation.
4. With the 60° transducer, in addition to measuring the transit time from an internal reflector, measurements of the reflected energy are also made in terms of frequency content and amplitude. This additional data is required because reflections from these angular distances (122 to 162 feet) are an average from a relatively large reflecting area as opposed to reflective energy from a 45° transducer, only 15 feet away, which is considered a point reflector.
5. As with the 45° transducer, the 60° transducer is placed on any individual test point and aimed at the imaginary perpendicular reflector; the sonic wave producer is placed in the same vicinity as with the 45° transducer test. However, at this point the test program includes at least 5 more "firing" of the sonic wave producer while the 60° transducer is rotated approximately 15°, on both sides of 0°, to determine a minimum frequency shift content and attenuation.
6. Due to the relatively long sound propagation distances involved at Waterford No. 3 with the 60° transducer, a system of electronic

transit time gating is used to clarify data as present on the storage CRT. This gate system is set up by making an initial pulse echo test at the maximum distance expected away from the imaginary reflector. The data is then subjected to an electronic reader which assigns transit times to the multiple reflectors encountered. Gating of transit times is then employed to $\pm 5\%$ of each reflector with individual reflectors being present on the storage CRT with an expanded time scale.

7. Frequency content and attenuation measurements are used to correlate continuous and/or noncontinuous reflecting surfaces.
8. Test data is presented in the form of three items, as follows:
 - a) Crack Depth and Orientation Sheet - This tabulation identifies the reflector as cracks numbered 1 to 7, gives the microsecond time from reflector and the horizontal distance to the reflector measured horizontally from the 105 foot test line.
 - b) Crack Depth and Orientation Graphic Sheet - These illustrations give the location of each reflector; solid line denotes positive identification, dashed line denotes an interpretation that the reflector is noncontinuous.

- c) Plan View of Crack Locations - This drawing illustrates the location of each reflector.

TEST DATA - Concrete Quality

As stated in the Test Technique section of this report, pulse echo nondestructive testing will generate data relative to concrete uniformity and insitu compressive strength, in addition to detecting and locating internal discontinuities.

Data from the 100 test area, see drawings numbered 5 and 13, relates microsecond readings for transit time through the 12 foot thick base mat. It must be noted that we assumed a constant mat thickness, and in reality the base mat thickness can vary as much as 3 inches. In addition, if the mud mat (which was placed using 5000 PSI concrete trial batches) is bonded to the structural base mat, then actual mat thickness could be between 12 and 13 feet. This variable thickness accounts for the minor increase for the coefficient of variation above normal. However, the transit times indicate the following:

- a) Average transit time is 71.2 microseconds per foot
- b) High transit time is 80 microseconds per foot
- c) Low transit time is 68 microseconds per foot
- d) One Standard Deviation is 3.14 microseconds
- e) Coefficient of Variation is 4.0%*

*H.N. Tomsentt - Magazine of Concrete Research, Volume 32, No. 110, Published by the Cement and Concrete Association of England states: "A coefficient of variation of 2.5 can be expected in measured pulse velocities (microsecond transit times per foot) for routine concrete placements".

Relating transit times to compressive strength values (PSI) is accomplished by destructive testing. Cores are taken and/or cylinders are made (using identical materials), transit times are measured immediately prior to core and/or cylinder testing to failure in compression and a velocity versus strength correlation is established. This procedure was not conducted during the current base mat evaluation program; however, a correlation program was conducted at Waterford No. 3, during previous test programs involving the dome ring beam concrete and on the base mat concrete early in the construction cycle. Velocities measured during prior correlation program were in the range of 13,000 to 14,700 feet per second; which are identical to velocities measured in the base mat concrete at this time. These velocities correlate to strengths in the 5000 to 7000 plus PSI range.

According to ACI Recommended Practices and Industry Standards, the uniformity of this concrete would be classed as normal; while the insitu compressive strengths exceed the design criteria. Reference ACI Monograph No. 2.

Crack width measurements are conducted in a comparison type test and reveal only an estimate, as compared to an actual measured value. Experience with this test technique at Marble Hill, Callaway and other concrete structures; indicates an accuracy of approximately 20% in the 5 to 15 mil range as verified by concrete removal and cores. With 0° transducers, crack widths are estimated as a ratio of reflective energy between the internal reflector and the back wall reflector. With the 45° transducer crack widths are estimated as a ratio of reflective energy between the internal reflector and a false back wall reflector of given amplitude. Crack width measurements were made on the following surface

indications, J-L-M-P-T Diagonal West-Ke-Le- and Fe, at depths of 1-2-4-7-9 and 11 feet. Test data indicates that the maximum estimated crack width did not exceed 7 mils. Measurement of surface exposure of crack L showed it to be in the range of 3 to 5 mils.

EXPLANATION OF RANDOM INTERNAL REFLECTORS

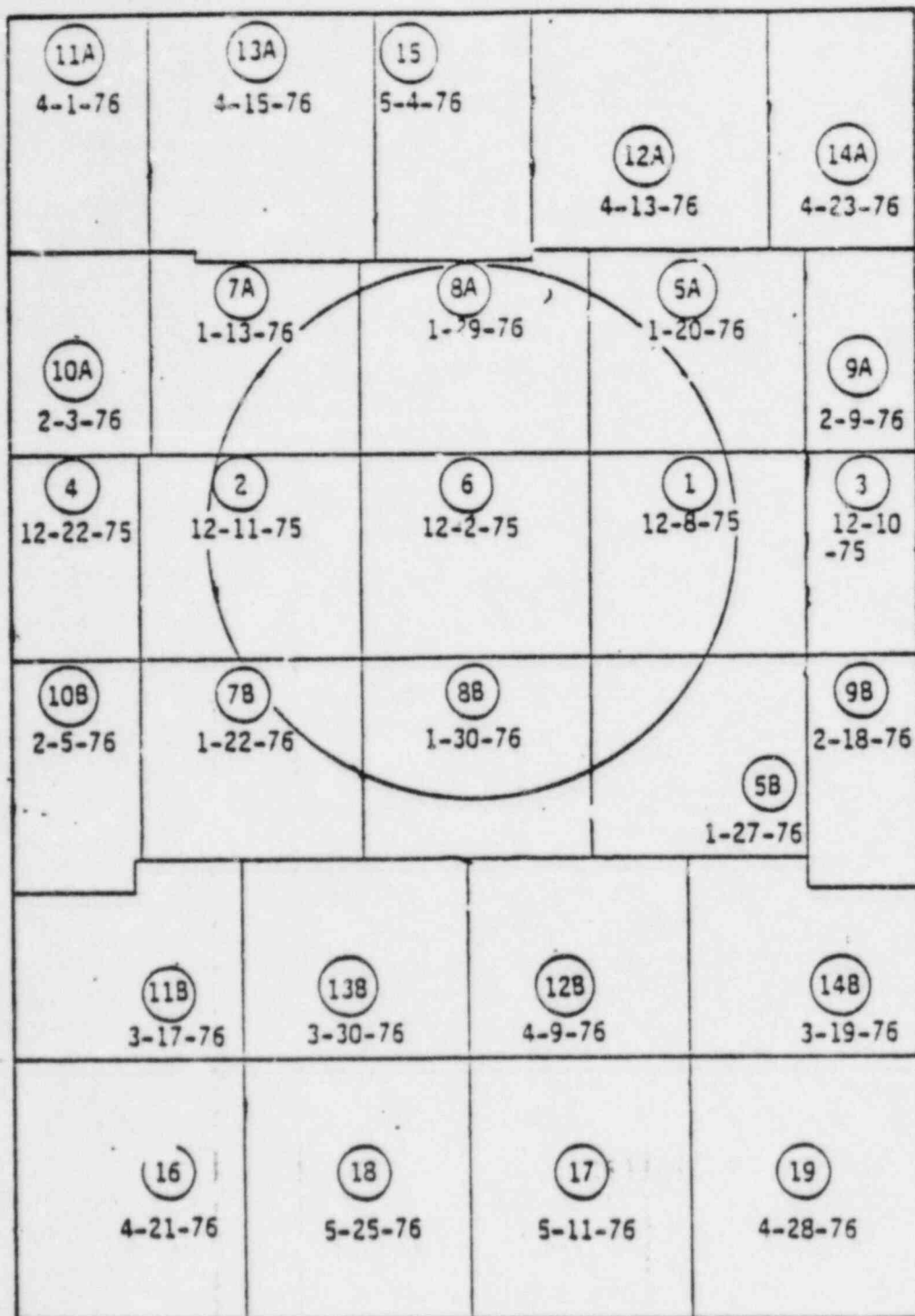
GENERAL STATEMENT: This summary, of internal reflectors, will explain the cause of those reflectors, which according to timing characteristics and related orientation, are not associated with specific patterns. Statements concerning these random internal reflectors are based upon a complete review of "as built" drawings for reinforcement steel and embedment, conversations with various superintendents, foremen and current on site personnel familiar with actual construction procedures. Our review also included a detailed study of all pertinent construction photos.

IDENTIFICATION AND DESCRIPTION OF RANDOM REFLECTOR ORIGIN

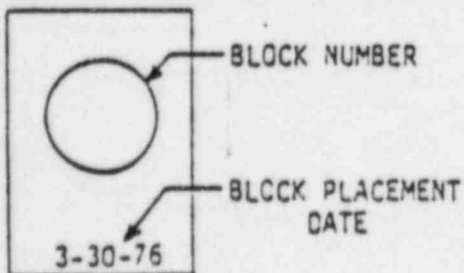
REFERENCE NO.

DESCRIPTION

1. Reflector associated with localized lack of bond and/or minor volume of unconsolidated materials around reinforcement steel bars. (This designation includes the primary reinforcement steel, reinforcement support structures, primary embedments, construction oriented embedments and utility embedments.
2. Reflectors from minor volumes of unconsolidated materials other than associated with designation 1 type reflectors.
3. Reflectors from volumes of material containing microcracks; which are defined as short, random and noninterconnecting discontinuities normally caused from, but not restricted to; heat of hydration, concentrations of cement matrix and limited nonuniformity of materials.
4. Positive identification difficult due to congestion of lower layer of reinforcement steel and/or embedments at bottom of base mat. These reflectors represent areas of localized lack of bond, thermal stress cracks and/or cracks propagating from the bottom of the slab in an upward direction.



KEY:



AMENDMENT NO. 19. (6/81)

LOUISIANA
POWER & LIGHT CO.
Waterford Steam
Electric Station

COMPOSITE FOUNDATION MAT
MUENOW AND ASSOCIATES, INC., DRAWING NO. 15

Figure
2.5-118

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
 3940 HUNTCLIFF DR.
 CHARLOTTE, NORTH CAROLINA 28211
 (704) 377 4041 - (704) 542 2223

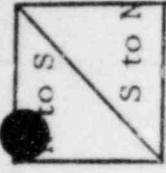
DESCRIPTION OF
 45° TRANSDUCER
 INTERNAL REFLECTOR DATA

CRACK ID A DATE: 8-30-84 - N TO S 45° TRANSDUCER

⑤ TEST # 7 MS TO VERT	⑥ 1 8 106	⑦ 90 ⑩ 0.85 ⑪ 0.15 ⑫ 10.12 ⑬
⑨ LINE 1		

- Crack ID A = Crack Identification A (See Drawing No. 7) _____ ①
- Date: 8-30-84 = Date of final computation. _____ ②
- N to S = Test direction was from North to South. _____ ③
- 45° Transducer = Test was conducted with 45° transducer. _____ ④
- Test # = Test number along test line start from RCB _____ ⑤
- 1 = Test Number 1 _____ ⑥
- MS to VERT = Microseconds to Vertical - Guide to Orientation. _____ ⑦
- 106 = Number of microseconds to vertical for that test no. _____ ⑧
- Line 1 = First line of test on any crack start at RCB. _____ ⑨
- 90 = Actual microsecond reading for that test location. _____ ⑩
- 0.85 = Vertical and horizontal coordinates for plotting data. _____ ⑪
- 0.15 = _____ ⑫
- 10.12 = Angle at that depth of straight line from surface indication to that internal point. _____ ⑬

TEST DIRECTION



MUENOW AND ASSOCIATES, INC CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

CRACK IDENTIFICATION A OPERATOR R. A. MUENOW P. E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1	2	3	4	5	6	7	8	9	10	11	12
LINE NO. 1	90 0	0 0	320 0	0 0	0 0	610 0	0 0	840 0	0 0	0 0	0 0	0 0
LINE NO. 2	90 0	195 0	0 0	0 0	0 0	0 0	0 990*	0 0	0 0	1060 0	1170 0	0 0
LINE NO. 3	85 0	0 0	0 0	440 0	0 0	640 0	840 0	800 0	0 0	0 0	0 0	0 0
LINE NO. 4	80 0	180 0	0 0	180 0	540 0	0 0	0 0	0 0	0 0	1100 0	1160 0	0 0
LINE NO. 5	60 0	140 0	310 0	410 0	0 0	610 0	700 990	640 0	0 0	0 0	0 0	0 0
LINE NO. 6	60 0	130 0	0 0	440 0	0 0	0 0	410 0	0 0	0 0	1070 0	0 0	0 0
LINE NO. 7	85 0	165 0	0 0	400 0	0 0	590 0	0 0	0 0	910 0	0 0	0 0	0 0
LINE NO.	85 0	165 0	0 0	400 0	0 0	590 0	0 0	0 0	910 0	0 0	0 0	0 0

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. A DATE : 8-30-84

N to S 45 deg TRANSDUCER

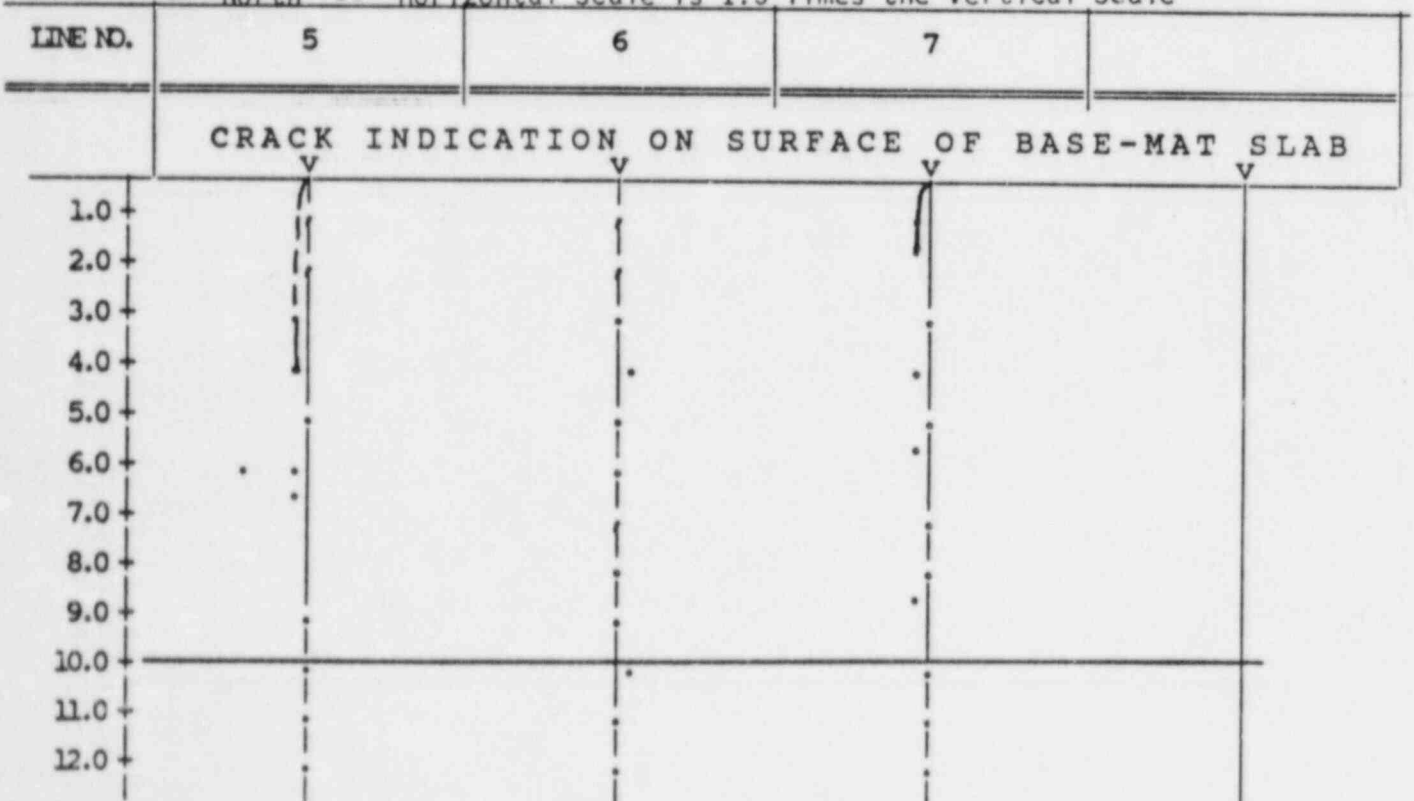
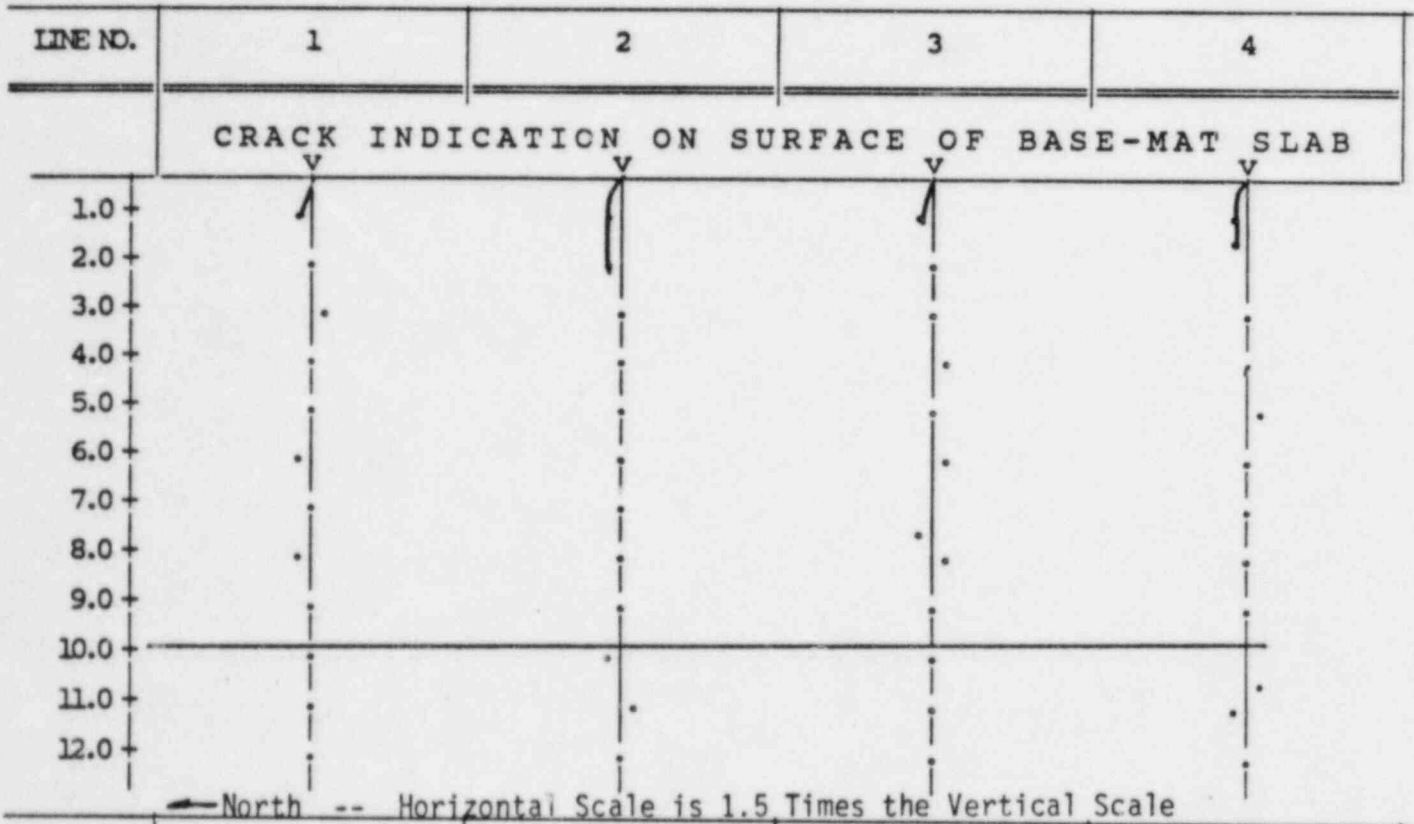
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	90	0	320	0	0	610	0	840	0	0	0	0
LINE 1	0.85 0.15 10.12	0.00 0.00 0.00	3.02 0.02 0.32	0.00 0.00 0.00	0.00 0.00 0.00	5.75 0.25 2.48	0.00 0.00 0.00	7.92 0.08 0.58	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	195	0	0	0	0	0	0	0	1060	1170	0
LINE 2	0.85 0.15 10.12	1.84 0.16 5.02	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	9.99 0.01 0.04	11.03 0.03 0.16	0.00 0.00 0.00
	85	0	0	440	0	640	840	800	0	0	0	0
LINE 3	0.80 0.20 13.92	0.00 0.00 0.00	0.00 0.00 0.00	4.15 0.15 2.05	0.00 0.00 0.00	6.03 0.03 0.32	7.92 0.92 6.62	7.54 0.46 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	180	0	180	540	0	0	0	0	1100	1160	0
LINE 4	0.75 0.25 18.05	1.70 0.30 10.12	0.00 0.00 0.00	1.70 2.30 53.61	5.09 0.09 1.03	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.37 0.37 2.05	10.94 0.06 0.33	0.00 0.00 0.00
	60	140	310	410	0	610	700	640	0	0	0	0
LINE 5	0.57 0.43 37.52	1.32 0.68 27.26	2.92 0.08 1.51	3.87 0.13 1.99	0.00 0.00 0.00	5.75 0.25 2.48	6.60 0.40 3.47	6.03 1.97 18.05	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	60	130	0	440	0	0	410	0	0	1070	0	0
LINE 6	0.57 0.43 37.52	1.23 0.77 32.28	0.00 0.00 0.00	4.15 0.15 2.05	0.00 0.00 0.00	0.00 0.00 0.00	3.87 3.13 39.04	0.00 0.00 0.00	0.00 0.00 0.00	10.09 0.09 0.50	0.00 0.00 0.00	0.00 0.00 0.00
	85	165	0	400	0	590	0	0	910	0	0	0
LINE 7	0.80 0.20 13.92	1.56 0.44 15.94	0.00 0.00 0.00	3.77 0.23 3.47	0.00 0.00 0.00	5.56 0.44 4.50	0.00 0.00 0.00	0.00 0.00 0.00	8.58 0.42 2.81	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. A DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
A	1/3	2
A	1/6	3
A	1/8	3
A	2/10	4
A	2/11	4
A	3/4	3
A	3/6	3
A	3/7	3
A	3/8	3
A	4/4	2
A	4/5	2
A	4/10	4
A	4/11	4
A	5/1	1
A	5/2	1
A	5/6	3
A	5/7	3
A	5/8	3
A	6/1	1
A	6/2	1
A	6/4	3
A	6/7	1
A	6/10	4
A	7/4	3
A	7/6	3
A	7/9	1

TEST DIRECTION

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION B OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO ⊥	1	2	3	4	5	6	7	8	9	10	11	12
LINE NO. 1	84	179	290	0	0	440*	0	810	0	1040	0	0
LINE NO. 2	84	181	295	0	690*	0	740	0	980	1000	0	0
LINE NO. 3	77*	177	297	0	0	410	0	0	905	0	0	1190
LINE NO. 4	84	180	0	0	110*	0	670	0	910	1060	0	0
LINE NO. 5	81	192	295	0	0	0	430*	0	0	0	0	0
LINE NO. 6	76*	161	267	0	0	0	180*	810	0	900	0	1010
LINE NO. 7	67*	154*	248	0	400	0	0	640	0	1040	1125	1200
LINE NO.						610	0	0	0	0	1170	1300

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. B DATE : 8-30-84

N to S 45 deg TRANSDUCER

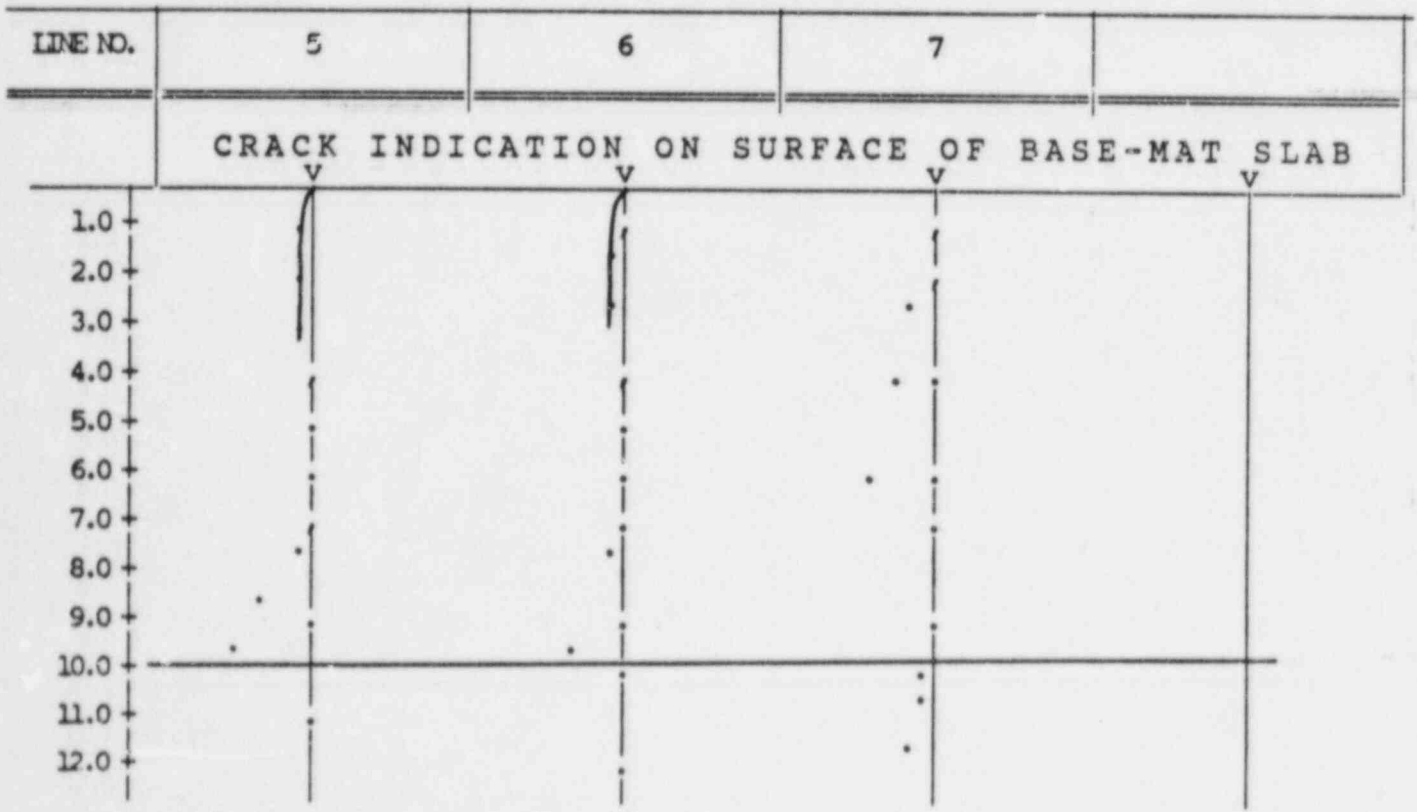
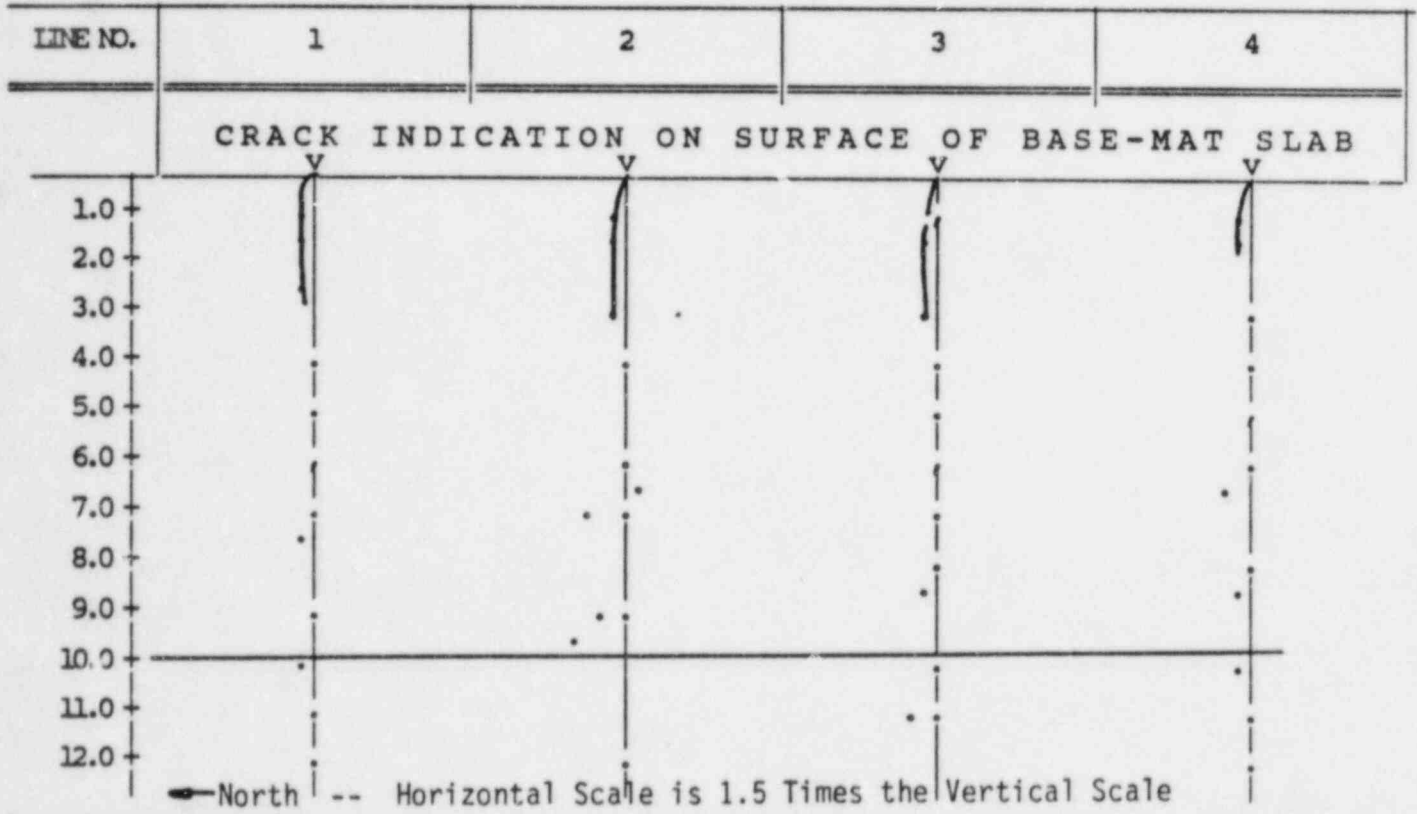
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	84 0.79 0.21 14.72	179 1.69 0.31 10.49	290 2.73 0.27 5.55	0 0.00 0.00 0.00	0 0.00 0.00 0.00	440 4.15 1.85 24.05	0 0.00 0.00 0.00	810 7.64 0.36 2.72	0 0.00 0.00 0.00	1040 9.81 0.19 1.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 2	84 0.79 0.21 14.72	181 1.71 0.29 9.76	295 2.78 0.22 4.50	0 0.00 0.00 0.00	690 6.51 1.51 13.03	0 0.00 0.00 0.00	0 0.00 0.00 0.00	740 6.98 1.02 8.34	0 0.00 0.00 0.00	980 9.24 0.76 4.71	1000 9.43 1.57 9.47	0 0.00 0.00 0.00
LINE 3	77 0.73 0.27 20.68	177 1.67 0.33 11.23	297 2.80 0.20 4.08	0 0.00 0.00 0.00	0 0.00 0.00 0.00	410 3.87 2.13 28.91	0 0.00 0.00 0.00	0 0.00 0.00 0.00	905 8.53 0.47 3.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1190 11.22 0.78 3.98
LINE 4	84 0.79 0.21 14.72	180 1.70 0.30 10.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	110 1.04 3.96 75.33	0 0.00 0.00 0.00	670 6.32 0.68 6.17	0 0.00 0.00 0.00	910 8.58 0.42 2.81	1060 9.99 0.01 0.04	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 5	81 0.76 0.24 17.20	192 1.81 0.19 5.99	295 2.78 0.22 4.50	140 1.32 2.68 63.78	0 0.00 0.00 0.00	0 0.00 0.00 0.00	180 1.70 5.30 72.25	810 7.64 0.36 2.72	0 0.00 0.00 0.00	900 8.49 1.51 10.12	0 0.00 0.00 0.00	1010 9.52 2.48 14.58
LINE 6	76 0.72 0.28 21.58	161 1.52 0.48 17.62	267 2.52 0.48 10.85	210 1.98 2.02 45.58	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	800 7.54 0.46 3.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1000 9.43 1.57 9.47	0 0.00 0.00 0.00
LINE 7	67 0.63 0.37 30.25	154 1.45 0.55 20.68	248 2.34 0.66 15.80	0 0.00 0.00 0.00	400 3.77 1.23 18.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	640 6.03 1.97 18.05	0 0.00 0.00 0.00	1040 9.81 0.19 1.14	1125 10.61 0.39 2.12	1200 11.31 0.69 3.47

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. P DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muesow and Associates, Inc.

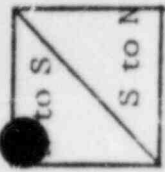
MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
B	1/6	3
B	1/8	4
B	1/10	4
B	2/6	3
B	2/8	3
B	2/10	4
B	2/11	4
B	3/6	2
B	3/9	4
B	3/11	4
B	4/5	1
B	4/7	1
B	4/9	2
B	4/10	4
B	5/4	3
B	5/8	3
B	5/10	4
B	5/11	4
B	6/4	3
B	6/8	2
B	6/11	4
B	7/1	1
B	7/3	2
B	7/5	3
B	7/8	3
B	7/10	4
B	7/11	4
B	7/12	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

CRACK IDENTIFICATION C OPERATOR R. A. MUENOW P. E. INSTRUMENT NO. B542588



TEST NO. MEC TO ↓	1	2	3	4	5	6	7	8	9	10	11	12
LINE NO.1	71*	170	280	0	410*	0	610	0	0	1020	1125	0
LINE NO.2	86	184	0	310*	0	0	0	740	0	1035	1117	1185
LINE NO.3	83	0	0	290*	0	0	0	710	0	1028	1103	1155
LINE NO.4	80	190	285	0	310*	0	0	680	0	1035	1116	1177
LINE NO.5	74*	148*	246	330	390*	0	0	0	0	1043	1118	1193
LINE NO.6	82	166	0	210*	0	430*	0	0	840	0	1125	1200
LINE NO.7	83	189	0	0	0	440*	0	0	790	0	910	0
LINE NO.8	83	189	0	390	0	510	0	0	0	840	0	0

TEST DIRECTION

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. C DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	71	170	280	0	410	0	610	0	0	1020	1125	0
LINE 1	0.67 0.33 26.28	1.60 0.40 13.92	2.64 0.36 7.77	0.00 0.00 0.00	3.87 1.13 16.36	0.00 0.00 0.00	5.75 1.25 12.25	0.00 0.00 0.00	0.00 0.00 0.00	9.62 0.38 2.28	10.61 0.39 2.12	0.00 0.00 0.00
	86	184	0	310	0	0	0	740	0	1035	1117	1185
LINE 2	0.81 0.19 13.13	1.73 0.27 8.69	0.00 0.00 0.00	2.92 1.08 20.23	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	6.98 1.02 8.34	0.00 0.00 0.00	9.76 0.24 1.42	10.53 0.47 2.55	11.17 0.83 4.24
	83	0	0	290	0	0	0	710	0	1028	1103	1155
LINE 3	0.78 0.22 15.53	0.00 0.00 0.00	0.00 0.00 0.00	2.73 1.27 24.84	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	6.69 1.31 11.04	0.00 0.00 0.00	9.69 0.31 1.82	10.40 0.60 3.31	10.89 1.11 5.82
	80	190	285	0	310	0	0	680	0	1035	1110	1177
LINE 4	0.75 0.25 18.05	1.79 0.21 6.64	2.69 0.31 6.64	0.00 0.00 0.00	2.92 2.08 35.40	0.00 0.00 0.00	0.00 0.00 0.00	6.41 1.59 13.92	0.00 0.00 0.00	9.76 0.24 1.42	10.47 0.53 2.93	11.10 0.90 4.65
	74	148	246	330	390	0	0	0	0	1043	1118	1193
LINE 5	0.70 0.30 23.43	1.40 0.60 23.43	2.32 0.68 16.36	3.11 0.89 15.94	3.68 1.32 19.79	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	9.83 0.17 0.97	10.54 0.46 2.50	11.25 0.75 3.83
	82	166	0	210	0	430	0	0	840	0	1125	1200
LINE 6	0.77 0.23 16.36	1.57 0.43 15.53	0.00 0.00 0.00	1.98 2.02 45.58	0.00 0.00 0.00	4.05 1.95 25.64	0.00 0.00 0.00	0.00 0.00 0.00	7.92 1.08 7.77	0.00 0.00 0.00	10.61 0.39 2.12	11.31 0.69 3.47
	83	189	0	0	0	440	0	0	790	0	910	0
LINE 7	0.78 0.22 15.53	1.78 0.22 6.98	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	4.15 1.85 24.05	0.00 0.00 0.00	0.00 0.00 0.00	7.45 1.55 11.77	0.00 0.00 0.00	8.58 2.42 15.75	0.00 0.00 0.00
	83	189	0	390	0	510	0	0	0	840	0	0
LINE 8	0.78 0.22 15.53	1.78 0.22 6.98	0.00 0.00 0.00	3.68 0.32 5.02	0.00 0.00 0.00	4.81 1.19 13.92	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	7.92 2.08 14.72	0.00 0.00 0.00	0.00 0.00 0.00

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. C DATE : 8-30-84

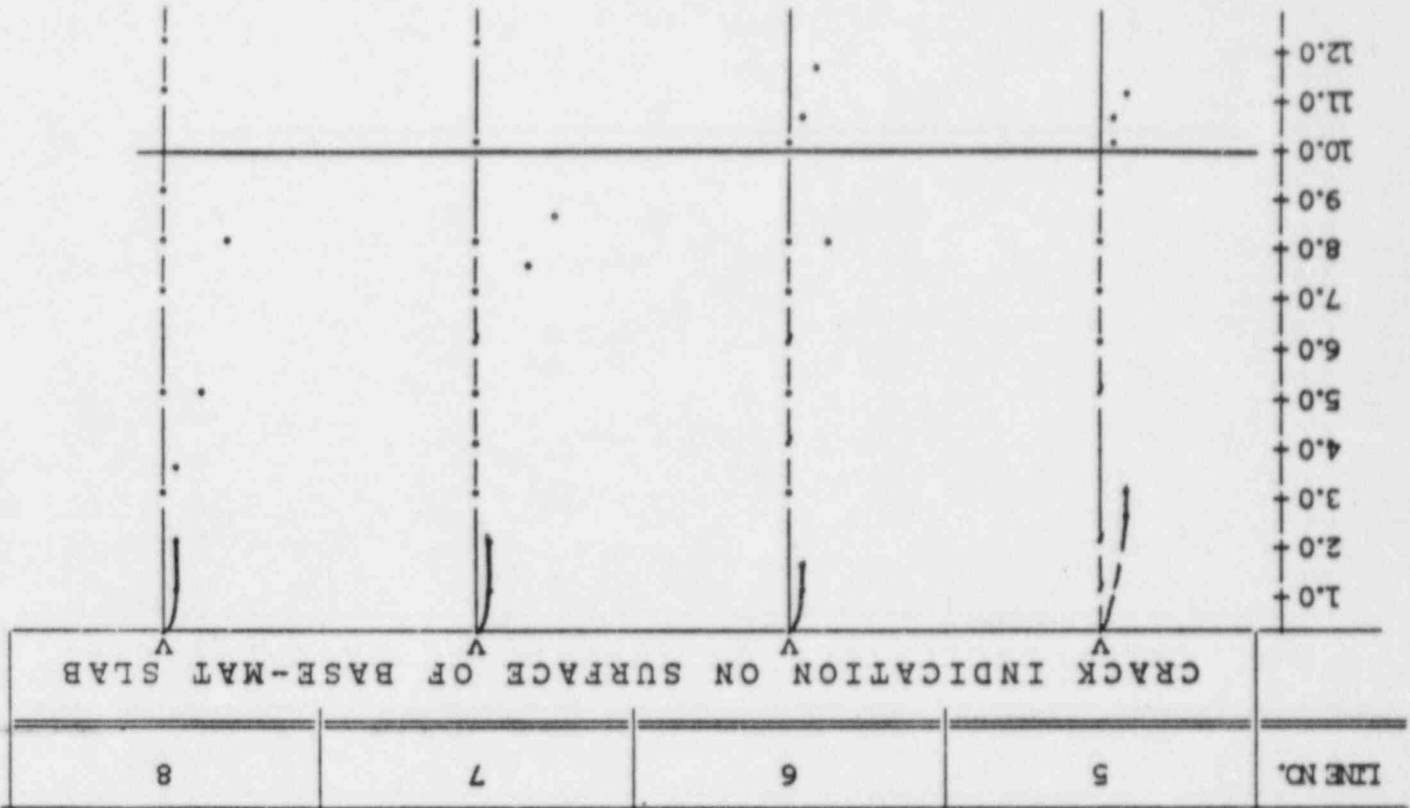
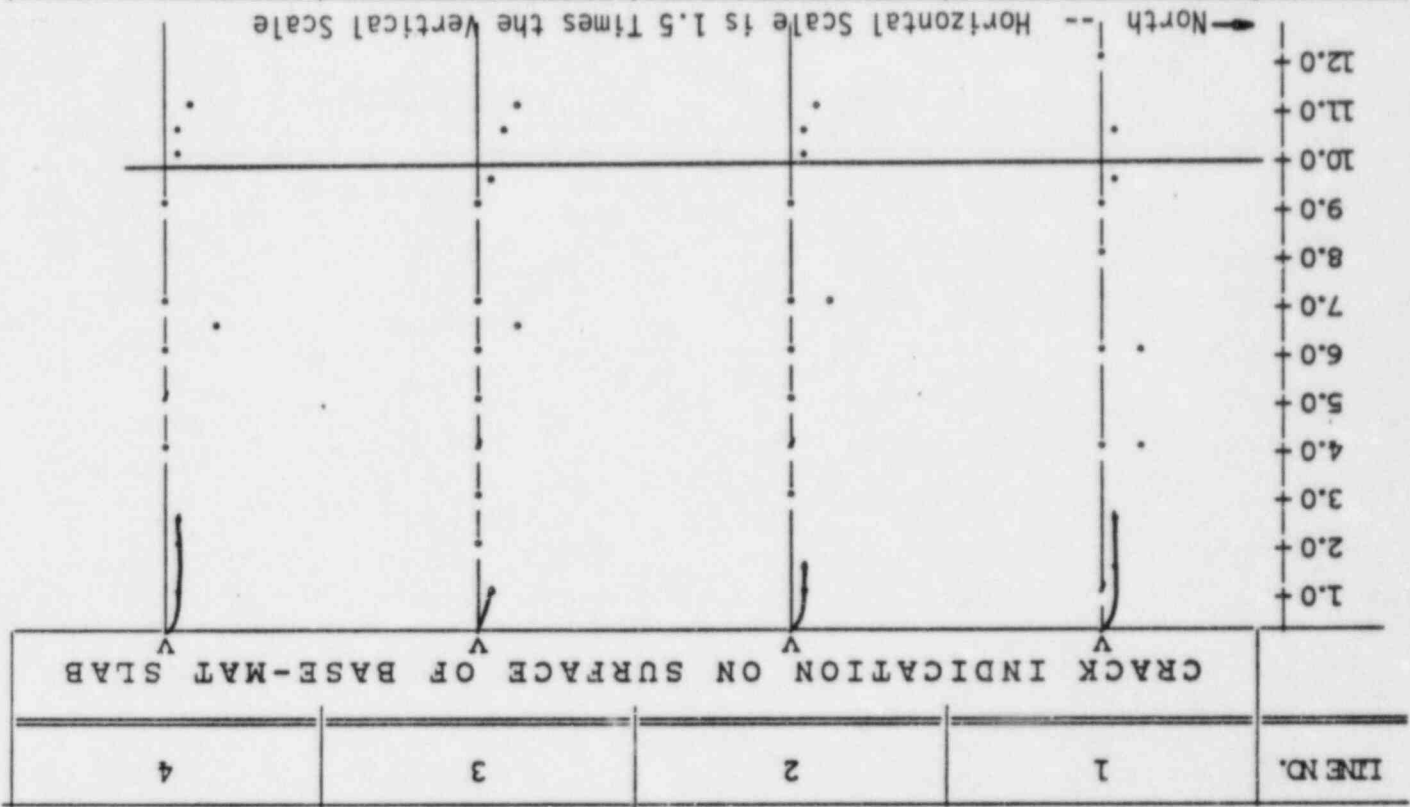
N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	83	188	0	0	0	410	0	0	800	0	0	0
LINE 9	0.78 0.22 15.53	1.77 0.23 7.31	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	3.87 2.13 28.91	0.00 0.00 0.00	0.00 0.00 0.00	7.54 1.46 10.94	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	83	175	0	340	410	0	0	0	0	910	0	0
LINE 10	0.78 0.22 15.53	1.65 0.35 11.98	0.00 0.00 0.00	3.21 0.79 13.92	3.87 1.13 16.36	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	8.58 1.42 9.40	0.00 0.00 0.00	0.00 0.00 0.00
	83	0	0	210	0	540	0	730	0	0	900	0
LINE 11	0.78 0.22 15.53	0.00 0.00 0.00	0.00 0.00 0.00	1.98 2.02 45.58	0.00 0.00 0.00	5.09 0.91 10.12	0.00 0.00 0.00	6.88 1.12 9.22	0.00 0.00 0.00	0.00 0.00 0.00	8.49 2.51 16.51	0.00 0.00 0.00
	83	0	210	0	0	440	0	700	0	0	870	0
LINE 12	0.78 0.22 15.53	0.00 0.00 0.00	1.98 1.02 27.26	0.00 0.00 0.00	0.00 0.00 0.00	4.15 1.85 24.05	0.00 0.00 0.00	6.60 1.40 11.98	0.00 0.00 0.00	0.00 0.00 0.00	8.20 2.80 18.83	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. C DATE : 8-30-84 N to S 45 deg TRANSDUCER

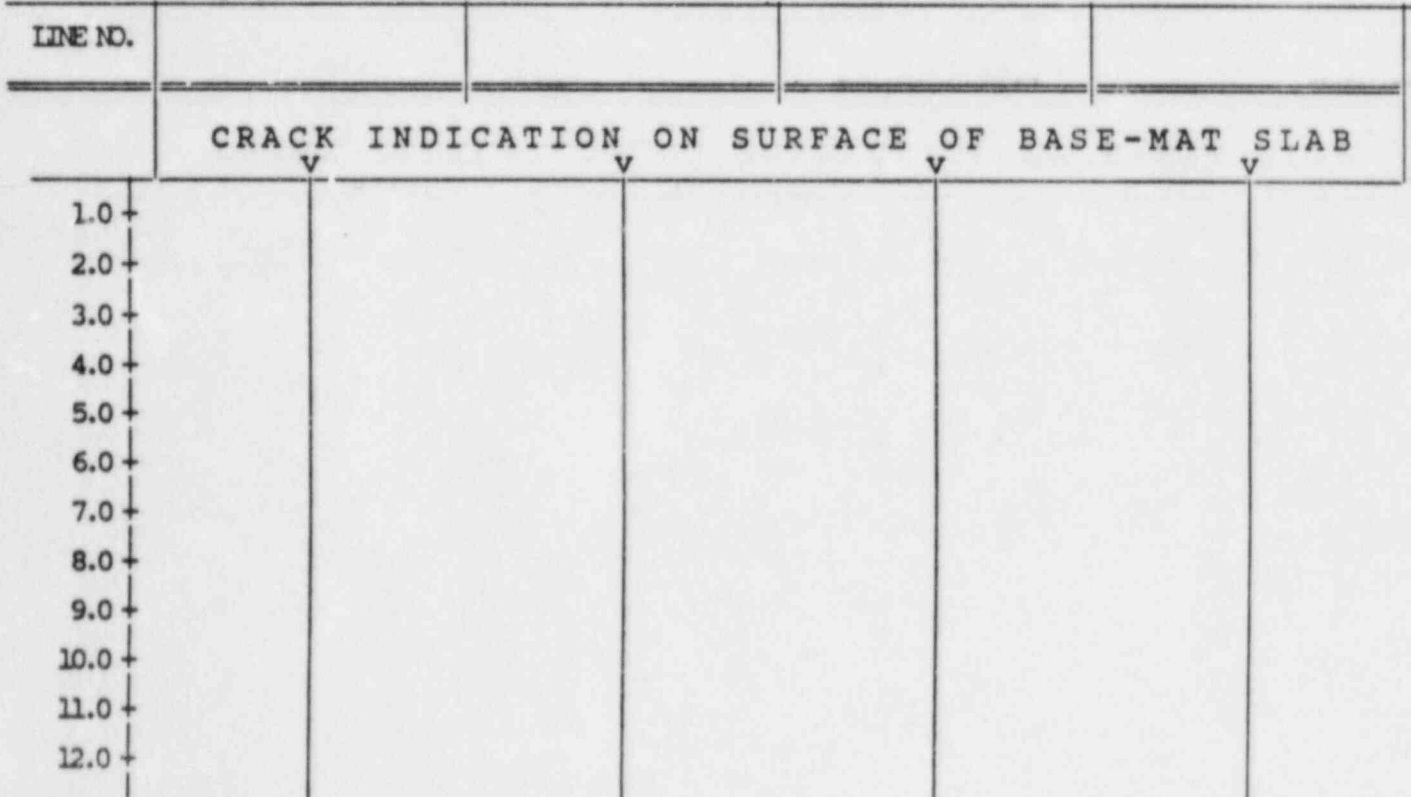
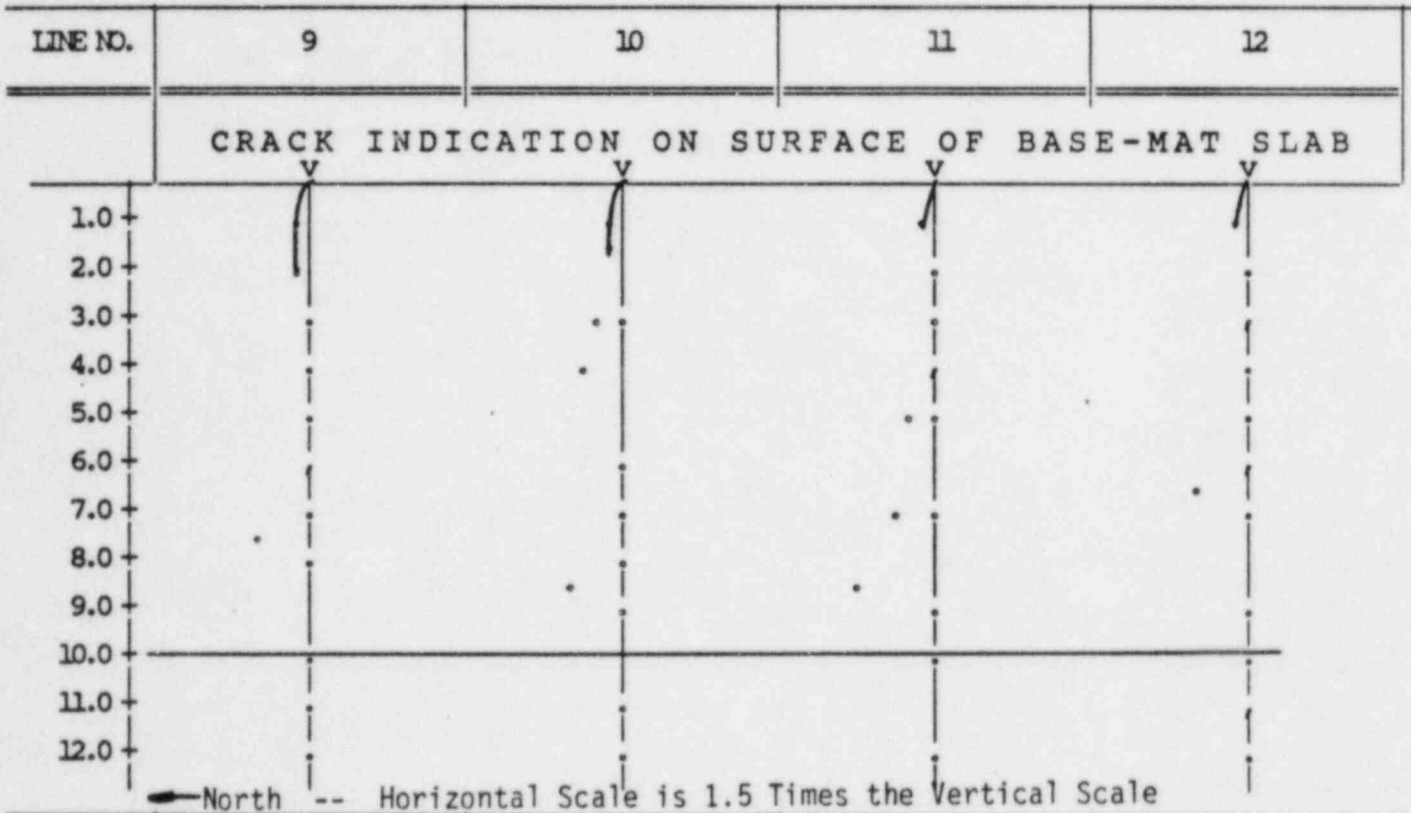


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. C DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
C	1/5	3
C	1/6	3
C	1/7	3
C	1/10	4
C	1/11	2
C	2/4	2
C	2/8	3
C	2/10	4
C	2/11	4
C	2/12	4
C	3/4	2
C	3/7	1
C	3/8	3
C	3/10	4
C	3/11	4
C	3/12	4
C	4/5	1
C	4/7	1
C	4/10	4
C	4/11	4
C	4/12	4
C	5/5	2
C	5/10	4
C	5/11	4
C	5/12	4
C	6/4	3
C	6/6	3
C	6/9	4
C	6/11	4
C	6/12	4
C	7/6	3
C	7/9	3
C	7/11	3
C	8/5	3
C	8/10	1
C	9/6	1
C	9/9	4
C	9/10	4
C	11/3	1
C	11/4	1
C	11/6	2
C	11/8	1

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
C	11/9	3
C	11/11	4
C	12/8	3

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. D DATE : 8-30-84

N to S 45 deg TRANSDUCER

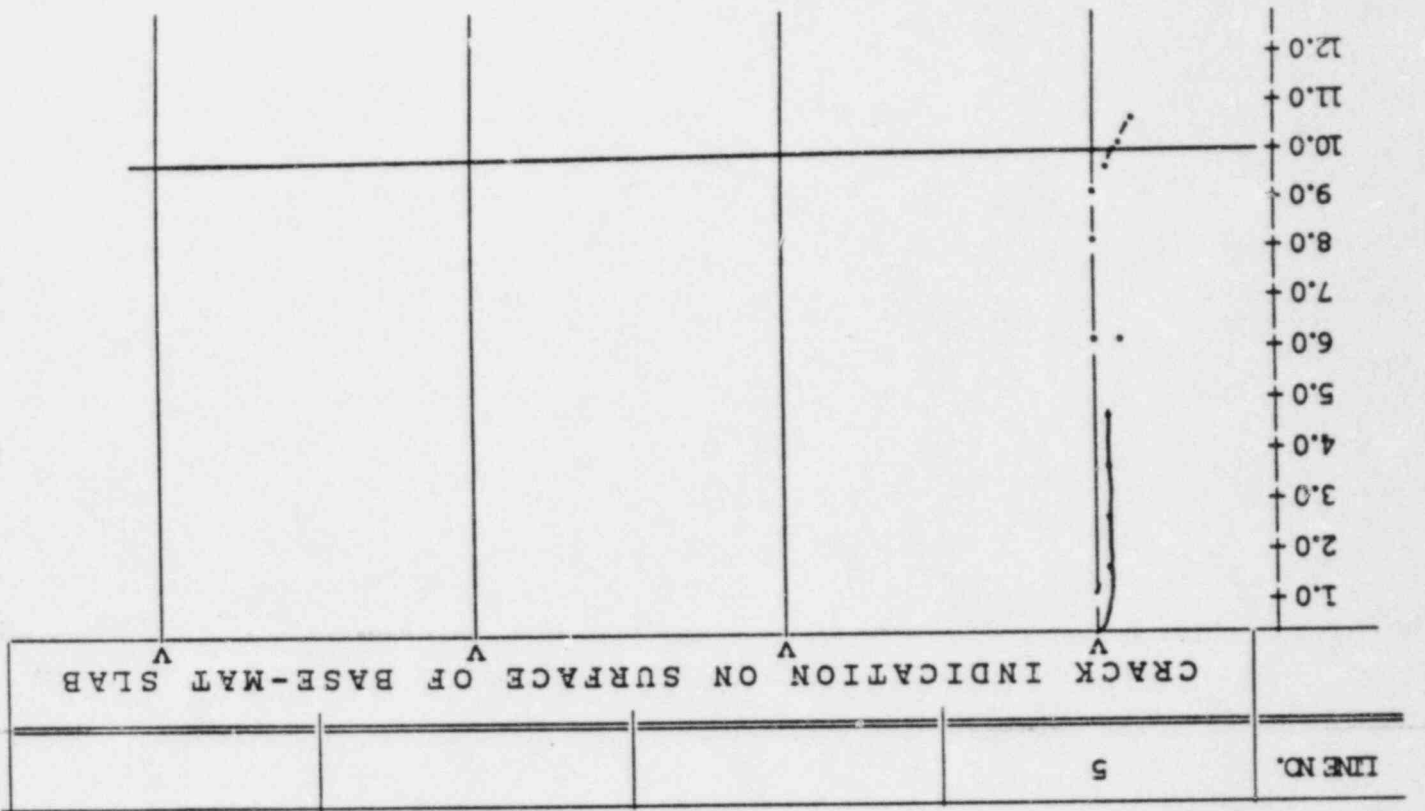
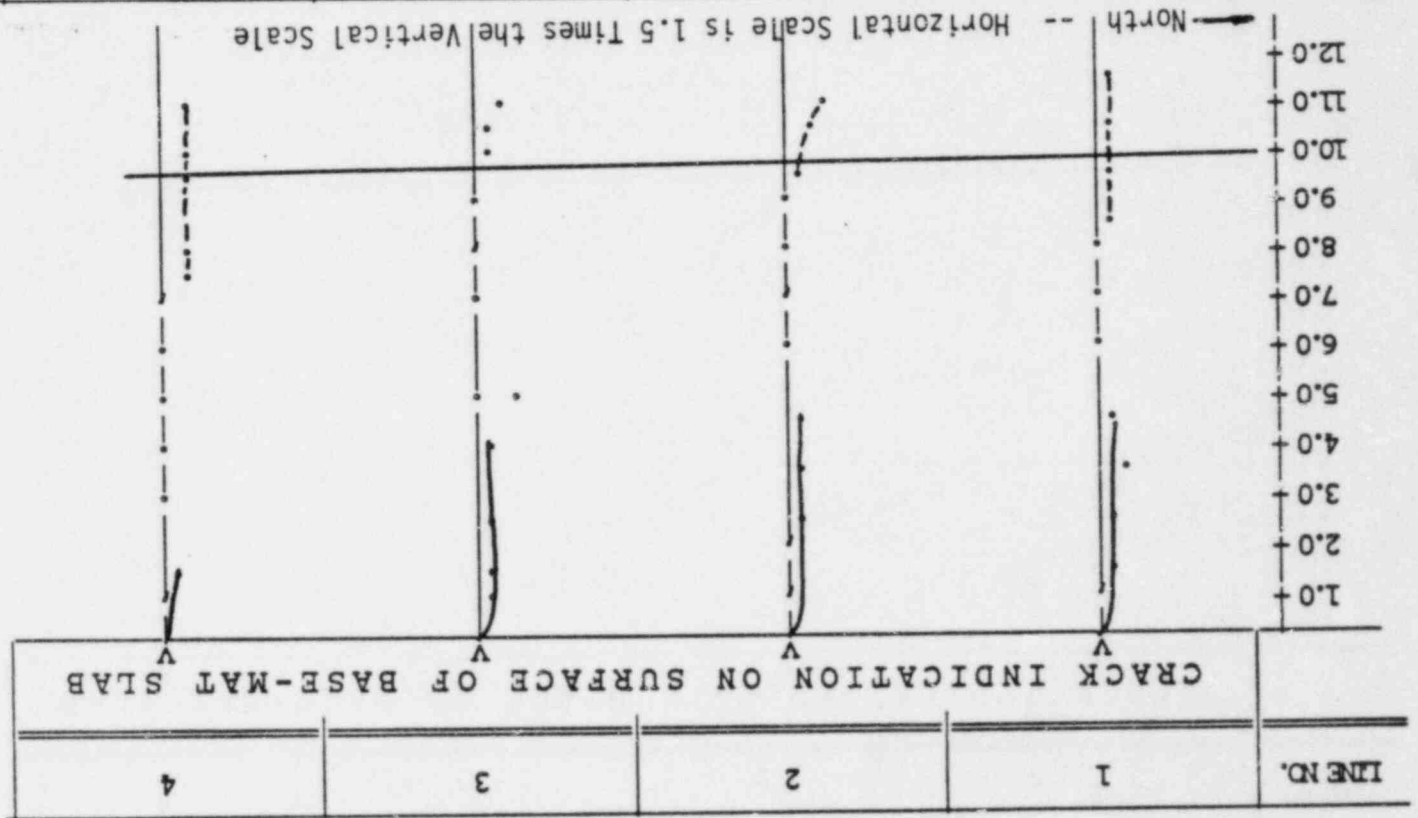
TEST # NS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	68	178	269	360	479	0	0	0	900	1005	1125	1238
LINE 1	0.64 0.36 29.24	1.68 0.32 10.85	2.54 0.46 10.36	3.39 0.61 10.12	4.52 0.48 6.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	8.49 0.51 3.47	9.48 0.52 3.17	10.61 0.39 2.12	11.67 0.33 1.61
	60	140	260	370	480	0	490	0	0	1013	1095	1163
LINE 2	0.57 0.43 37.52	1.32 0.68 27.26	2.45 0.55 12.62	3.49 0.51 8.34	4.53 0.47 5.99	0.00 0.00 0.00	4.62 2.38 27.26	0.00 0.00 0.00	0.00 0.00 0.00	9.55 0.45 2.69	10.32 0.68 3.75	10.96 1.04 5.39
	81	179	274	399	0	510	0	470	0	1035	1110	1178
LINE 3	0.76 0.24 17.20	1.69 0.31 10.49	2.58 0.42 9.16	3.76 0.24 3.62	0.00 0.00 0.00	4.81 1.19 13.92	0.00 0.00 0.00	4.43 3.57 38.85	0.00 0.00 0.00	9.76 0.24 1.42	10.47 0.53 2.93	11.11 0.89 4.60
	70	178	0	0	0	0	310	770	850	990	1080	1180
LINE 4	0.66 0.34 27.26	1.68 0.32 10.85	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	2.92 4.08 54.37	7.26 0.74 5.82	8.01 0.99 7.02	9.33 0.67 4.08	10.18 0.82 4.59	11.13 0.87 4.50
	73	163	260	380	495	0	640	0	0	1000	1065	1130
LINE 5	0.69 0.31 24.37	1.54 0.46 16.77	2.45 0.55 12.62	3.58 0.42 6.64	4.67 0.33 4.08	0.00 0.00 0.00	6.03 0.97 9.10	0.00 0.00 0.00	0.00 0.00 0.00	9.43 0.57 3.47	10.04 0.96 5.46	10.65 1.35 7.20

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. D DATE : 8-30-84 N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING

3940 HUNTCLIFF DR

CHARLOTTE, NORTH CAROLINA 28211

(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
D	2/2	1
D	2/7	3
D	3/6	2
D	3/8	3
D	3/10	4
D	3/11	4
D	3/12	4
D	4/7	3
D	5/6	2
D	5/10	4
D	5/11	4
D	5/12	4

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. E DATE : 8-30-84

N to S 45 deg TRANSDUCER

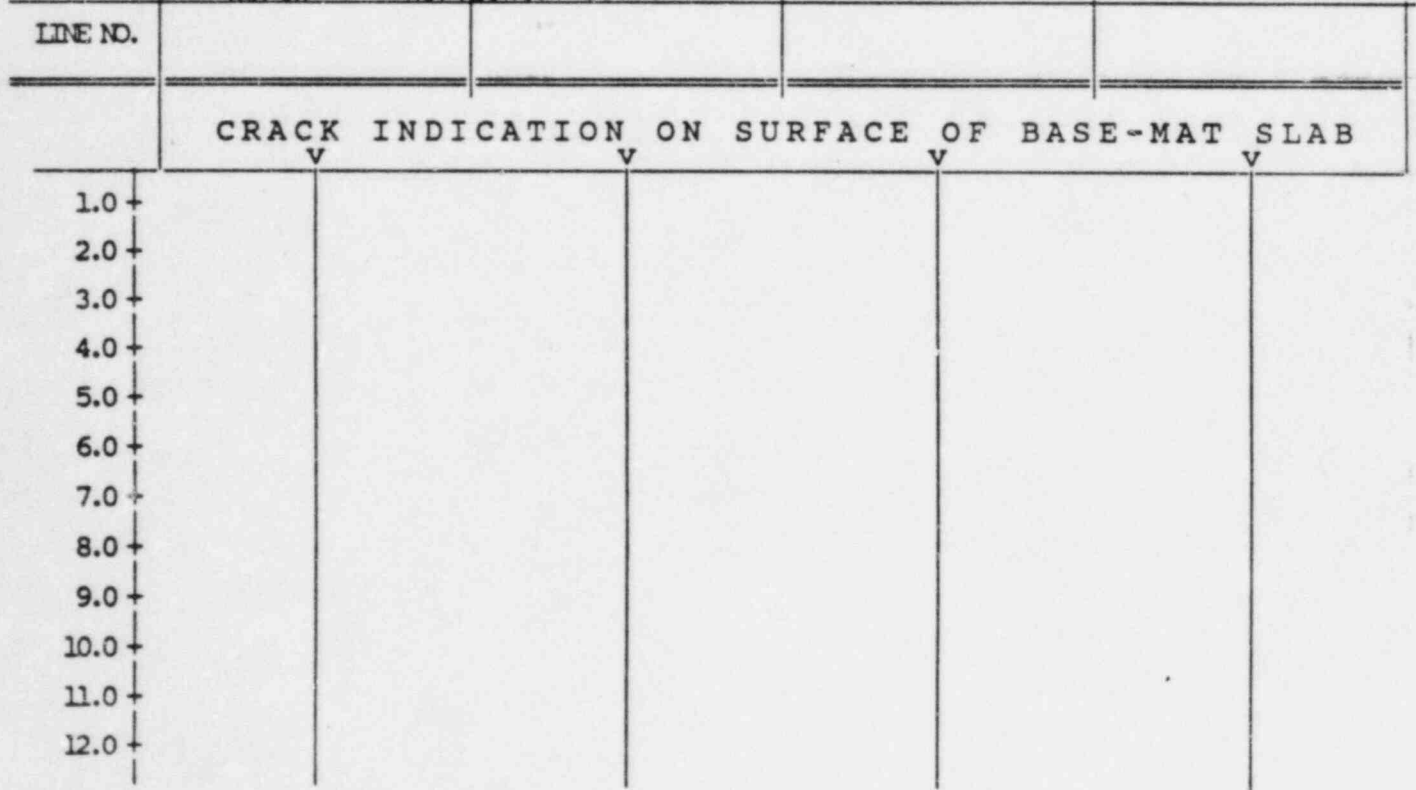
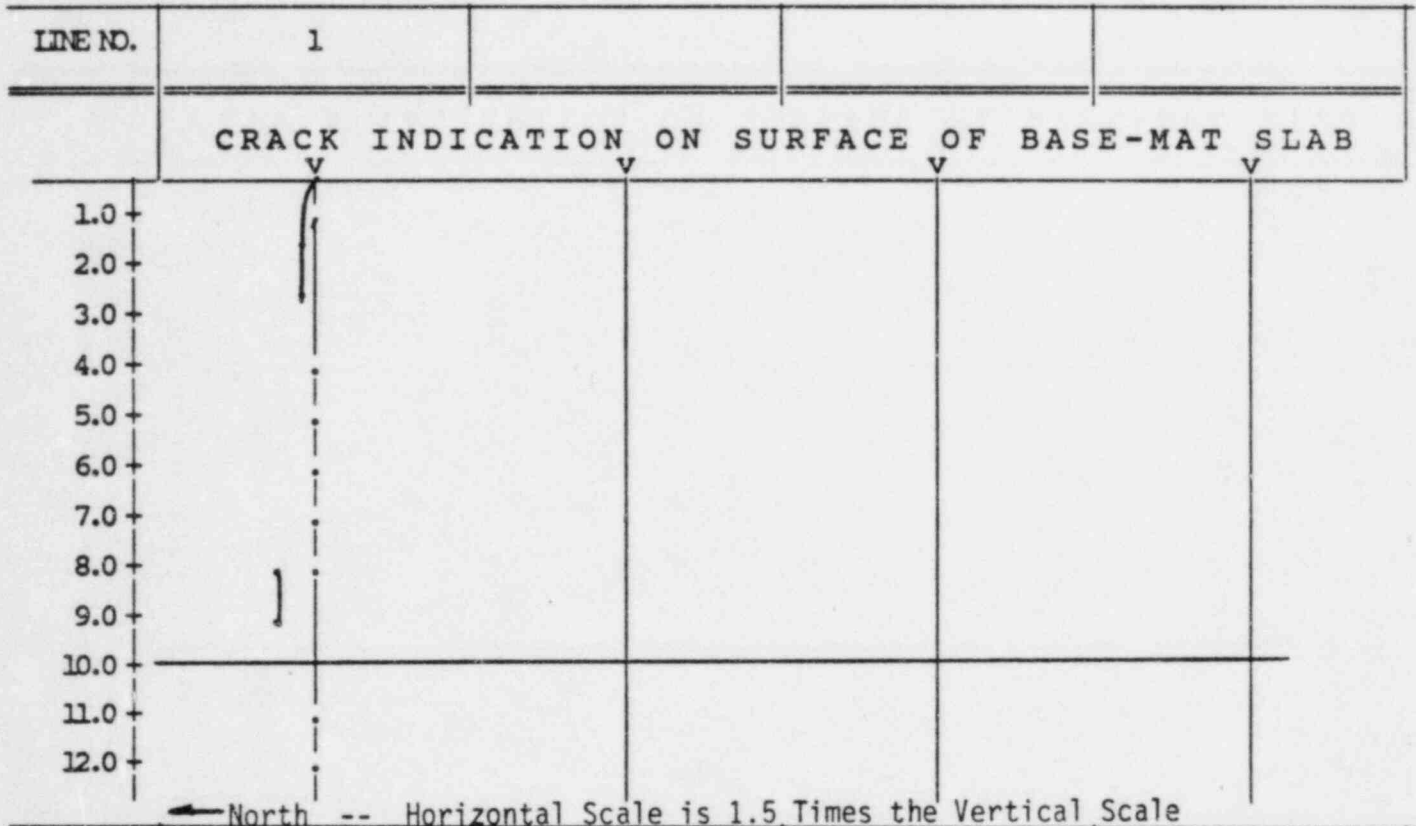
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	69	167	270	0	0	0	0	0	840	930	0	0
LINE 1	0.65 0.35 28.24	1.57 0.43 15.12	2.55 0.45 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	7.92 1.08 7.77	8.77 1.23 8.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. E DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542 2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
E	NONE NOTED	

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. F DATE : 8-30-84

N to S 45 deg TRANSDUCER

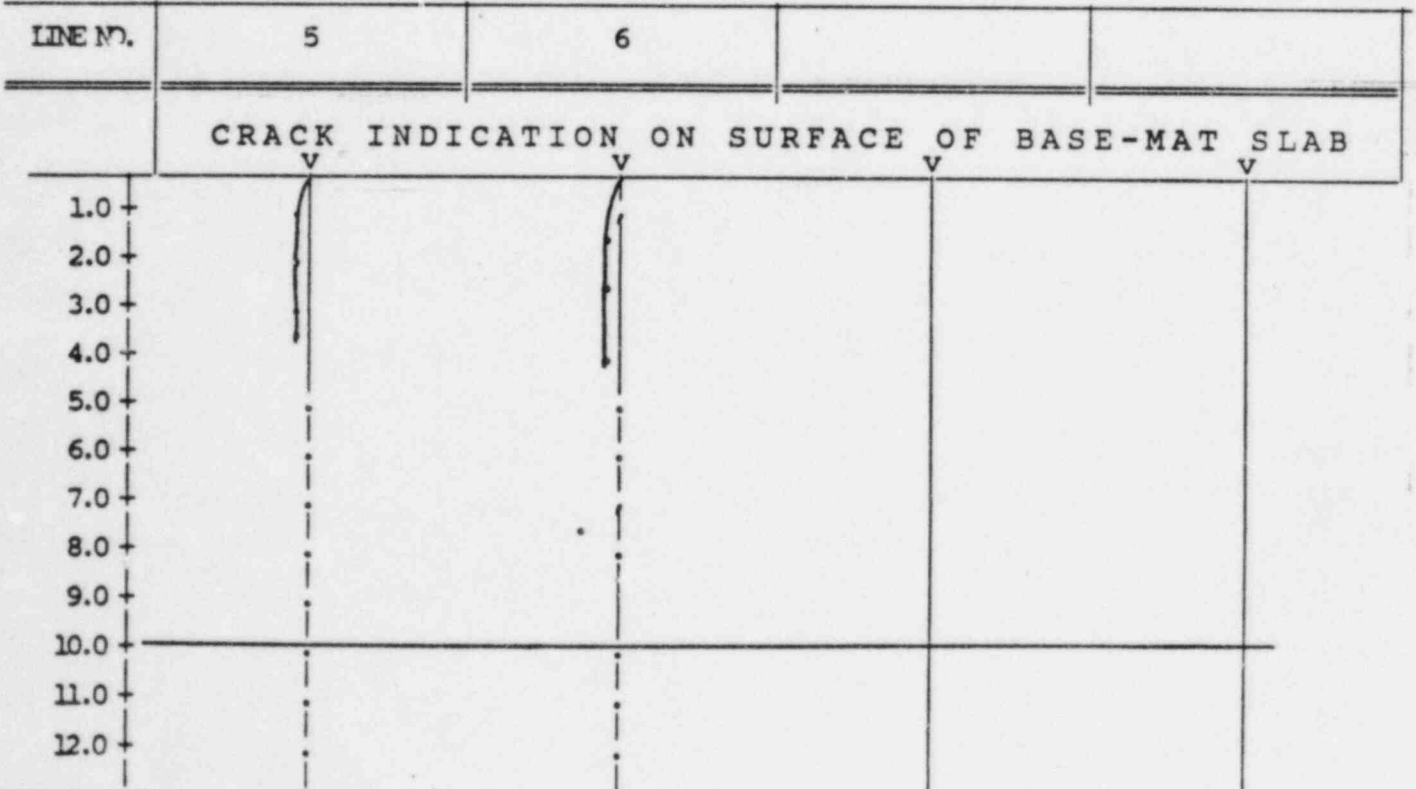
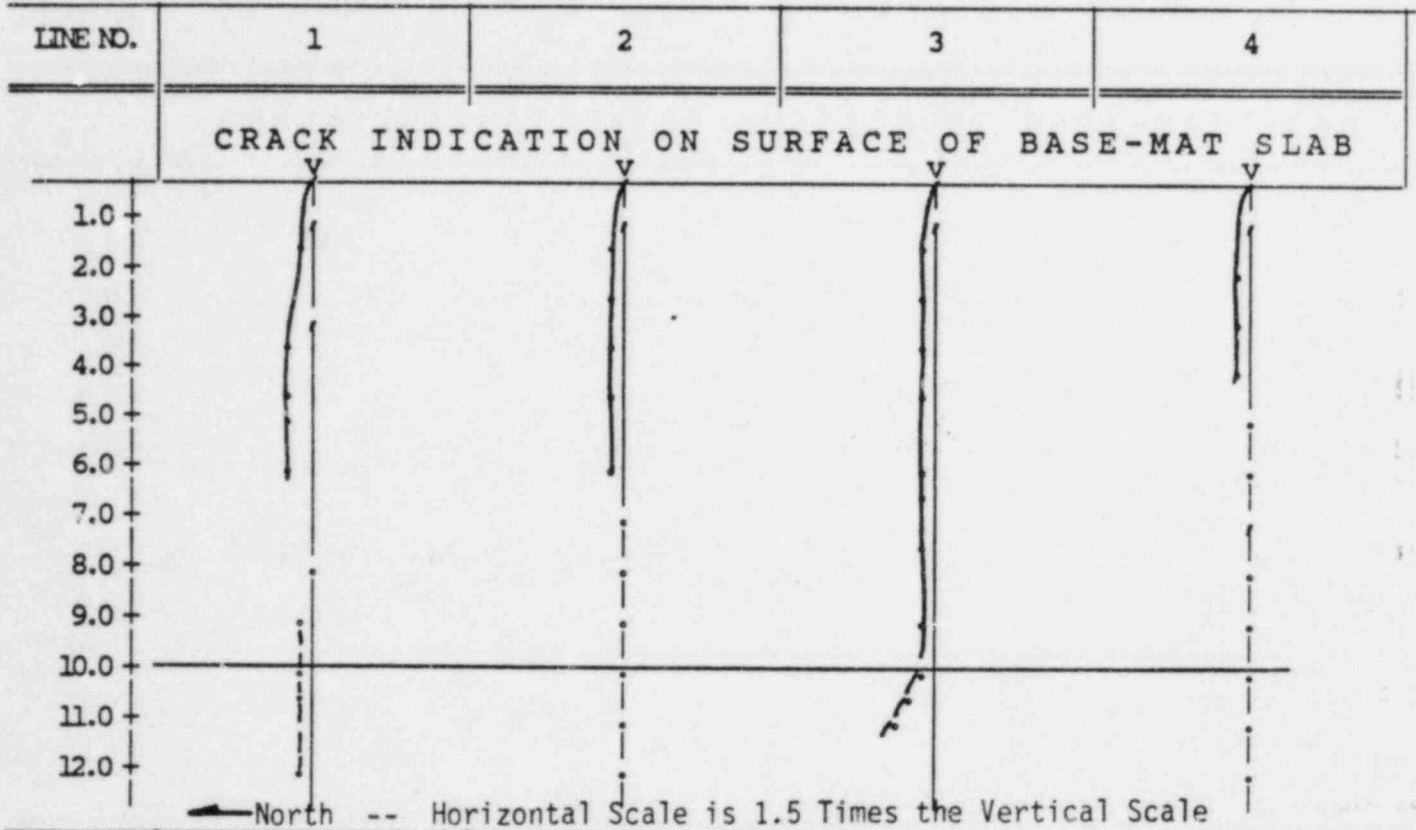
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	68	170	180	360	460	540	660	0	950	1040	1130	1250
LINE 1	0.64 0.36 29.24	1.60 0.40 13.92	1.70 1.30 37.52	3.39 0.61 10.12	4.34 0.66 8.69	5.09 0.91 10.12	6.22 0.78 7.12	0.00 0.00 0.00	8.96 0.04 0.28	9.81 0.19 1.14	10.65 0.35 1.86	11.79 0.21 1.04
	70	170	265	380	470	620	0	0	0	0	0	0
LINE 2	0.66 0.34 27.26	1.60 0.40 13.92	2.50 0.50 11.35	3.58 0.42 6.64	4.43 0.57 7.31	5.85 0.15 1.51	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	75	170	280	380	490	610	710	800	940	1040	1100	1160
LINE 3	0.71 0.29 22.50	1.60 0.40 13.92	2.64 0.36 7.77	3.58 0.42 6.64	4.62 0.38 4.71	5.75 0.25 2.48	6.69 0.31 2.62	7.54 0.46 3.47	8.85 0.14 0.89	9.81 0.19 1.14	10.37 0.63 3.47	10.94 1.06 5.55
	75	190	295	400	0	0	440	0	0	0	0	0
LINE 4	0.71 0.29 22.50	1.79 0.21 6.64	2.78 0.22 4.50	3.77 0.23 3.47	0.00 0.00 0.00	0.00 0.00 0.00	4.15 2.85 34.51	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	85	190	295	390	0	0	0	0	0	0	0	0
LINE 5	0.80 0.20 13.92	1.79 0.21 6.64	2.78 0.22 4.50	3.68 0.32 5.02	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	70	170	290	400	0	0	470	0	810	0	0	0
LINE 6	0.66 0.34 27.26	1.60 0.40 13.92	2.73 0.27 5.55	3.77 0.23 3.47	0.00 0.00 0.00	0.00 0.00 0.00	4.43 2.57 30.10	0.00 0.00 0.00	7.64 1.36 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. F DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING

3940 HUNTCLIFF DR.

CHARLOTTE, NORTH CAROLINA 28211

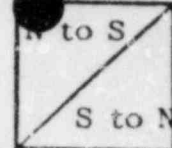
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
F	1/3	2
F	4/7	3
F	6/7	3
F	6/9	1

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION G

OPERATOR R.A. MUENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	59* 140	150* 240	260 310	370 500	490 540	NA 0	NA 0	NA 0	NA NA	NA NA	NA NA	NA NA
LINE NO. 2	80 110	170 250	270 0	380 0	470 0	0 0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 3	80 110	140* 250	200* 210	260* 480	370* 610*	0 0	NA 0	NA 0	NA NA	NA NA	NA NA	NA NA
LINE NO. 4	80 0	150* 0	250 340	350 510	430 610*	540 670	0 0	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

69

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I. D. G DATE : 8-30-84

N to S 45 deg TRANSDUCER

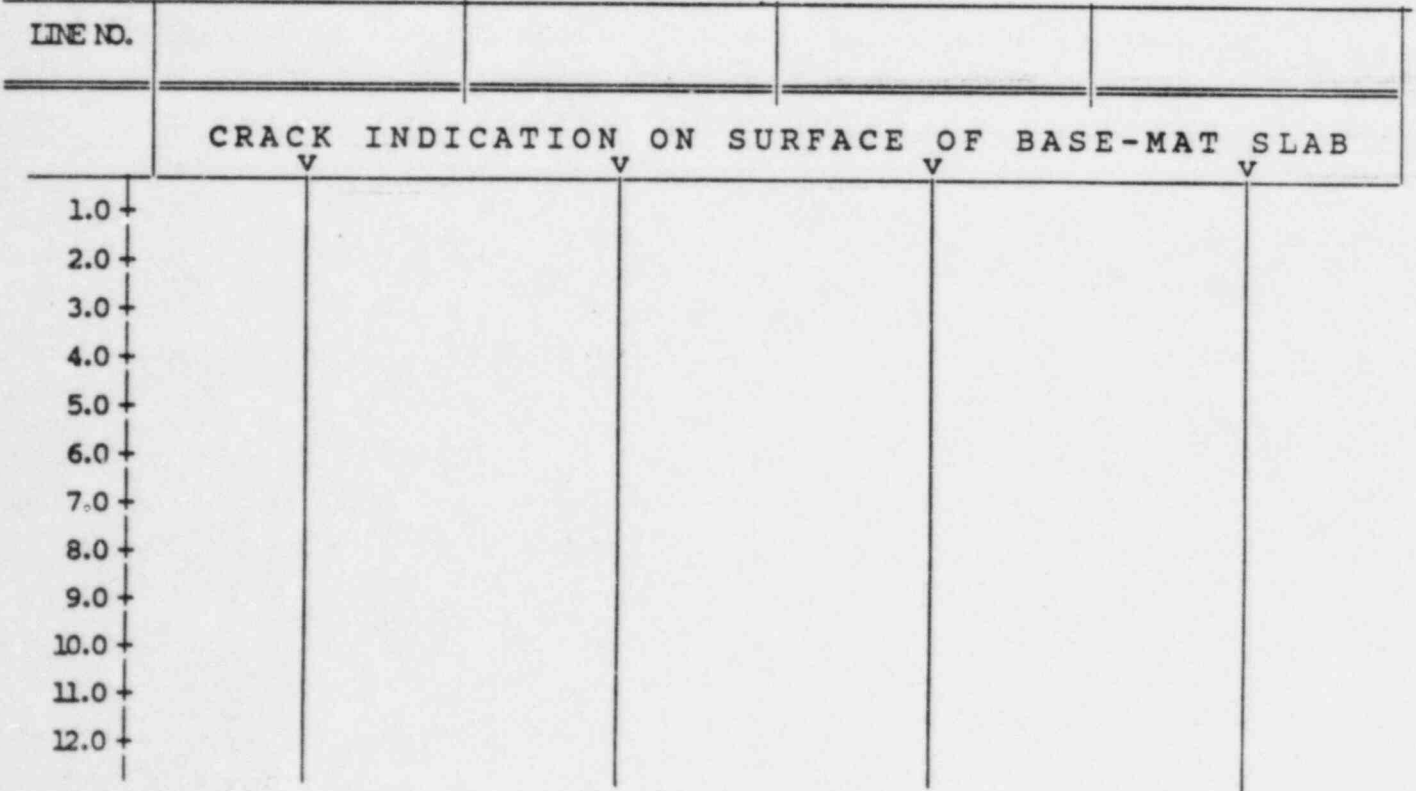
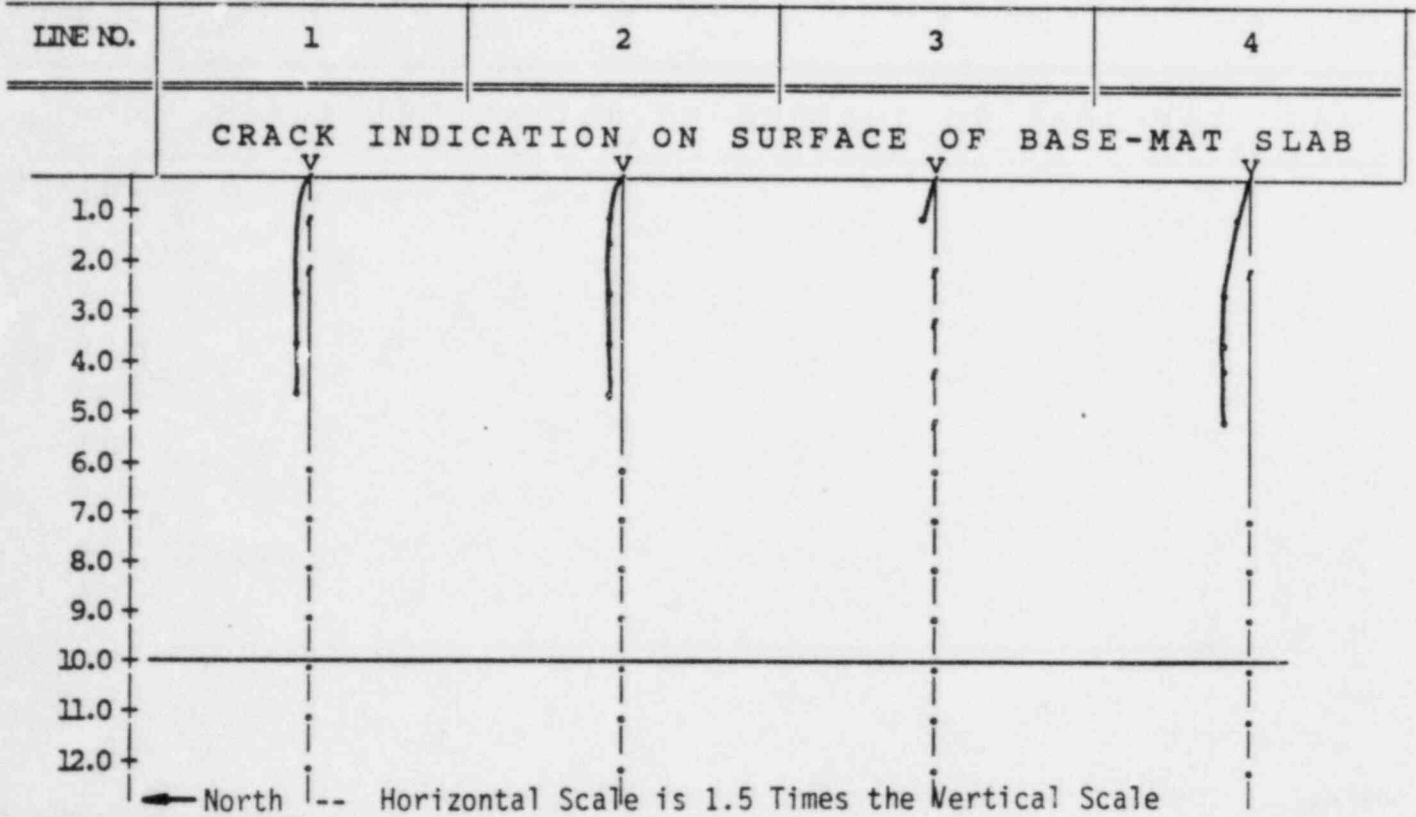
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	59	150	260	370	490	0	0	0	0	0	0	0
LINE 1	0.56 0.44 38.58	1.41 0.59 22.50	2.45 0.55 12.62	3.49 0.51 8.34	4.62 0.38 4.71	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	170	270	380	470	0	0	0	0	0	0	0
LINE 2	0.75 0.25 18.05	1.60 0.40 13.92	2.55 0.45 10.12	3.58 0.42 6.64	4.43 0.57 7.31	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	140	200	260	370	0	0	0	0	0	0	0
LINE 3	0.75 0.25 18.05	1.32 0.68 27.26	1.89 1.11 30.58	2.45 1.55 32.28	3.49 1.51 23.43	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	150	250	350	430	540	0	0	0	0	0	0
LINE 4	0.75 0.25 18.05	1.41 0.59 22.50	2.36 0.64 15.26	3.30 0.70 11.98	4.05 0.95 13.13	5.09 0.91 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

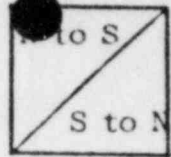
CRACK I.D. G DATE : 8-30-84

N to S 45 deg TRANSDUCER



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION H

OPERATOR R.A. MUENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	80 110	170 220	260 240	350 500	440 540	540 660	610* 0	790 670 0	880 770 0	1000 0	1110 0	1200 0
LINE NO. 2	80 110	190 0	290 0	390 540	470 640	590 0	740 0	0 0	0 0	0 0	1110 1240	1200 1350
LINE NO. 3	80 115	175 190	290 290	420 430	490 540	640 640	0 0	820 0	940 0	1030 1100	1150 1160	0 0
LINE NO. 4	75* 120	180 215	280 0	400 0	480 0	600 680	720 770	800 890	940 970	1040 1040	1100 1200	0 0
LINE NO. 5	75* 120	185 220	280 310	390 430	490 0	610 0	720 0	840 0	0 0	1060 1060	1150 1170	1220 1310
LINE NO. 6	80 125	180 210	280 320	390 420	470 610	590 0	690 0	800 0	0 0	1060 0	1140 0	1200 0
LINE NO.												
LINE NO.												

70

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
G	3/2	2
G	3/3	1
G	3/4	3
G	3/5	1

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. H DATE : 8-30-84

N to S 45 deg TRANSDUCER

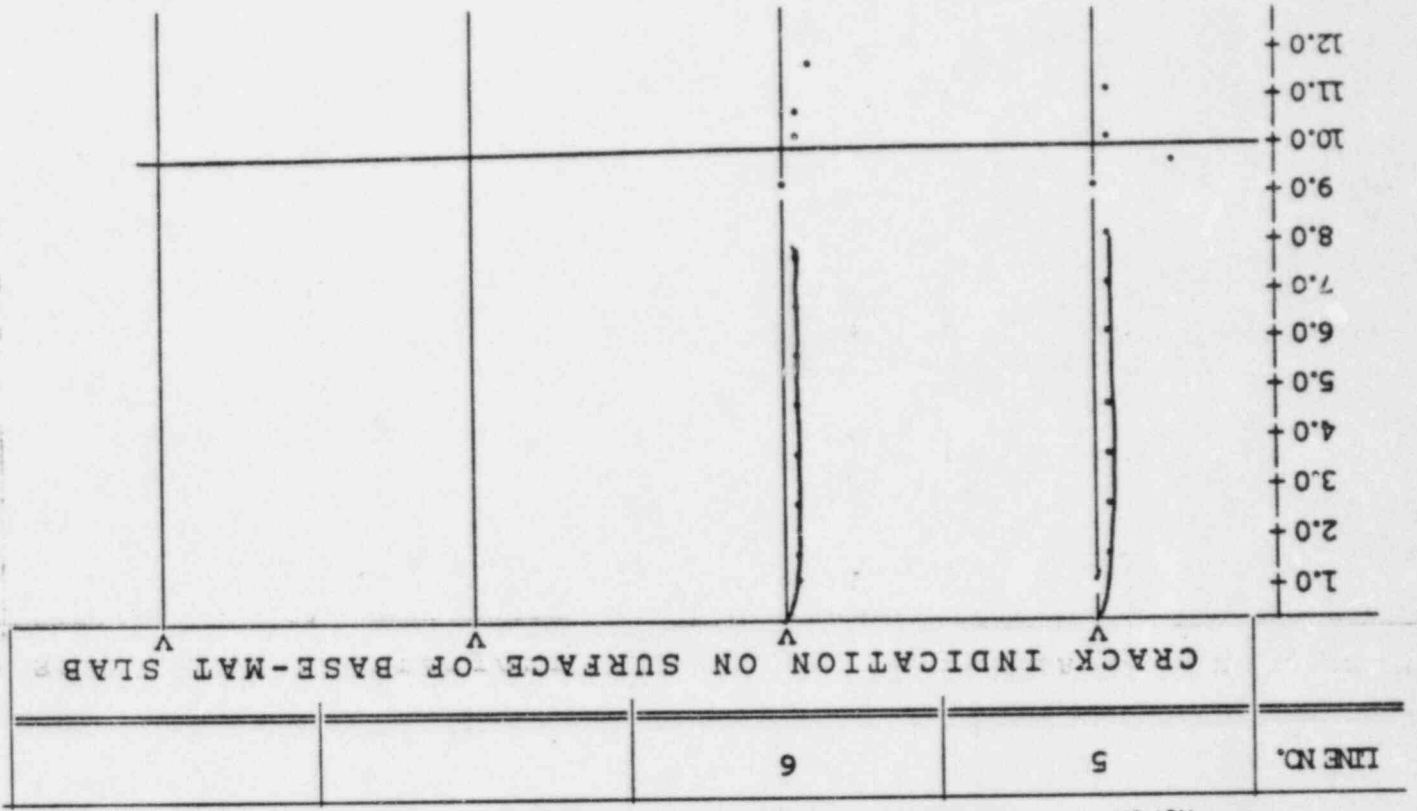
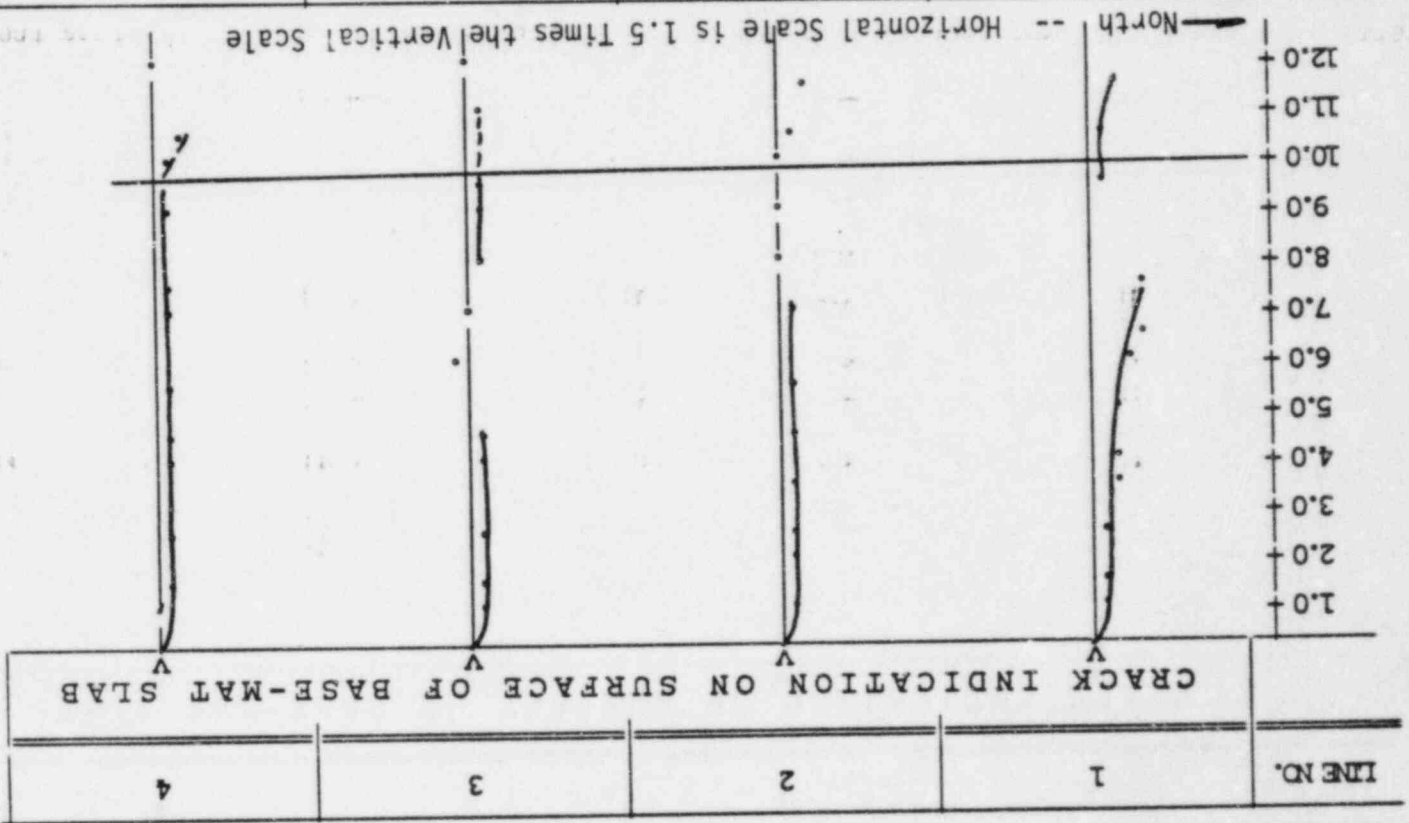
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	80	170	260	350	440	540	610	670	770	1000	1110	1200
LINE 1	0.75 0.25 18.05	1.60 0.40 13.92	2.45 0.55 12.62	3.30 0.70 11.98	4.15 0.85 11.60	5.09 0.91 10.12	5.75 1.25 12.25	6.32 1.68 14.92	7.26 1.74 13.48	9.43 0.57 3.47	10.47 0.53 2.93	11.31 0.69 3.47
	80	190	290	390	470	590	740	0	0	0	1110	1200
LINE 2	0.75 0.25 18.05	1.79 0.21 6.64	2.73 0.27 5.55	3.68 0.32 5.02	4.43 0.57 7.31	5.56 0.44 4.50	6.98 0.02 0.19	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.47 0.53 2.93	11.31 0.69 3.47
	80	175	290	420	490	640	0	840	940	1030	1150	0
LINE 3	0.75 0.25 18.05	1.65 0.35 11.98	2.73 0.27 5.55	3.96 0.04 0.58	4.62 0.38 4.71	6.03 0.03 0.32	0.00 0.00 0.00	7.92 0.08 0.58	8.86 0.14 0.89	9.71 0.29 1.71	10.84 0.16 0.83	0.00 0.00 0.00
	75	180	280	400	480	600	720	800	940	1040	1100	0
LINE 4	0.71 0.29 22.50	1.70 0.30 10.12	2.64 0.36 7.77	3.77 0.23 3.47	4.53 0.47 5.99	5.66 0.34 3.47	6.79 0.21 1.79	7.54 0.46 3.47	8.86 0.14 0.89	9.81 0.19 1.14	10.37 0.63 3.47	0.00 0.00 0.00
	75	185	280	390	490	610	720	840	0	1060	1150	1020
LINE 5	0.71 0.29 22.50	1.74 0.26 8.34	2.64 0.36 7.77	3.68 0.32 5.02	4.62 0.38 4.71	5.75 0.25 2.48	6.79 0.21 1.79	7.92 0.08 0.58	0.00 0.00 0.00	9.99 0.01 0.04	10.84 0.16 0.83	9.62 2.38 13.92
	80	180	280	390	470	590	690	800	0	1060	1140	1200
LINE 6	0.75 0.25 18.05	1.70 0.30 10.12	2.64 0.36 7.77	3.68 0.32 5.02	4.43 0.57 7.31	5.56 0.44 4.50	6.51 0.49 4.35	7.54 0.46 3.47	0.00 0.00 0.00	9.99 0.01 0.04	10.75 0.25 1.34	11.31 0.69 3.47

MUNOM AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. H DATE : 8-30-84 N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

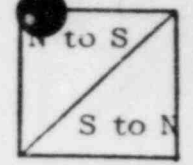
MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542 2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
H	2/11	4
H	2/12	4
H	3/6	1
H	5/10	4
H	5/11	4
H	5/12	4
H	6/10	4
H	6/11	4
H	6/12	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



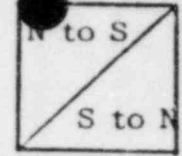
CRACK IDENTIFICATION J

OPERATOR R.A. MUENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	70* 0	170 0	780 0	400 440	480 0	590 0	720 770	800 890	950 970	1050 0	1150 0	1250 0
LINE NO. 2	70* 0	160 230	260 0	360 0	460 600	570 0	660 0	800 850	840* 990	1060 1060	1180 0	1200 1350
LINE NO. 3	75* 0	170 0	270 310	380 420	480 490	600 690	720 770	800 850	860 1055	940 0	1150 0	1200 1310
LINE NO. 4 75	75* 110	160 220	240 0	340 0	470 600	550 0	640* 0	1700* 1000*	840 0	900 1180	1120 0	1190 0
LINE NO. 5	70* 110	160 230	240 340	360 490	450 0	570 0	670 0	770 840	870 955	1040 1070	1110 0	1200 0
LINE NO. 6	70* 110	170 0	270 0	370 0	460 0	570 640	680 740	780 0	870 0	980 1050	1050 1180	1200 0
LINE NO. 7	80 110	170 225	280 310	370 0	470 0	580 0	660 740	770 840	950 950	1040 1040	1110 0	1200 0
LINE NO. 8	85 0	180 0	280 0	380 420	470 540	580 0	680 0	790 840	890 950	1100 0	1180 0	1240 0

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATON J

OPERATOR R. A. MUENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 9	75* 100	170 220	290 310	380 420	470 0	660 0	700 0	770 0	850 1050	940 0	1150 0	1250 1300
LINE NO. 10	65* 125	155* 0	250 0	390 0	480 540	600 640	690 0	800 0	900 1000	1000 1100	1070 0	1150 0
LINE NO. 11	80 110	180 215	270 320	380 420	470 530	590 630	680 730	780 0	890 0	990 1060	1100 0	1210 0
LINE NO. 12	70* 0	170 230	240 260	360 420	450 560	570 650	650 740	770 850	840 970	1050 1080	1170 1200	1240 1310
LINE NO. 13	80 115	180 240	290 320	390 450	480 540	590 670	690 0	790 0	890 0	1060 920 0	1140 0	1200 0
LINE NO. 14	70* 110	170 240	270 340	380 470	450 540	570 0	680 0	800 0	890 1005	990 1160	1125 1010 0	1240 0
LINE NO. 15	70* 130	150* 240	290 0	390 0	460 0	590 0	700 800	800 900	1000 1110	1040 1190	1180 1210	1240 0
LINE NO. 16	70* 130	160 240	265 0	370 0	440 0	570 640	670 770	770 900	900 1000	1050 950 0	1100 0	1200 0

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. J DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	70	170	280	400	480	590	720	800	950	1050	1150	1250
LINE 1	0.66 0.34 27.26	1.60 0.40 13.92	2.64 0.36 7.77	3.77 0.23 3.47	4.53 0.47 5.99	5.56 0.44 4.50	6.79 0.21 1.79	7.54 0.46 3.47	8.96 0.04 0.28	9.90 0.10 0.58	10.84 0.16 0.83	11.79 0.21 1.04
	70	160	260	360	460	570	660	800	840	1060	1180	1200
LINE 2	0.66 0.34 27.76	1.51 0.49 18.05	2.45 0.55 12.62	3.39 0.61 10.12	4.34 0.66 8.69	5.37 0.63 6.64	6.22 0.78 7.12	7.54 0.46 3.47	7.92 1.08 7.77	9.99 0.01 0.04	11.13 0.13 0.64	11.31 0.69 3.47
	75	170	270	380	480	600	720	800	860	940	1150	1200
LINE 3	0.71 0.29 22.50	1.60 0.40 13.92	2.55 0.45 10.12	3.58 0.42 6.64	4.53 0.47 5.99	5.66 0.34 3.47	6.79 0.21 1.79	7.54 0.46 3.47	8.11 0.89 6.28	8.86 1.14 7.31	10.84 0.16 0.83	11.31 0.69 3.47
	75	160	240	340	470	550	640	700	840	900	1120	1190
LINE 4	0.71 0.29 22.50	1.51 0.49 18.05	2.26 0.74 18.05	3.21 0.79 13.92	4.43 0.57 7.31	5.19 0.81 8.93	6.03 0.97 9.10	6.60 1.40 11.98	7.92 1.08 7.77	8.49 1.51 10.12	10.56 0.44 2.39	11.22 0.78 3.98
	70	160	240	360	450	570	670	770	870	1040	1110	1200
LINE 5	0.66 0.34 27.26	1.51 0.49 18.05	2.26 0.74 18.05	3.39 0.61 10.12	4.24 0.76 10.12	5.37 0.63 6.64	6.32 0.68 6.17	7.26 0.74 5.82	8.20 0.80 5.55	9.81 0.19 1.14	10.47 0.53 2.93	11.31 0.69 3.47
	70	170	270	370	460	570	680	780	870	980	1050	1200
LINE 6	0.66 0.34 27.26	1.60 0.40 13.92	2.55 0.45 10.12	3.49 0.51 8.34	4.34 0.66 8.69	5.37 0.63 6.64	6.41 0.59 5.25	7.35 0.65 5.02	8.20 0.80 5.55	9.24 0.76 4.71	9.90 1.10 6.34	11.31 0.69 3.47
	80	170	280	370	470	580	660	770	950	1040	1110	1200
LINE 7	0.75 0.25 18.05	1.60 0.40 13.92	2.64 0.36 7.77	3.49 0.51 8.34	4.43 0.57 7.31	5.47 0.53 5.55	6.22 0.78 7.12	7.26 0.74 5.82	8.96 0.04 0.28	9.81 0.19 1.14	10.47 0.53 2.93	11.31 0.69 3.47
	85	180	280	380	470	580	680	790	890	1100	1180	1240
LINE 8	0.80 0.20 13.92	1.70 0.30 10.12	2.64 0.36 7.77	3.58 0.42 6.64	4.43 0.57 7.31	5.47 0.53 5.55	6.41 0.59 5.25	7.45 0.55 4.24	8.39 0.61 4.15	10.37 0.37 2.05	11.13 0.13 0.64	11.69 0.31 1.51

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. J DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 9	75 0.71 0.29 22.50	170 1.60 0.40 13.92	290 2.73 0.27 5.55	380 3.58 0.42 6.64	470 4.43 0.57 7.31	660 6.22 0.22 2.05	700 6.60 0.40 3.47	770 7.26 0.74 5.82	850 8.01 0.99 7.02	940 8.86 1.14 7.31	1150 10.84 0.16 0.83	1250 11.79 0.21 1.04
LINE 10	65 0.61 0.39 32.28	155 1.46 0.54 20.23	250 2.36 0.64 15.26	390 3.68 0.32 5.02	480 4.53 0.47 5.99	600 5.66 0.34 3.47	690 6.51 0.49 4.35	800 7.54 0.46 3.47	900 8.49 0.51 3.47	1000 9.43 0.57 3.47	1070 10.09 0.91 5.17	1150 10.84 1.16 6.09
LINE 11	80 0.75 0.25 18.05	180 1.70 0.30 10.12	270 2.55 0.45 10.12	380 3.58 0.42 6.64	470 4.43 0.57 7.31	590 5.56 0.44 4.50	680 6.41 0.59 5.25	780 7.35 0.65 5.02	890 8.39 0.61 4.15	990 9.33 0.67 4.08	1100 10.37 0.63 3.47	1210 11.41 0.59 2.97
LINE 12	70 0.66 0.34 27.26	170 1.60 0.40 13.92	240 2.26 0.74 18.05	360 3.39 0.61 10.12	450 4.24 0.76 10.12	570 5.37 0.63 6.64	650 6.13 0.87 8.10	770 7.26 0.74 5.82	840 7.92 1.08 7.77	1050 9.90 0.10 0.58	1170 11.03 0.03 0.16	1240 11.69 0.31 1.51
LINE 13	80 0.75 0.25 18.05	180 1.70 0.30 10.12	290 2.73 0.27 5.55	390 3.68 0.32 5.02	480 4.53 0.47 5.99	590 5.56 0.44 4.50	690 6.51 0.49 4.35	790 7.45 0.55 4.24	890 8.39 0.61 4.15	920 8.67 1.33 8.69	1140 10.75 0.25 1.34	1200 11.31 0.69 3.47
LINE 14	70 0.66 0.34 27.26	170 1.60 0.40 13.92	270 2.55 0.45 10.12	380 3.58 0.42 6.64	450 4.24 0.76 10.12	570 5.37 0.63 6.64	680 6.41 0.59 5.25	800 7.54 0.46 3.47	890 8.39 0.61 4.15	990 9.33 0.67 4.08	1010 9.52 1.48 8.82	1240 11.69 0.31 1.51
LINE 15	70 0.66 0.34 27.26	150 1.41 0.59 22.50	290 2.73 0.27 5.55	390 3.68 0.32 5.02	460 4.34 0.66 8.69	590 5.56 0.44 4.50	700 6.60 0.40 3.47	800 7.54 0.46 3.47	1000 9.43 0.43 2.60	1040 9.81 0.19 1.14	1180 11.13 0.13 0.64	1240 11.69 0.31 1.51
LINE 16	70 0.66 0.34 27.26	160 1.51 0.49 18.05	265 2.50 0.50 11.35	370 3.49 0.51 8.34	440 4.15 0.85 11.60	570 5.37 0.63 6.64	670 6.32 0.68 6.17	770 7.26 0.74 5.82	900 8.49 0.51 3.47	950 8.96 1.04 6.64	1100 10.37 0.63 3.47	1200 11.31 0.69 3.47
LINE 17	90 0.85 0.15 10.12	170 1.60 0.40 13.92	270 2.55 0.45 10.12	380 3.58 0.42 6.64	460 4.34 0.66 8.69	590 5.56 0.44 4.50	690 6.51 0.49 4.35	780 7.35 0.65 5.02	900 8.49 0.51 3.47	990 9.33 0.67 4.08	1140 10.75 0.25 1.34	1210 11.41 0.59 2.97

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. J DATE : 8-30-84

N to S 45 deg TRANSDUCER

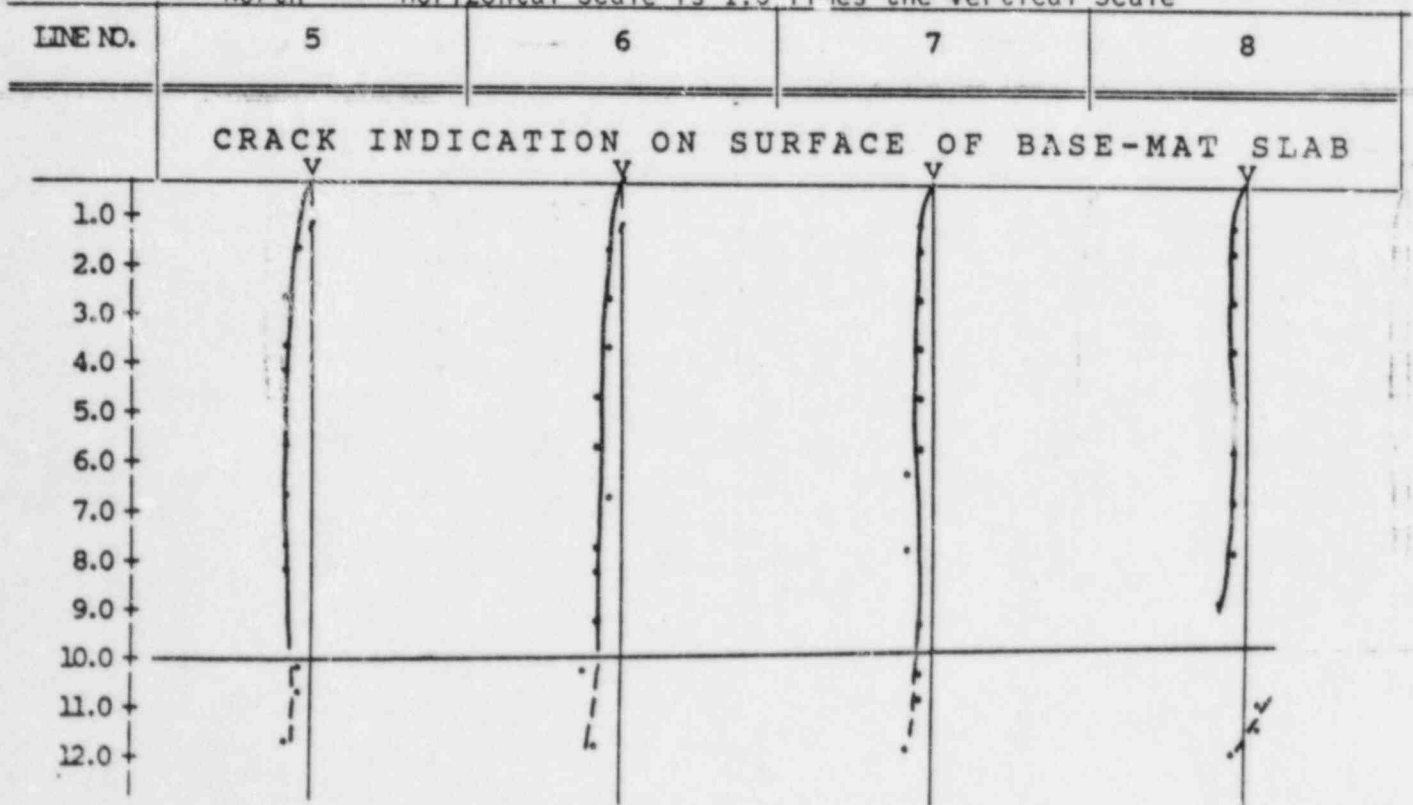
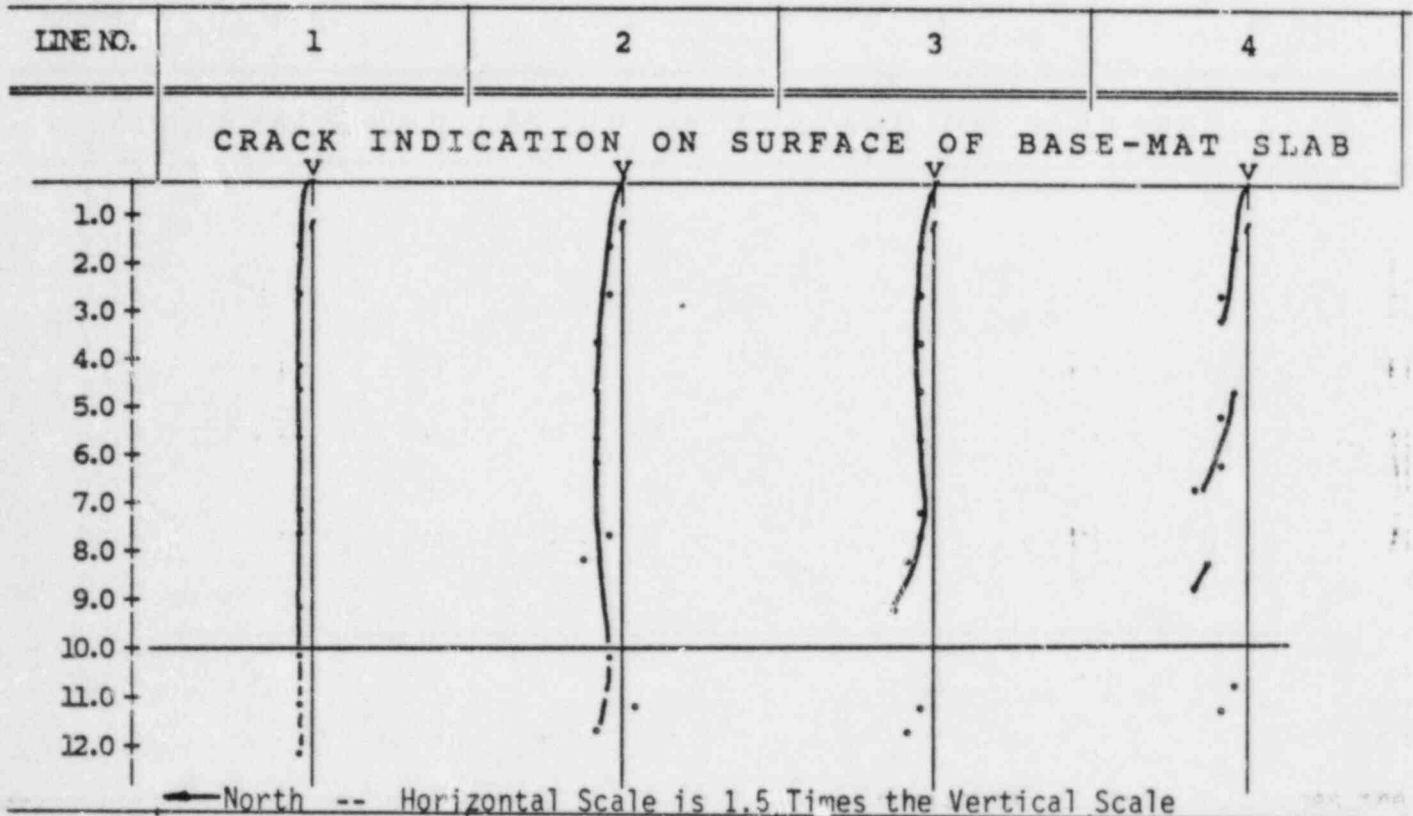
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	80	180	290	400	510	600	700	800	940	0	1140	1250
LINE 18	0.75 0.25 18.05	1.70 0.30 10.12	2.73 0.27 5.55	3.77 0.23 3.47	4.81 0.19 2.28	5.66 0.34 3.47	6.60 0.40 3.47	7.54 0.46 3.47	8.86 0.14 0.89	0.00 0.00 0.00	10.75 0.25 1.34	11.79 0.21 1.04
	75	170	290	390	480	590	700	800	910	1000	1160	1250
LINE 19	0.71 0.29 22.50	1.60 0.40 13.92	2.73 0.27 5.55	3.68 0.32 5.02	4.53 0.47 5.99	5.56 0.44 4.50	6.60 0.40 3.47	7.54 0.46 3.47	8.58 0.42 2.81	9.43 0.57 3.47	10.94 0.06 0.33	11.79 0.21 1.04
	75	170	270	380	490	600	700	790	890	0	0	0
LINE 20	0.71 0.29 22.50	1.60 0.40 13.92	2.55 0.45 10.12	3.58 0.42 6.64	4.62 0.38 4.71	5.66 0.34 3.47	6.60 0.40 3.47	7.45 0.55 4.24	8.39 0.61 4.15	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. J DATE : 8-30-84

N to S 45 deg TRANSDUCER

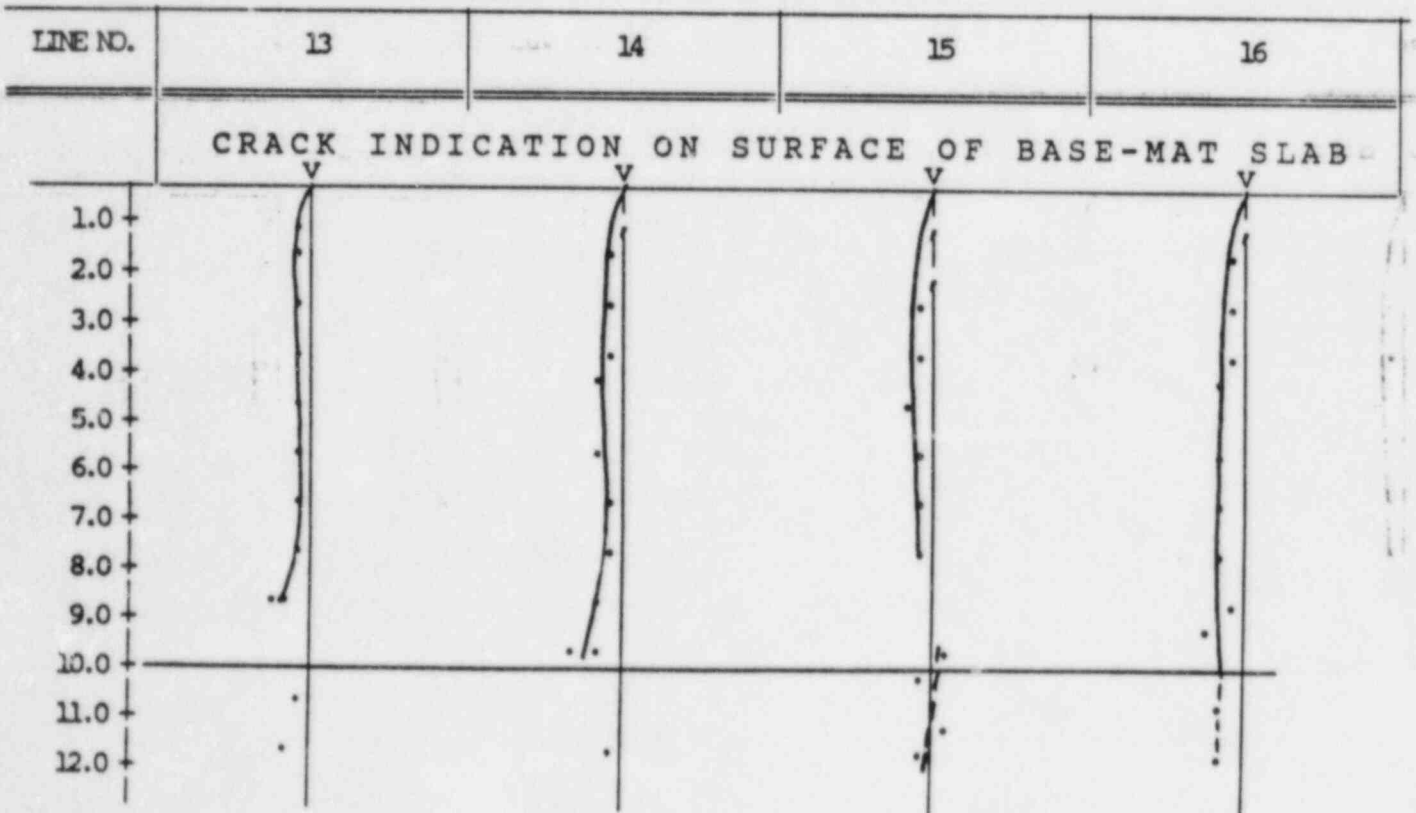
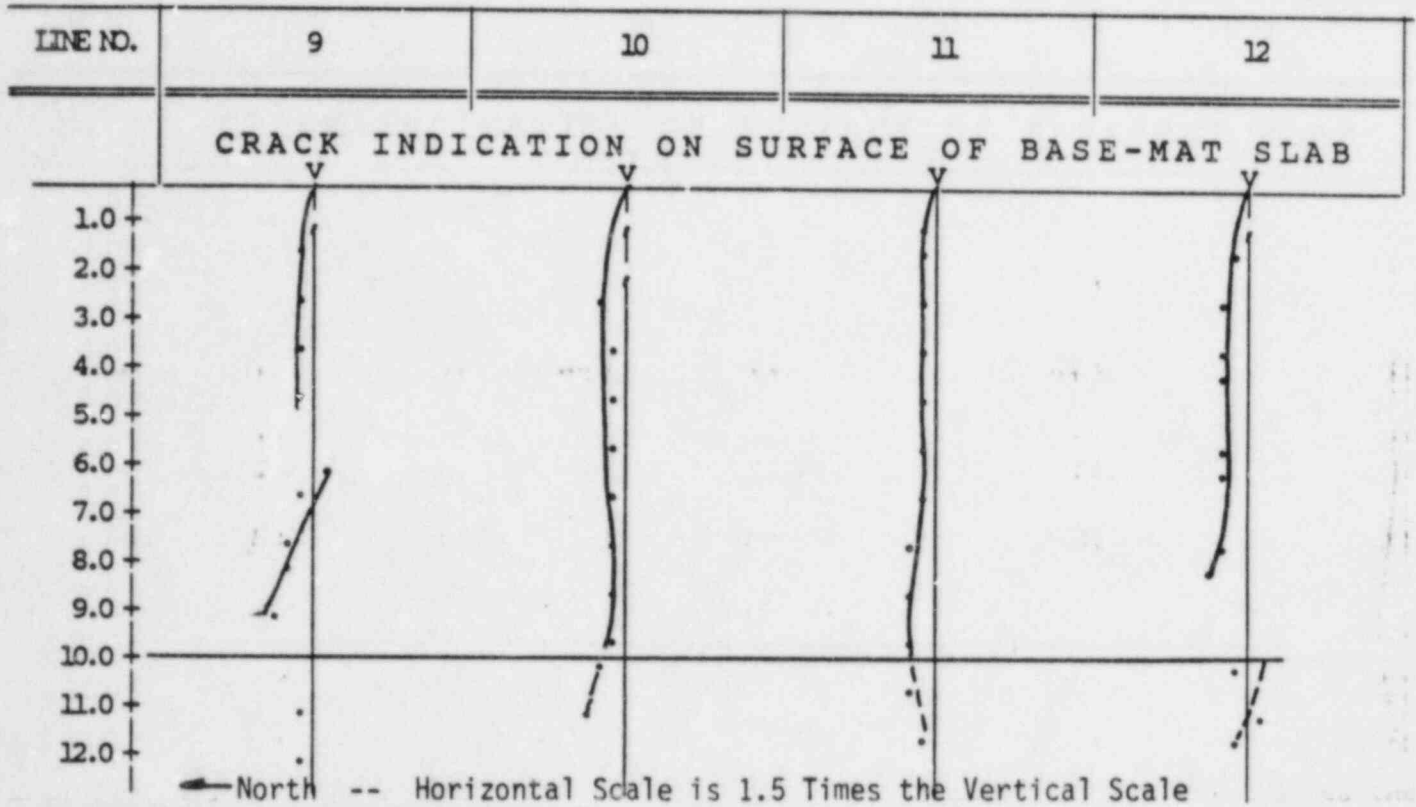


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. J DATE : 8-30-84

N to S 45 deg TRANSDUCER

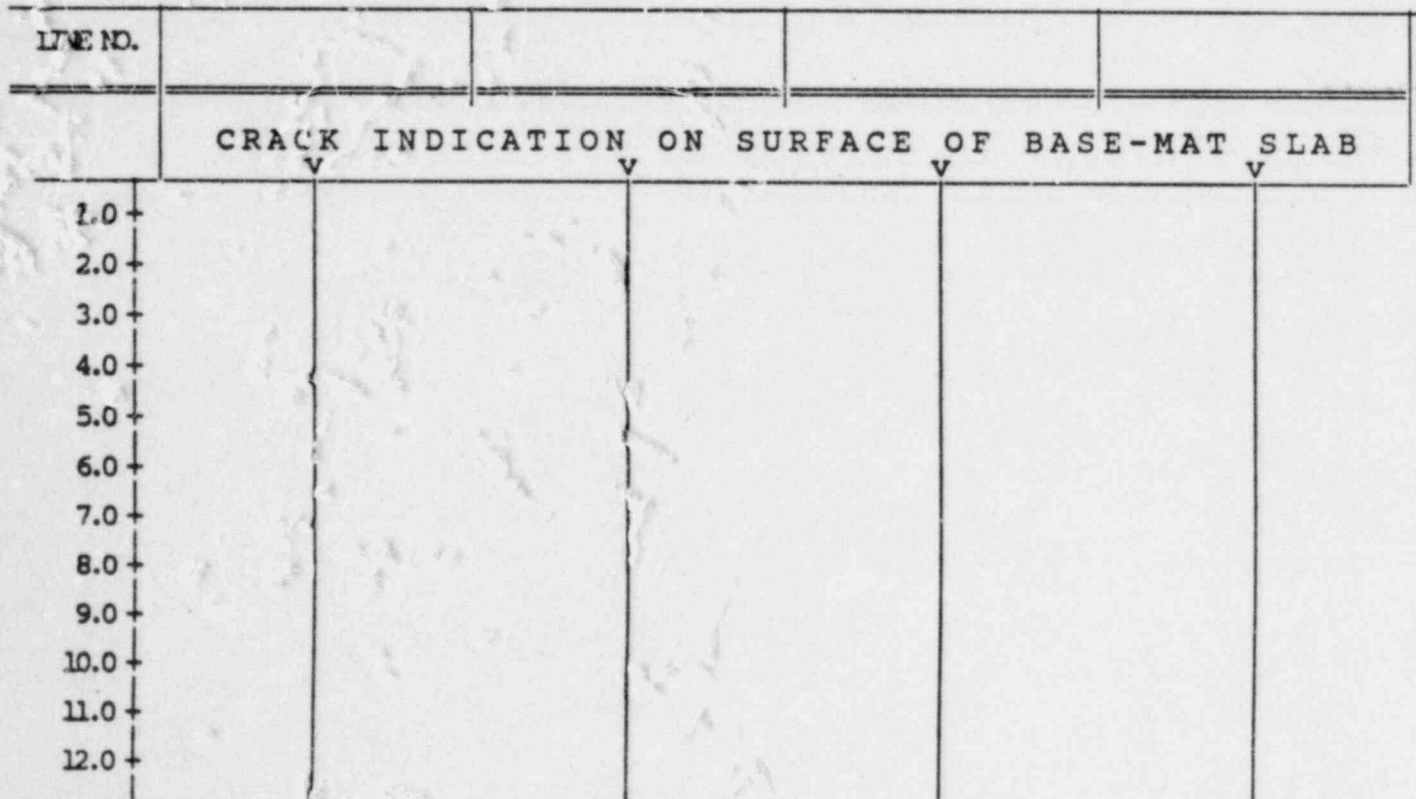
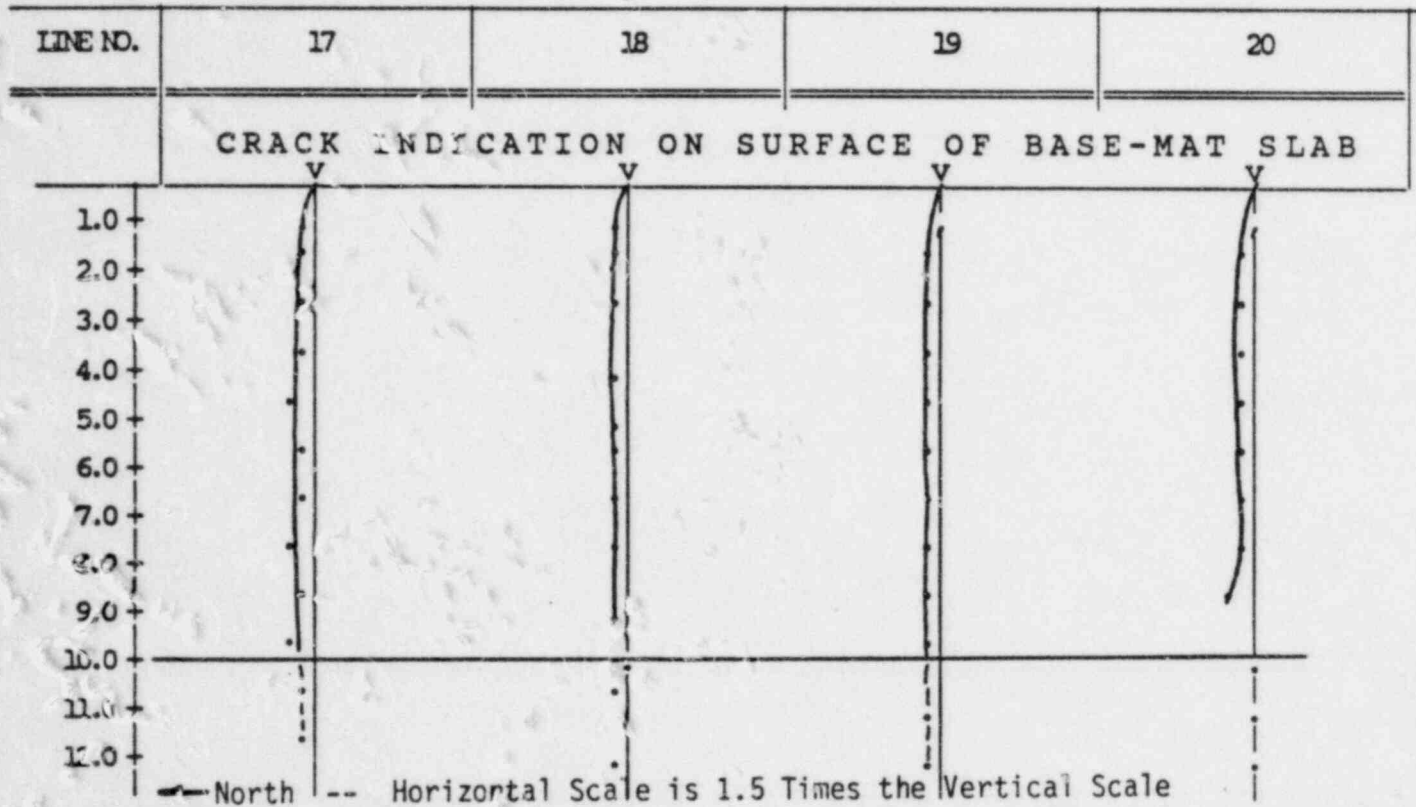


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. J DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muesow and Associates, Inc.

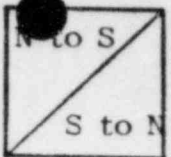
MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
J	2/11	4
J	3/11	4
J	3/12	4
J	4/11	4
J	4/12	4
J	9/11	4
J	9/12	4
J	13/11	4
J	13/12	4
J	14/12	4
J	18/11	4
J	18/12	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION K

OPERATOR R.A. MUENOW

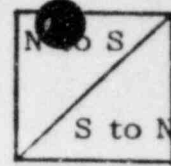
P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	80 110	180 210	290 0	400 450	510 540	610 660	690 0	0 0	940 970	1040 0	1140 0	1200 1340
LINE NO. 2	80 0	170 0	260 360	360 480	510 550	600 0	700 780	830 870	940 0	1000 0	1050 1250	1140 0
LINE NO. 3	80 110	180 0	290 0	390 450	0 0	540 0	0 0	840 850	920 980	960 0	1080 0	1210 0
LINE NO. 4	75* 0	170 0	290 0	380 460	460 590	590 640	0 0	0 0	940 960	1040 1080	1100 0	1200 0
LINE NO. 5	80 120	175 0	290 0	390 450	490 0	0 0	430* 0	0 0	930 970	1010 1210	1100 0	1200 1340
LINE NO. 6	80 120	180 210	290 310	390 0	480 0	590 670	0 0	825 0	940 970	1010 1100	1140 0	1200 1340
LINE NO. 7	75* 0	180 0	290 0	400 490	510 550	620 640	730 0	0 0	940 970	1030 1090	1140 0	1210 0
LINE NO. 8	85 0	180 0	270 0	380 460	490 570	580 0	690 0	840 850	860 0	880 0	1000 0	1100 0

85

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION K

OPERATOR R.A. MUENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 9	85 0	180 210	280 0	360 480	500 550	600 670	680 0	630* 0	700* 0	1040 775* 0	1080 0	1190 1340
LINE NO. 10	80 0	180 0	280 310	380 410	490 0	610 0	690* 890	740* 0	810* 0	0 0	0 0	0 0
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

98

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. K DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	80 0.75 0.25 18.05	180 1.70 0.30 10.12	290 2.73 0.27 5.55	400 3.77 0.23 3.47	510 4.81 0.19 2.28	610 5.75 0.25 2.48	690 6.51 0.49 4.35	0 0.00 0.00 0.00	940 8.86 0.14 0.89	1040 9.81 0.19 1.14	1140 10.75 0.25 1.34	1200 11.31 0.69 3.47
LINE 2	80 0.75 0.25 18.05	170 1.60 0.40 13.92	260 2.45 0.55 12.62	360 3.39 0.61 10.12	510 4.81 0.19 2.28	600 5.66 0.34 3.47	700 6.60 0.40 3.47	830 7.83 0.17 1.28	940 8.86 0.14 0.89	1000 9.43 0.57 3.47	1050 9.90 1.10 6.34	1140 10.75 1.25 6.64
LINE 3	80 0.75 0.25 18.05	180 1.70 0.30 10.12	290 2.73 0.27 5.55	390 3.68 0.32 5.02	0 0.00 0.00 0.00	540 5.09 0.91 10.12	0 0.00 0.00 0.00	840 7.92 0.08 0.58	920 8.67 0.33 2.15	960 9.05 0.95 5.99	1080 10.18 0.82 4.59	1210 11.41 0.59 2.97
LINE 4	75 0.71 0.29 22.50	170 1.60 0.40 13.92	290 2.73 0.27 5.55	380 3.58 0.42 6.64	460 4.34 0.66 8.69	590 5.56 0.44 4.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00	940 8.86 0.14 0.89	1040 9.81 0.19 1.14	1100 10.37 0.63 3.47	1200 11.31 0.69 3.47
LINE 5	80 0.75 0.25 18.05	175 1.65 0.35 11.98	290 2.73 0.27 5.55	390 3.68 0.32 5.02	490 4.62 0.38 4.71	0 0.00 0.00 0.00	430 4.05 2.95 36.00	0 0.00 0.00 0.00	930 8.77 0.23 1.51	1010 9.52 0.48 2.87	1100 10.37 0.63 3.47	1200 11.31 0.69 3.47
LINE 6	80 0.75 0.25 18.05	180 1.70 0.30 10.12	290 2.73 0.27 5.55	390 3.68 0.32 5.02	480 4.53 0.47 5.99	590 5.56 0.44 4.50	0 0.00 0.00 0.00	825 7.78 0.22 1.63	940 8.86 0.14 0.89	1010 9.52 0.48 2.87	1140 10.75 0.25 1.34	1200 11.31 0.69 3.47
LINE 7	75 0.71 0.29 22.50	180 1.70 0.30 10.12	290 2.73 0.27 5.55	400 3.77 0.23 3.47	510 4.81 0.19 2.28	620 5.85 0.15 1.51	730 6.88 0.12 0.98	0 0.00 0.00 0.00	940 8.86 0.14 0.89	1030 9.71 0.29 1.71	1140 10.75 0.25 1.34	1210 11.41 0.59 2.97
LINE 8	85 0.80 0.20 13.92	180 1.70 0.30 10.12	270 2.55 0.45 10.12	380 3.58 0.42 6.64	490 4.62 0.38 4.71	580 5.47 0.53 5.55	690 6.51 0.49 4.35	840 7.92 0.08 0.58	860 8.11 0.89 6.28	880 8.30 1.70 11.60	1000 9.43 1.57 9.47	1100 10.37 1.63 8.93

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. K DATE : 8-30-84

N to S 45 deg TRANSDUCER

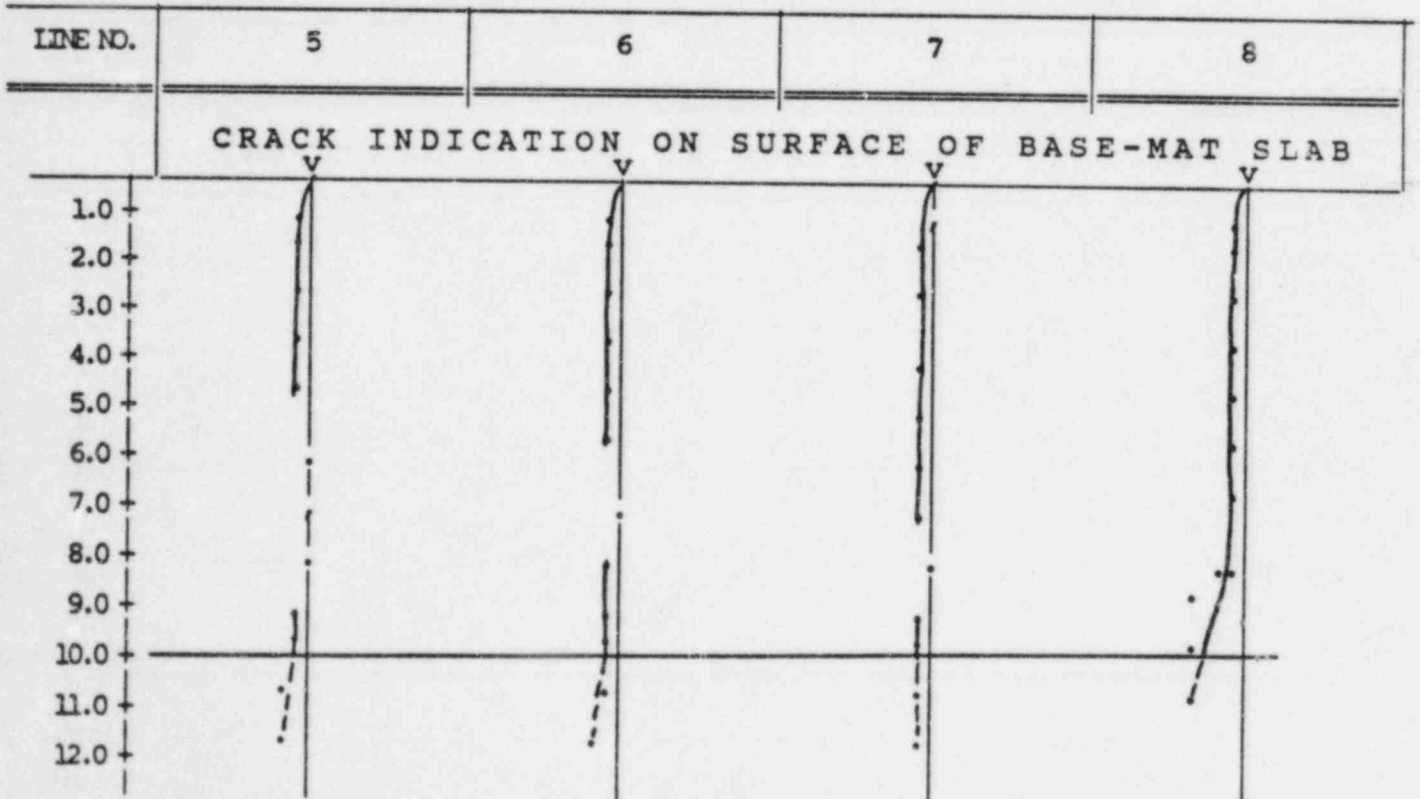
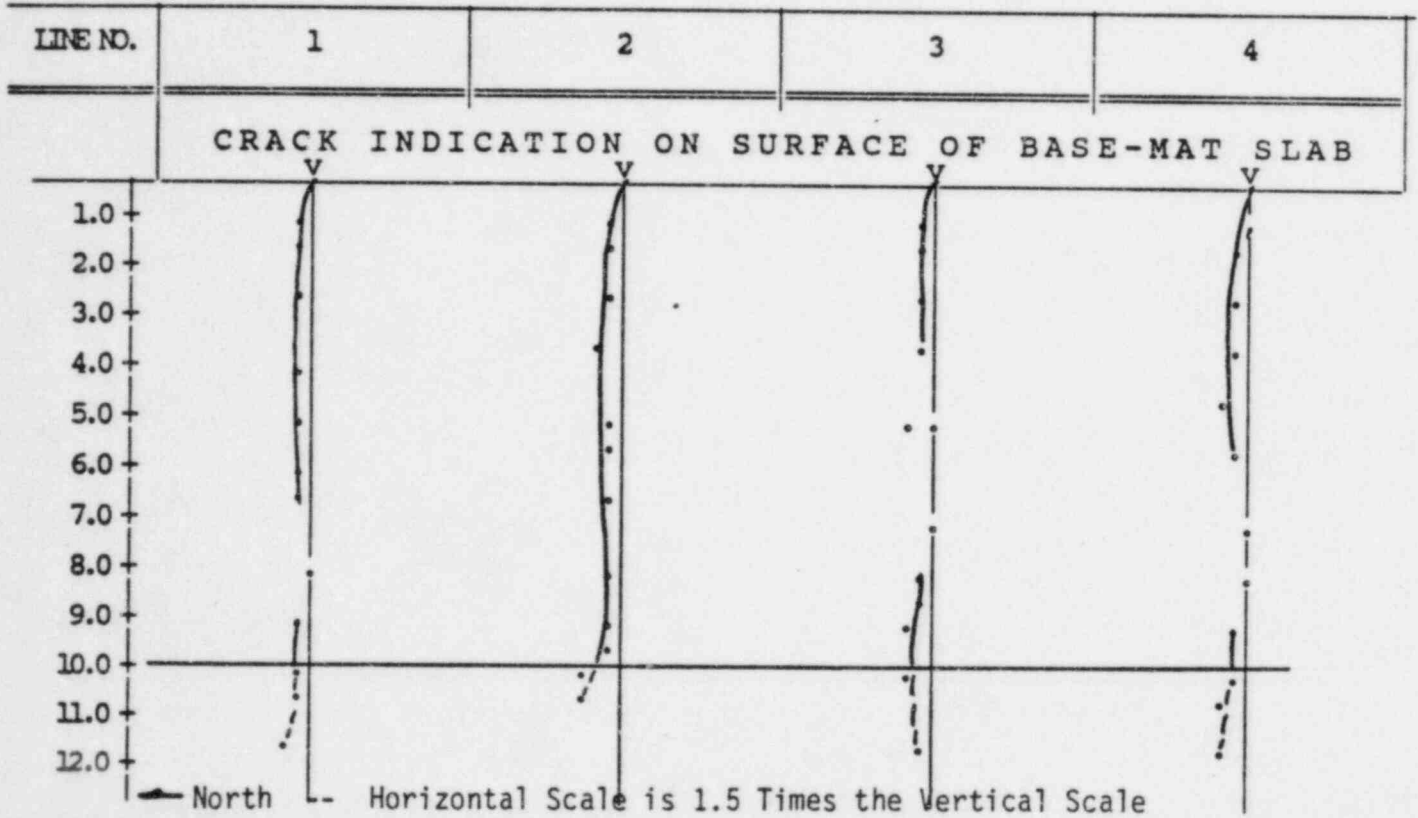
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	85	180	280	360	500	600	680	630	700	775	1080	1190
LINE 9	0.80 0.20 13.92	1.70 0.30 10.12	2.64 0.36 7.77	3.39 0.61 10.12	4.71 0.29 3.47	5.66 0.34 3.47	6.41 0.59 5.25	5.94 2.06 19.13	6.60 2.40 19.99	7.31 2.69 20.23	10.18 0.82 4.59	11.22 0.78 3.98
	80	180	280	380	490	610	690	740	810	0	0	0
LINE 10	0.75 0.25 18.05	1.70 0.30 10.12	2.64 0.36 7.77	3.58 0.42 6.64	4.62 0.38 4.71	5.75 0.25 2.48	6.51 0.49 4.35	6.98 1.02 8.34	7.64 1.36 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. K DATE : 8-30-84

N to S 45 deg TRANSDUCER

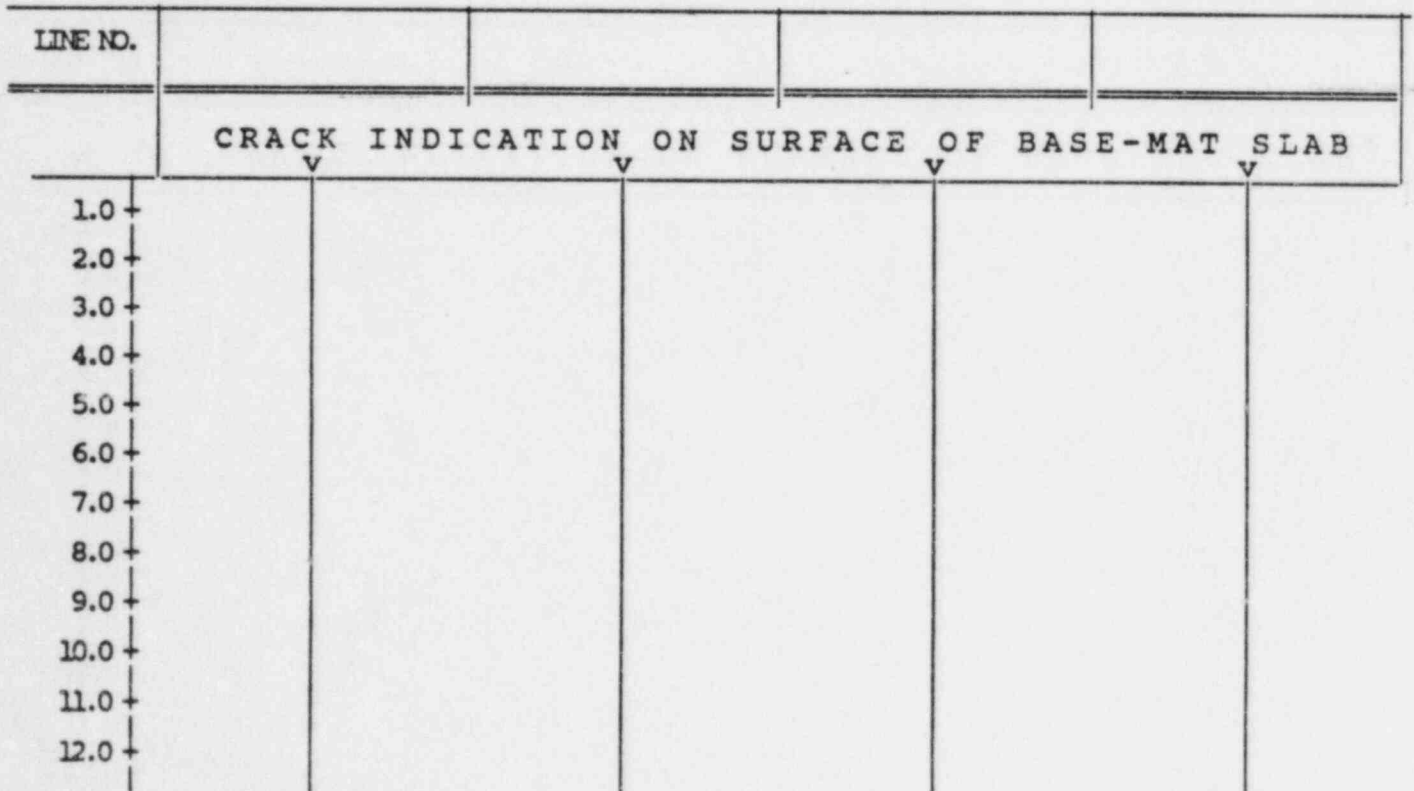
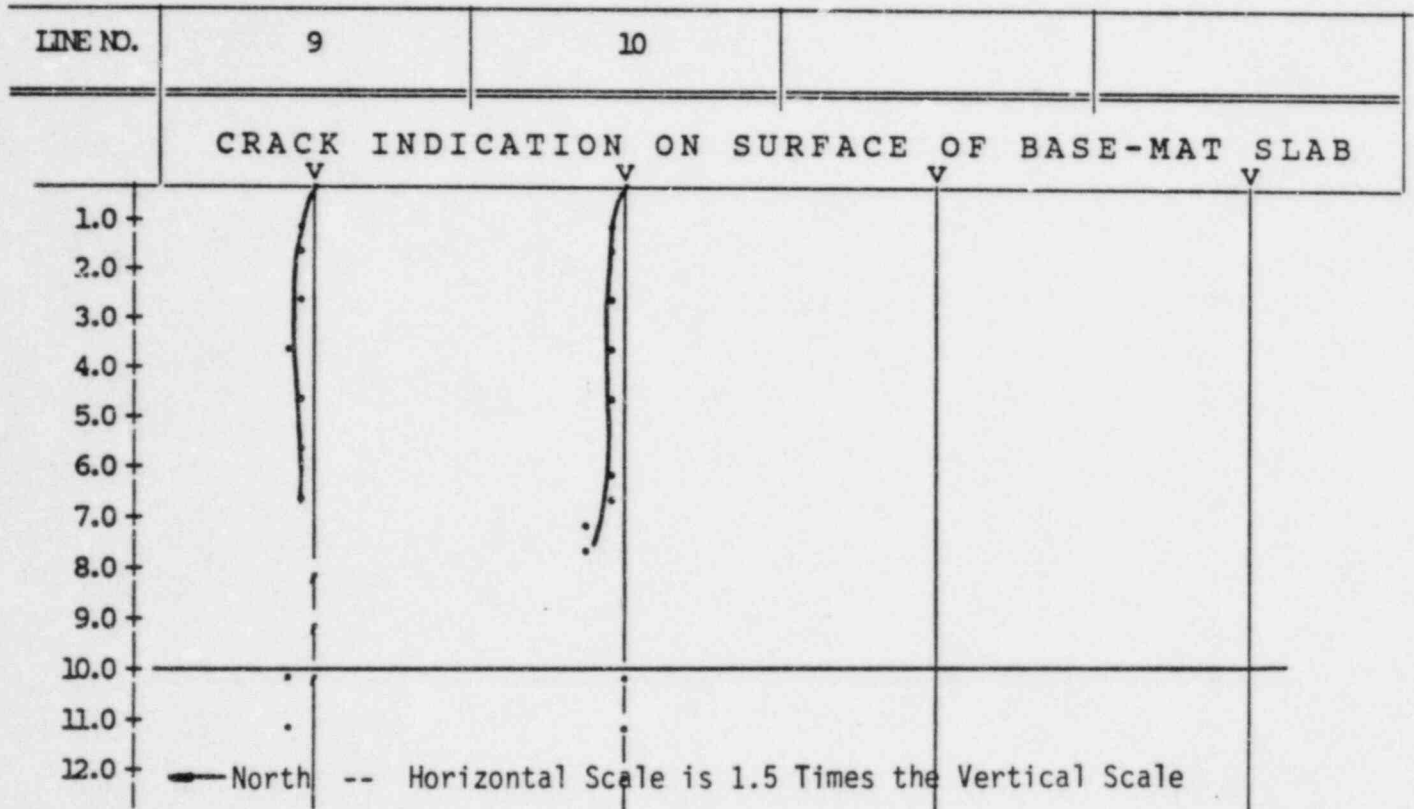


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. K DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING

3940 HUNTCLEFF DR

CHARLOTTE, NORTH CAROLINA 28211

(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
K	5/7	1
K	9/8	1
K	9/9	4
K	9/10	4
K	9/11	4
K	9/12	4

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. L DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	80 0.75 0.25 18.05	200 1.89 0.11 3.47	310 2.92 0.08 1.51	420 3.96 0.04 0.58	510 4.81 0.19 2.28	620 5.85 0.15 1.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	950 8.96 0.04 0.28	1040 9.81 0.19 1.14	1090 10.28 0.72 4.03	1200 11.31 0.69 3.47
LINE 2	80 0.75 0.25 18.05	190 1.79 0.21 6.64	310 2.92 0.08 1.51	410 3.87 0.13 1.99	500 4.71 0.29 3.47	610 5.75 0.25 2.48	700 6.60 0.40 3.47	790 7.45 0.55 4.24	915 8.63 0.37 2.48	980 9.24 0.76 4.71	1070 10.09 0.91 5.17	1175 11.06 0.92 4.76
LINE 3	75 0.71 0.29 22.50	190 1.79 0.21 6.64	290 2.73 0.27 5.55	410 3.87 0.13 1.99	520 4.90 0.10 1.14	630 5.94 0.06 0.58	730 6.88 0.12 0.98	840 7.92 0.08 0.58	940 8.86 0.14 0.89	980 9.24 0.76 4.71	1060 9.99 1.01 5.75	1130 10.65 1.35 7.20
LINE 4	80 0.75 0.25 18.05	180 1.70 0.30 10.12	270 2.55 0.45 10.12	380 3.58 0.42 6.64	440 4.15 0.85 11.60	550 5.19 0.81 8.93	640 6.03 0.97 9.10	750 7.07 0.93 7.48	780 7.35 1.65 12.62	855 8.06 1.94 13.52	950 8.96 2.04 12.85	1020 9.62 2.38 13.92
LINE 5	80 0.75 0.25 18.05	175 1.65 0.35 11.98	280 2.64 0.36 7.77	360 3.39 0.61 10.12	440 4.15 0.85 11.60	530 5.00 1.00 11.35	640 6.03 0.97 9.10	710 6.69 1.31 11.04	780 7.35 1.65 12.62	850 8.01 1.99 13.92	930 8.77 2.23 14.28	1000 9.43 2.57 15.26
LINE 6	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 7	70 0.66 0.34 27.26	160 1.51 0.49 18.05	270 2.55 0.45 10.12	350 3.30 0.70 11.98	410 3.87 1.13 16.36	510 4.81 1.19 13.92	590 5.56 1.44 14.49	670 6.32 1.68 14.92	740 6.98 2.02 16.17	810 7.64 2.36 17.20	950 8.96 2.04 12.85	980 9.24 2.76 16.63
LINE 8	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. L DATE : 8-30-84

N to S 45 deg TRANSDUCER

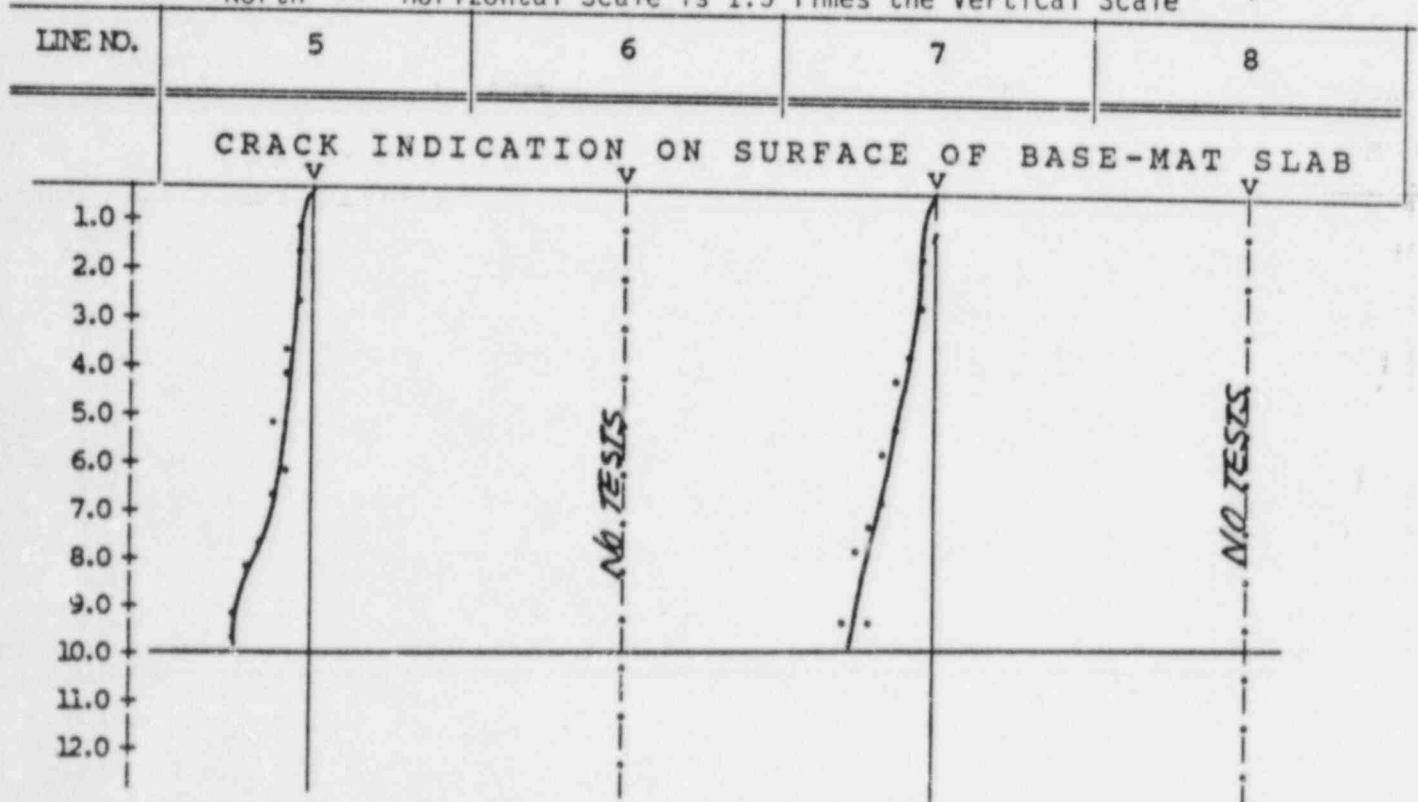
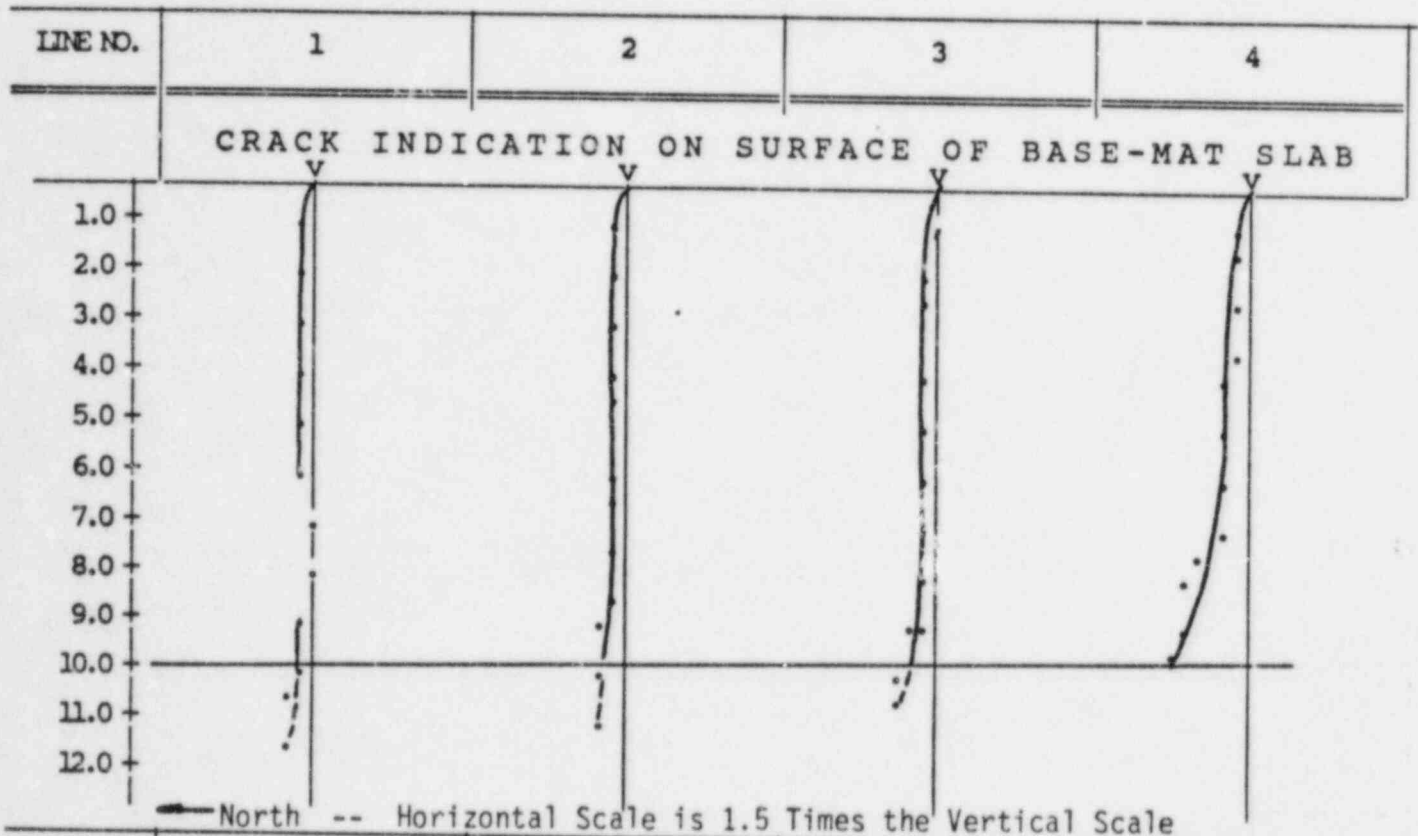
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	80	190	280	380	480	580	710	770	890	990	1010	1080
LINE 9	0.75 0.25 18.05	1.79 0.21 6.64	2.64 0.36 7.77	3.58 0.42 6.64	4.53 0.47 5.99	5.47 0.53 5.55	6.69 0.31 2.62	7.26 0.74 5.82	8.39 0.61 4.15	9.33 0.67 4.08	9.52 1.48 8.82	10.18 1.82 10.12
	0	0	0	0	0	0	0	0	0	0	0	0
LINE 10	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	85	180	290	390	490	580	670	790	890	870	970	1040
LINE 11	0.80 0.20 13.92	1.70 0.30 10.12	2.73 0.27 5.55	3.68 0.32 5.02	4.62 0.38 4.71	5.47 0.53 5.55	6.32 0.68 6.17	7.45 0.55 4.24	8.39 0.61 4.15	8.20 1.80 12.36	9.15 1.85 11.46	9.81 2.19 12.62
	0	0	0	0	0	0	0	0	0	0	0	0
LINE 12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	75	170	290	390	510	570	680	790	870	990	980	1070
LINE 13	0.71 0.29 22.50	1.60 0.40 13.92	2.73 0.27 5.55	3.68 0.32 5.02	4.81 0.19 2.28	5.37 0.63 6.64	6.41 0.59 5.25	7.45 0.55 4.24	8.20 0.80 5.55	9.33 0.67 4.08	9.24 1.76 10.79	10.09 1.91 10.73
	80	180	290	390	520	595	690	790	890	1000	910	980
LINE 14	0.75 0.25 18.05	1.70 0.30 10.12	2.73 0.27 5.55	3.68 0.32 5.02	4.90 0.10 1.14	5.61 0.39 3.98	6.51 0.49 4.35	7.45 0.55 4.24	8.39 0.61 4.15	9.43 0.57 3.47	8.58 2.42 15.75	9.24 2.76 16.63

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. L DATE : 8-30-84

N to S 45 deg TRANSDUCER

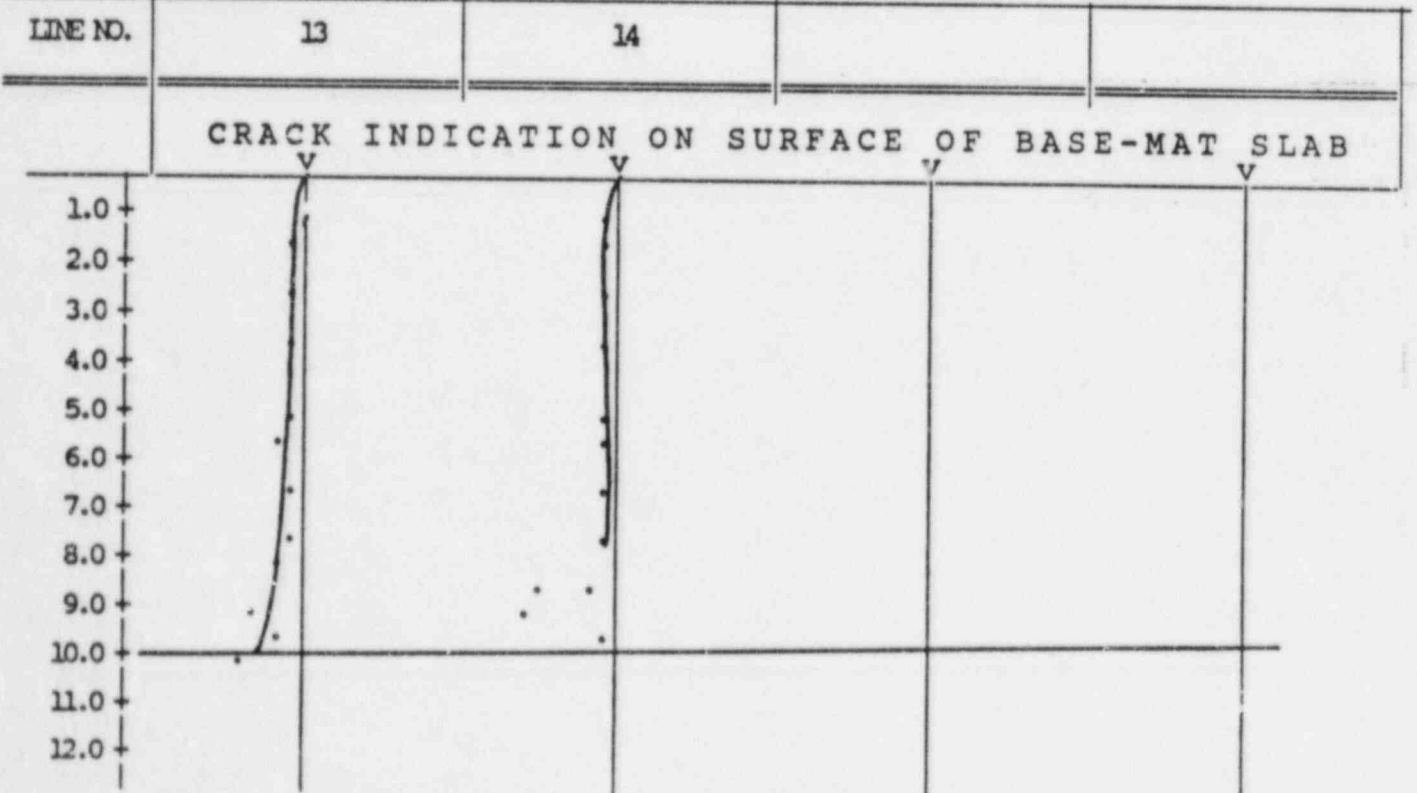
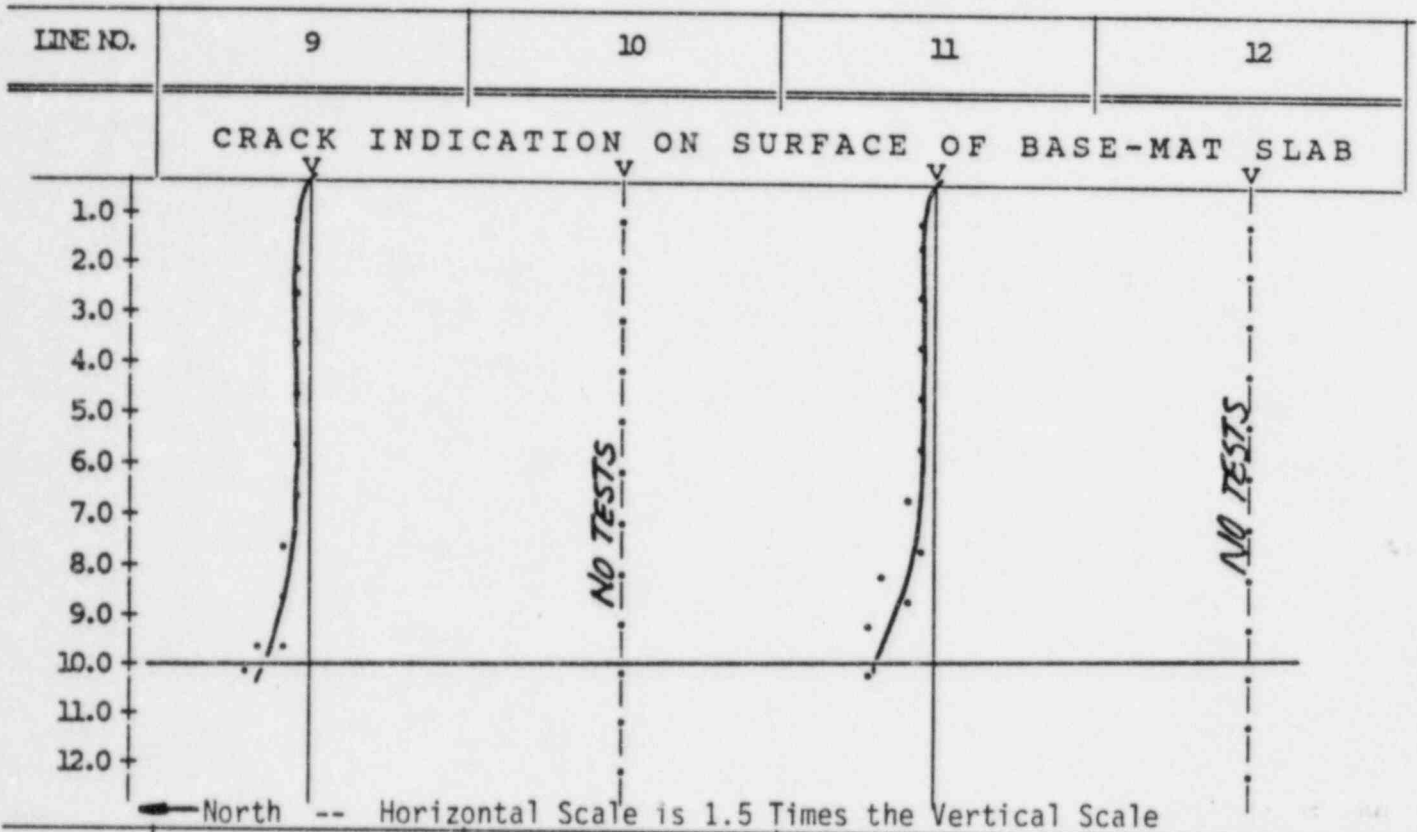


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. L DATE : 8-30-84

N to S 45 deg TRANSDUCER



Mucnow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 3/7-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
L	3/1	1
L	13/9	3
L	13/10	4
L	13/11	4
L	13/12	4
L	14/9	3
L	14/10	3
L	14/11	3
L	14/12	3

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATON M OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	80 120	190 0	290* 0	390 450	510 550	0 0	0 0	630* 0	0 905	0 0	910 0	0 0
LINE NO. 2	80 0	180 0	290* 0	390 0	0 0	0 0	0 770	0 0	0 990	0 0	900 0	0 0
LINE NO. 3	100 0	185 0	310 330	415 430	0 0	620 0	0 0	0 0	820* 0	0 0	0 0	0 0
LINE NO. 4	90 110	180 0	290 0	390 450	490 570	0 670	710 0	710* 0	0 0	0 1060	840* 0	0 0
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

66

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. M DATE : 8-30-84

N to S 45 deg TRANSDUCER

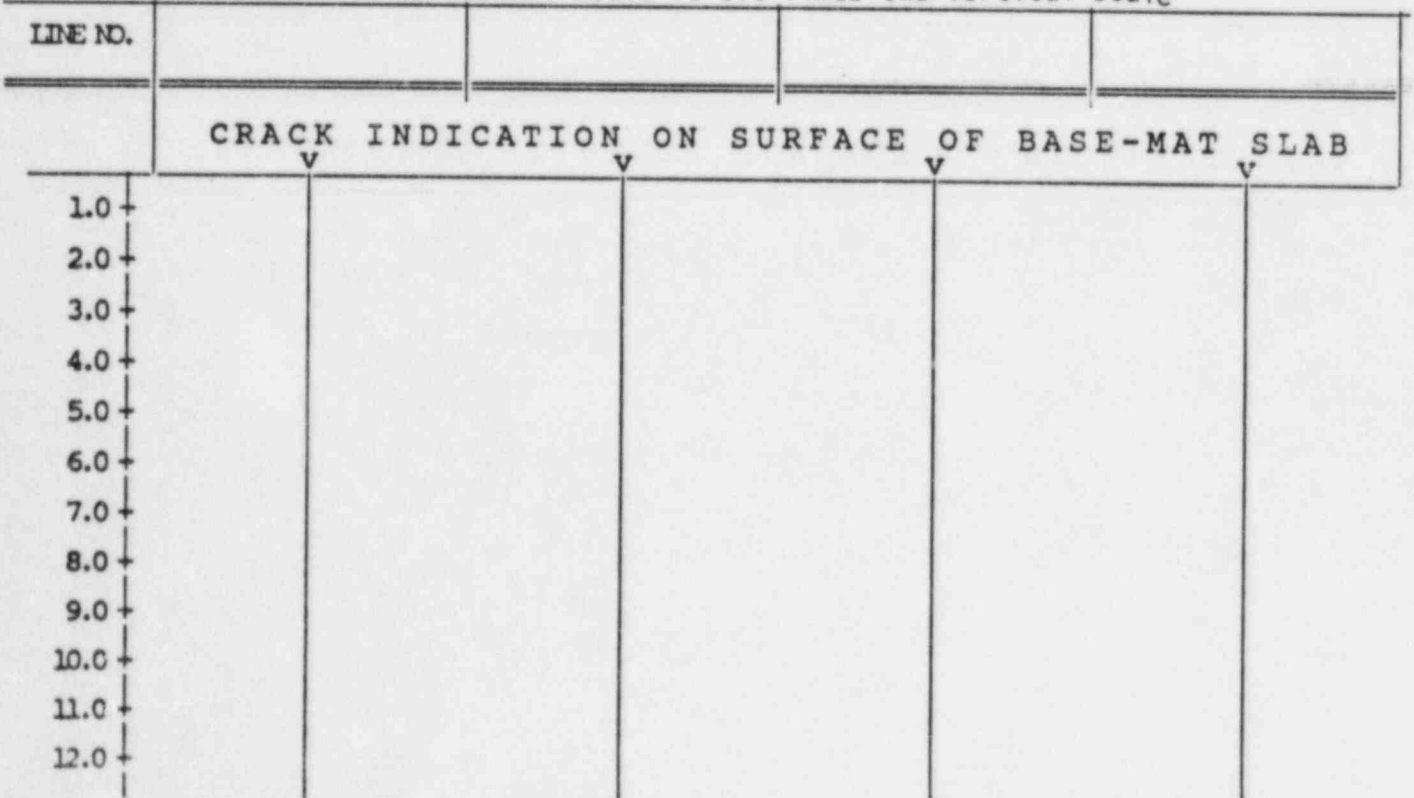
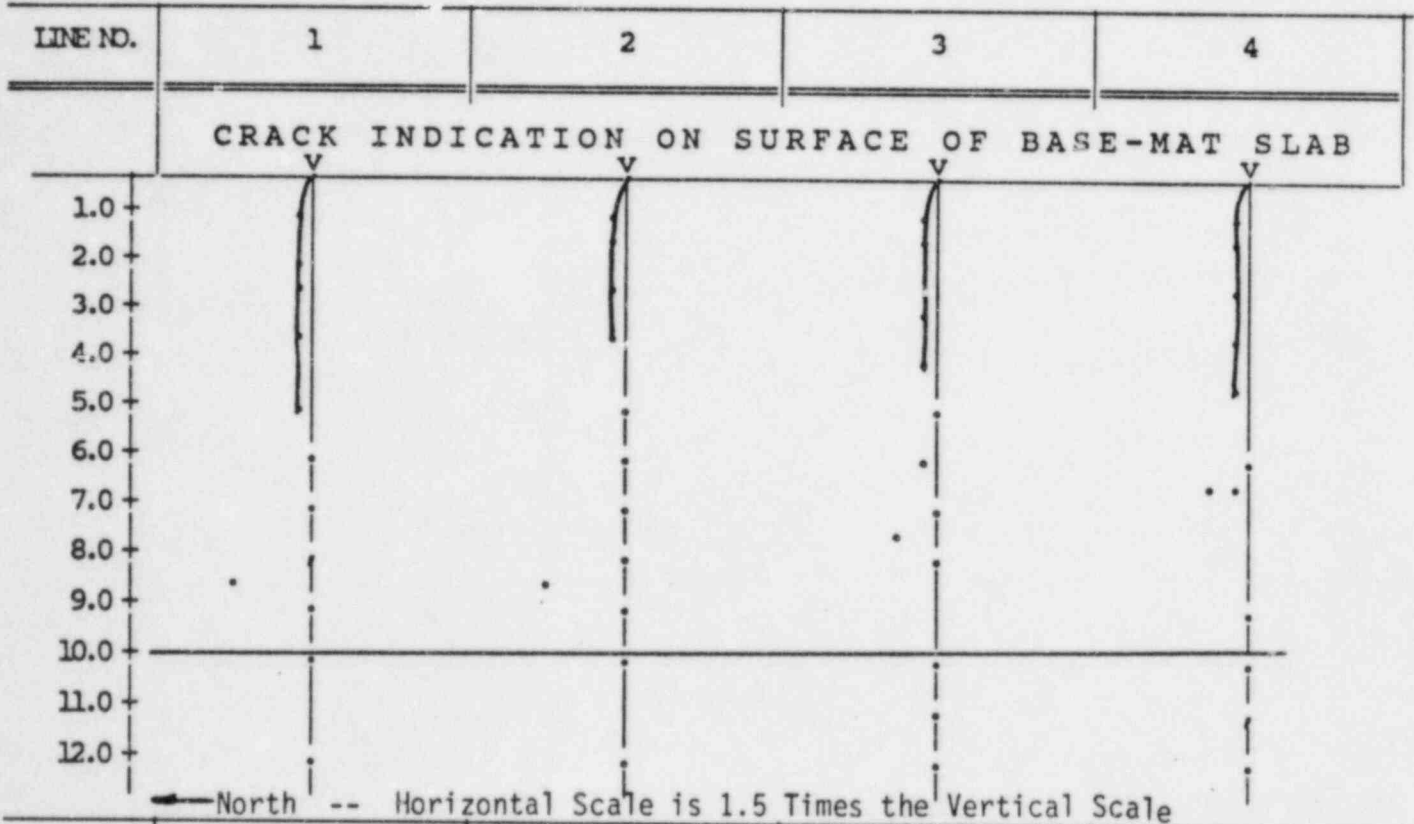
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	80	190	290	390	510	0	0	630	0	0	910	0
LINE 1	0.75 0.25 18.05	1.79 0.21 6.64	2.73 0.27 5.55	3.68 0.32 5.02	4.81 0.19 2.28	0.00 0.00 0.00	0.00 0.00 0.00	5.94 2.06 19.13	0.00 0.00 0.00	0.00 0.00 0.00	8.58 2.42 15.75	0.00 0.00 0.00
	80	180	290	390	0	0	0	0	0	0	900	0
LINE 2	0.73 0.25 18.05	1.70 0.30 10.12	2.73 0.27 5.55	3.68 0.32 5.02	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	8.49 2.51 16.51	0.00 0.00 0.00
	100	185	310	415	0	620	0	0	820	0	0	0
LINE 3	0.94 0.06 3.47	1.74 0.26 8.34	2.92 0.08 1.51	3.91 0.09 1.28	0.00 0.00 0.00	5.85 0.15 1.51	0.00 0.00 0.00	0.00 0.00 0.00	7.73 1.27 9.32	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	180	290	390	490	0	710	710	0	0	840	0
LINE 4	0.85 0.15 10.12	1.70 0.30 10.12	2.73 0.27 5.55	3.68 0.32 5.02	4.62 0.38 4.71	0.00 0.00 0.00	6.69 0.31 2.62	6.69 1.31 11.04	0.00 0.00 0.00	0.00 0.00 0.00	7.92 3.08 21.25	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. M DATE : 8-30-84

N to S 45 deg TRANSDUCER



Wuenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
M	1/8	3
M	1/11	4
M	2/11	4
M	3/6	3
M	3/9	3
M	4/7	2
M	4/8	2
M	4/11	4

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. N DATE : 8-30-84

N to S 45 deg TRANSDUCER

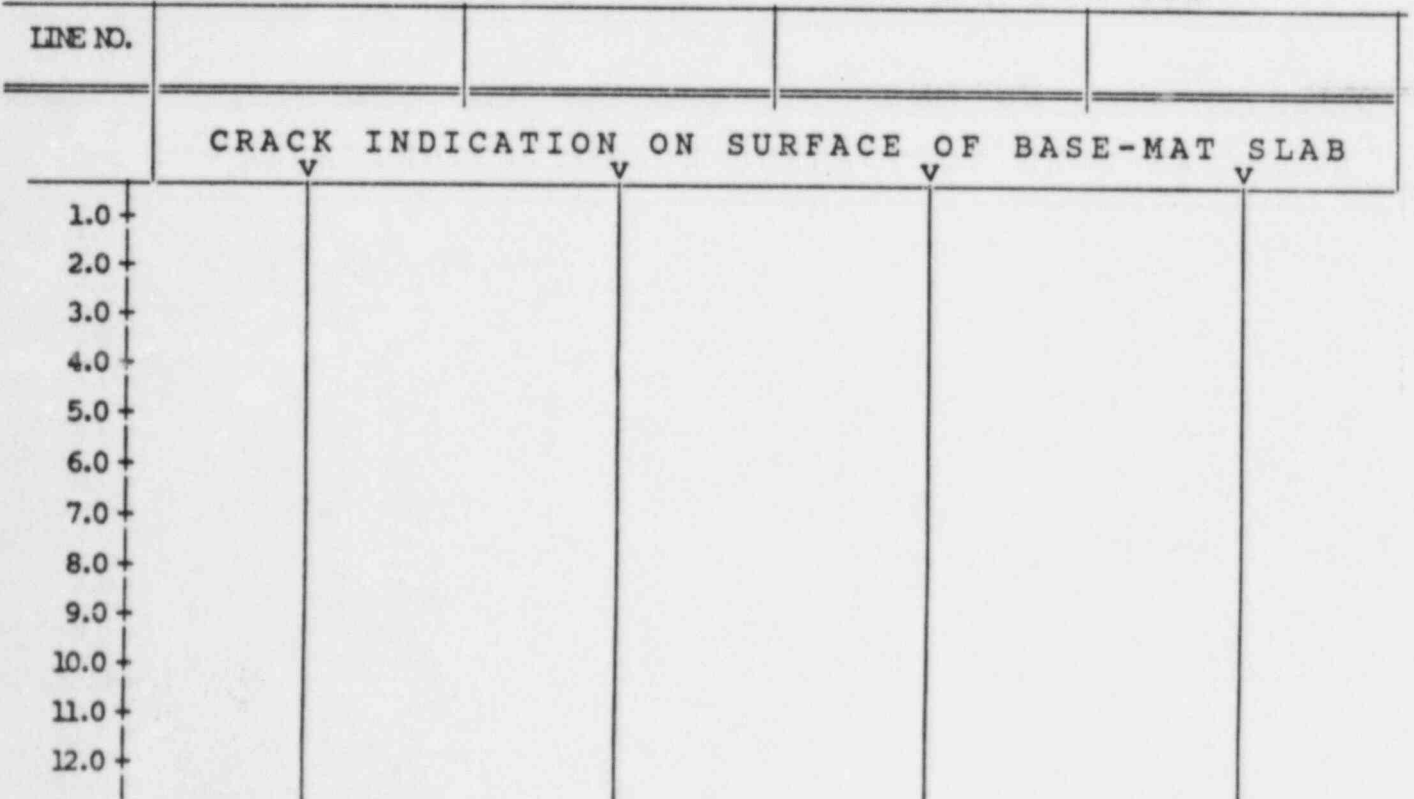
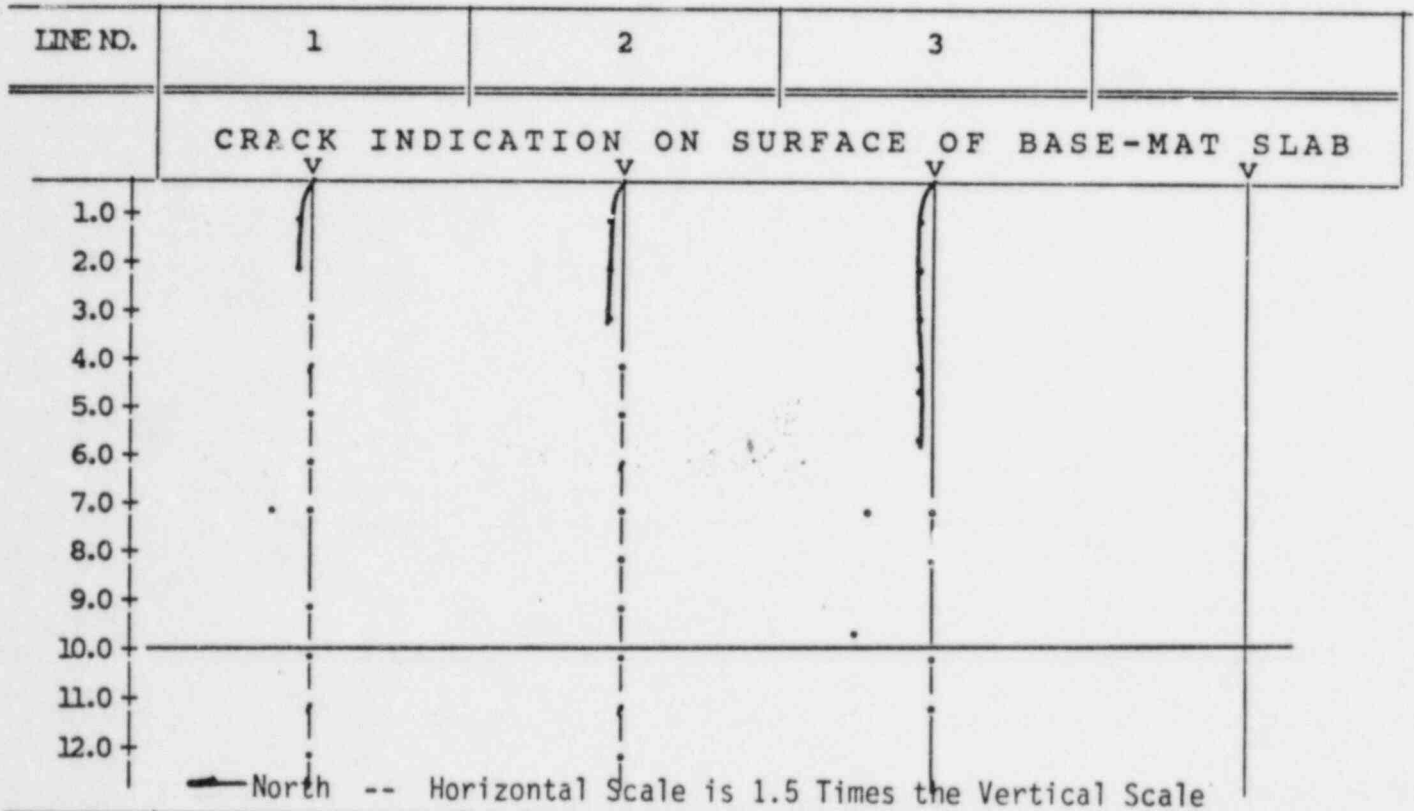
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	90	190	0	220	0	0	0	720	0	0	840	0
LINE 1	0.85 0.15 10.12	1.79 0.21 6.64	0.00 0.00 0.00	2.07 1.93 42.88	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	6.79 1.21 10.12	0.00 0.00 0.00	0.00 0.00 0.00	7.92 3.08 21.25	0.00 0.00 0.00
	85	195	315	0	0	430	0	0	0	0	790	0
LINE 2	0.80 0.20 13.92	1.84 0.16 5.02	2.97 0.03 0.58	0.00 0.00 0.00	0.00 0.00 0.00	4.05 1.95 25.64	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	7.45 3.55 25.49	0.00 0.00 0.00
	80	190	300	415	500	600	0	0	730	0	0	1000
LINE 3	0.75 0.25 18.05	1.79 0.21 6.64	2.83 0.17 3.47	3.91 0.09 1.28	4.71 0.29 3.47	5.66 0.34 3.47	0.00 0.00 0.00	0.00 0.00 0.00	6.88 2.12 17.10	0.00 0.00 0.00	0.00 0.00 0.00	9.43 2.57 15.26

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. N DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HIGHTCLIFF DR.
CHARLOTTE NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
N	1/4	1
N	1/8	2
N	1/11	4
N	2/6	2
N	2/11	4
N	3/9	3
N	3/12	3

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



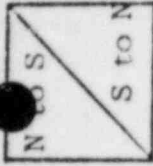
CRACK IDENTIFICATION P OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 422	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	75* 0	170 230	280 310	380 0	490 570	600 670	700 780	790 0	940 0	0 0	0 0	0 0
LINE NO. 2	80 125	180 0	270 0	380 460	450 0	570 690	690 0	790 890	890 810	960 890	1040 0	0 0
LINE NO. 3	75* 0	160 0	280 0	390 450	470 590	540 0	710 0	790 730	860 0	940 1160	1040 0	0 0
LINE NO. 4	85 115	180 220	290 0	395 0	510 550	600 680	700 780	820 760	910 850	990 1130	1100 0	0 0
LINE NO. 5	80 0	170 230	270 0	390 450	510 550	570 0	680 0	790 0	910 0	990 0	0 0	0 0
LINE NO. 6	80 0	180 0	290 0	390 0	490 570	610 650	740 750	810 0	0 0	440* 0	0 0	0 0
LINE NO. 7	80 0	180 220	290 310	400 450	510 0	610 0	710 770	780 900	810 1200	0 0	0 0	0 0
LINE NO. 8	80 0	150* 0	240 360	350 0	510 550	550 0	670 810	740 940	855 0	690* 0	0 0	0 0

107

TEST DIRECTION

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERPOURD NO. 3
NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION P OPERATOR R.A. MUELOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1	2	3	4	5	6	7	8	9	10	11	12
LINE NO. 9	75* 106	160 212	270 318	360 425	480 530	550 636	640 742	730 848	870 810 955	950 890 1060	1050 970 1166	1100 1272
LINE NO.	0	245	0	480	580	0	0	1040	0	0	0	0
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. P DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	75	170	280	380	490	600	700	790	940	0	0	0
LINE 1	0.71 0.29 22.50	1.60 0.40 13.92	2.64 0.36 7.77	3.58 0.42 6.64	4.62 0.38 4.71	5.66 0.34 3.47	6.60 0.40 3.47	7.45 0.55 4.24	8.86 0.14 0.89	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	180	270	380	450	570	690	790	810	890	1040	0
LINE 2	0.75 0.25 18.55	1.70 0.30 10.12	2.55 0.45 10.12	3.58 0.42 6.64	4.24 0.76 10.12	5.37 0.63 6.64	6.51 0.49 4.35	7.45 0.55 4.24	7.64 1.36 10.12	8.39 1.61 10.85	9.81 1.19 6.95	0.00 0.00 0.00
	75	160	280	390	470	540	710	730	860	940	1040	0
LINE 3	0.71 0.29 22.50	1.51 0.49 18.05	2.64 0.36 7.77	3.68 0.32 5.02	4.43 0.57 7.31	5.09 0.91 10.12	6.69 0.31 2.62	6.88 1.12 9.22	8.11 0.89 6.28	8.86 1.14 7.31	9.81 1.19 6.95	0.00 0.00 0.00
	85	180	290	395	510	600	700	760	850	990	1100	0
LINE 4	0.80 0.20 13.92	1.70 0.30 10.12	2.73 0.27 5.55	3.72 0.28 4.24	4.81 0.19 2.28	5.66 0.34 3.47	6.60 0.40 3.47	7.17 0.83 6.64	8.01 0.99 7.02	9.33 0.67 4.08	10.37 0.63 3.47	0.00 0.00 0.00
	80	170	270	390	510	570	680	790	910	990	0	0
LINE 5	0.75 0.25 18.05	1.60 0.40 13.92	2.55 0.45 10.12	3.68 0.32 5.02	4.81 0.19 2.28	5.37 0.63 6.64	6.41 0.59 5.25	7.45 0.55 4.24	8.58 0.42 2.81	9.33 0.67 4.08	0.00 0.00 0.00	0.00 0.00 0.00
	80	180	290	390	490	610	740	810	0	440	0	0
LINE 6	0.75 0.25 18.05	1.70 0.30 10.12	2.73 0.27 5.55	3.68 0.32 5.02	4.62 0.38 4.71	5.75 0.25 2.48	6.98 0.02 0.19	7.64 0.36 2.72	0.00 0.00 0.00	4.15 5.85 54.67	0.00 0.00 0.00	0.00 0.00 0.00
	80	180	290	400	510	610	710	780	810	0	0	0
LINE 7	0.75 0.25 18.05	1.70 0.30 10.12	2.73 0.27 5.55	3.77 0.23 3.47	4.81 0.19 2.28	5.75 0.25 2.48	6.69 0.31 2.62	7.35 0.65 5.02	7.64 1.36 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	150	240	350	510	550	670	740	855	690	0	0
LINE 8	0.75 0.25 18.05	1.41 0.59 22.50	2.26 0.74 18.05	3.30 0.70 11.98	4.81 0.19 2.28	5.19 0.81 8.93	6.32 0.68 6.17	6.98 1.02 8.34	8.06 0.94 6.64	6.51 3.49 28.24	0.00 0.00 0.00	0.00 0.00 0.00

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. P DATE : 8-30-84

N to E 45 deg TRANSDUCER

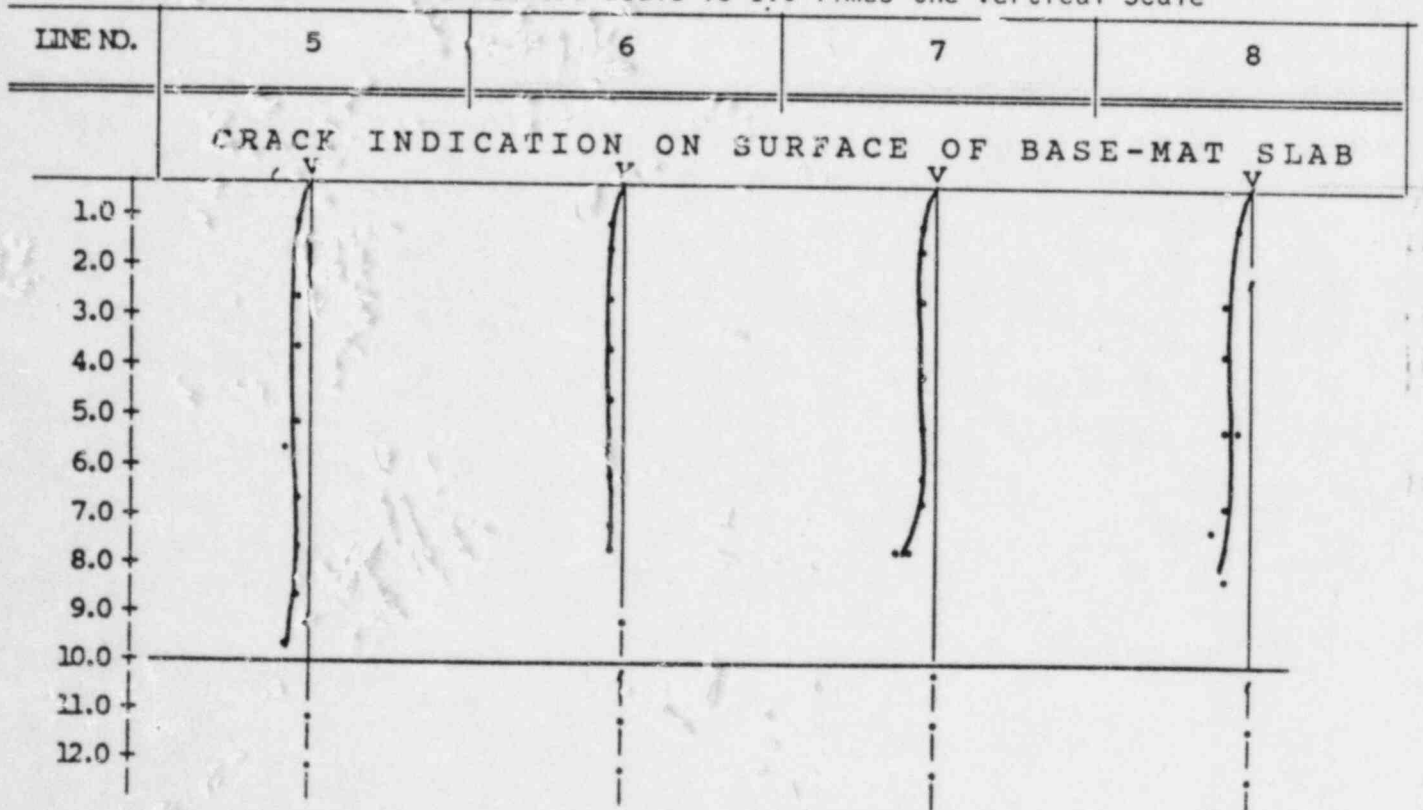
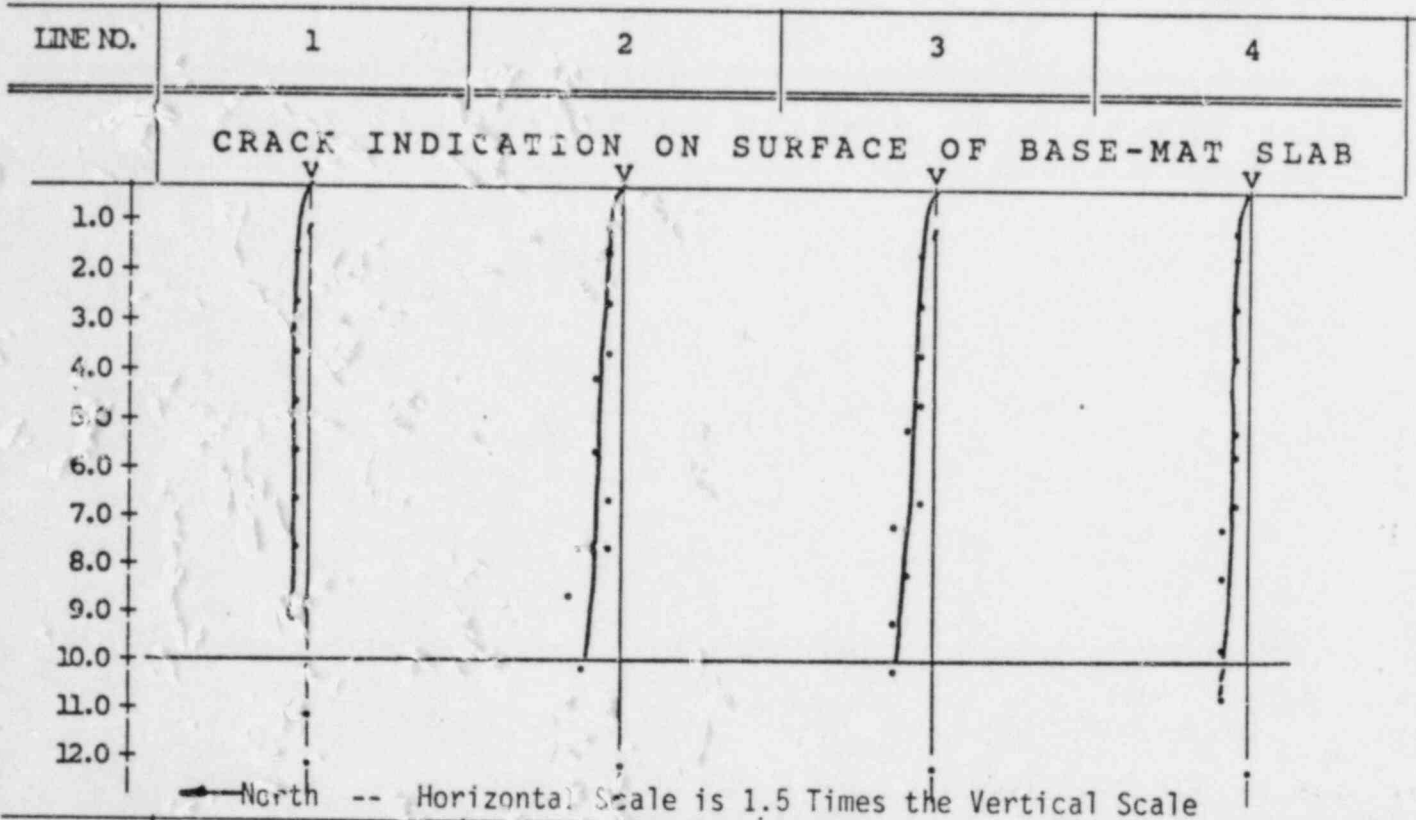
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	75	160	270	360	480	550	640	730	810	890	970	1100
LINE 9	0.71 0.29 22.50	1.51 0.49 18.05	2.55 0.45 10.12	3.39 0.61 10.12	4.53 0.47 5.99	5.19 0.81 8.93	6.03 0.97 9.10	6.88 1.12 9.22	7.64 1.36 10.12	8.39 1.61 10.85	9.15 1.85 11.46	10.37 1.63 8.93

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. P DATE : 8-30-84

N to S 45 deg TRANSDUCER

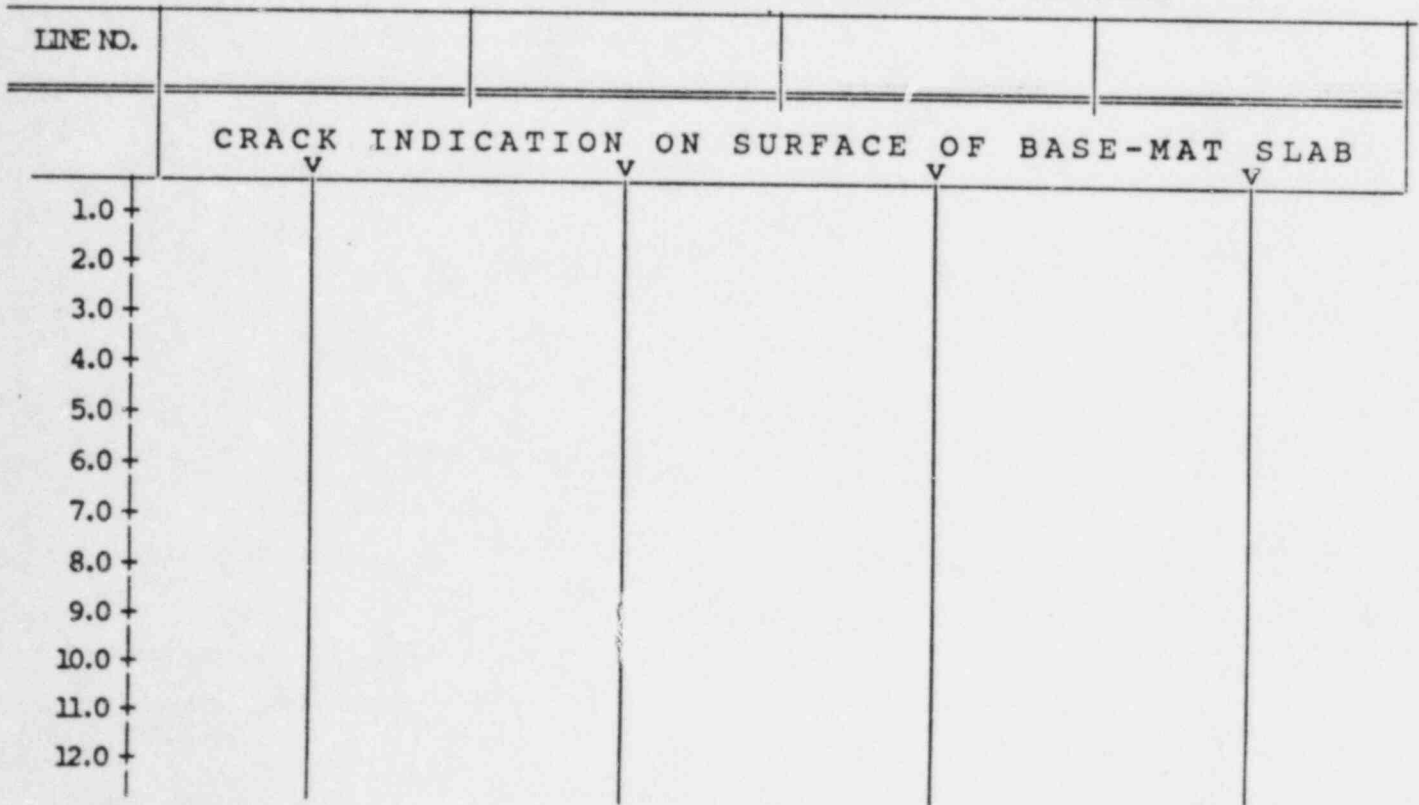
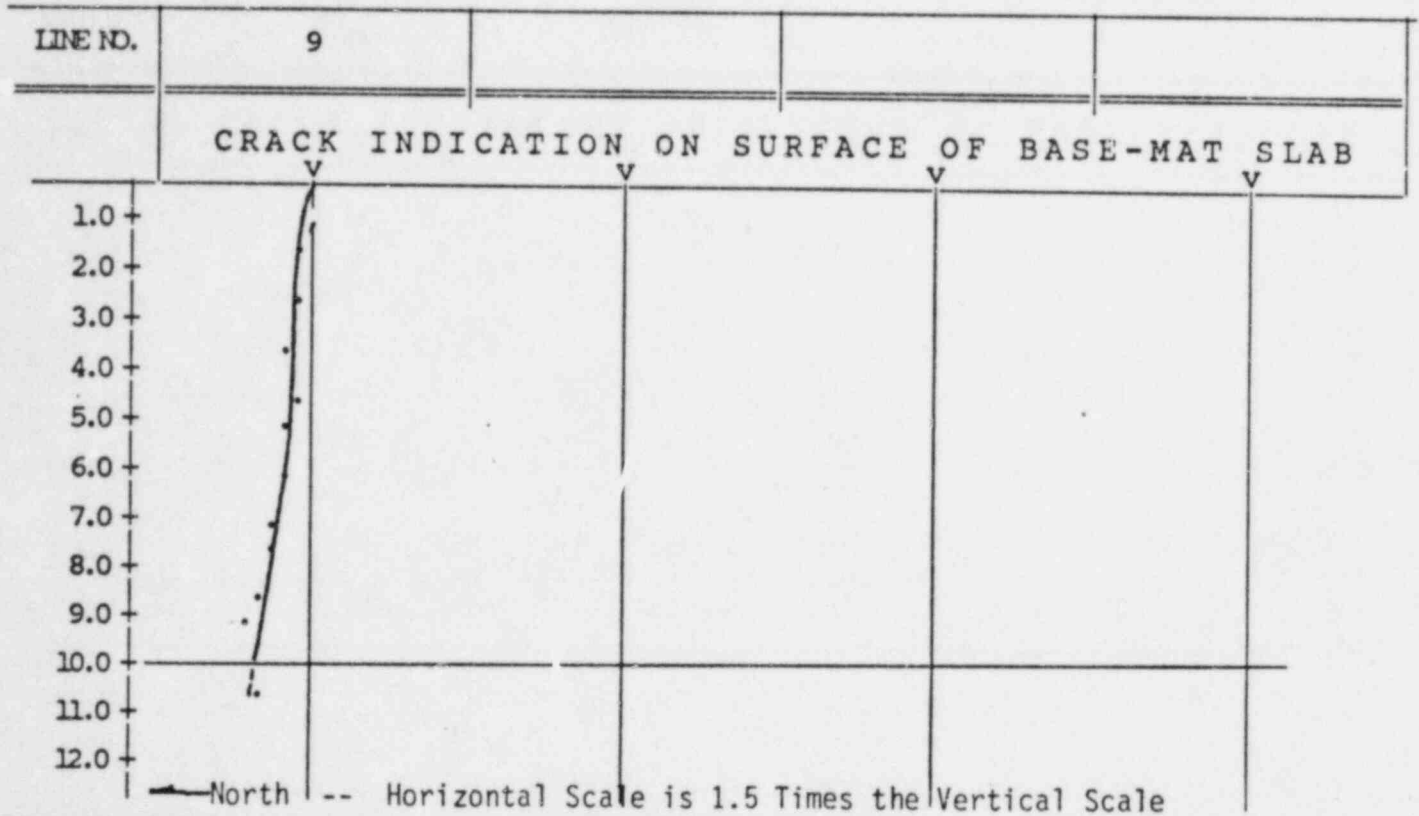


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. P DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
P	2/10	4
P	6/10	4
P	8/2	1
P	8/10	4

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Q DATE : 8-30-84

N to S 45 deg TRANSDUCER

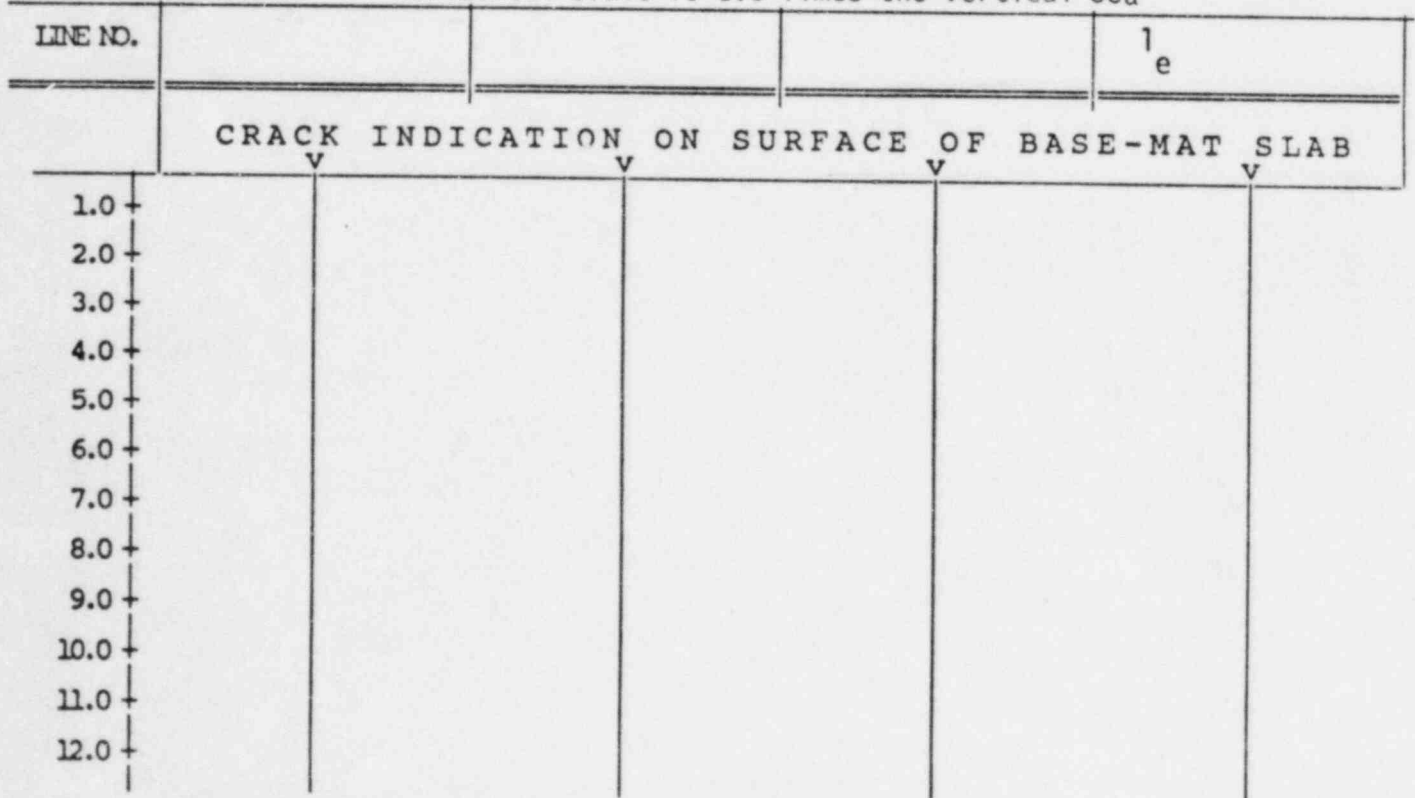
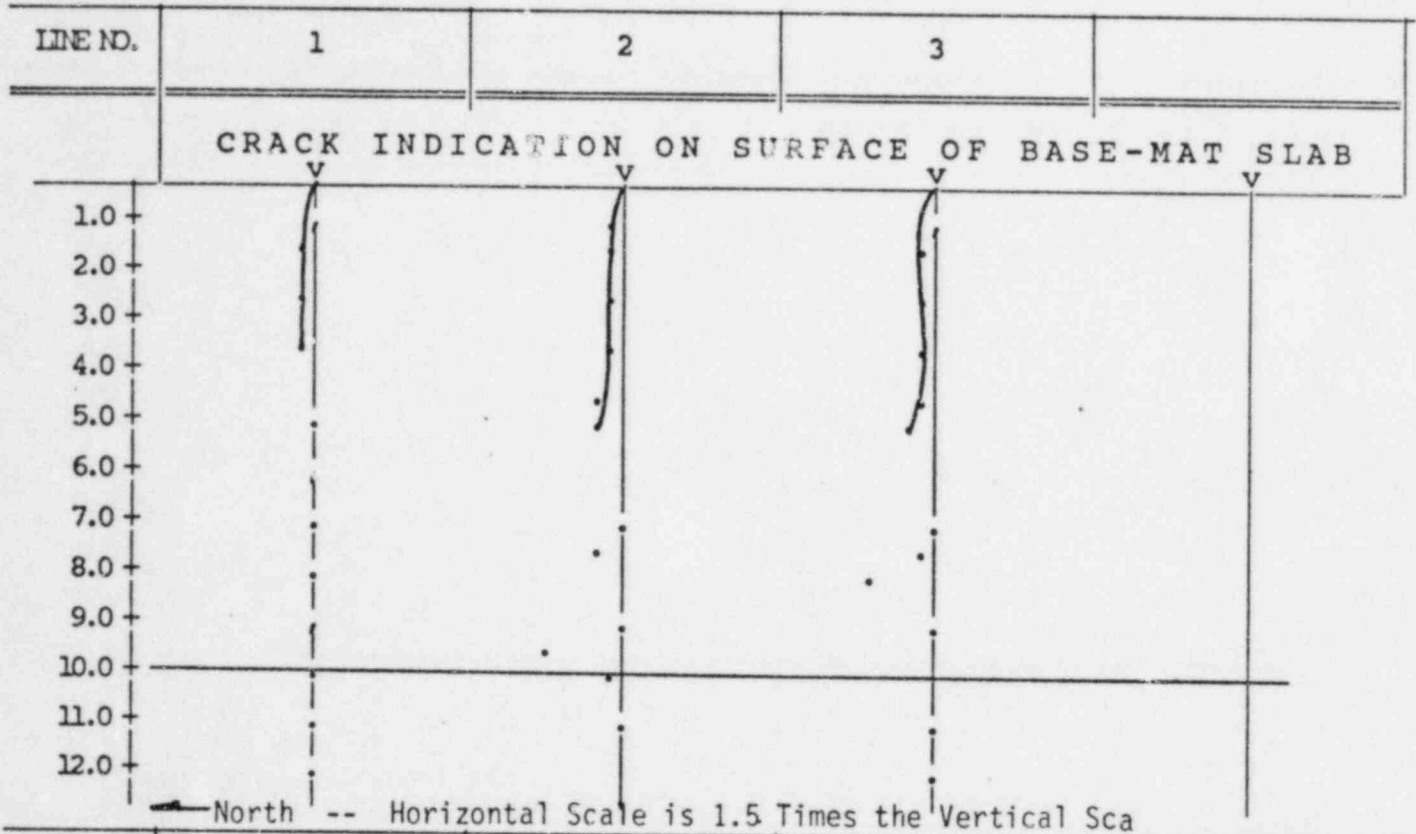
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	70	180	280	390	0	440	0	0	670	0	0	0
LINE 1	0.66 0.34 27.26	1.70 0.30 10.12	2.64 0.36 7.77	3.68 0.32 5.02	0.00 0.00 0.00	4.15 1.85 24.05	0.00 0.00 0.00	0.00 0.00 0.00	6.32 2.68 23.01	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	160	270	380	460	540	0	770	0	1060	0	1000
LINE 2	0.75 0.25 18.05	1.51 0.49 18.05	2.55 0.45 10.12	3.58 0.42 6.64	4.34 0.66 8.69	5.09 0.91 10.12	0.00 0.00 0.00	7.26 0.74 5.82	0.00 0.00 0.00	9.99 0.01 0.04	0.00 0.00 0.00	9.43 2.57 15.26
	75	160	260	380	500	540	0	810	0	840	0	0
LINE 3	0.71 0.29 22.50	1.51 0.49 18.05	2.45 0.55 12.62	3.58 0.42 6.64	4.71 0.29 3.47	5.09 0.91 10.12	0.00 0.00 0.00	7.64 0.36 2.72	0.00 0.00 0.00	7.92 2.08 14.72	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Q DATE : 8-30-84

N to S 45 deg TRANSDUCER



Wuexow and Associates, Inc.

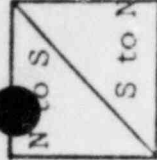
MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
Q	1/6	2
Q	1/9	2
Q	2/8	2
Q	2/12	4
Q	3/8	3
Q	3/10	4

TEST DIRECTION

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NON-DESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION R OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO <u>L</u>	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 1	75*	180	0	0	1410	0	0	705	0	0	810	0
LINE NO.	0	0	0	0	0	0	770	0	990	0	0	0
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. R DATE : 8-30-84

N to S 45 deg TRANSDUCER

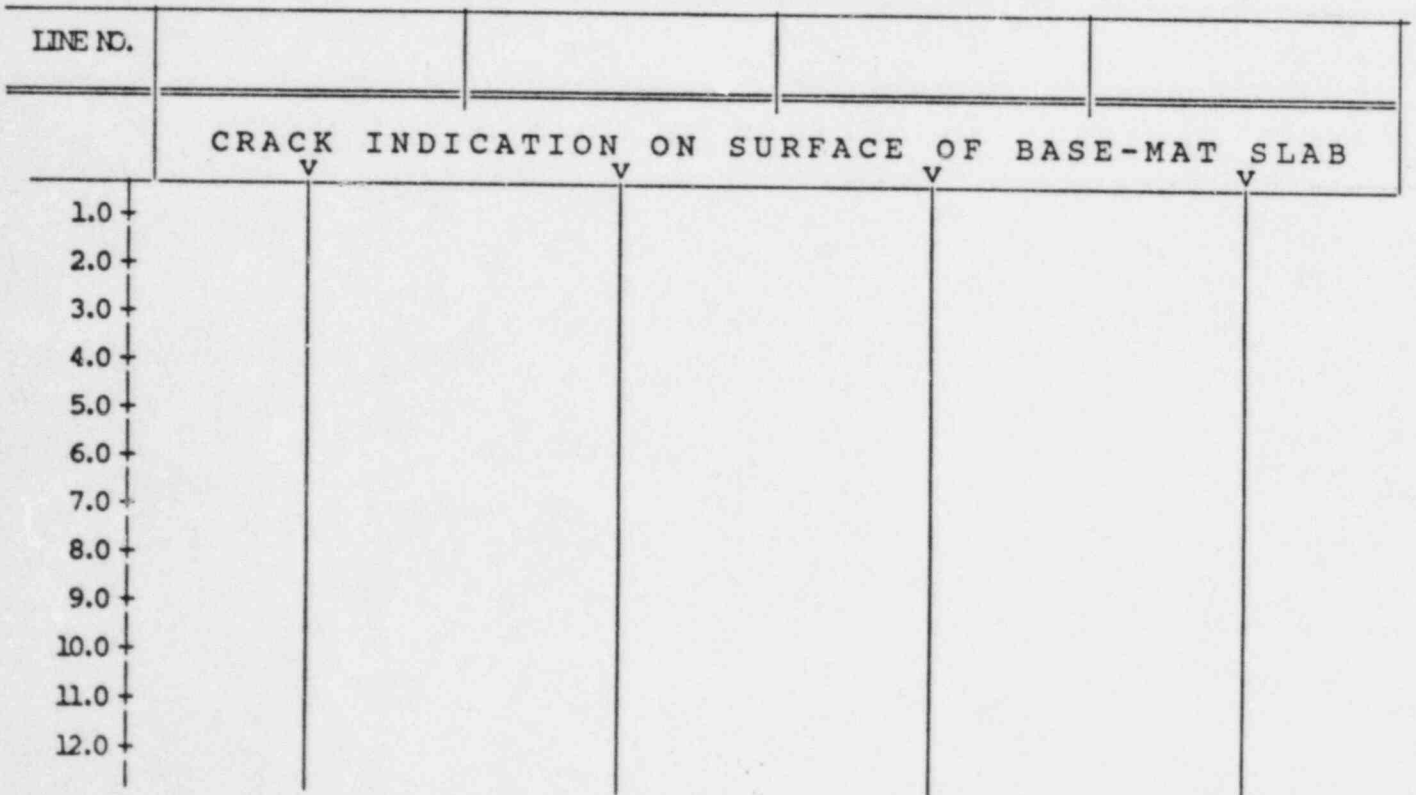
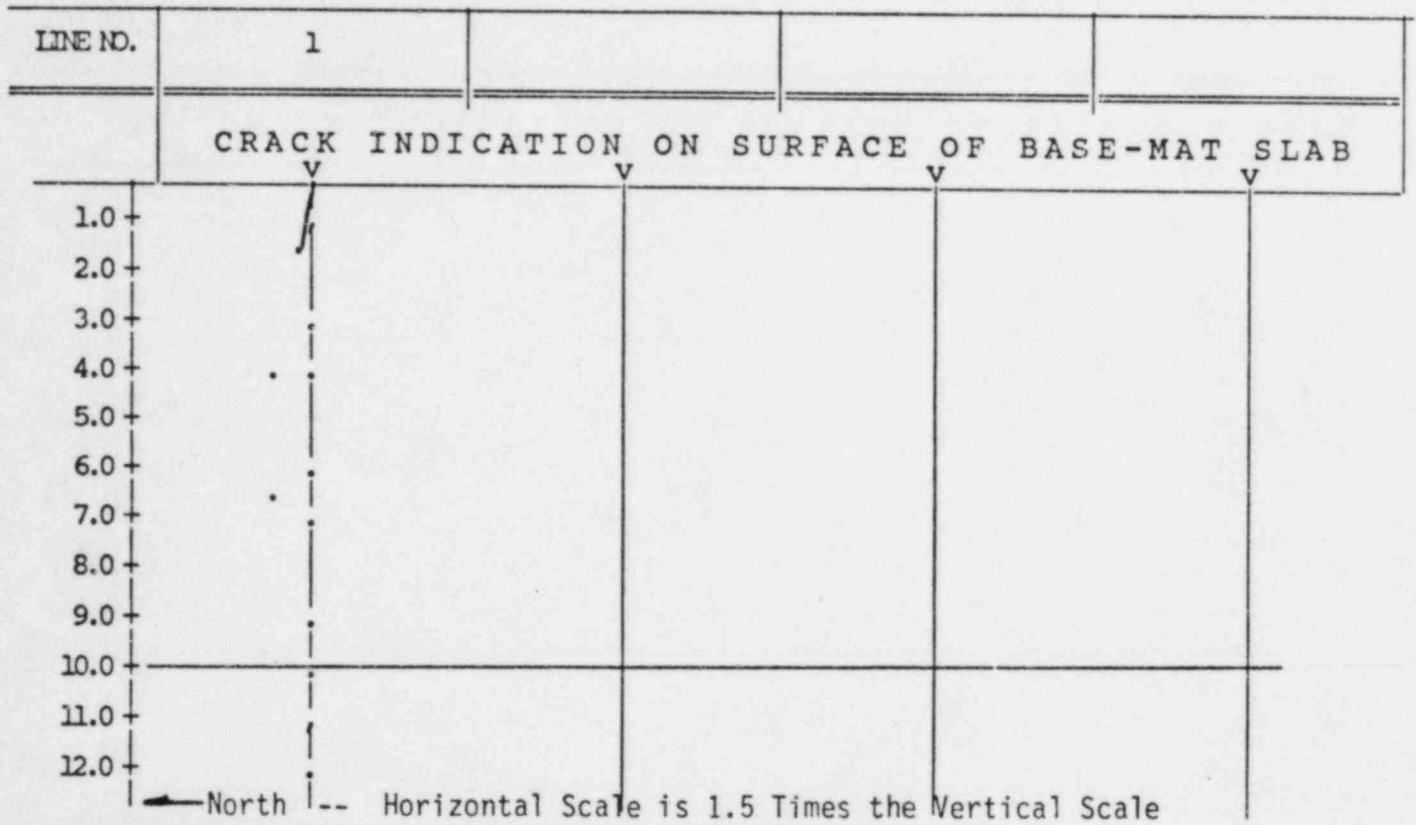
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	75	180	0	0	410	0	0	705	0	0	810	0
LINE 1	0.71 0.29 22.50	1.70 0.30 10.12	0.00 0.00 0.00	0.00 0.00 0.00	3.87 1.13 16.36	0.00 0.00 0.00	0.00 0.00 0.00	6.65 1.35 11.51	0.00 0.00 0.00	0.00 0.00 0.00	7.64 3.36 23.77	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. R DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2123

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
R	1/5	1
R	1/7	1
R	1/11	4

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. S DATE : 8-30-84

N to S 45 deg TRANSDUCER

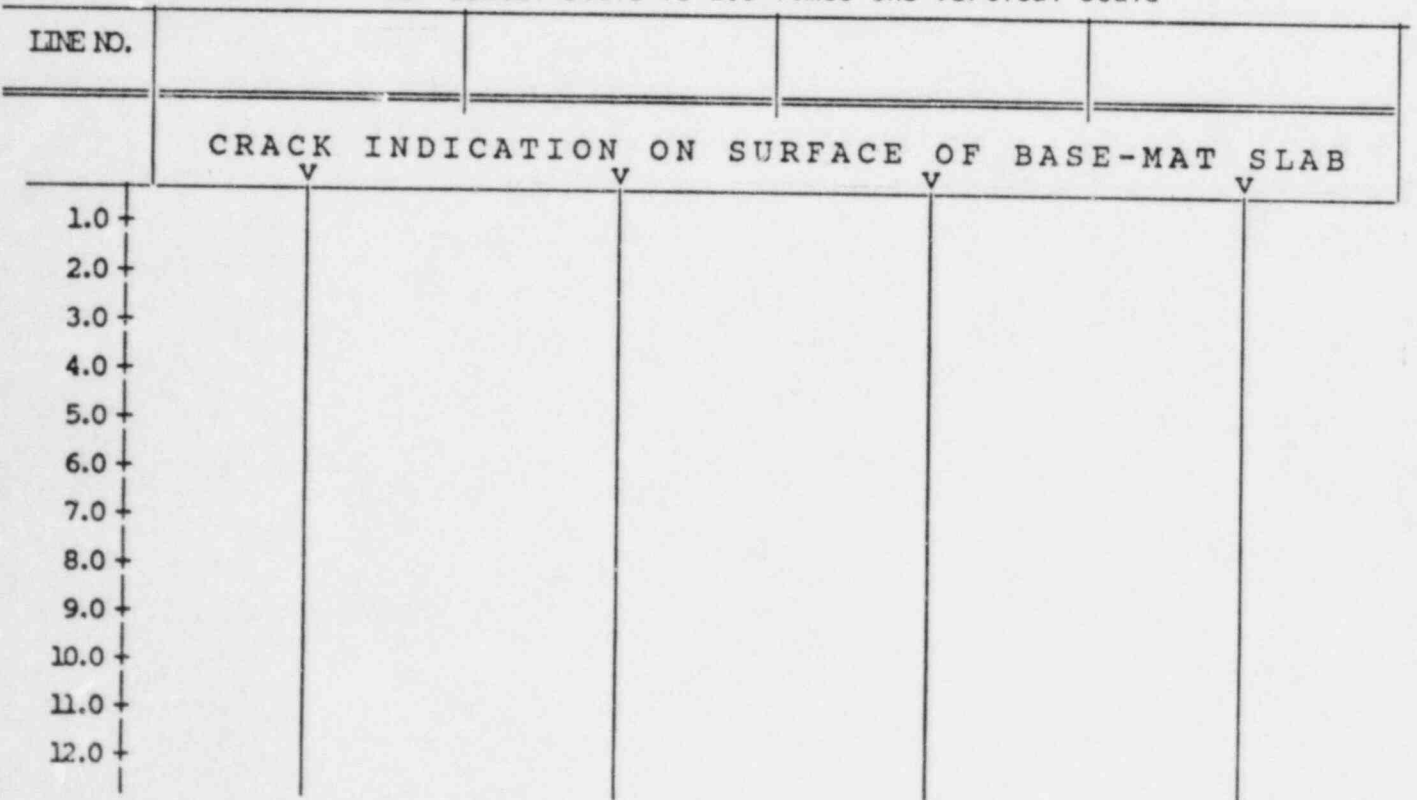
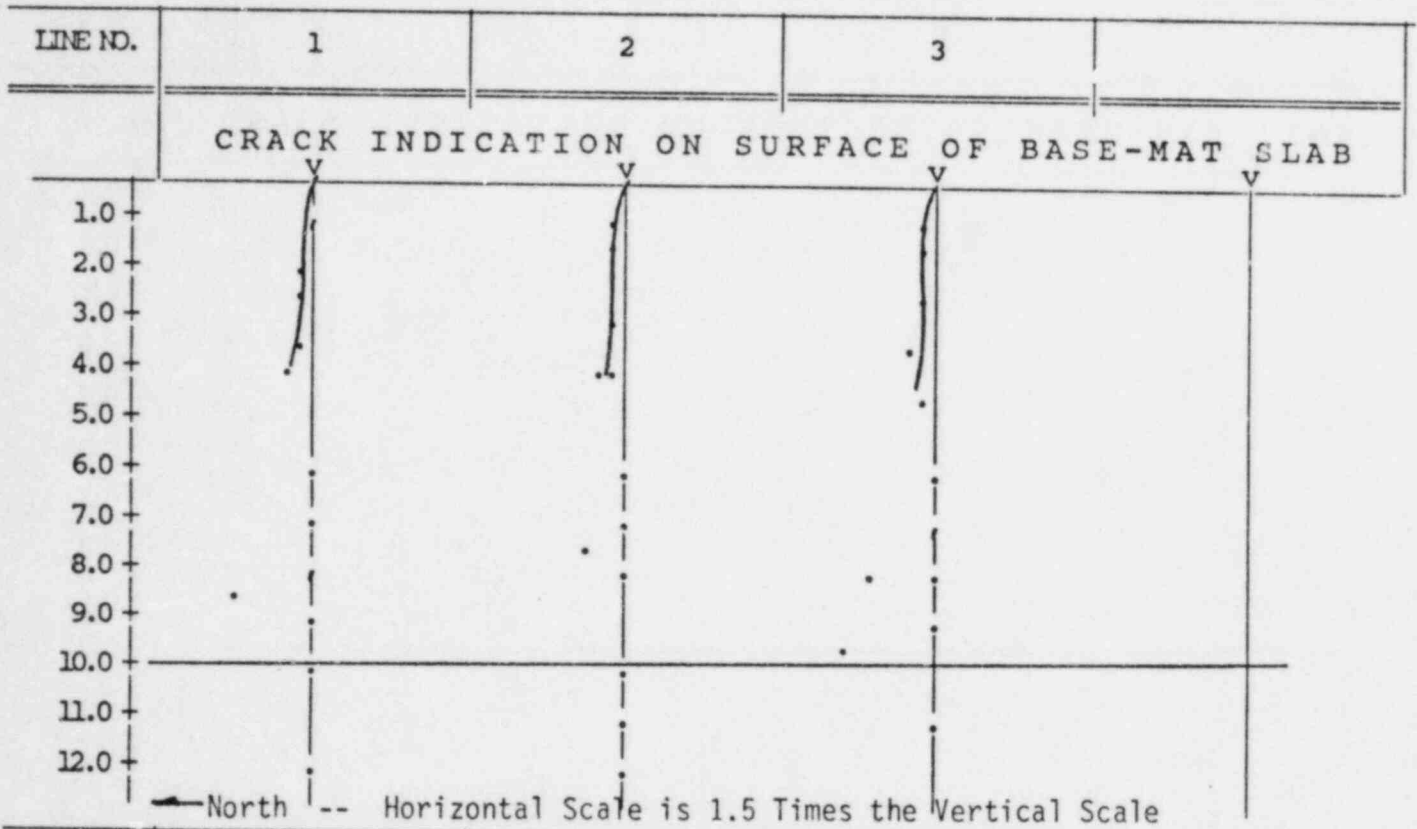
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	70	190	290	380	440	0	0	630	0	0	910	0
LINE 1	0.66 0.34 27.26	1.79 0.21 6.64	2.73 0.27 5.55	3.58 0.42 6.64	4.15 0.85 11.60	0.00 0.00 0.00	0.00 0.00 0.00	5.94 2.06 19.13	0.00 0.00 0.00	0.00 0.00 0.00	8.58 2.42 15.75	0.00 0.00 0.00
	80	180	295	400	430	0	0	0	810	0	0	0
LINE 2	0.75 0.25 18.05	1.70 0.30 10.12	2.78 0.22 4.50	3.77 0.23 3.47	4.05 0.95 13.13	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	7.64 1.36 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	180	260	360	480	0	390	0	0	840	0	990
LINE 3	0.75 0.25 18.05	1.70 0.30 10.12	2.45 0.55 12.62	3.39 0.61 10.12	4.53 0.47 5.99	0.00 0.00 0.00	3.68 3.32 42.11	0.00 0.00 0.00	0.00 0.00 0.00	7.92 2.08 14.72	0.00 0.00 0.00	9.33 2.67 15.94

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. S DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3540 HUNTCLEFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
S	1/11	4
S	2/9	3
S	3/7	2
S	3/10	3
S	3/12	3

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION T

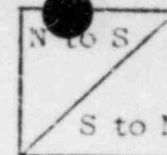
OPERATOR R.A. MUENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO ⊥	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	95 0	170 0	270 350	350 0	480 0	590 670	690 790	740 940	840 1040	960 890 0	1020 960 0	1100 1340
LINE NO. 2	95 0	170 230	285 0	380 460	440 620	570 690	670 0	740 0	850 0	950 1150	0 0	0 0
LINE NO. 3	100 100	190 0	290 0	395 455	470 0	540 0	670 810	740 940	870 1030	960 910 0	1040 0	1110 0
LINE NO. 4	90 110	190 220	295 310	400 450	450 630	570 0	640 840	770 910	803 0	950 890 0	1030 960 0	1210 0
LINE NO. 5	80 0	180 230	290 0	350 500	440 620	570 0	640 840	770 0	800 1100	980 920 0	1060 990 0	1140 0
LINE NO. 6	80 120	180 0	290 0	400 0	440 620	580 690	640 840	800 900	890 0	990 0	1050 1210	0 0
LINE NO. 7	100 110	190 210	310 310	380 460	500 570	550 0	680 0	0 0	430* 0	0 0	620* 0	0 0
LINE NO. 8	80 0	180 0	250 0	370 0	400 650	550 720	560 0	690 0	740 0	890 0	0 0	940* 0

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION T

OPERATOR R.A. MUENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 9	80 120	180 230	268 0	390 0	0 0	480* 0	0 0	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 10	80 0	190 0	290 0	410 0	0 0	0 0	640 0	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 11	95 115	175 230	295 0	0 0	410 0	0 0	0 0	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 12	100 110	205 215	310 0	0 0	410 580	0 690	0 0	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 13	100 0	200 210	310 0	0 0	0 0	340* 0	0 0	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 14	90 0	190 0	300 0	0 0	440 0	0 0	590 0	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO.												
LINE NO.												

127

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. T DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	95	170	270	350	480	590	690	740	840	890	960	1100
LINE 1	0.90 0.10 6.64	1.60 0.40 13.92	2.55 0.45 10.12	3.30 0.70 11.98	4.53 0.47 5.99	5.56 0.44 4.50	6.51 0.49 4.35	6.98 1.02 8.34	7.92 1.08 7.77	8.39 1.61 10.85	9.05 1.95 12.15	10.37 1.63 8.93
	95	170	285	380	440	570	670	740	850	950	0	0
LINE 2	0.90 0.10 6.64	1.60 0.40 13.92	2.69 0.31 6.64	3.58 0.42 6.64	4.15 0.85 11.60	5.37 0.63 6.64	6.32 0.68 6.17	6.98 1.02 8.34	8.01 0.99 7.02	8.96 1.04 6.64	0.00 0.00 0.00	0.00 0.00 0.00
	100	190	290	395	470	540	670	740	870	910	1040	1110
LINE 3	0.94 0.06 3.47	1.79 0.21 6.64	2.73 0.27 5.55	3.72 0.28 4.24	4.43 0.57 7.31	5.09 0.91 10.12	6.32 0.68 6.17	6.98 1.02 8.34	8.20 0.80 5.55	8.58 1.42 9.40	9.81 1.19 6.95	10.47 1.53 8.34
	90	190	295	400	450	570	640	770	800	890	960	1210
LINE 4	0.85 0.15 10.12	1.79 0.21 6.64	2.78 0.22 4.50	3.77 0.23 3.47	4.24 0.76 10.12	5.37 0.63 6.64	6.03 0.97 9.10	7.26 0.74 5.82	7.54 1.46 10.94	8.39 1.61 10.85	9.05 1.95 12.15	11.41 0.59 2.97
	80	180	290	350	440	570	640	770	800	920	990	1140
LINE 5	0.75 0.25 18.05	1.70 0.30 10.12	2.73 0.27 5.55	3.30 0.70 11.98	4.15 0.85 11.60	5.37 0.63 6.64	6.03 0.97 9.10	7.26 0.74 5.82	7.54 1.46 10.94	8.67 1.33 8.69	9.33 1.67 10.12	10.75 1.25 6.64
	80	180	290	400	440	580	640	800	830	990	1050	0
LINE 6	0.75 0.25 18.05	1.70 0.30 10.12	2.73 0.27 5.55	3.77 0.23 3.47	4.15 0.85 11.60	5.47 0.53 5.55	6.03 0.97 9.10	7.54 0.46 3.47	7.83 1.17 8.54	9.33 0.67 4.08	9.90 1.10 6.34	0.00 0.00 0.00
	100	190	310	380	500	550	680	0	430	0	620	0
LINE 7	0.94 0.06 3.47	1.79 0.21 6.64	2.92 0.08 1.51	3.58 0.42 6.64	4.71 0.29 3.47	5.19 0.81 8.93	6.41 0.59 5.25	0.00 0.00 0.00	4.05 4.95 50.66	0.00 0.00 0.00	5.85 5.15 41.41	0.00 0.00 0.00
	80	180	250	370	400	550	560	690	740	890	0	940
LINE 8	0.75 0.25 18.05	1.70 0.30 10.12	2.36 0.64 15.26	3.49 0.51 8.34	3.77 1.23 18.05	5.19 0.81 8.93	5.28 1.72 18.05	6.51 1.49 12.94	6.98 2.02 16.17	8.39 1.61 10.85	0.00 0.00 0.00	8.86 3.14 19.50

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. T DATE : 8-30-84

N to S 45 deg TRANSDUCER

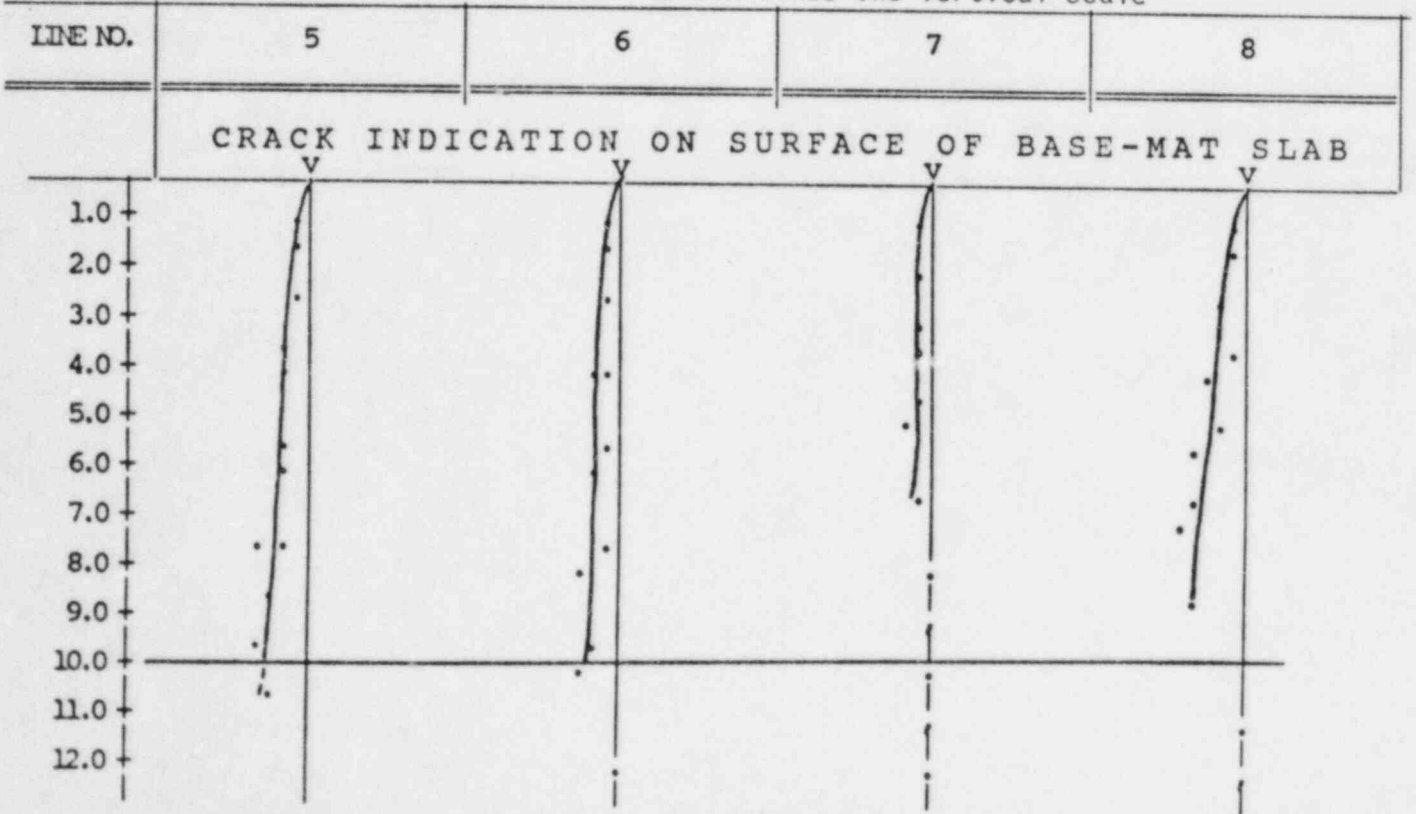
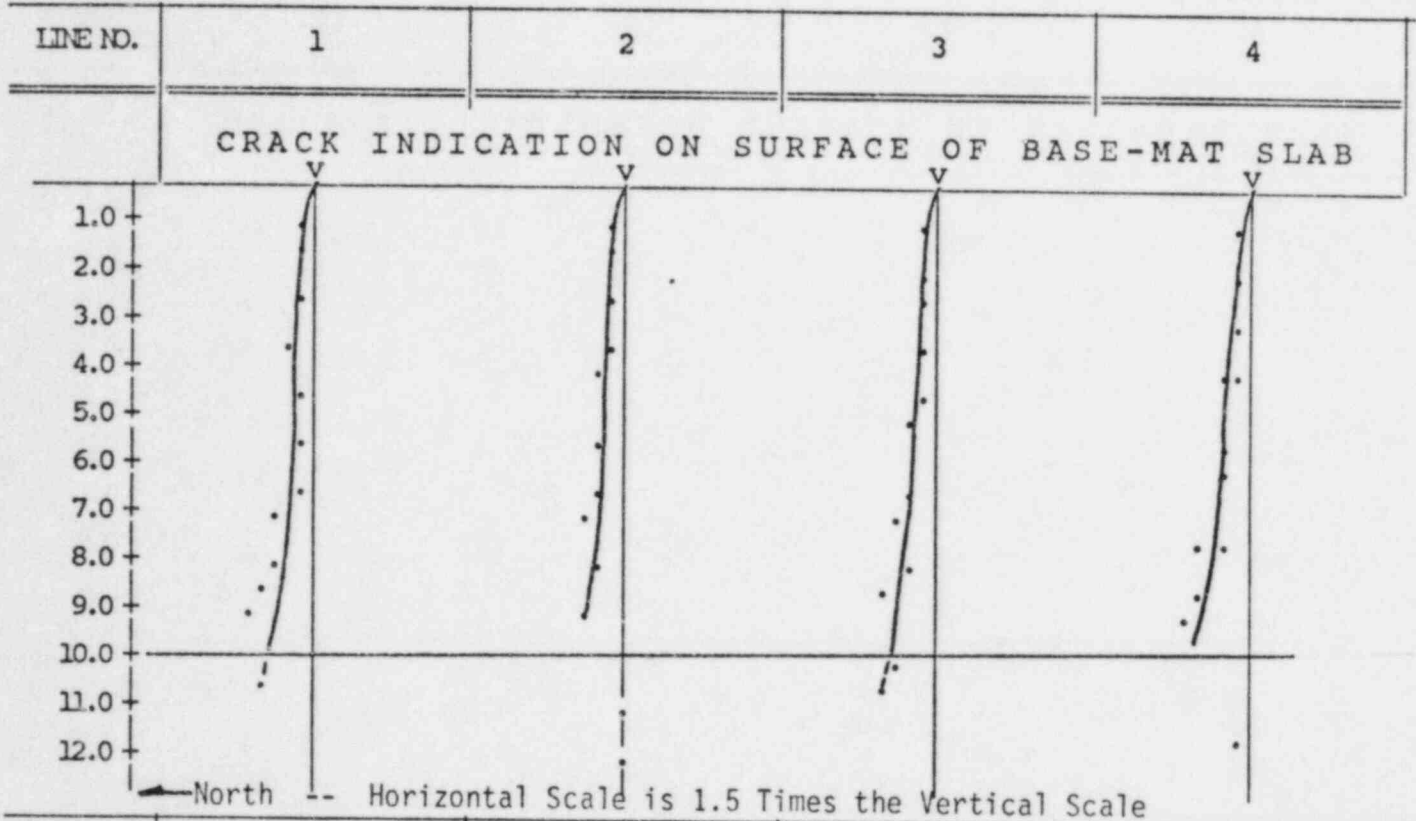
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	80	180	270	390	0	480	0	0	0	0	0	0
LINE 9	0.75 0.25 18.05	1.70 0.30 10.12	2.55 0.45 10.12	3.68 0.32 5.02	0.00 0.00 0.00	4.53 1.47 18.05	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	190	290	410	0	0	640	0	0	0	0	0
LINE 10	0.75 0.25 18.05	1.79 0.21 6.64	2.73 0.27 5.55	3.87 0.13 1.99	0.00 0.00 0.00	0.00 0.00 0.00	6.03 0.97 9.10	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	95	175	295	0	410	0	0	0	0	0	0	0
LINE 11	0.90 0.10 6.64	1.65 0.35 11.98	2.78 0.22 4.50	0.00 0.00 0.00	3.87 1.13 16.36	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	205	310	0	410	0	0	0	0	0	0	0
LINE 12	0.94 0.06 3.47	1.93 0.07 1.99	2.92 0.08 1.51	0.00 0.00 0.00	3.87 1.13 16.36	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	200	310	0	0	340	0	0	0	0	0	0
LINE 13	0.94 0.06 3.47	1.89 0.11 3.47	2.92 0.08 1.51	0.00 0.00 0.00	0.00 0.00 0.00	3.21 2.79 41.08	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	190	300	0	440	0	590	0	0	0	0	0
LINE 14	0.85 0.15 10.12	1.79 0.21 6.64	2.83 0.17 3.47	0.00 0.00 0.00	4.15 0.85 11.60	0.00 0.00 0.00	5.56 1.44 14.49	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. T DATE : 8-30-84

N to S 45 deg TRANSDUCER

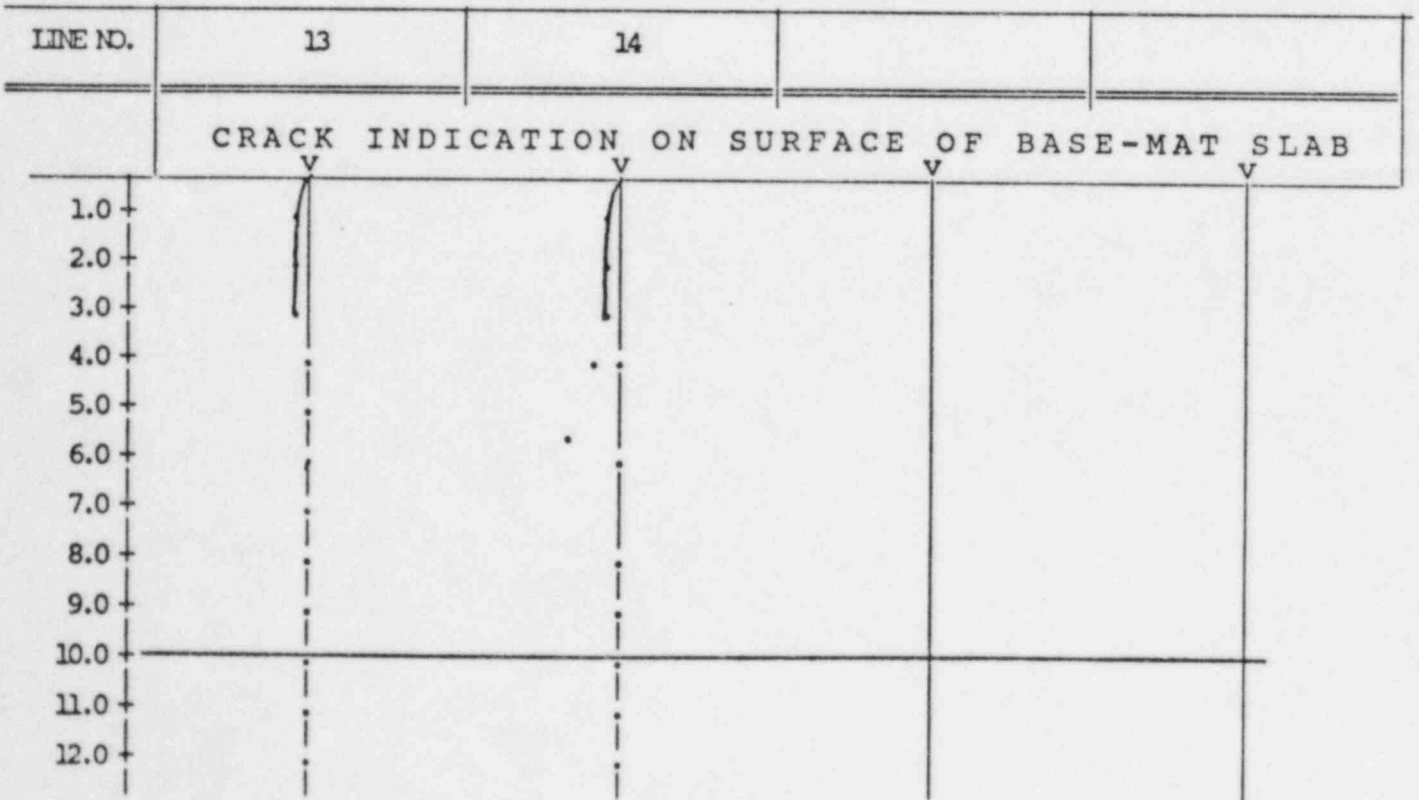
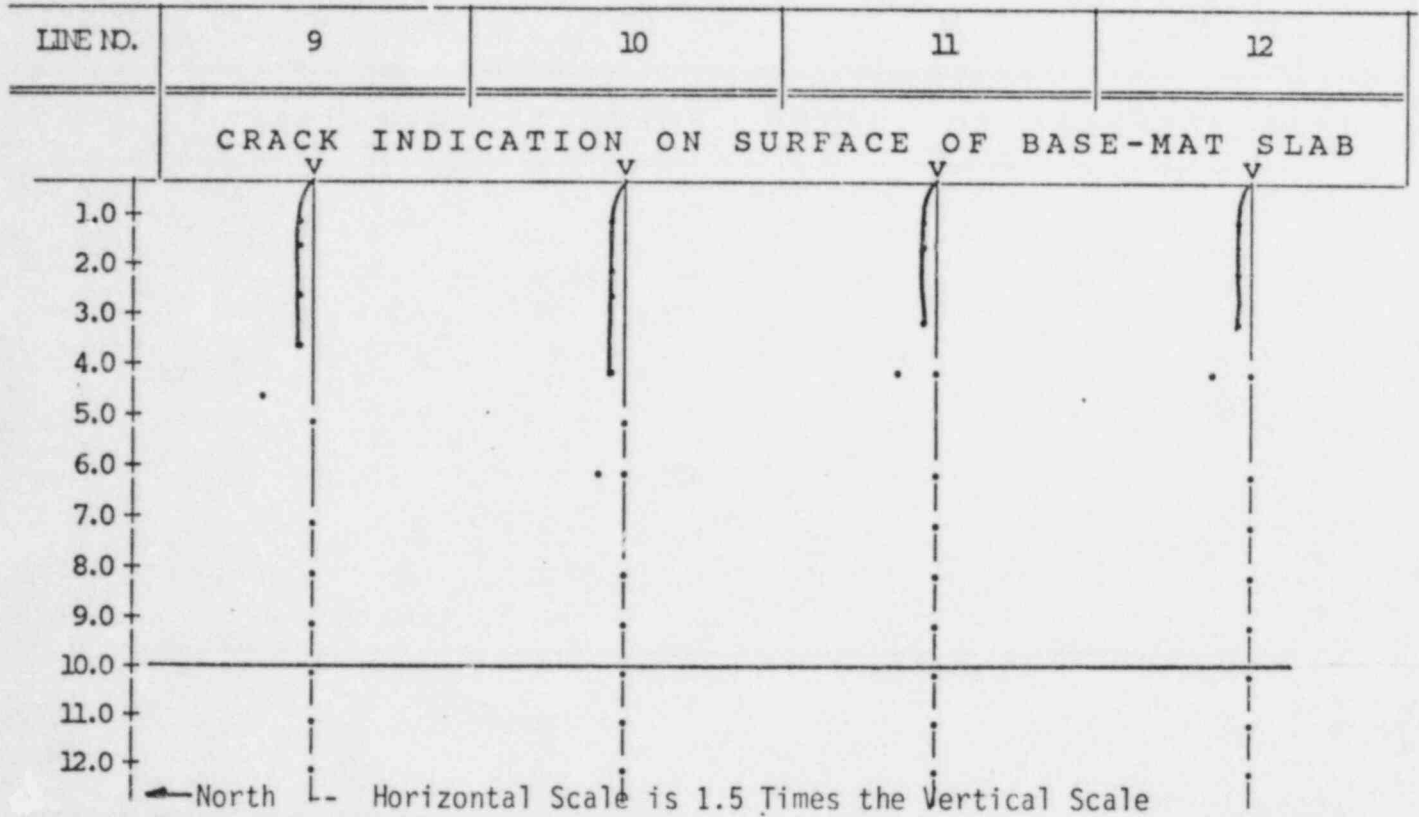


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. T DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
T	4/12	4
T	7/7	3
T	7/9	3
T	7/11	4
T	8/12	4
T	9/6	2
T	10/7	2
T	11/5	1
T	12/5	1
T	13/6	1
T	14/5	1
T	14/7	1

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION U

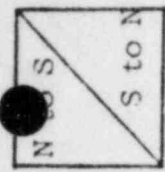
OPERATOR R.A. MUENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSLC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	90 0	190 0	310 320	400 460	500 570	640 0	730 750	850 0	940 0	1060 0	1140 1180	0 0
LINE NO. 2	80 0	180 0	310 310	410 430	510 540	590 0	670 810	790 0	840 1140	950 1150	0 840*	0 980*
LINE NO. 3	100 115	195 0	330 330	410 430	510 560	560 700	640* 0	0 0	640* 0	0 0	0 0	840* 0
LINE NO. 4	100 110	190 0	285 0	415 430	480 580	630 0	670 740	785 900	840 0	0 1090	0 1180	0 1290
LINE NO. 5	80 115	190 210	290 0	400 440	460 600	0 0	440* 0	0 900	0 980	390* 1090	0 0	0 0
LINE NO. 6	100 115	190 210	295 0	380 460	0 0	310* 0	0 0	0 870	0 990	0 1090	0 1190	0 0
LINE NO. 7	80 0	180 220	280 360	0 0	290* 0	0 0	0 760	0 870	470* 990	0 0	580* 0	0 0
LINE NO. 8	80 0	190 220	270 0	0 0	190* 0	0 0	240* 0	740 0	0 0	0 0	480* 1180	0 1290

TEST DIRECTION

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION U OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. E542588

TEST NO. MSEC TO <u>L</u>	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 9 100	105	195	0	240*	0	0	310*	480*	0	0	0	0
LINE NO.		210	0	0	580	0	770	0	0	0	940*	890*
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. U DATE : 8-30-84

N to S 45 deg TRANSDUCER

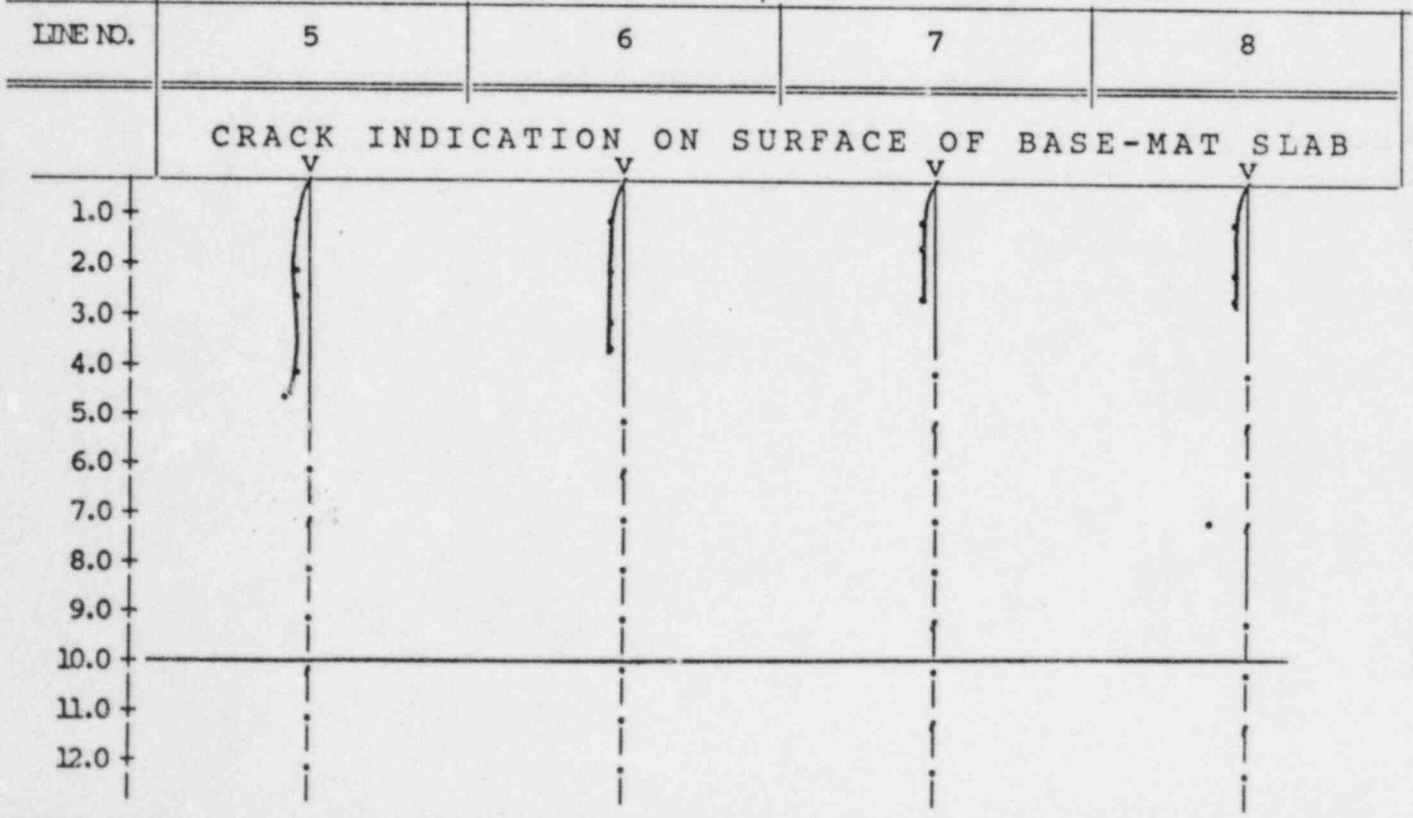
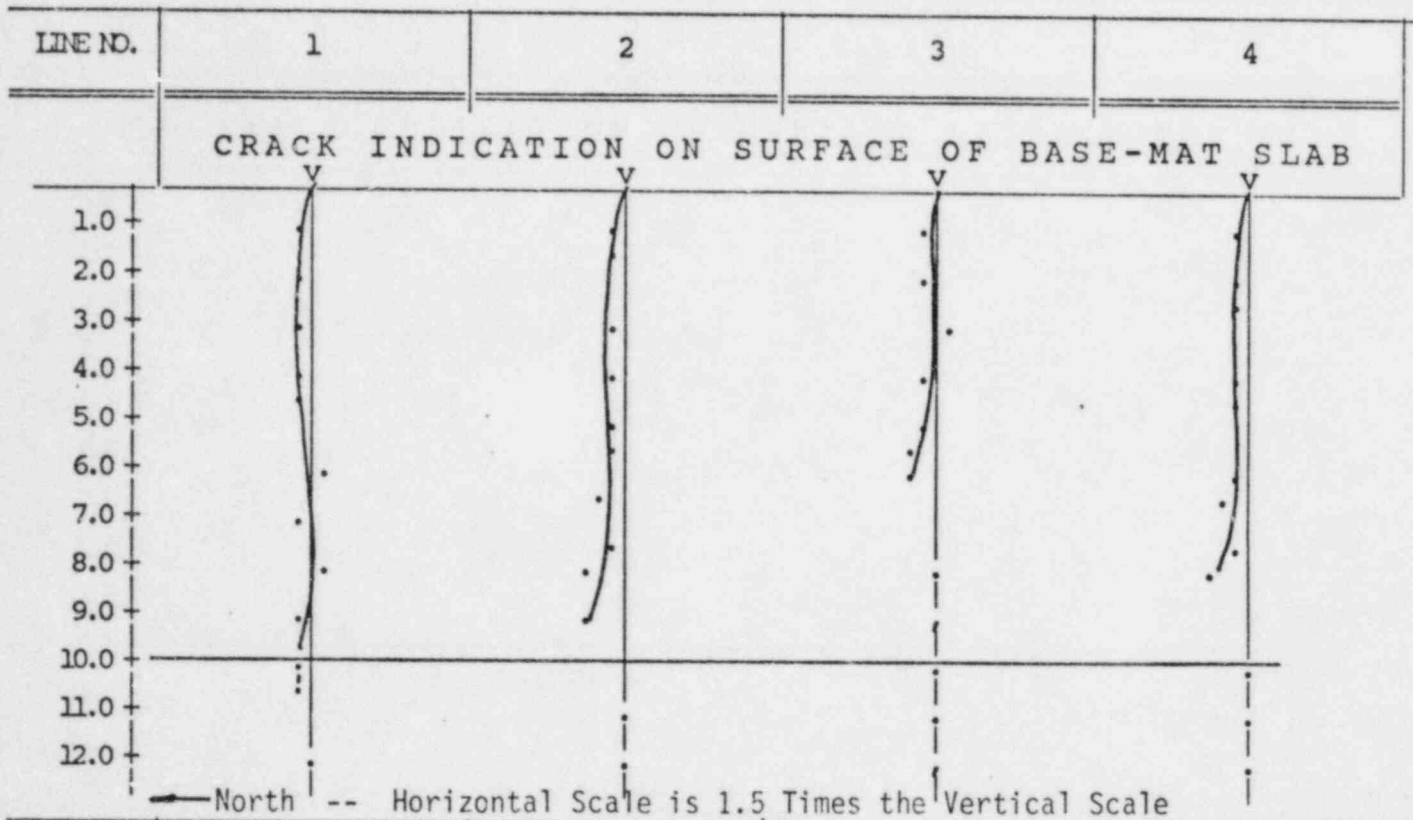
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	90	190	310	400	500	640	730	850	940	1060	1140	0
LINE 1	0.85 0.15 10.12	1.79 0.21 6.64	2.92 0.08 1.51	3.77 0.23 3.47	4.71 0.29 3.47	6.03 0.03 0.32	6.88 0.12 0.98	8.01 0.01 0.10	8.86 0.14 0.89	9.99 0.01 0.04	10.75 0.25 1.34	0.00 0.00 0.00
	80	180	310	410	510	590	670	790	840	950	0	0
LINE 2	0.75 0.25 18.05	1.70 0.30 10.12	2.92 0.08 1.51	3.87 0.13 1.99	4.81 0.19 2.28	5.56 0.44 4.50	6.32 0.68 6.17	7.45 0.55 4.24	7.92 1.08 7.77	8.96 1.04 6.64	0.00 0.00 0.00	0.00 0.00 0.00
	100	195	330	410	510	560	640	0	690	0	0	840
LINE 3	0.94 0.06 3.47	1.84 0.16 5.02	3.11 0.11 2.05	3.87 0.13 1.99	4.81 0.19 2.28	5.28 0.72 7.77	6.03 0.97 9.10	0.00 0.00 0.00	6.51 2.49 20.98	0.00 0.00 0.00	0.00 0.00 0.00	7.92 4.08 27.26
	100	190	285	415	480	630	670	785	840	0	0	0
LINE 4	0.94 0.06 3.47	1.79 0.21 6.64	2.69 0.31 6.64	3.91 0.09 1.28	4.53 0.47 5.99	5.94 0.06 0.58	6.32 0.68 6.17	7.40 0.60 4.63	7.92 1.08 7.77	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	190	290	400	460	0	440	0	0	390	0	0
LINE 5	0.75 0.25 18.05	1.79 0.21 6.64	2.73 0.27 5.55	3.77 0.23 3.47	4.34 0.66 8.69	0.00 0.00 0.00	4.15 2.85 34.51	0.00 0.00 0.00	0.00 0.00 0.00	3.68 6.32 59.82	0.00 0.00 0.00	0.00 0.00 0.00
	100	190	295	380	0	310	0	0	0	0	0	0
LINE 6	0.94 0.06 3.47	1.79 0.21 6.64	2.78 0.22 4.50	3.58 0.42 6.64	0.00 0.00 0.00	2.92 3.08 46.48	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	180	280	0	290	0	0	0	470	0	580	0
LINE 7	0.75 0.25 18.05	1.70 0.30 10.12	2.64 0.36 7.77	0.00 0.00 0.00	2.73 2.27 39.65	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	4.43 4.57 45.88	0.00 0.00 0.00	5.47 5.53 45.33	0.00 0.00 0.00
	80	190	270	0	190	0	240	740	0	0	480	0
LINE 8	0.75 0.25 18.05	1.79 0.21 6.64	2.55 0.45 10.12	0.00 0.00 0.00	1.79 3.21 60.83	0.00 0.00 0.00	2.26 4.74 64.47	6.98 1.02 8.34	0.00 0.00 0.00	0.00 0.00 0.00	4.53 6.47 55.05	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. U DATE : 8-30-84

N to S 45 deg TRANSDUCER

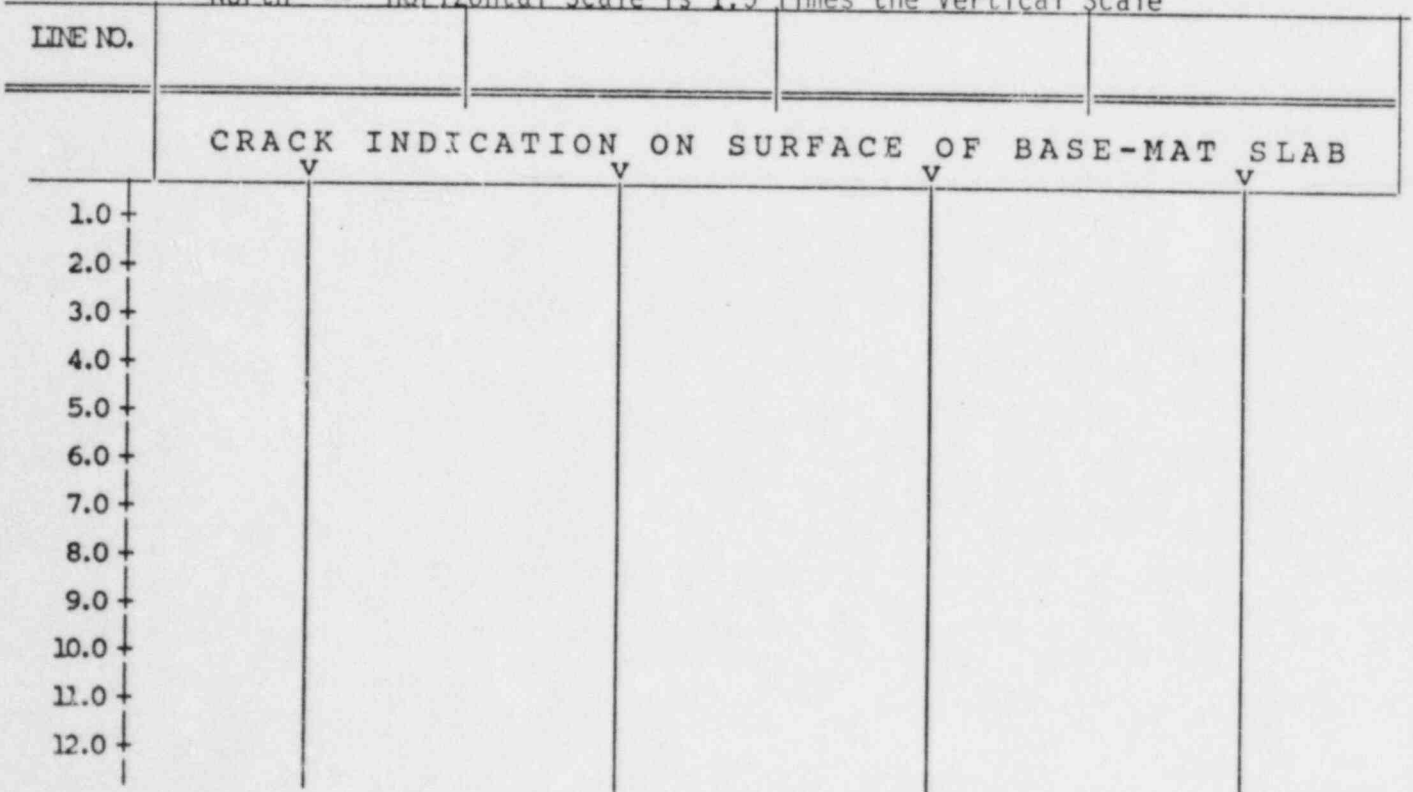
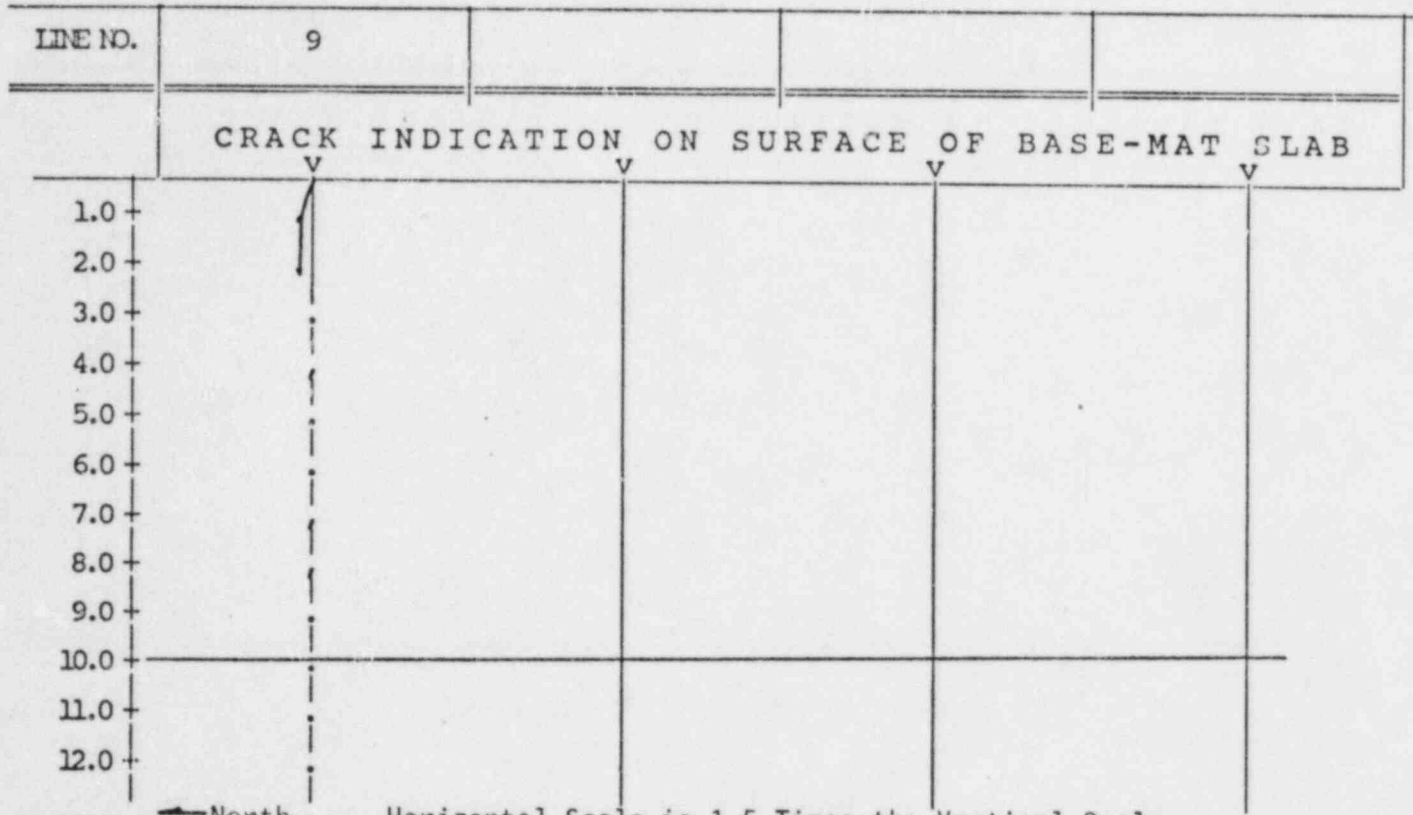


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. U DATE : 8-30-84

N to S 45 deg TRANSDUCER



Wuenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
U	3/9	3
U	3/12	4
U	5/7	2
U	5/10	4
U	6/6	2
U	7/9	2
U	7/11	4
U	8/5	3
U	8/7	3
U	8/8	2
U	8/11	4
U	9/4	2
U	9/7	1
U	9/8	1

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. V DATE : 8-30-84

N to S 45 deg TRANSDUCER

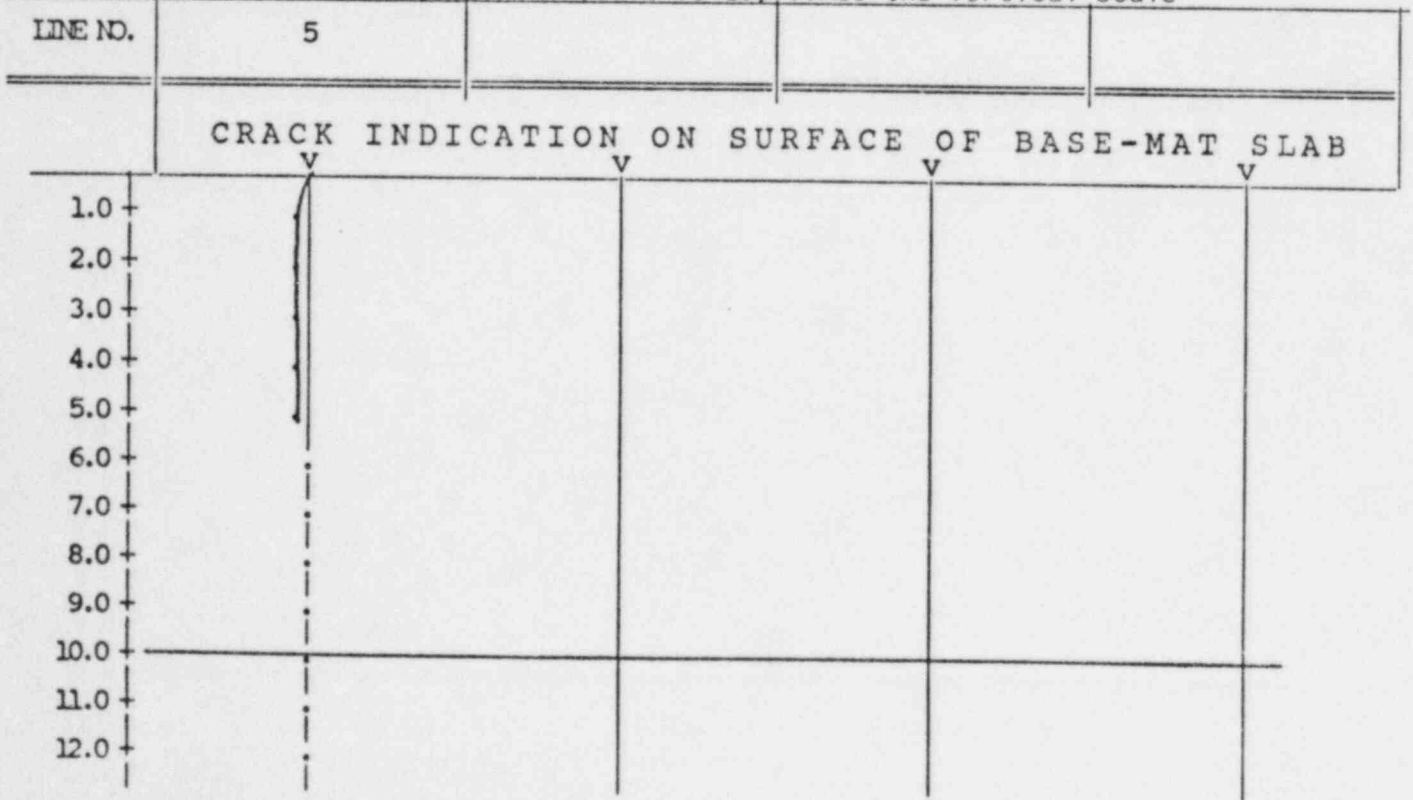
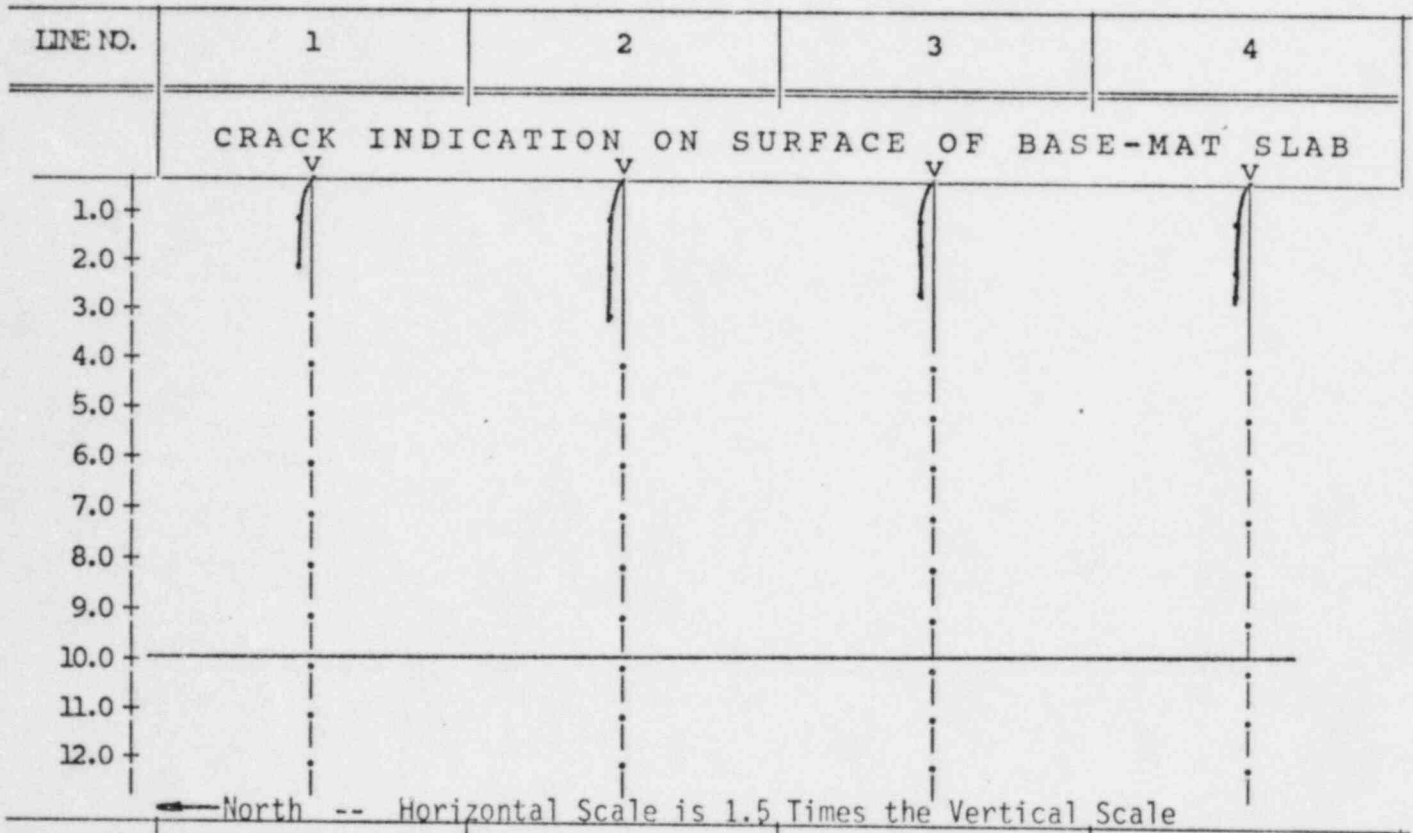
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	90 0.85 0.15 10.12	205 1.93 0.07 1.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 2	90 0.85 0.15 10.12	195 1.84 0.16 5.02	310 2.92 0.08 1.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 3	80 0.75 0.25 18.05	160 1.51 0.49 18.05	260 2.45 0.55 12.62	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 4	90 0.85 0.15 10.12	195 1.84 0.16 5.02	290 2.73 0.27 5.55	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 5	100 0.94 0.06 3.47	200 1.89 0.11 3.47	310 2.92 0.08 1.51	410 3.87 0.13 1.99	520 4.90 0.10 1.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. V DATE : 8-30-84

N to S 45 deg TRANSDUCER



Wuenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4051 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LIME NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
V	NONE NOTED	

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



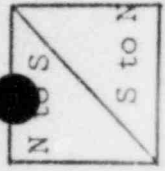
CRACK IDENTIFICATION X OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO <u> 1 </u>	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	100 110	210 210	300 340	410 440	505 0	NA NA	NA NA					
LINE NO. 2	80 110	190 210	300 340	405 440	470 590	NA NA	NA NA					
LINE NO. 3	100 115	195 0	300 0	NA NA	NA NA							
LINE NO. 4	100 110	205 210	0 0	NA NA	NA NA							
LINE NO. 5	85 115	205 215	NA NA	NA NA								
LINE NO. 6	100 105	200 220	300 330	0 0	NA NA							
LINE NO. 7	80 110	190 210	300 330	400 0	470 0	NA NA						
LINE NO. 8	100 110	200 220	310 340	0 0	NA NA							

143

TEST DIRECTION

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION X OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. E542588

TEST NO. SEC TO ⊥	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 9	100 0	210 0	0 0	0 0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 10	95 0	0 0	240 0	0 0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 11	95 0	0 0	0 0	330* 0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 12	85 0	310* 0	0 0	0 0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 13	85 0	0 0	0 0	290* 0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 14	85 0	0 0	0 200*	0 0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 15	90 0	0 0	0 0	0 0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
LINE NO. 16	90 0	310* 0	0 0	0 190*	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. X DATE : 8-30-84 N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	210	300	410	505	0	0	0	0	0	0	0
LINE 1	0.94 0.06 3.47	1.98 0.02 0.58	2.83 0.17 3.47	3.87 0.13 1.99	4.76 0.24 2.87	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	190	300	405	470	0	0	0	0	0	0	0
LINE 2	0.75 0.25 18.05	1.79 0.21 6.64	2.83 0.17 3.47	3.82 0.18 2.72	4.43 0.57 7.31	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	150	300	0	0	0	0	0	0	0	0	0
LINE 3	0.94 0.06 3.47	1.84 0.16 5.02	2.83 0.17 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	205	0	0	0	0	0	0	0	0	0	0
LINE 4	0.94 0.06 3.47	1.93 0.07 1.99	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	85	205	0	0	0	0	0	0	0	0	0	0
LINE 5	0.80 0.20 13.92	1.93 0.07 1.99	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	200	300	0	0	0	0	0	0	0	0	0
LINE 6	0.94 0.06 3.47	1.89 0.11 3.47	2.83 0.17 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	190	300	400	470	0	0	0	0	0	0	0
LINE 7	0.75 0.25 18.05	1.79 0.21 6.64	2.83 0.17 3.47	3.77 0.23 3.47	4.43 0.57 7.31	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	200	310	0	0	0	0	0	0	0	0	0
LINE 8	0.94 0.06 3.47	1.89 0.11 3.47	2.92 0.08 1.51	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. X DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	210	0	0	0	0	0	0	0	0	0	0
LINE 9	0.94 0.06 3.47	1.98 0.02 0.58	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	95	0	240	0	0	0	0	0	0	0	0	0
LINE 10	0.90 0.10 6.64	0.00 0.00 0.00	2.26 0.74 18.05	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	95	0	0	330	0	0	0	0	0	0	0	0
LINE 11	0.90 0.10 6.64	0.00 0.00 0.00	0.00 0.00 0.00	3.11 0.89 15.94	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	85	310	0	0	0	0	0	0	0	0	0	0
LINE 12	0.80 0.20 13.92	2.92 0.92 17.52	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	85	0	0	290	0	0	0	0	0	0	0	0
LINE 13	0.80 0.20 13.92	0.00 0.00 0.00	0.00 0.00 0.00	2.73 1.27 24.84	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	85	0	0	0	0	0	0	0	0	0	0	0
LINE 14	0.80 0.20 13.92	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	0	0	0	0	0	0	0	0	0	0
LINE 15	0.85 0.15 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	310	0	0	0	0	0	0	0	0	0	0
LINE 16	0.85 0.15 10.12	2.92 0.92 17.52	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	210	0	0	0	0	0	0	0	0	0
LINE 17	0.85 0.15 10.12	0.00 0.00 0.00	1.98 1.02 27.26	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. X DATE : 8-30-84

N to S 45 deg TRANSDUCER

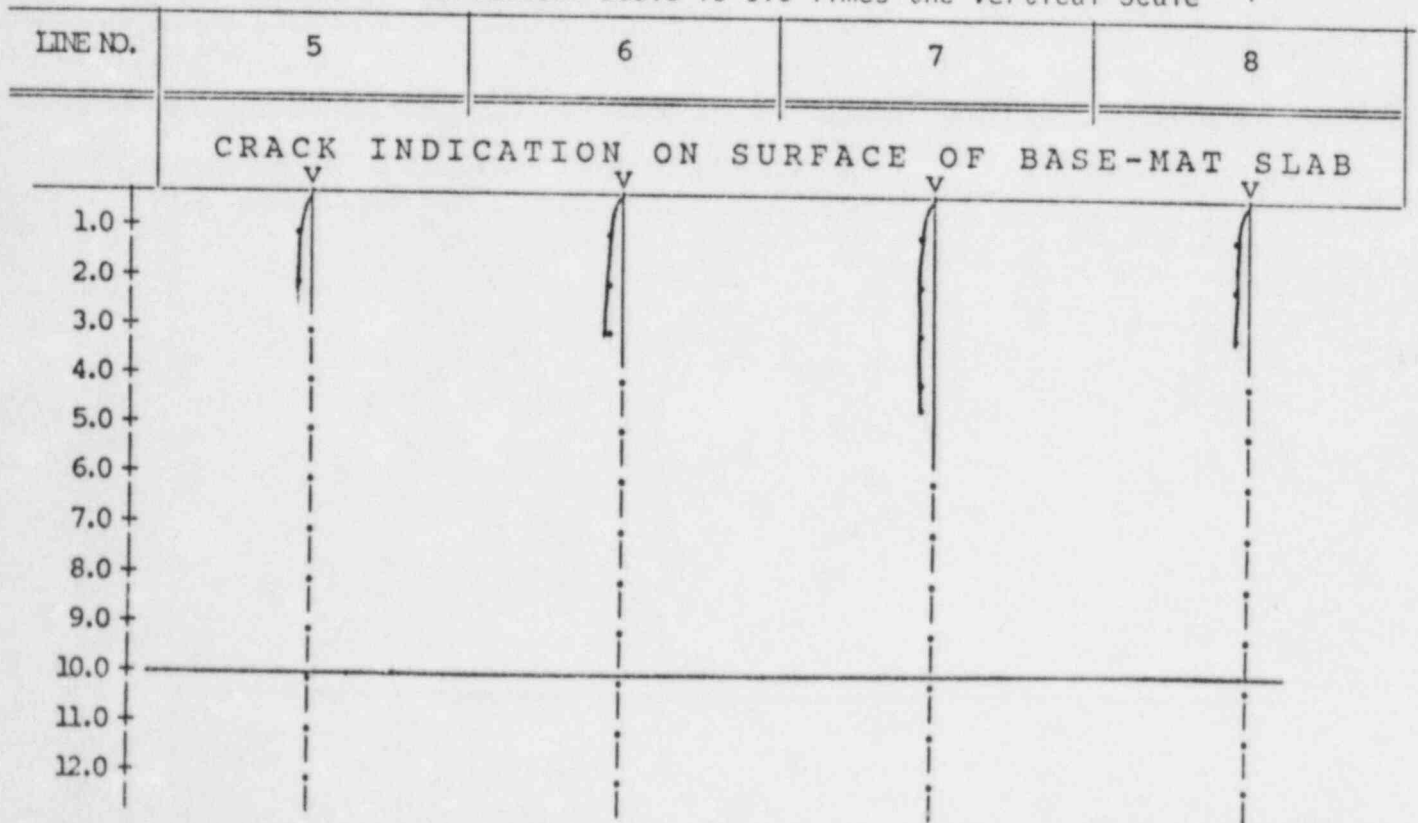
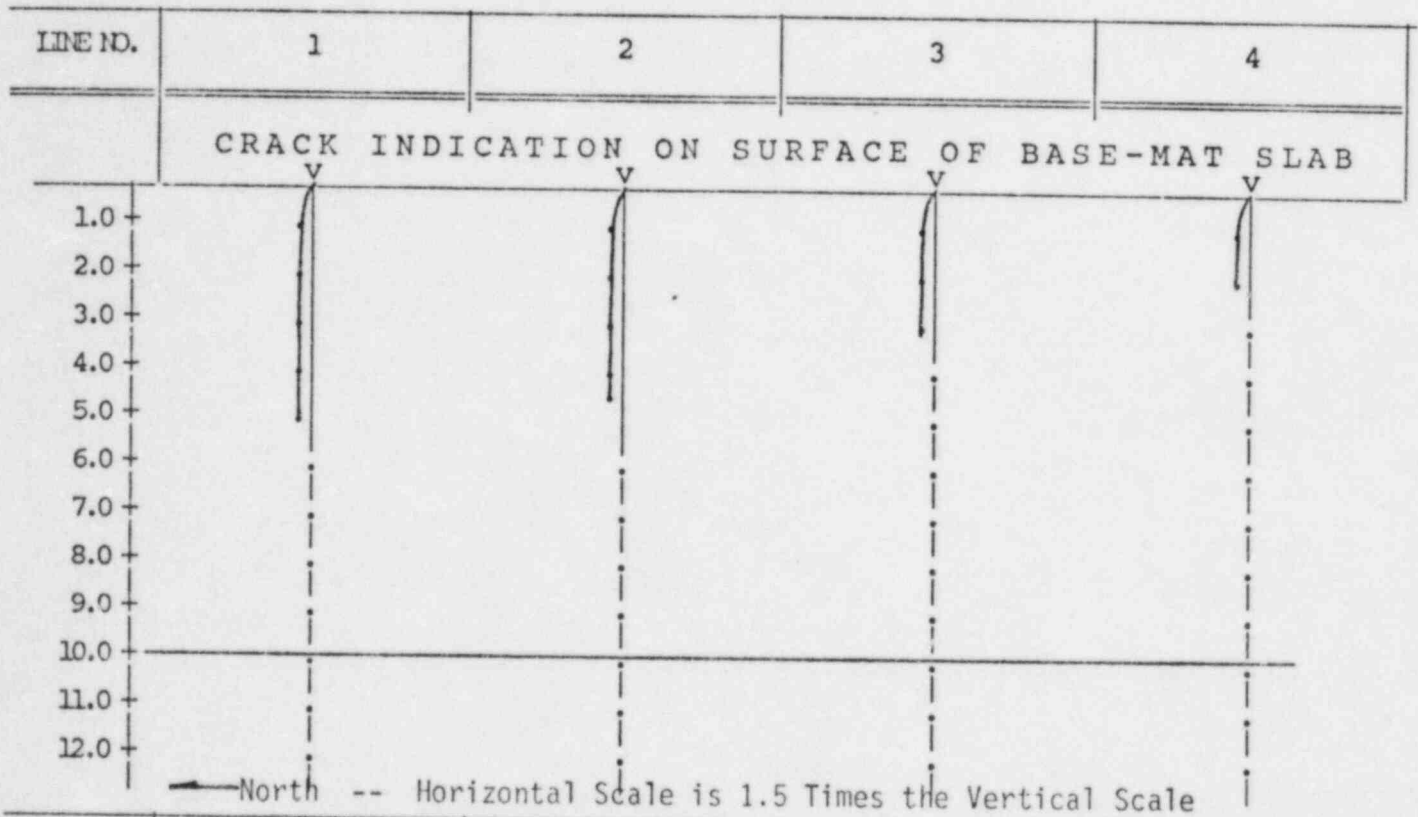
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	85	280	0	0	0	0	0	0	0	0	0	0
LINE 18	0.80 0.20 13.92	2.64 0.64 13.62	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	0	210	0	0	0	0	0	0	0	0
LINE 19	0.85 0.15 10.12	0.00 0.00 0.00	0.00 0.00 0.00	1.98 2.02 45.58	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	0	0	0	0	0	0	0	0	0	0
LINE 20	0.85 0.15 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	0	0	0	0	0	0	0	0	0	0
LINE 21	0.85 0.15 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	380	0	180	0	0	0	0	0	0	0	0
LINE 22	0.94 0.06 3.47	3.58 1.58 23.83	0.00 0.00 0.00	1.70 2.30 53.61	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. X DATE : 8-30-84

N to S 45 deg TRANSDUCER

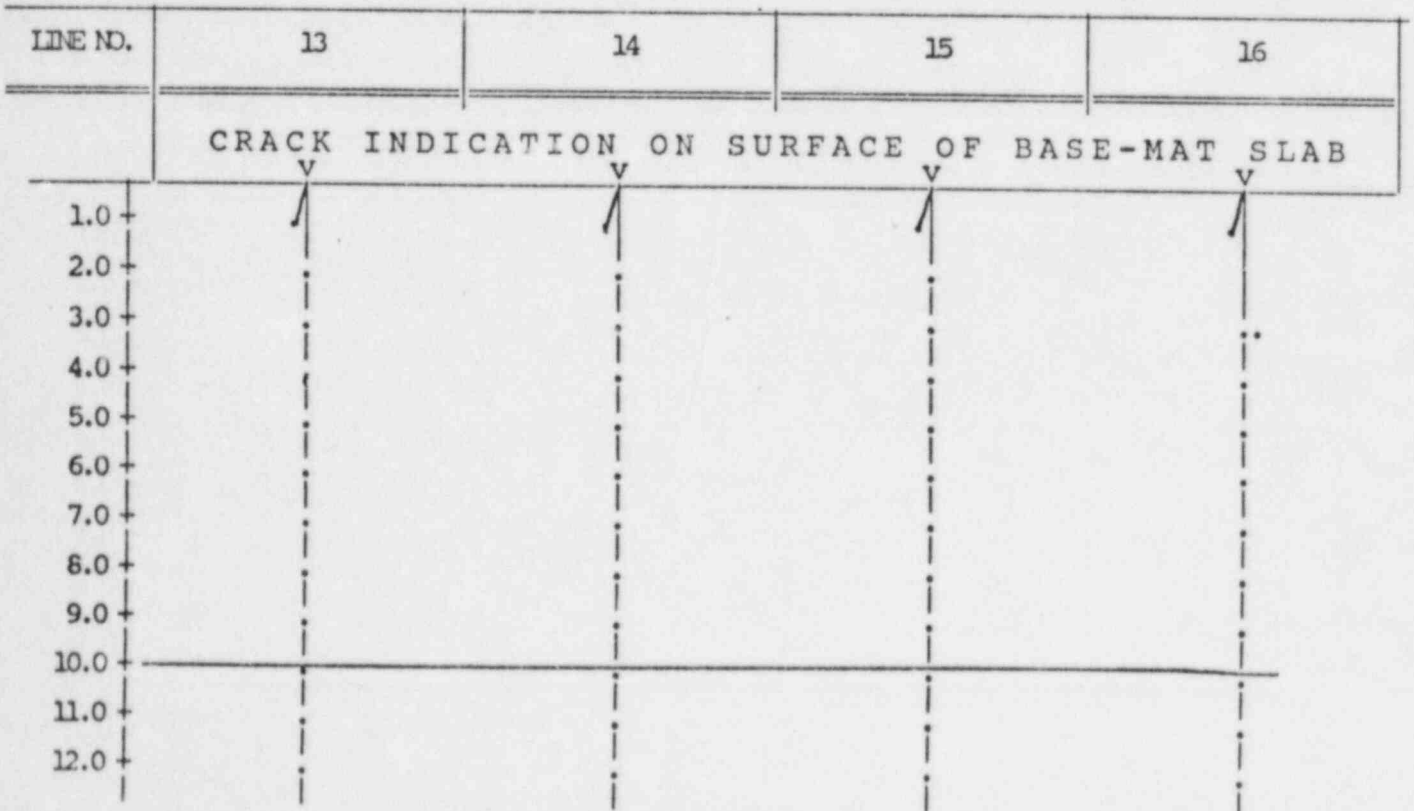
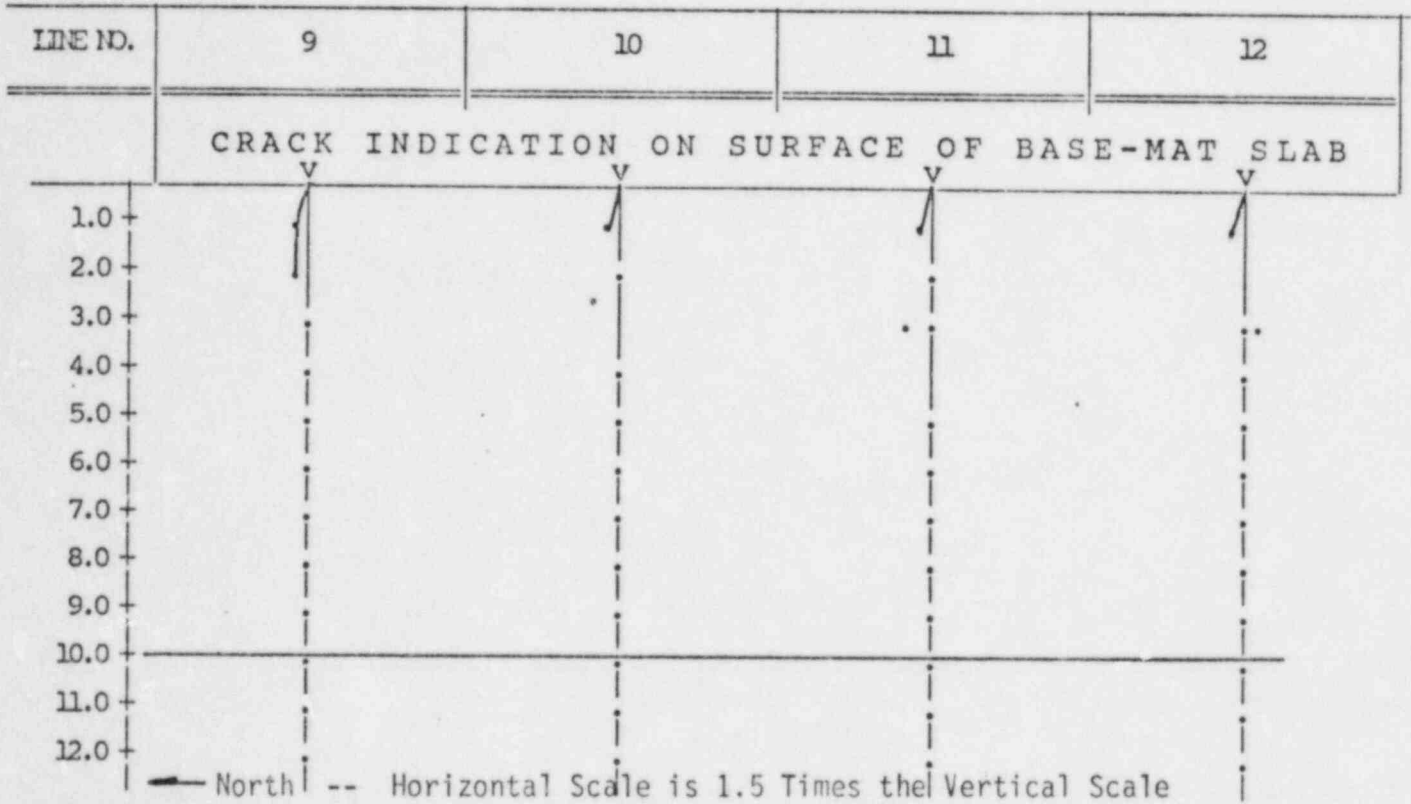


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. X DATE : 8-30-84

N to S 45 deg TRANSDUCER

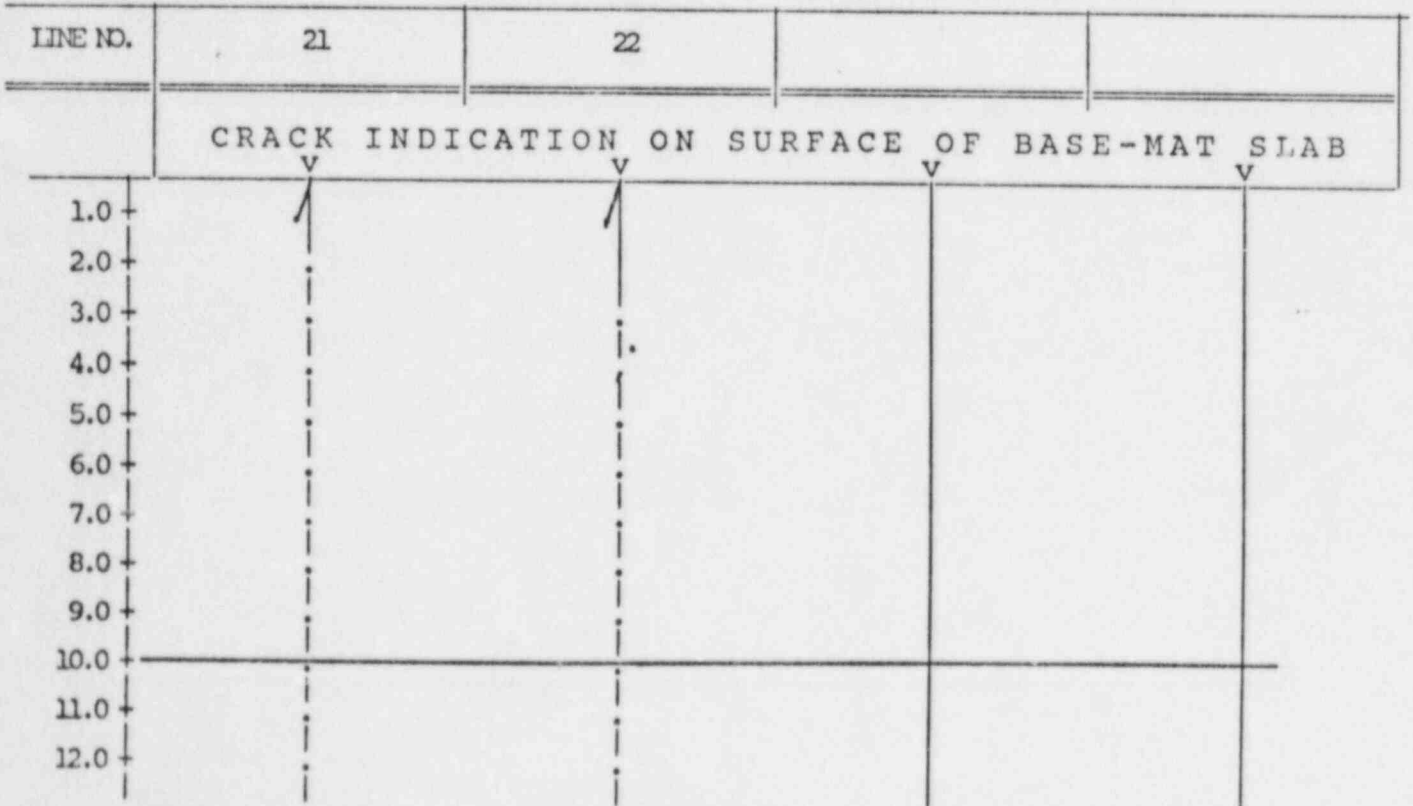
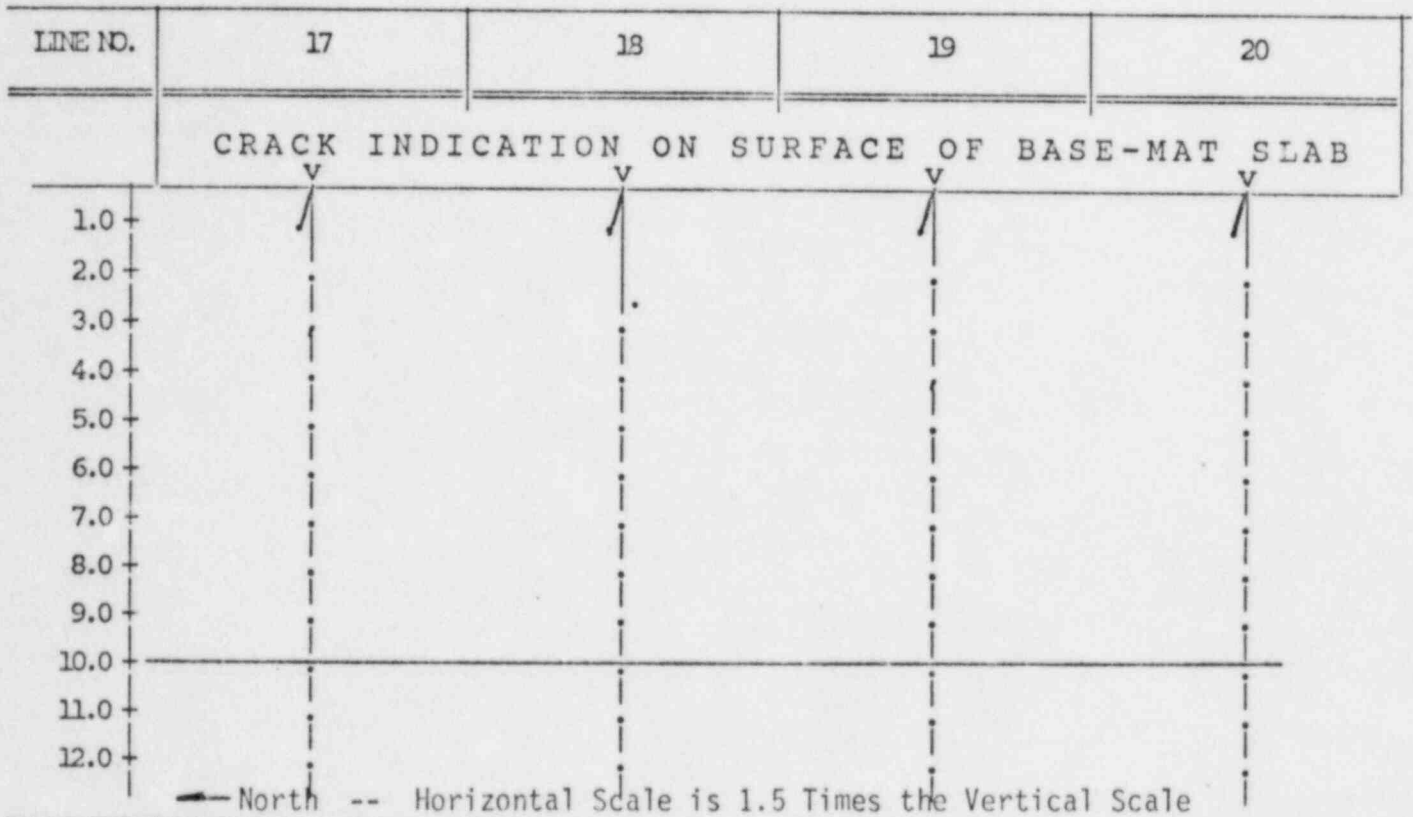


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. X DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

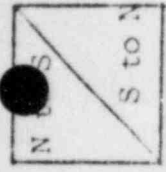
MATERIALS AND NONDESTRUCTIVE TESTING
2940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 577-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
X	12/2	1
X	13/4	1
X	16/2	3
X	18/2	3
X	22/2	3
X	22/4	3

TEST DIRECTION

MUELOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERPOFD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION Y OPERATOR R.A. MUELOW P.E. INSTRUMENT NO. B542588

TEST NO. SEC TO <u>L</u>	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	0 105	0 0	0 0	310* 0	0 0	440* 0	0 0	0 610*	0 0	NA NA		
LINE NO. 2	0 100	0 0	0 0	0 190*	0 0	0 0	0 240*	0 0	0 0	NA NA		
LINE NO. 3	0 100	0 0	0 170*	0 0	0 0	0 190*	0 0	0 290*	0 0	NA NA		
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Y DATE : 8-30-84

N to S 45 deg TRANSDUCER

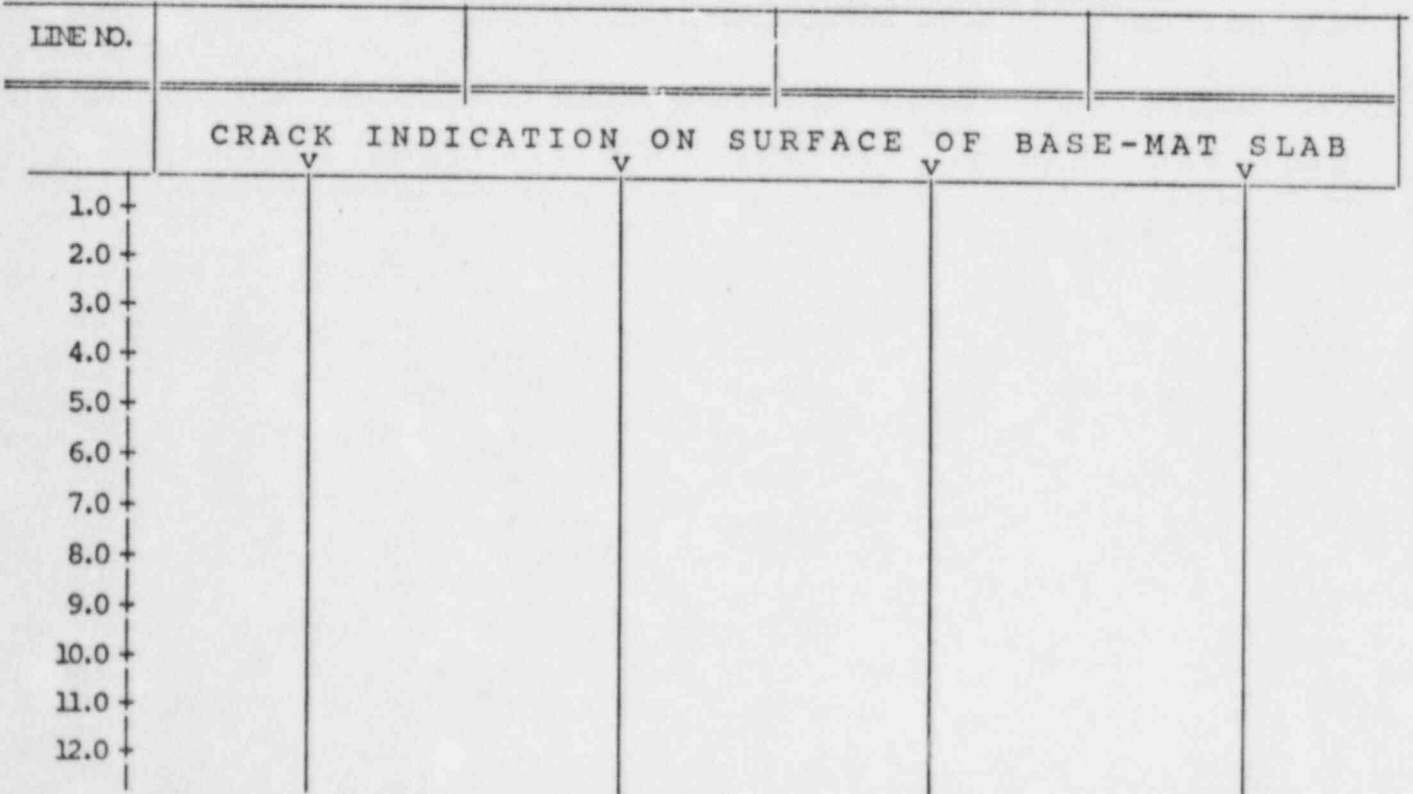
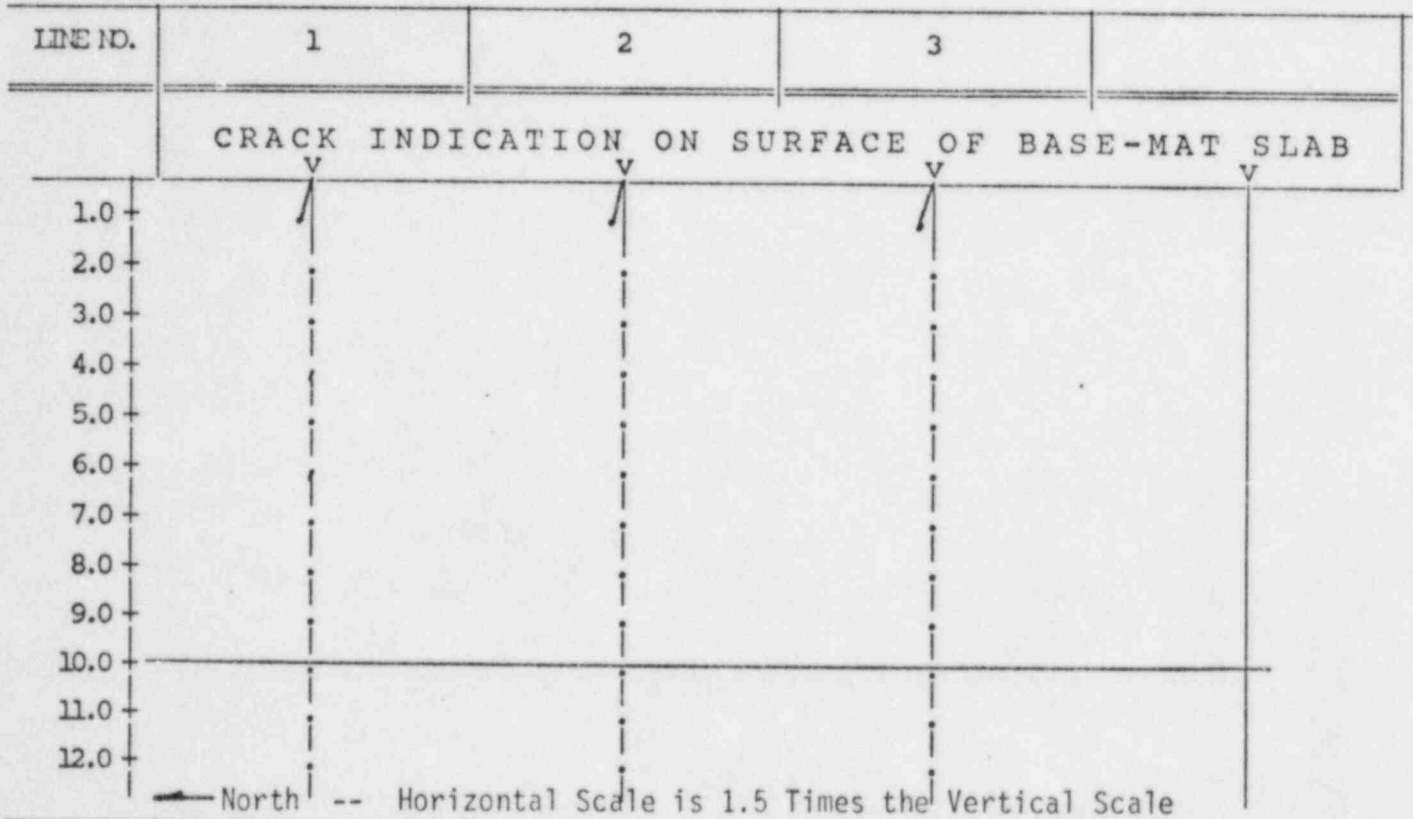
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	105	0	0	310	0	440	0	0	0	0	0	0
LINE 1	0.99 0.01 0.58	0.00 0.00 0.00	0.00 0.00 0.00	2.92 1.08 20.23	0.00 0.00 0.00	4.15 1.85 24.05	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 2	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 3	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Y DATE : 8-30-84

N to S 45 deg TRANSDUCER



Wessom and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3010 HUNTELIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 277-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
Y	1/4	1
Y	1/6	1

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION 1 OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B5425S8

TEST NO. MSEC TO <u>1</u>	1	2	3	4	5	6	7	8	9	10	11	12
LINE NO. 1	70* 106	160 212	280 318	300 425	440 530	550 636	640 742	790 848	923 955	0 1060	1040 1166	1110 1272
LINE NO. 2	65* 0	150 270	240 318	380 460	420 640	550 630	630 830	750 0	NA NA	0 0	0 0	1290
LINE NO. 3	70* 130	170 230	280 318	380 460	490 0	570 690	720 770	800 900	920 0	1050 0	1140 0	1170 0
LINE NO. 4	80 120	200 220	240 360	390 0	440 0	630 640	680 0	820 0	940 970	1000 1240	0 0	0 0
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. 1 DATE : 8-30-84

N to S 45 deg TRANSDUCER

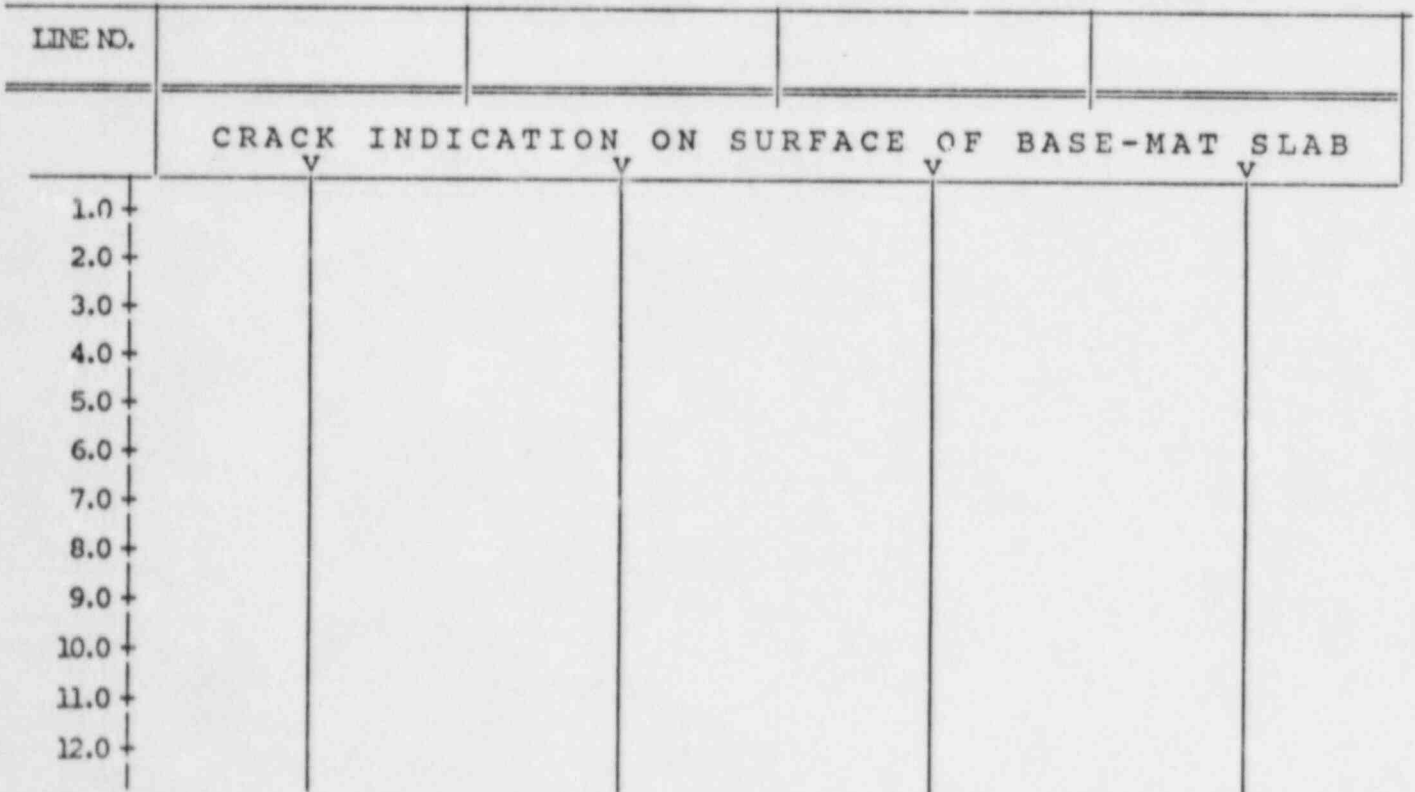
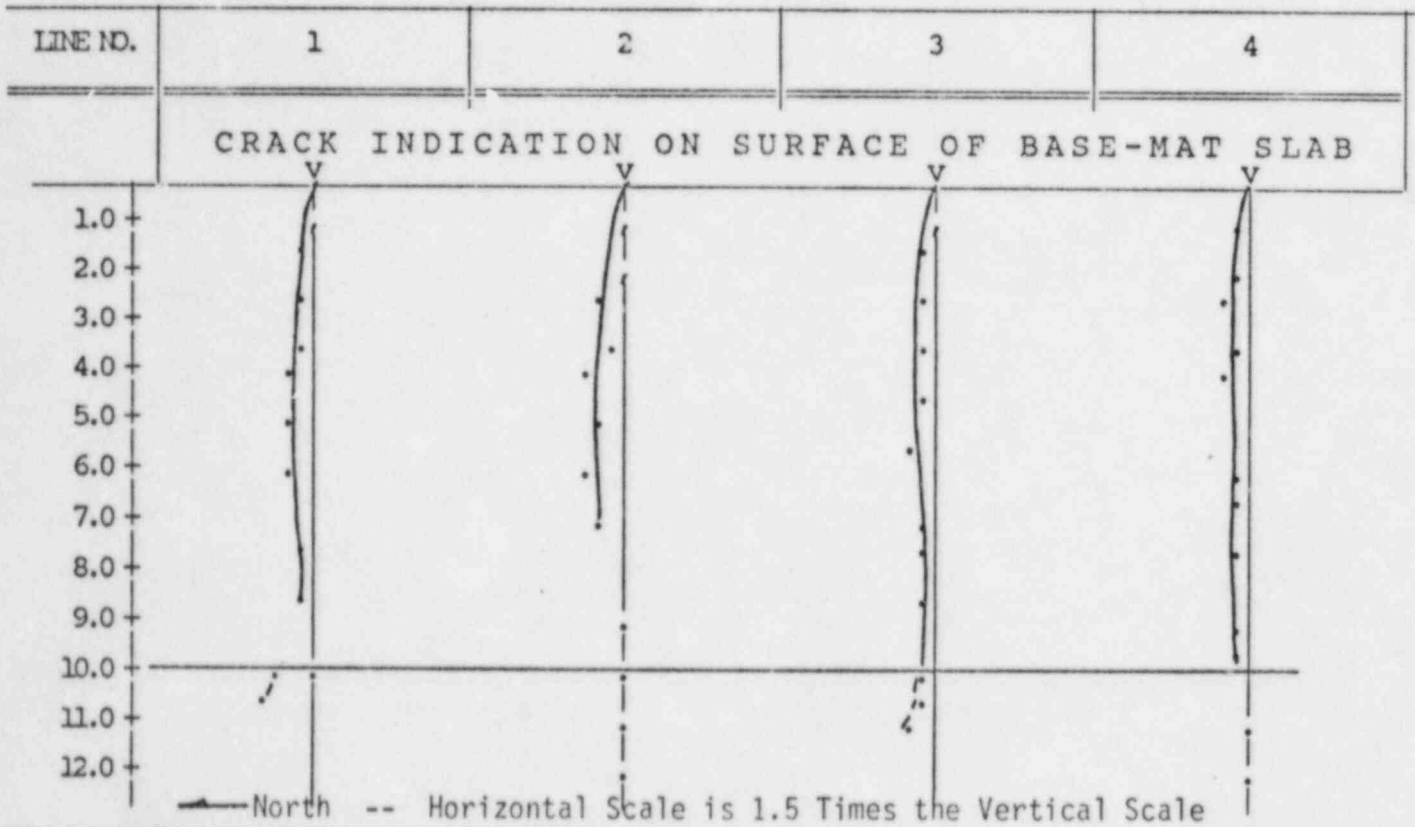
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	70	160	280	390	440	550	640	790	923	0	1040	1110
LINE 1	0.66 0.34 27.26	1.51 0.49 18.05	2.64 0.36 7.77	3.68 0.32 5.02	4.15 0.85 11.60	5.19 0.81 8.93	6.03 0.97 9.10	7.45 0.55 4.24	8.70 0.30 1.96	0.00 0.00 0.00	9.81 1.19 6.95	10.47 1.53 8.34
	65	150	240	380	420	550	630	750	0	0	0	0
LINE 2	0.61 0.39 32.28	1.41 0.59 22.50	2.26 0.74 18.05	3.58 0.42 6.64	3.96 1.04 14.72	5.19 0.81 8.93	5.94 1.06 10.12	7.07 0.93 7.48	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	70	170	280	380	490	570	720	800	920	1050	1140	1170
LINE 3	0.66 0.34 27.26	1.60 0.40 13.92	2.64 0.36 7.77	3.58 0.42 6.64	4.62 0.38 4.71	5.37 0.63 6.64	6.79 0.21 1.79	7.54 0.46 3.47	8.67 0.33 2.15	9.90 0.10 0.58	10.75 0.25 1.34	11.03 0.97 5.02
	80	200	240	390	440	630	680	820	940	1000	0	0
LINE 4	0.75 0.25 18.05	1.89 0.11 3.47	2.26 0.74 18.05	3.68 0.32 5.02	4.15 0.85 11.60	5.94 0.05 0.58	6.41 0.59 5.25	7.73 0.27 1.99	8.86 0.14 0.89	9.43 0.57 3.47	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. 1 DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
1	1/11	4
1	1/12	4
1	2/1	1
1	2/2	1

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. 2 DATE : 8-30-84

N to S 45 deg TRANSDUCER

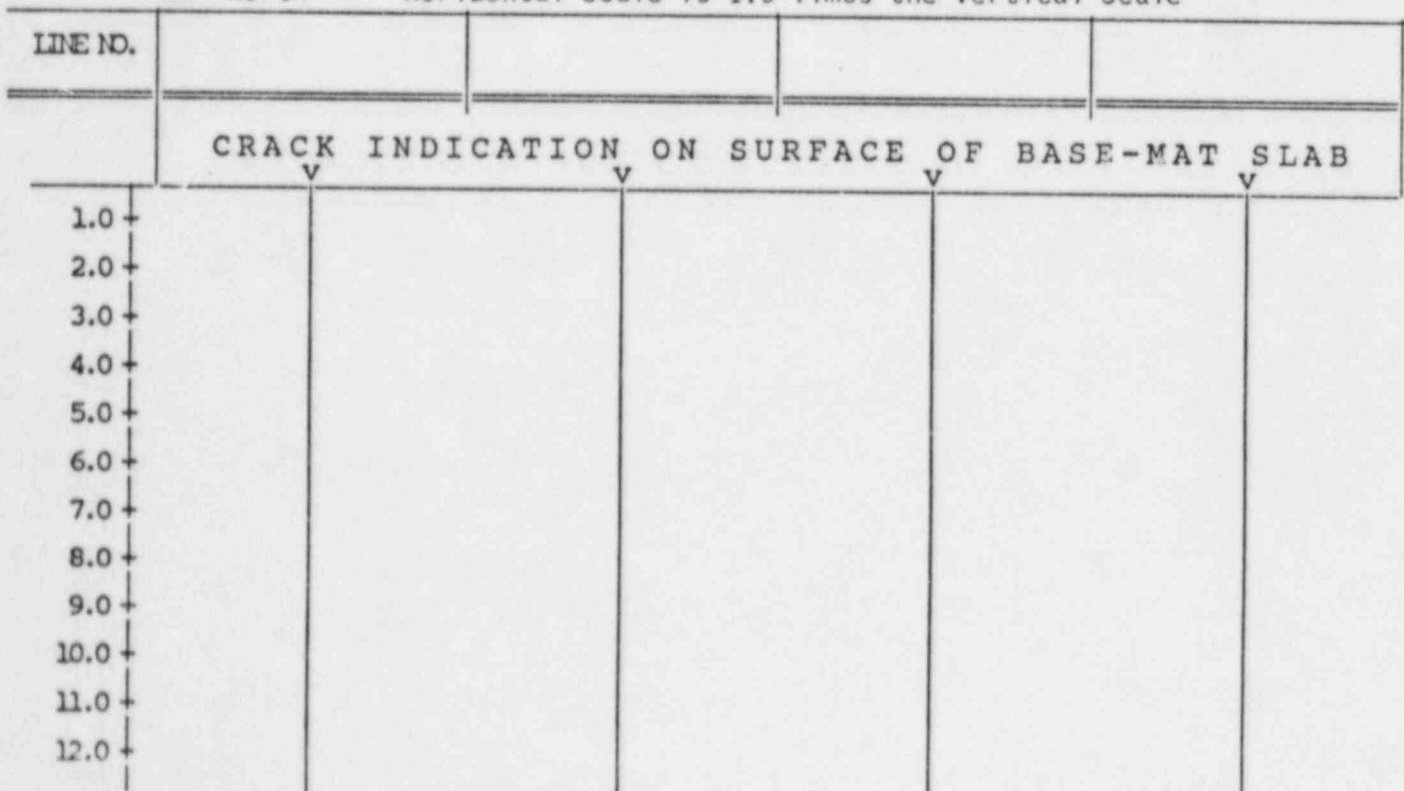
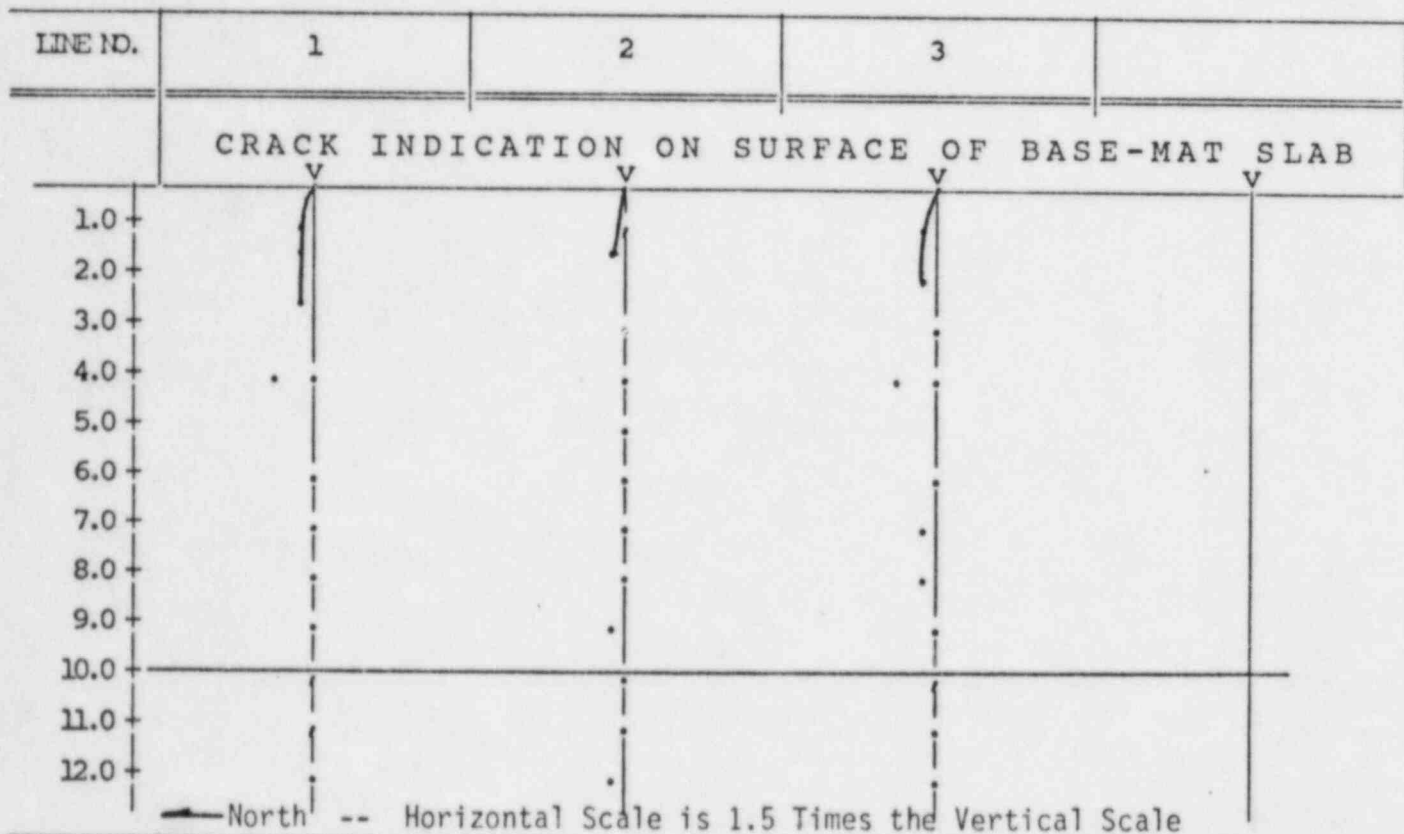
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	80	180	290	0	400	0	0	0	0	740	790	0
LINE 1	0.75 0.25 18.05	1.70 0.30 10.12	2.73 0.27 5.55	0.00 0.00 0.00	3.77 1.23 18.05	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	6.98 3.02 23.43	7.45 3.55 25.49	0.00 0.00 0.00
	75	180	0	0	0	0	0	0	940	0	0	1270
LINE 2	0.71 0.29 22.50	1.70 0.30 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	8.86 0.14 0.89	0.00 0.00 0.00	0.00 0.00 0.00	11.97 0.03 0.13
	85	190	0	0	400	0	740	840	0	710	0	0
LINE 3	0.80 0.20 13.92	1.79 0.21 6.64	0.00 0.00 0.00	0.00 0.00 0.00	3.77 1.23 18.05	0.00 0.00 0.00	6.98 0.02 0.19	7.92 0.08 0.58	0.00 0.00 0.00	6.69 3.31 26.28	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. 2 DATE : 8-30-84

N to S 45 deg TRANSDUCER



Wucnow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
2	1/5	2
2	1/10	4
2	1/11	4
2	2/9	3
2	2/12	4
2	3/5	2
2	3/10	4

TEST DIRECTION



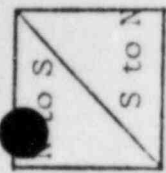
MUFENOW AND ASSOCIATES, INC CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

CRACK IDENTIFICATION 3 OPERATOR R.A. MUFENOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO ⊥	1	2	3	4	5	6	7	8	9	10	11	12	
LINE NO. 1	75* 190 130	190 0 0	280 0 0	370 0 0	490 570 185*	0 0 0	0 0 0	410* 0 190*	0 1010 0	0 1070 0	900* 0 0	0 0 0	
LINE NO. 2	85 190 0	190 0 0	270 350 170*	0 0 0	0 0 0	0 0 0	0 0 0	190* 860 850	0 0 0	1060 0 810*	0 0 0	0 0 1290	
LINE NO. 3	90 120 0	180 240 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	870 850 850	0 0 0	0 0 0	1160 0 0	0 0 0	
LINE NO. 4	90 0 0	180 0 0	0 0 0	190* 0 0	0 0 0	640 0 0	0 0 0	0 600 850	0 440 450	0 1070 0	0 0 0	0 0 0	0 810 0
LINE NO. 5	100 0 0	203 210 0	0 0 0	0 440 0	190* 0 0	0 0 0	0 0 0	280* 0 0	450 0 0	0 190 0	1160 0 0	0 0 0	
LINE NO. 6	100 0 0	203 90 0	0 0 0	0 0 0	540 100 180*	0 0 0	0 750 640	240* 0 410	0 0 0	1070 0 1060	1170 390 1180	0 0 0	
LINE NO. 7	90 0 0	0 0 0	90* 0 0	0 0 0	0 0 0	640 640 0	0 0 0	0 410 0	0 0 0	1060 0 190*	1180 0 0	0 0 0	
LINE NO. 8	100 0 0	100* 0 0	0 0 0	0 0 0	540 0 0	0 190 0	740 0 0	0 0 0	950 0 0	190* 0 0	0 740 0	0 0 1290	

TEST DIRECTION

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION 3 OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO <u>L</u>	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 9	100 0	0 100*	0 0	405 0	0 0	605 0	0 770	800 0	0 970	0 0	710* 0	0 0
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

166

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. 3 DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	75	190	280	370	490	0	0	410	0	0	900	0
LINE 1	0.71 0.29 22.50	1.79 0.21 6.64	2.64 0.36 7.77	3.49 0.51 8.34	4.62 0.38 4.71	0.00 0.00 0.00	0.00 0.00 0.00	3.87 4.13 46.93	0.00 0.00 0.00	0.00 0.00 0.00	8.49 2.51 16.51	0.00 0.00 0.00
	85	190	270	0	185	0	0	190	0	1060	0	0
LINE 2	0.80 0.20 13.92	1.79 0.21 6.64	2.55 0.45 10.12	0.00 0.00 0.00	1.74 3.26 61.82	0.00 0.00 0.00	0.00 0.00 0.00	1.79 6.21 73.91	0.00 0.00 0.00	9.99 0.01 0.04	0.00 0.00 0.00	0.00 0.00 0.00
	90	180	170	0	0	310	0	850	0	810	0	1280
LINE 3	0.85 0.15 10.12	1.70 0.30 10.12	1.60 1.40 41.08	0.00 0.00 0.00	0.00 0.00 0.00	2.92 3.08 46.48	0.00 0.00 0.00	8.01 0.01 0.10	0.00 0.00 0.00	7.64 2.36 17.20	0.00 0.00 0.00	12.07 0.07 0.32
	90	180	0	190	0	640	0	0	0	0	0	0
LINE 4	0.85 0.15 10.12	1.70 0.30 10.12	0.00 0.00 0.00	1.79 2.21 50.96	0.00 0.00 0.00	6.03 0.03 0.32	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	203	0	0	190	0	740	280	950	0	1160	0
LINE 5	0.94 0.06 3.47	1.91 0.09 2.58	0.00 0.00 0.00	0.00 0.00 0.00	1.79 3.21 60.83	0.00 0.00 0.00	6.98 0.02 0.19	2.64 5.36 63.78	8.96 0.04 0.28	0.00 0.00 0.00	10.94 0.06 0.33	0.00 0.00 0.00
	100	203	0	0	540	0	0	240	0	1070	1170	0
LINE 6	0.94 0.06 3.47	1.91 0.09 2.58	0.00 0.00 0.00	0.00 0.00 0.00	5.09 0.09 1.03	0.00 0.00 0.00	0.00 0.00 0.00	2.26 5.74 68.48	0.00 0.00 0.00	10.09 0.09 0.50	11.03 0.03 0.16	0.00 0.00 0.00
	90	0	90	0	180	640	0	0	0	1060	1180	0
LINE 7	0.85 0.15 10.12	0.00 0.00 0.00	0.85 2.15 68.48	0.00 0.00 0.00	1.70 3.30 62.81	6.03 0.03 0.32	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	9.99 0.01 0.04	11.13 0.13 0.64	0.00 0.00 0.00
	100	100	0	0	540	0	740	0	950	190	0	0
LINE 8	0.94 0.06 3.47	0.94 1.06 48.27	0.00 0.00 0.00	0.00 0.00 0.00	5.09 0.09 1.03	0.00 0.00 0.00	6.98 0.02 0.19	0.00 0.00 0.00	8.96 0.04 0.28	1.79 8.21 77.69	0.00 0.00 0.00	0.00 0.00 0.00

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. 3 DATE : 8-30-84

N to S 45 deg TRANSDUCER

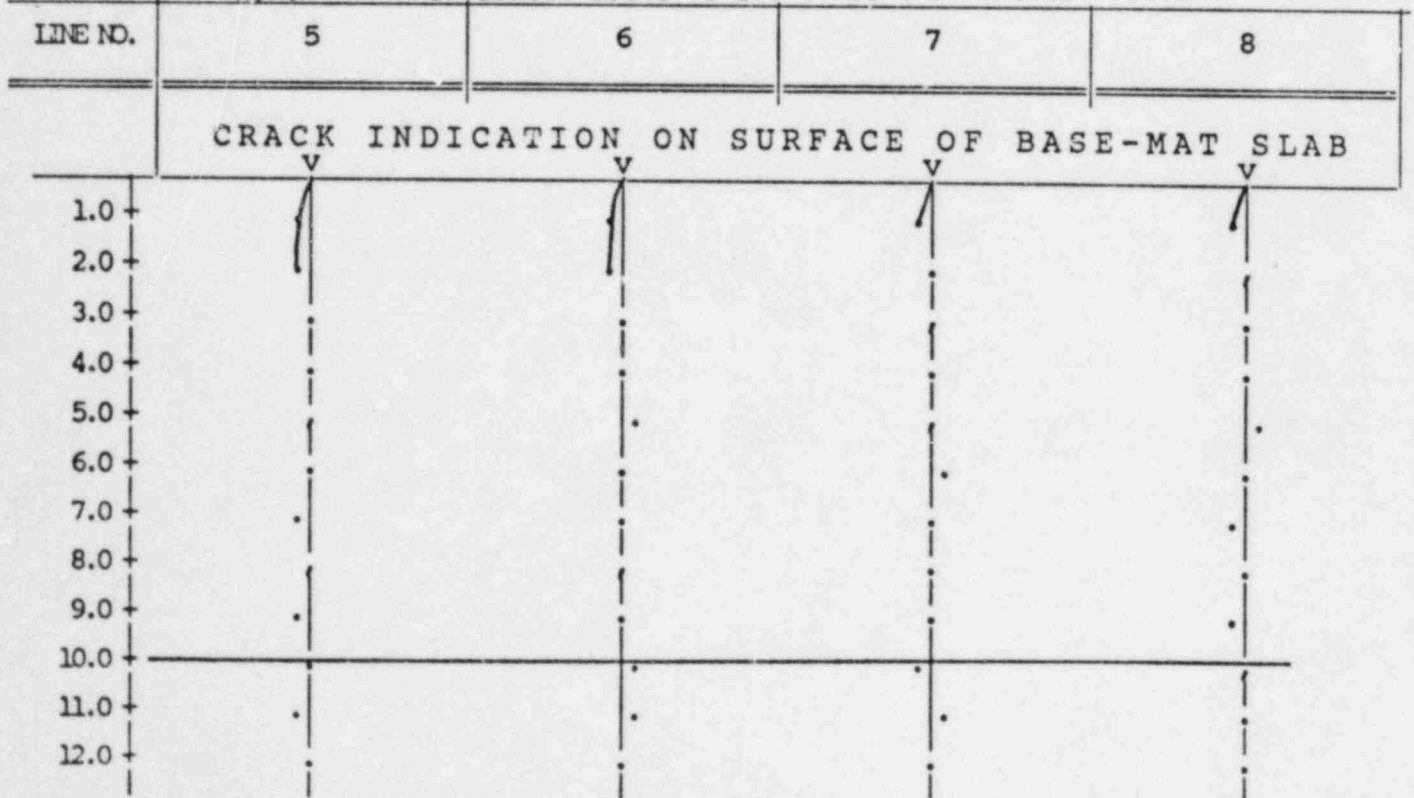
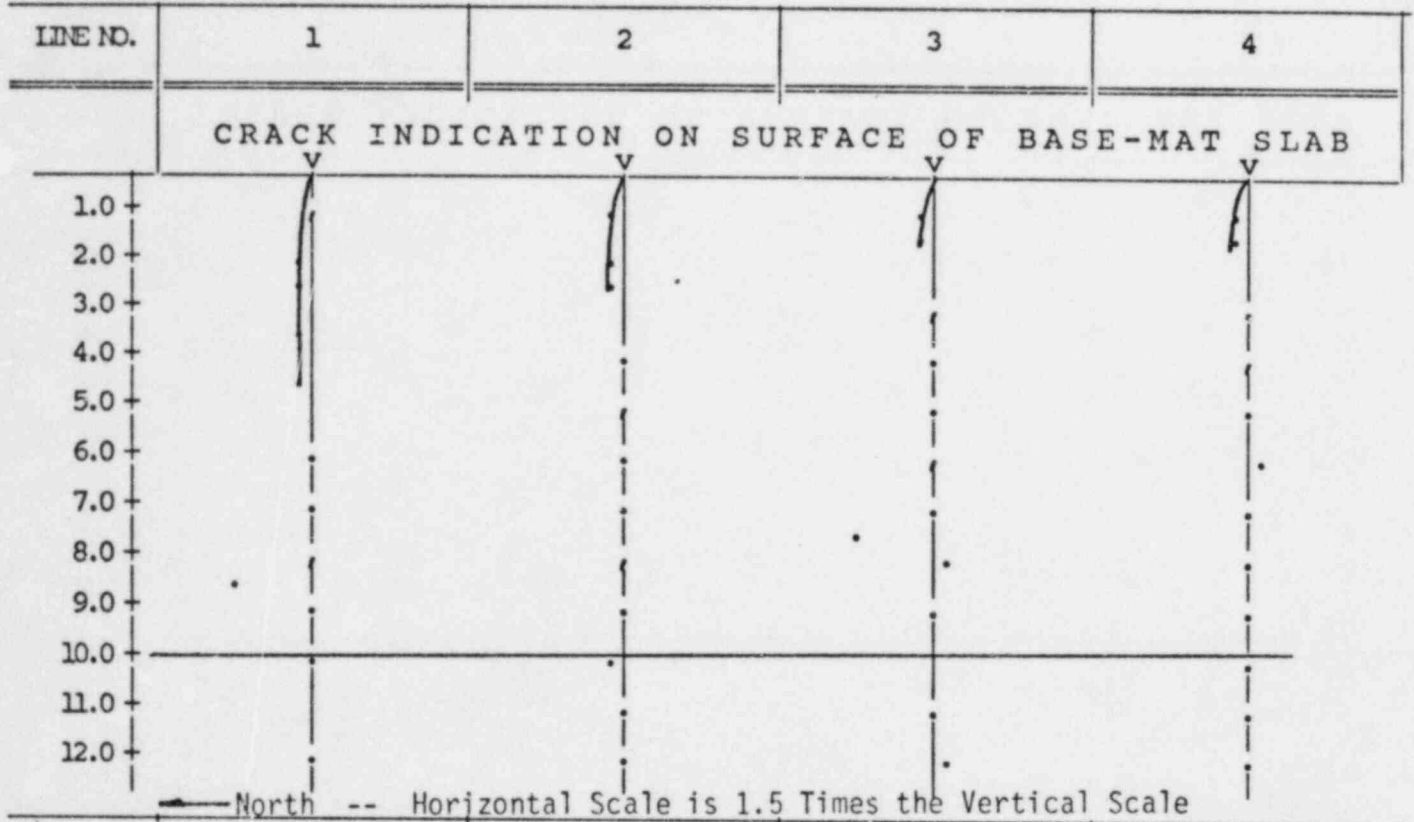
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	0	0	405	0	605	0	800	0	0	710	0
LINE 9	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	3.82 0.18 2.72	0.00 0.00 0.00	5.70 0.30 2.97	0.00 0.00 0.00	7.54 0.46 3.47	0.00 0.00 0.00	0.00 0.00 0.00	6.69 4.31 32.75	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. 3 DATE : 8-30-84

N to S 45 deg TRANSDUCER

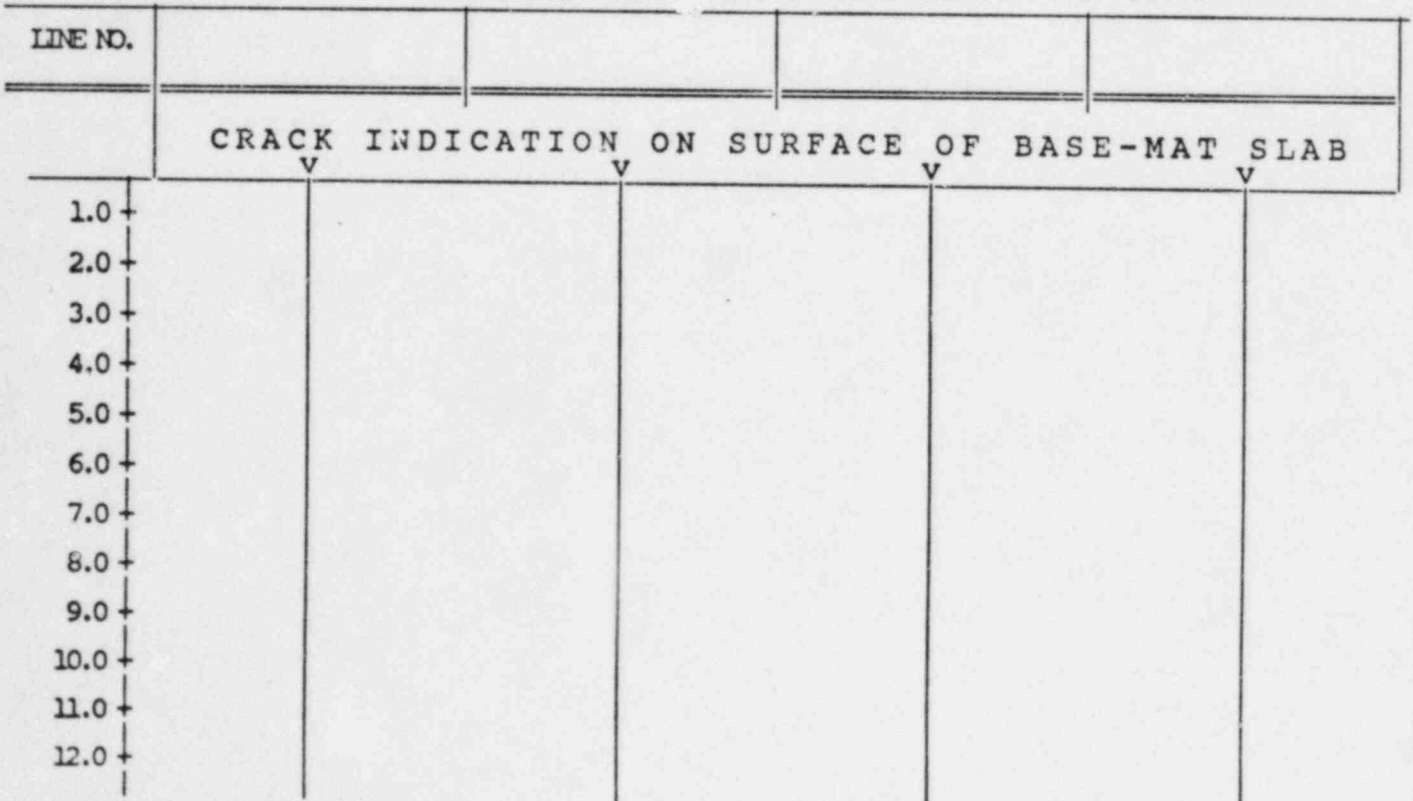
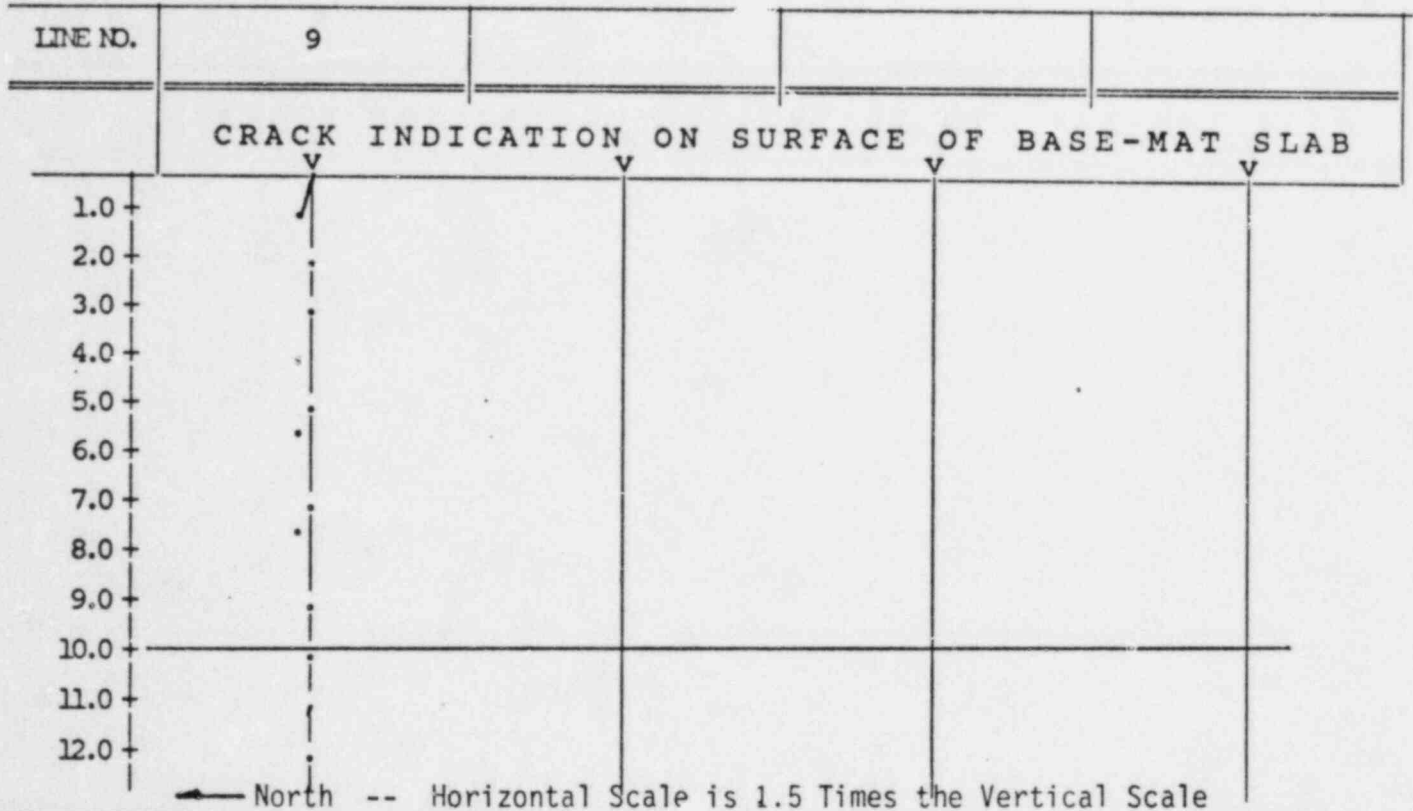


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. 3 DATE : 8-30-84

N to S 45 deg TRANSDUCER



Mueow and Associates, Inc.

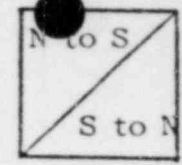
MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
3	1/8	3
3	1/11	4
3	2/5	2
3	2/7	1
3	2/10	4
3	3/3	1
3	3/6	1
3	3/8	2
3	3/10	4
3	3/12	4
3	4/4	3
3	4/6	3
3	5/5	2
3	5/7	1
3	5/8	1
3	5/9	1
3	5/11	4
3	6/5	3
3	6/8	2
3	6/10	4
3	6/11	4
3	7/3	2
3	7/5	2
3	7/6	1
3	7/10	4
3	7/11	4
3	8/2	1
3	8/5	1
3	8/7	1
3	8/9	1
3	8/10	4
3	9/4	1
3	9/6	1
3	9/8	2
3	9/11	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION WEST DIA.

OPERATOR R.A. MUENOW

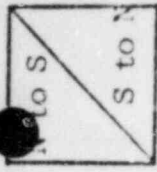
P.E. INSTRUMENT NO. B54258S

TEST NO. MSLC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	80 120	210 215	330 300	390 440	0 0	0 0	190* 0	0 850	0 0	0 900	1130 0	1200 1340
LINE NO. 2	75* 110	195 230	295 0	420 430	0 0	0 0	240* 740	0 0	0 190	0 0	1130 1200	1200 1340
LINE NO. 3	90 0	190 210	310 330	0 0	0 340	0 650	0 0	0 0	0 960	1010 390	1130 0	1200 1340
LINE NO. 4	90 0	190 0	310 0	0 0	0 410	0 0	0 740	0 0	440* 960	0 0	1130 0	1230 0
172 LINE NO. 5	90 115	190 220	315 320	0 0	0 540	0 0	0 440	0 850	0 0	1015 0	1125 190	0 0
LINE NO. 6	100 105	195 0	300 340	0 0	0 340	410* 0	0 0	0 850	0 0	1020 0	1100 0	0 0
LINE NO. 7	90 115	203 220	310 320	0 0	0 540	0 0	740 410	0 0	0 0	1020 0	1110 0	0 0
LINE NO. 8	90 120	205 215	300 330	440 460	c 0	0 0	310* 0	860 0	0 140	180* 0	1125 0	1230 0

TEST DIRECTION

MUEWOW AND ASSOCIATES, INC. CHALOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1964

CRACK IDENTIFICATION WEST DIA. OPERATOR R.A. MUEWOW P.E. INSTRUMENT NO. B542588



TEST NO. MSEC TO ⊥	1	2	3	4	5	6	7	8	9	10	11	12
LINE NO. 9	90 106	195 212	310 318	0 425	0 530	180* 636	0 742	0 848	0 955	1040 1060	1110 1166	0 1272
LINE NO. 10	80	175	260	370	0	0	0	850	410*	0	0	0
LINE NO. 11	80	180	300	0	0	0	0	540*	0	0	0	1270
LINE NO. 12	80	180	300	0	0	640	0	0	450	0	0	0
LINE NO. 13	85	190	0	0	540	0	0	190*	0	0	0	1270
LINE NO. 14	90	190	0	420	0	0	190*	0	970	1040	0	0
LINE NO. 15	90	0	0	440	0	0	0	330*	970	0	1200	0
LINE NO. 16	85	190	0	440	0	0	205*	0	0	1060	1200	1000

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. WEST DIA. DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	80 0.75 0.25 18.05	210 1.98 0.02 0.58	330 3.11 0.11 2.05	390 3.68 0.32 5.02	0 0.00 0.00 0.00	0 0.00 0.00 0.00	190 1.79 5.21 71.02	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1130 10.65 0.35 1.86	1200 11.31 0.69 3.47
LINE 2	75 0.71 0.29 22.50	195 1.84 0.16 5.02	295 2.78 0.22 4.50	420 3.96 0.04 0.58	0 0.00 0.00 0.00	0 0.00 0.00 0.00	240 2.26 4.74 64.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1130 10.65 0.35 1.86	1200 11.31 0.69 3.47
LINE 3	90 0.85 0.15 10.12	190 1.79 0.21 6.64	310 2.92 0.08 1.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1010 9.52 0.48 2.87	1130 10.65 0.35 1.86	1200 11.31 0.69 3.47
LINE 4	90 0.85 0.15 10.12	190 1.79 0.21 6.64	310 2.92 0.08 1.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	440 4.15 4.85 49.47	0 0.00 0.00 0.00	1130 10.65 0.35 1.86	1230 11.60 0.40 1.99
LINE 5	90 0.85 0.15 10.12	190 1.79 0.21 6.64	315 2.97 0.03 0.58	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1015 9.57 0.43 2.58	1125 10.61 0.39 2.12	0 0.00 0.00 0.00
LINE 6	100 0.94 0.06 3.47	195 1.84 0.16 5.02	300 2.83 0.17 3.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	410 3.87 2.13 28.91	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1020 9.62 0.38 2.28	1100 10.37 0.63 3.47	0 0.00 0.00 0.00
LINE 7	90 0.85 0.15 10.12	203 1.91 0.09 2.58	310 2.92 0.08 1.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	740 6.98 0.02 0.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1020 9.62 0.38 2.28	1110 10.47 0.53 2.93	0 0.00 0.00 0.00
LINE 8	90 0.85 0.15 10.12	205 1.93 0.07 1.99	300 2.83 0.17 3.47	440 4.15 0.15 2.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	310 2.92 4.08 54.37	860 8.11 0.11 0.76	0 0.00 0.00 0.00	180 1.70 8.30 78.45	1125 10.61 0.39 2.12	1230 11.60 0.40 1.99

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. WEST DIA. DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 9	90 0.85 0.15 10.12	195 1.84 0.16 5.02	310 2.92 0.08 1.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	180 1.70 4.30 68.48	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1040 9.81 0.19 1.14	1110 10.47 0.53 2.93	0 0.00 0.00 0.00
LINE 10	80 0.75 0.25 18.05	175 1.65 0.35 11.98	260 2.45 0.55 12.62	370 3.49 0.51 8.34	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	850 8.01 0.01 0.10	410 3.87 5.13 53.03	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 11	80 0.75 0.25 18.05	180 1.70 0.30 10.12	300 2.83 0.17 3.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	540 5.09 2.91 29.74	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 12	80 0.75 0.25 18.05	180 1.70 0.30 10.12	300 2.83 0.17 3.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	640 6.03 0.03 0.32	0 0.00 0.00 0.00	0 0.00 0.00 0.00	950 8.96 0.04 0.28	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 13	85 0.80 0.20 13.92	190 1.79 0.21 6.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	540 5.09 0.09 1.03	0 0.00 0.00 0.00	0 0.00 0.00 0.00	190 1.79 6.21 73.91	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1270 11.97 0.03 0.13
LINE 14	90 0.85 0.15 10.12	190 1.79 0.21 6.64	0 0.00 0.00 0.00	420 3.96 0.04 0.58	0 0.00 0.00 0.00	0 0.00 0.00 0.00	190 1.79 5.21 71.02	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1040 9.81 0.19 1.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 15	90 0.85 0.15 10.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	440 4.15 0.15 2.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	330 3.11 4.89 57.53	970 9.15 0.15 0.91	0 0.00 0.00 0.00	1200 11.31 0.31 1.59	0 0.00 0.00 0.00
LINE 16	85 0.80 0.20 13.92	0 0.00 0.00 0.00	0 0.00 0.00 0.00	440 4.15 0.15 2.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	205 1.93 5.07 69.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1060 9.99 0.01 0.04	1200 11.31 0.31 1.59	1000 9.43 2.57 15.26
LINE 17	90 0.85 0.15 10.12	180 1.70 0.30 10.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	190 1.79 3.21 60.83	0 0.00 0.00 0.00	770 7.26 0.26 2.05	0 0.00 0.00 0.00	970 9.15 0.15 0.91	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. WEST DIA. DATE : 8-30-84

N to S 45 deg TRANSDUCER

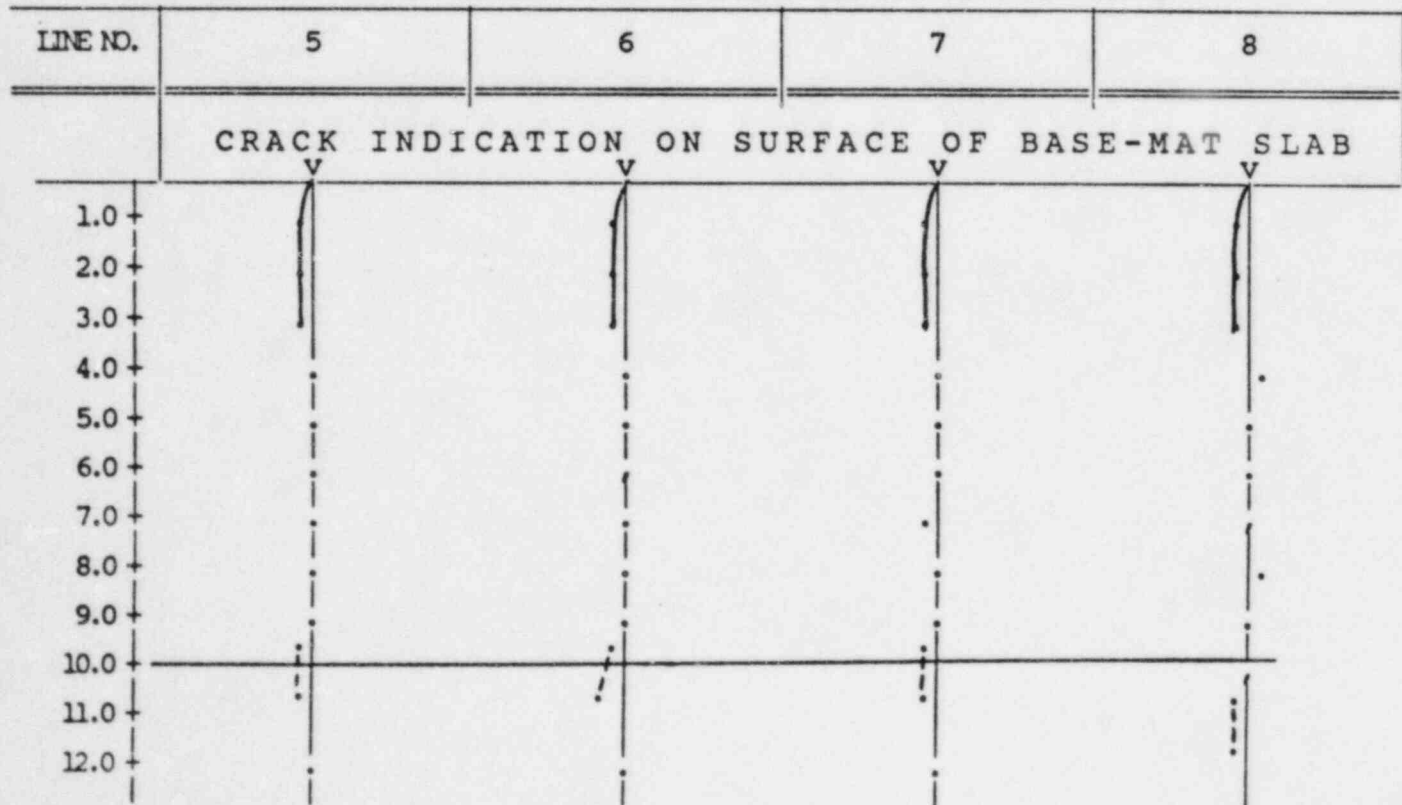
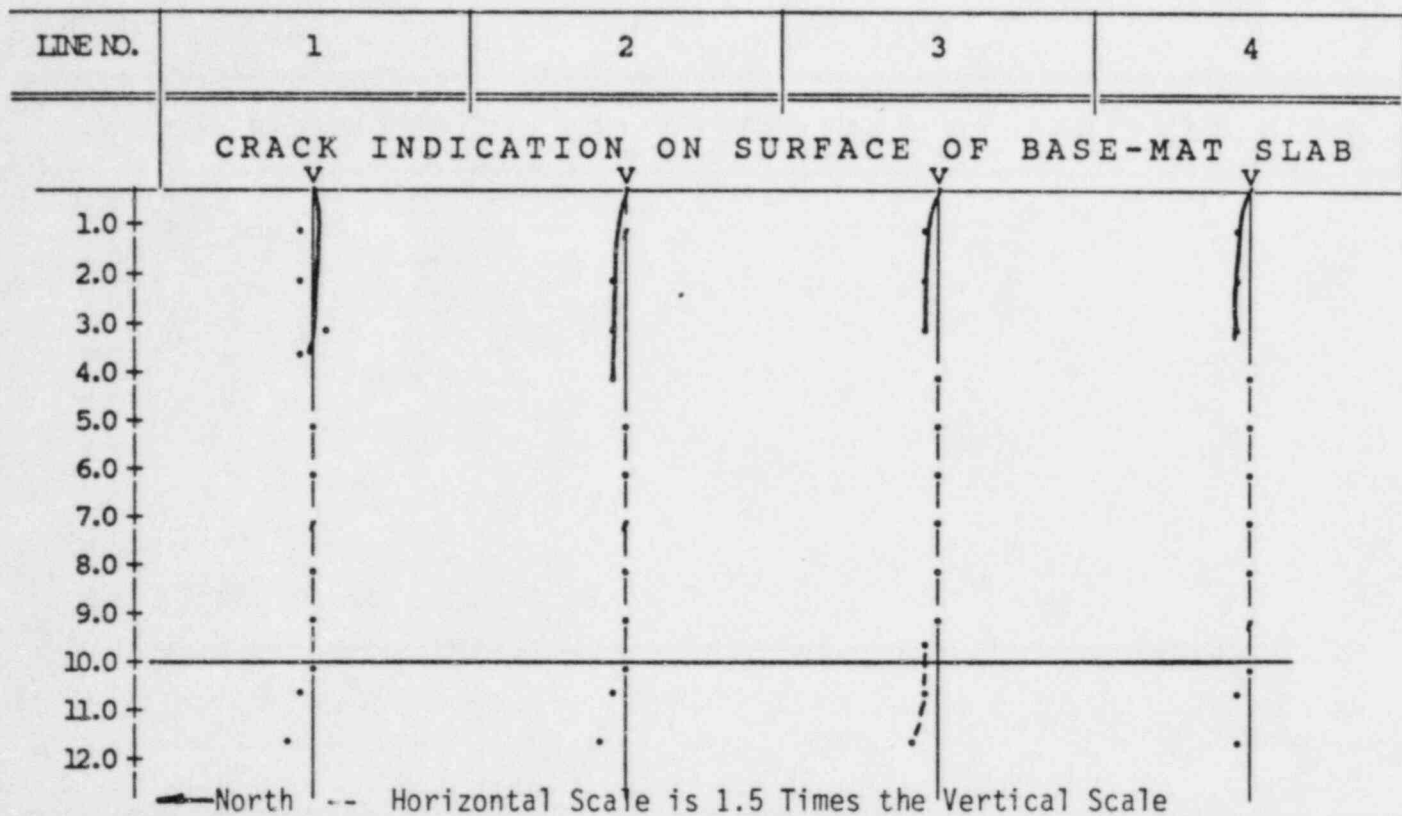
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	90	190	0	220	0	0	770	210	0	1070	0	1290
LINE 18	0.85 0.15 10.12	1.79 0.21 6.64	0.00 0.00 0.00	2.07 1.93 42.88	0.00 0.00 0.00	0.00 0.00 0.00	7.26 0.26 2.05	1.98 6.02 71.79	0.00 0.00 0.00	10.09 0.09 0.50	0.00 0.00 0.00	12.16 0.16 0.76
	85	180	0	0	0	0	390	0	0	1070	0	0
LINE 19	0.80 0.20 13.92	1.70 0.30 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	3.68 3.32 42.11	0.00 0.00 0.00	0.00 0.00 0.00	10.09 0.09 0.50	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. WEST DIA. DATE : 8-30-84

N to S 45 deg TRANSDUCER

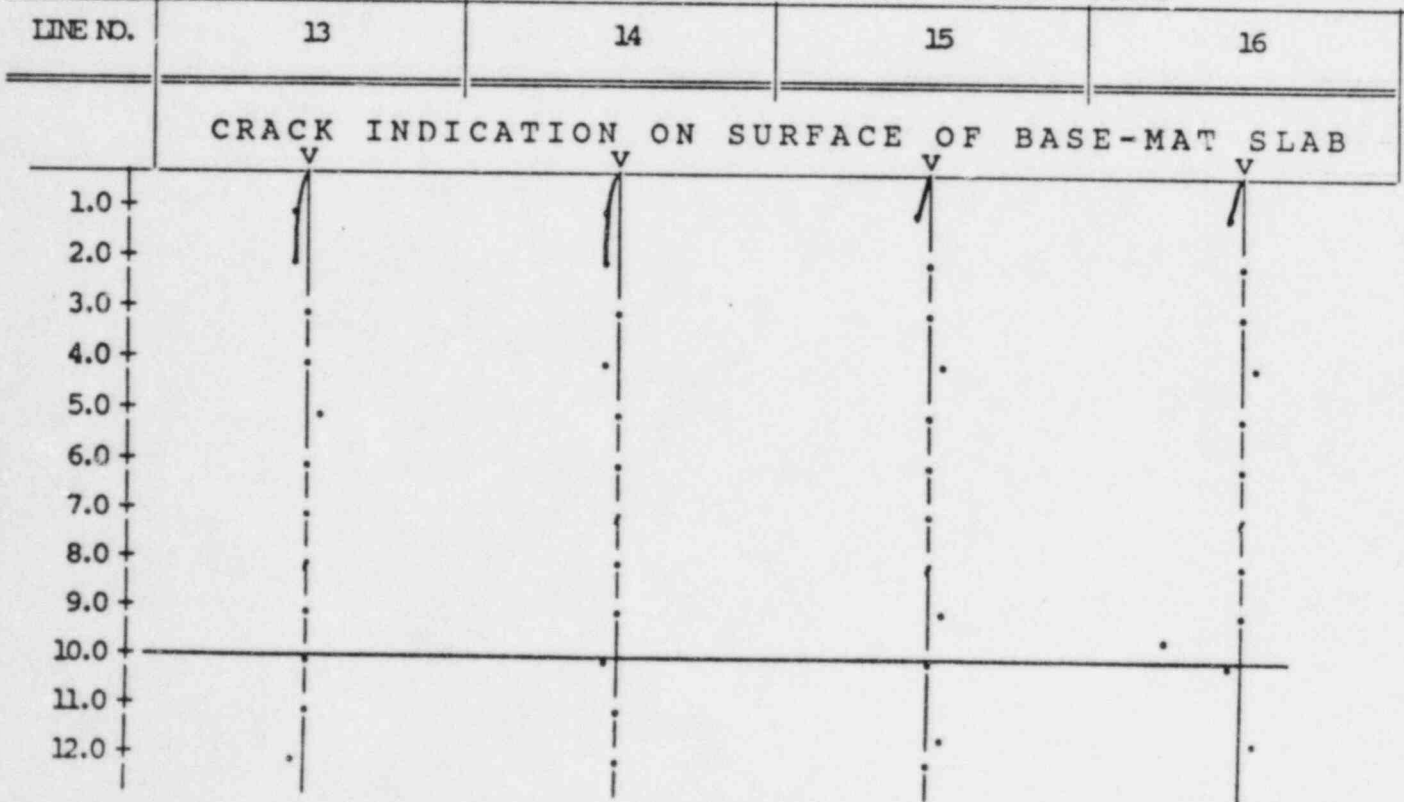
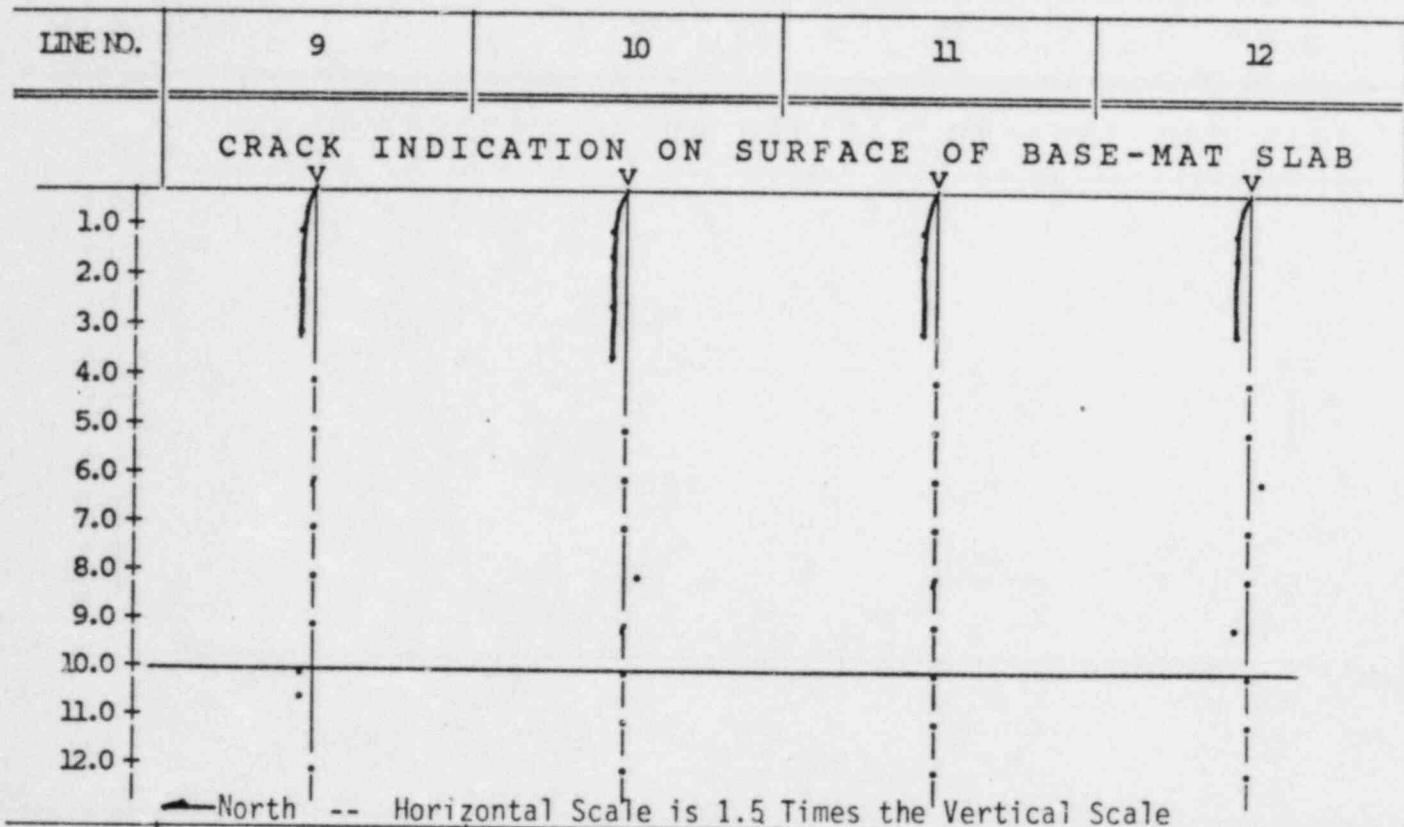


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. WEST DIA. DATE : 8-30-84

N to S 45 deg TRANSDUCER

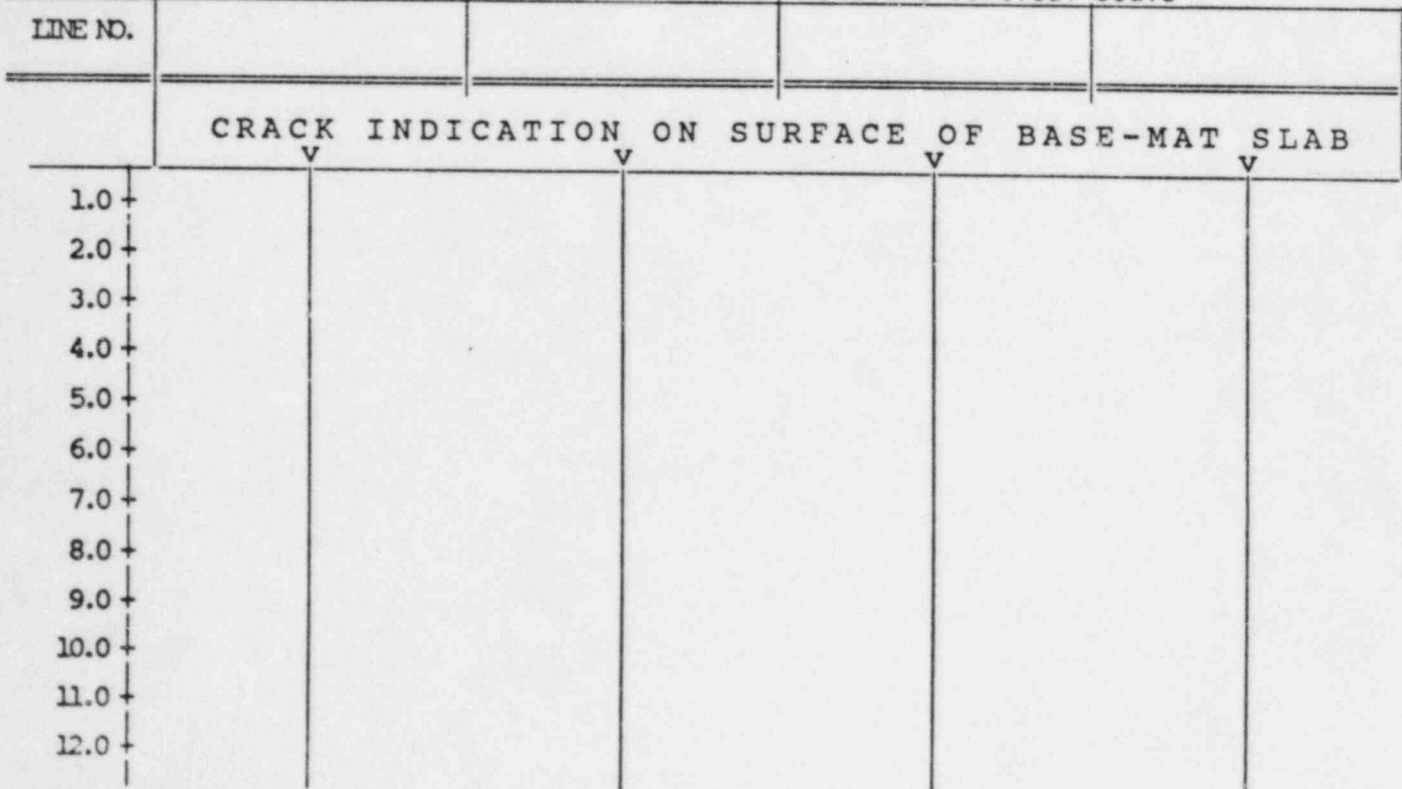
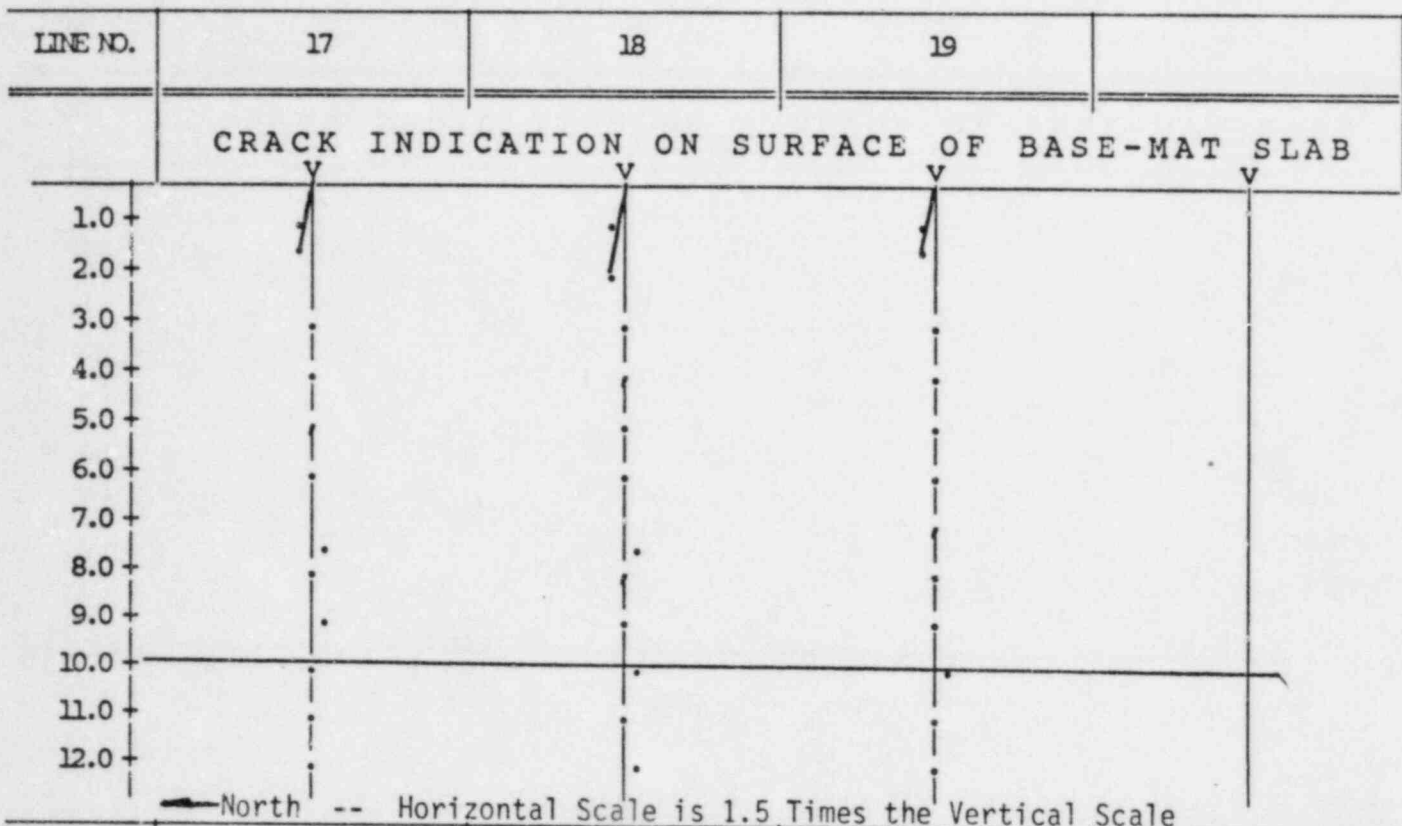


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. WEST DIA. DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
(West Diagonal)		
WD	1/7	3
WD	1/11	4
WD	1/12	4
WD	2/7	3
WD	2/11	4
WD	2/12	4
WD	4/9	3
WD	4/11	4
WD	4/12	4
WD	6/6	2
WD	7/7	2
WD	8/4	1
WD	8/7	1
WD	8/8	1
WD	8/10	4
WD	9/6	2
WD	9/10	3
WD	9/11	4
WD	10/8	3
WD	10/9	3
WD	11/8	3
WD	12/6	3
WD	12/9	1
WD	13/5	1
WD	13/8	1
WD	13/12	4
WD	14/4	3
WD	14/7	3
WD	14/10	4
WD	15/4	1
WD	15/8	1
WD	15/9	1
WD	15/11	4
WD	16/4	1
WD	16/7	1
WD	16/10	3
WD	16/11	4
WD	16/12	4
WD	17/5	2

Wuenschow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
WD	17/7	2
WD	18/4	3
WD	18/7	1
WD	18/8	1
WD	18/10	4
WD	18/12	4
WD	19/7	2
WD	19/10	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION Ae OPERATOR R.A. MUELOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 1	100	0	0	0	0	0	0	NA				
	100	0	0	0	0	0	0	NA				
LINE NO. 2	100	0	0	0	0	0	NA					
	100	0	0	0	0	0	NA					
LINE NO. 3	90	0	0	0	0	0	NA					
	0	0	0	0	0	0	NA					
LINE NO. 4	0	0	0	0	0	0	0	0	NA			
	0	0	0	0	0	0	0	0	NA			
LINE NO. 5	105	0	0	0	0	0	0	0	NA			
	0	0	0	0	0	0	0	0	NA			
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Ae DATE : 8-30-84

N to S 45 deg TRANSDUCER

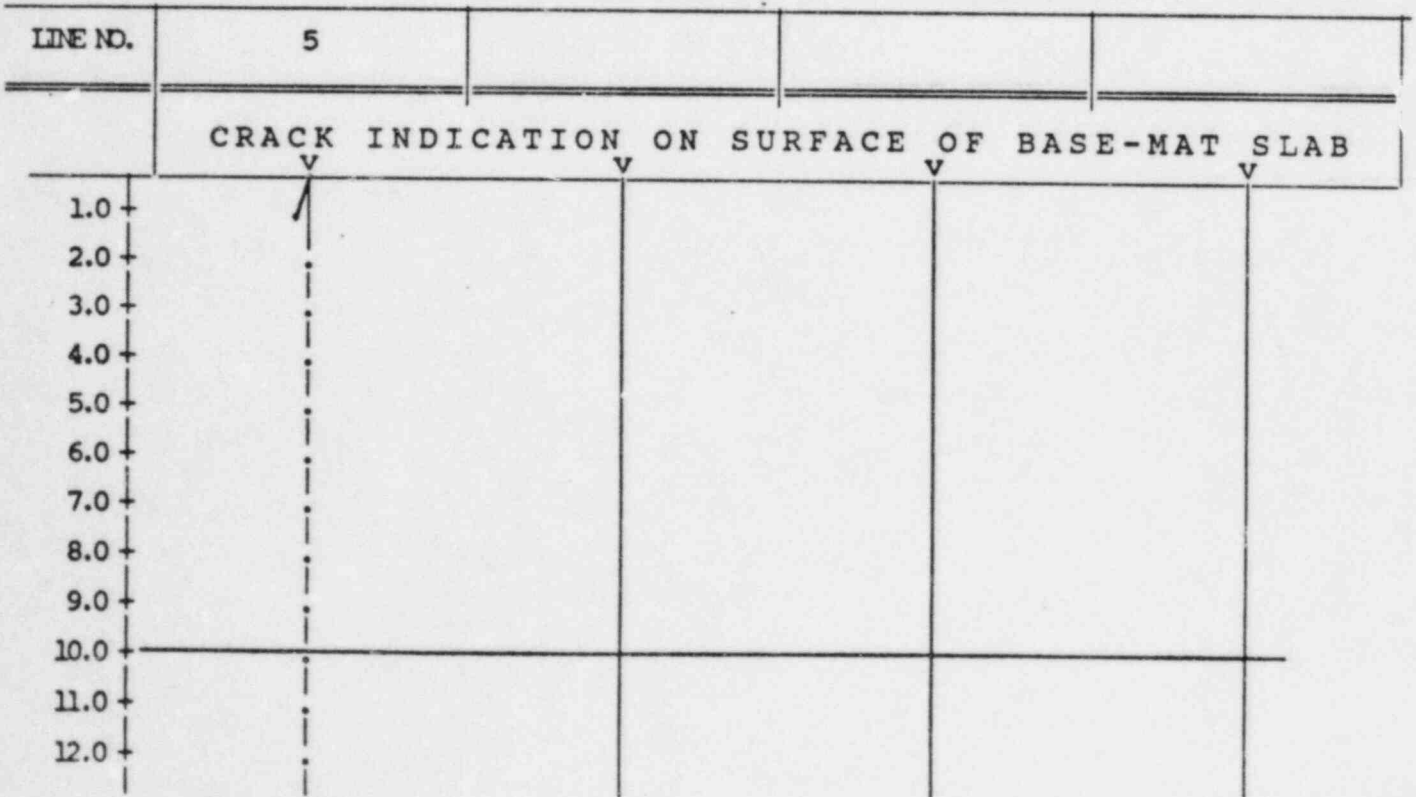
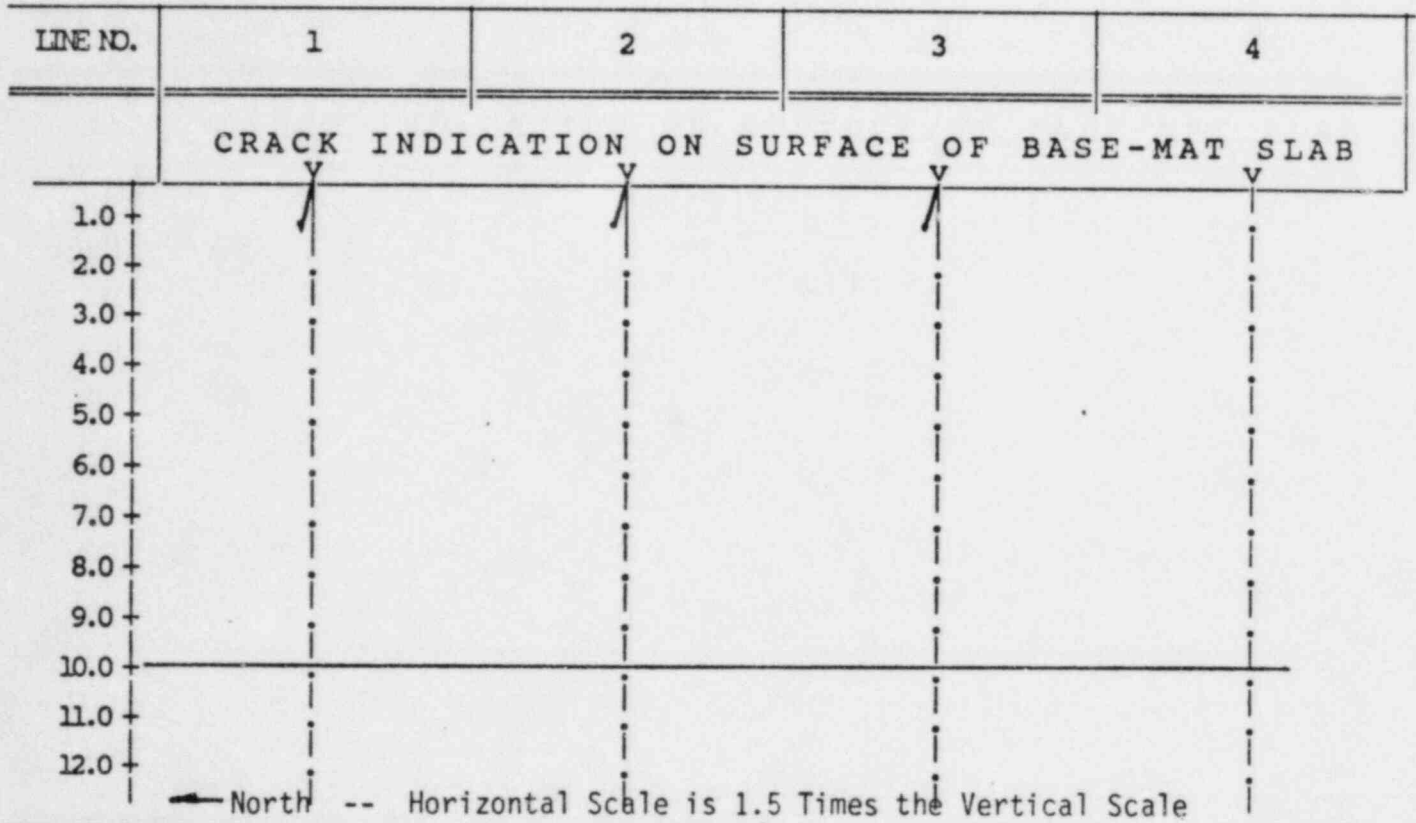
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 1	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 2	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	0	0	0	0	0	0	0	0	0	0
LINE 3	0.85 0.15 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	0	0	0	0	0	0	0	0	0	0	0	0
LINE 4	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	105	0	0	0	0	0	0	0	0	0	0	0
LINE 5	0.99 0.01 0.58	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Ae DATE : 8-30-84

N to S 45 deg TRANSDUCER



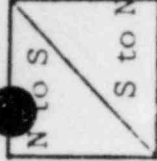
Musenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542 2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
Ae	NONE NOTED	

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH A-D ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION Be & Ce OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO ⊥	1	2	3	4	5	6	7	8	9	10	11	12
LINE NO. 1	100	210	300	400	0	0	0	0	0	NA		
LINE NO. 2	100	200	310	410	0	0	0	0	0	NA		
LINE NO. 3	100	200	300	0	0	0	0	0	NA			
LINE NO. 4	90	190	300	0	0	0	0	0	NA			
LINE NO. 5	85	0	0	0	0	0	0	0	NA			
LINE NO. 6	0	0	0	0	0	0	0	0	NA			
LINE NO. 7	0	0	0	0	0	0	0	0	NA			
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Be and Ce DATE : 8-30-84

N to S 45 deg TRANSDUCER

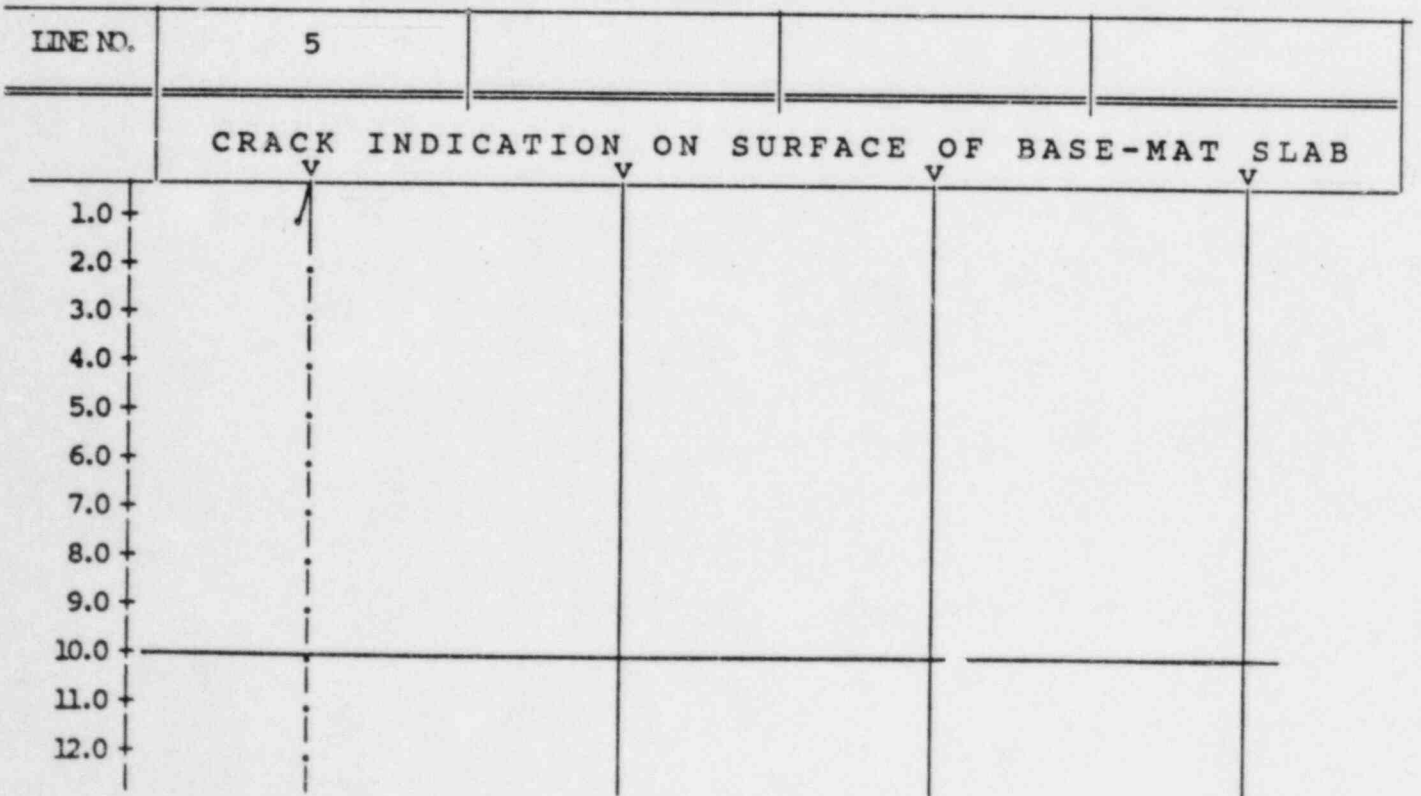
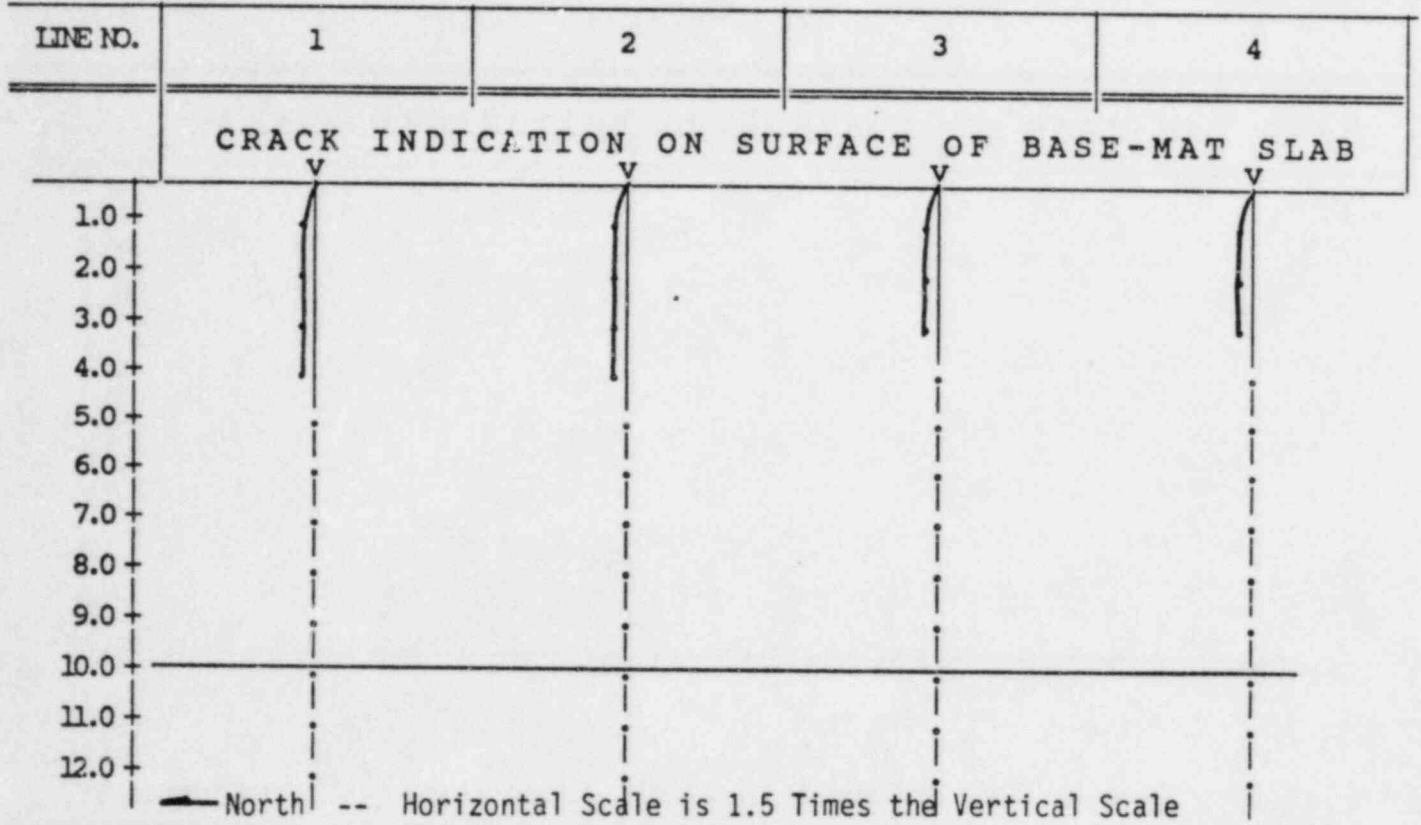
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	210	300	400	0	0	0	0	0	0	0	0
LINE 1	0.94 0.06 3.47	1.98 0.02 0.58	2.83 0.17 3.47	3.77 0.23 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	210	310	410	0	0	0	0	0	0	0	0
LINE 2	0.94 0.06 3.47	1.98 0.02 0.58	2.92 0.08 1.51	3.87 0.13 1.99	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	200	300	0	0	0	0	0	0	0	0	0
LINE 3	0.94 0.06 3.47	1.89 0.11 3.47	2.83 0.17 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	190	300	0	0	0	0	0	0	0	0	0
LINE 4	0.85 0.15 10.12	1.79 0.21 6.64	2.83 0.17 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	85	0	0	0	0	0	0	0	0	0	0	0
LINE 5	0.80 0.20 13.92	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Be and Ce DATE : 8-30-84

N to S 45 deg TRANSDUCER



Wuenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

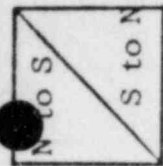
IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
Be - Ce	NONE NOTED	

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

CRACK IDENTIFICATION De OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588



TEST NO. MSEC TO <u>L</u>	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 1	100	0	0	0	0	0	0	NA				
	100	0	0	0	0	0	0	NA				
LINE NO. 2	95	0	0	0	0	0	0	NA				
	115	0	0	0	0	0	0	NA				
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. De DATE : 8-30-84

N to S 45 deg TRANSDUCER

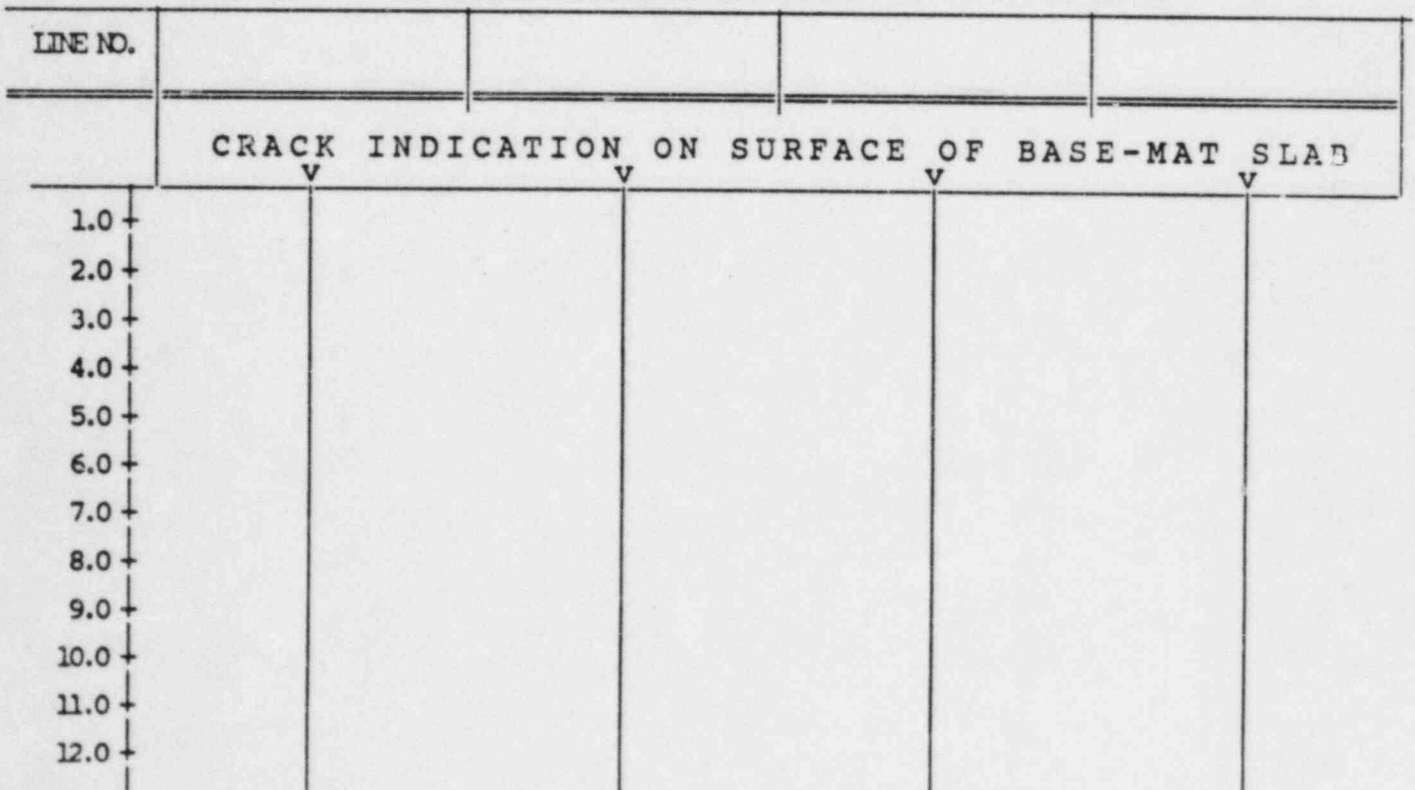
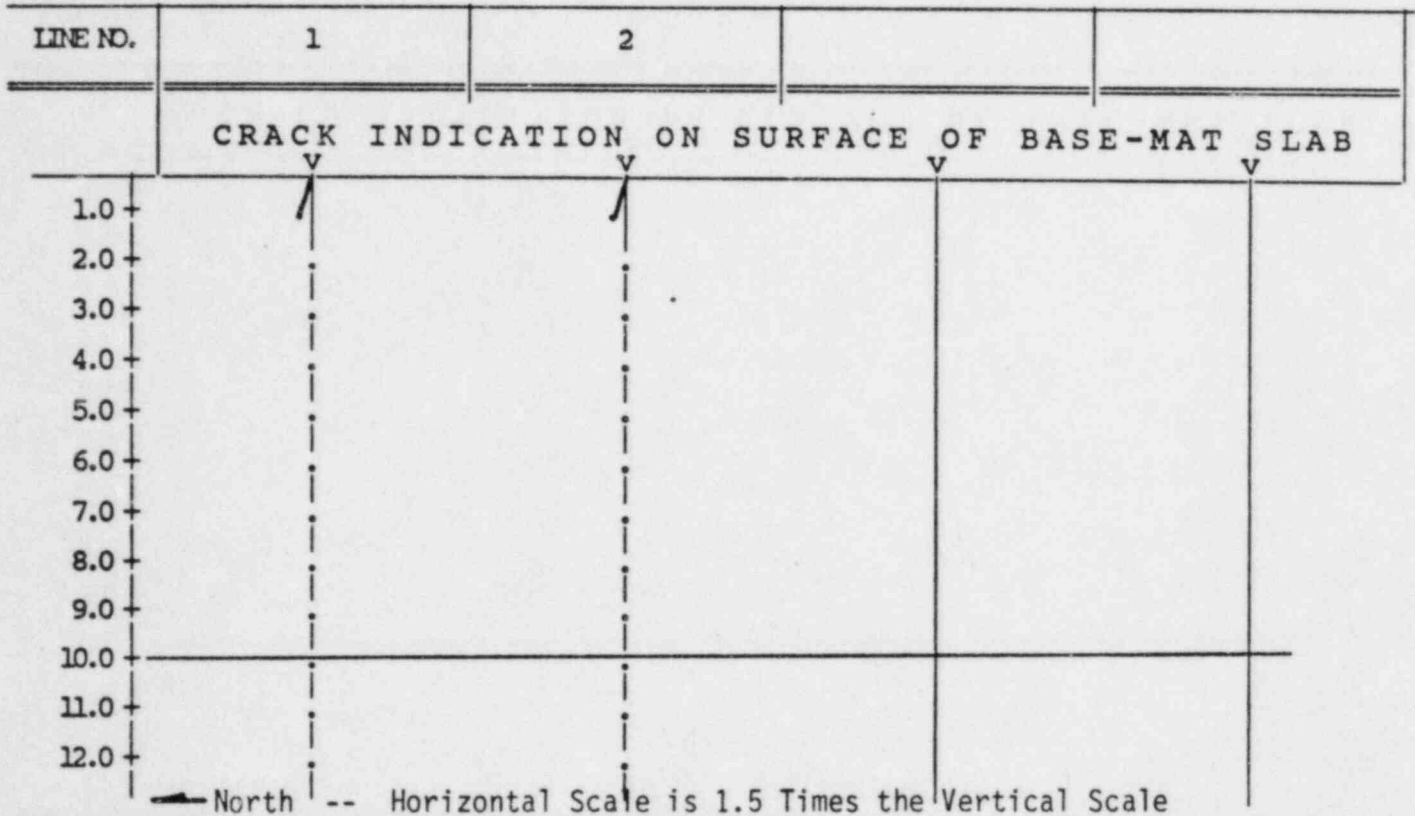
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 1	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	95	0	0	0	0	0	0	0	0	0	0	0
LINE 2	0.90 0.10 6.64	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. De DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
De	NONE NOTED	

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Ee DATE : 8-30-84

N to S 45 deg TRANSDUCER

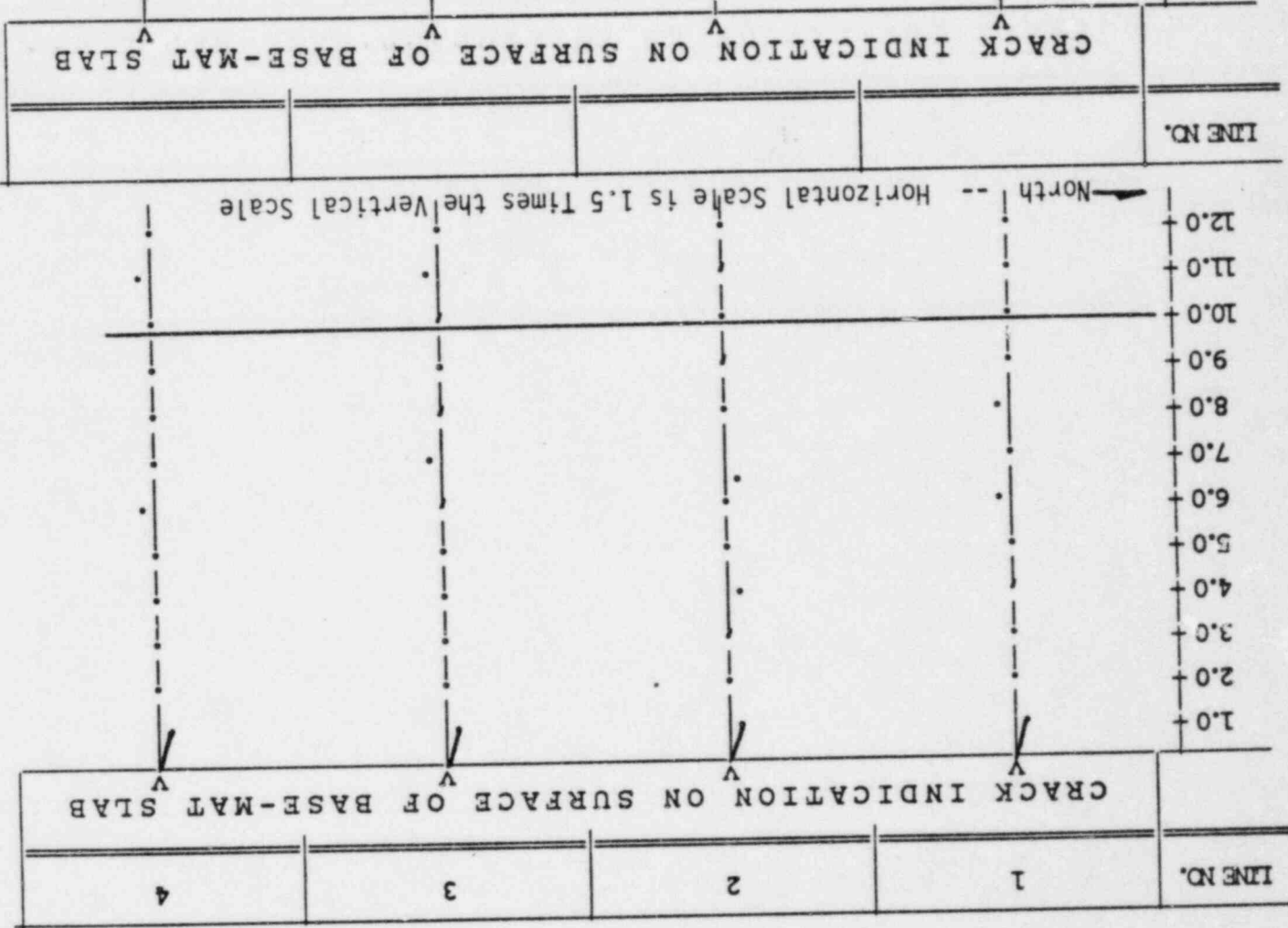
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	85 0.80 0.20 13.92	0 0.00 0.00 0.00	0 0.00 0.00 0.00	140 1.32 2.68 63.78	0 0.00 0.00 0.00	640 6.03 0.03 0.32	0 0.00 0.00 0.00	870 8.20 0.20 1.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 2	85 0.80 0.20 13.92	0 0.00 0.00 0.00	170 1.60 1.40 41.08	410 3.87 0.13 1.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	700 6.60 0.40 3.47	0 0.00 0.00 0.00	480 4.53 4.47 44.68	0 0.00 0.00 0.00	510 4.81 6.19 52.17	0 0.00 0.00 0.00
LINE 3	90 0.85 0.15 10.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	290 2.73 3.27 50.06	760 7.17 0.17 1.32	480 4.53 3.47 37.52	0 0.00 0.00 0.00	490 4.62 5.38 49.35	1170 11.03 0.03 0.16	0 0.00 0.00 0.00
LINE 4	85 0.80 0.20 13.92	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	640 6.03 0.03 0.32	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1170 11.03 0.03 0.16	0 0.00 0.00 0.00

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Ee DATE : 8-30-84 N to S 45 deg TRANSDUCER



12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0

CRACK INDICATION ON SURFACE OF BASE-MAT SLAB

LINE NO.

Horizontal Scale is 1.5 Times the Vertical Scale

12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0

CRACK INDICATION ON SURFACE OF BASE-MAT SLAB

LINE NO.

1 2 3 4

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
Ee	1/4	1
Ee	1/6	1
Ee	1/8	1
Ee	2/3	1
Ee	2/4	1
Ee	2/7	1
Ee	2/9	1
Ee	2/11	4
Ee	3/6	2
Ee	3/7	1
Ee	3/10	4
Ee	3/11	4
Ee	4/6	1
Ee	4/11	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION Fe

OPERATOR R.A. MUENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO ⊥	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	75* 0	170 0	270 360	370 450	450 600	580 0	640 0	770 910	890 990	940 0	1090 0	1210 0
LINE NO. 2	70* 130	170 0	270 350	360 460	440 620	550 710	660 820	840 850	890 0	990 1130	1100 1060	1100 0
LINE NO. 3	100 110	180 0	280 0	360 480	490 0	610 650	660 800	690 0	940 970	990 0	1010 980	1120 0
LINE NO. 4	80 120	170 230	270 350	380 460	490 570	550 0	640 0	720 0	840 0	890 0	1080 960	1140 1045
LINE NO. 5	80 125	190 210	280 0	370 460	470 590	595 0	680 0	0 710	480* 0	0 890	1170 0	0 0
LINE NO. 6	80 0	180 0	280 340	360 480	490 0	0 0	0 740	690 0	970 0	0 0	0 810	980 1270
LINE NO. 7	80 0	180 0	270 0	0 0	0 0	640 0	0 0	0 850	940 0	0 840*	790* 0	0 0
LINE NO. 8	80 120	185 235	0 0	0 0	520 0	0 0	0 0	0 0	0 770*	800 0	0 0	0 0

169

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Fe DATE : 8-30-84

N to S 45 deg TRANSDUCER

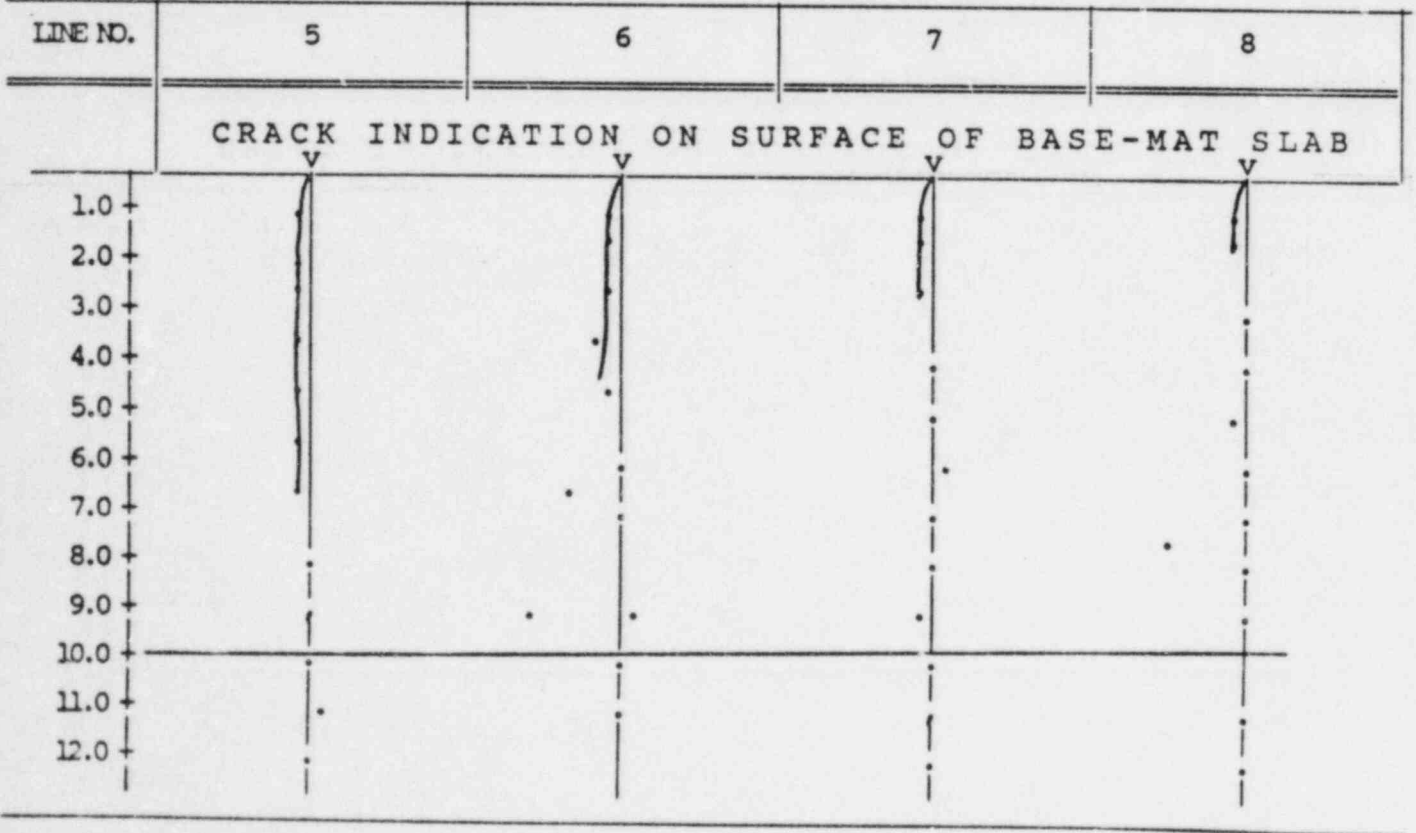
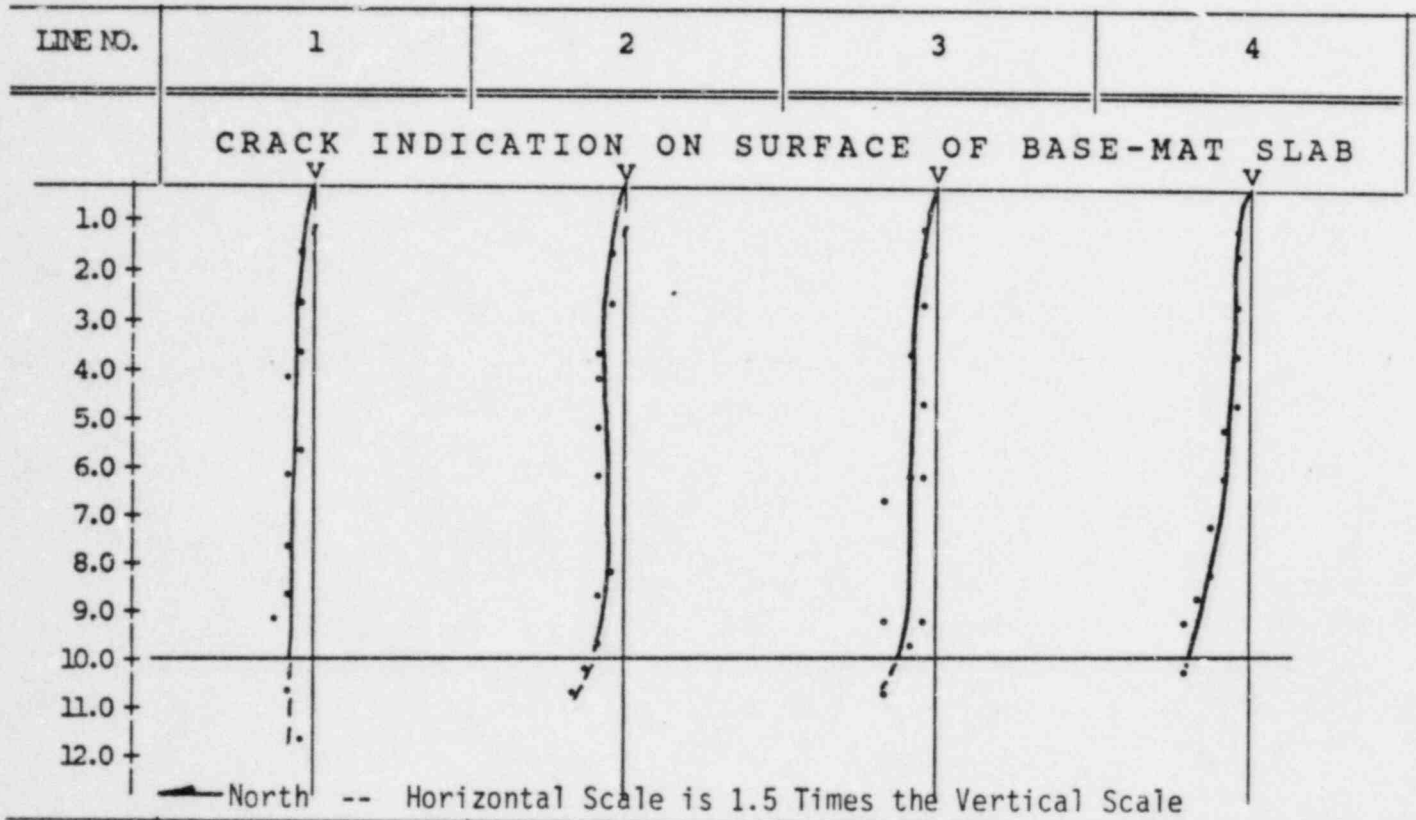
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	75	170	270	370	450	580	640	770	890	940	1090	1210
LINE 1	0.71 0.29 22.50	1.60 0.40 13.92	2.55 0.45 10.12	3.49 0.51 8.34	4.24 0.76 10.12	5.47 0.53 5.55	6.03 0.97 9.10	7.26 0.74 5.82	8.39 0.61 4.15	8.86 1.14 7.31	10.28 0.72 4.03	11.41 0.59 2.97
	70	170	270	360	440	550	660	840	890	990	1060	1100
LINE 2	0.66 0.34 27.26	1.60 0.40 13.92	2.55 0.45 10.12	3.39 0.61 10.12	4.15 0.85 11.60	5.19 0.81 8.93	6.22 0.78 7.12	7.92 0.03 0.58	8.39 0.61 4.15	9.33 0.67 4.08	9.93 1.01 5.75	10.37 1.63 8.93
	100	180	280	360	490	610	660	690	940	990	960	1120
LINE 3	0.94 0.06 3.47	1.70 0.30 10.12	2.64 0.36 7.77	3.39 0.61 10.12	4.62 0.38 4.71	5.75 0.25 2.48	6.22 0.78 7.12	6.51 1.49 12.94	8.86 0.14 0.89	9.33 0.67 4.08	9.24 1.76 10.79	10.56 1.44 7.77
	80	170	270	380	490	550	640	720	840	890	960	1045
LINE 4	0.75 0.25 18.05	1.60 0.40 13.92	2.55 0.45 10.12	3.58 0.42 6.64	4.62 0.38 4.71	5.19 0.81 8.93	6.03 0.97 9.10	6.79 1.21 10.12	7.92 1.08 7.77	8.39 1.61 10.85	9.05 1.95 12.15	9.85 2.15 12.30
	80	190	280	370	470	595	680	0	480	0	1170	0
LINE 5	0.75 0.25 18.05	1.79 0.21 6.64	2.64 0.36 7.77	3.49 0.51 8.34	4.43 0.57 7.31	5.61 0.39 3.98	6.41 0.59 5.25	0.00 0.00 0.00	4.53 4.47 44.68	0.00 0.00 0.00	11.03 0.03 0.16	0.00 0.00 0.00
	80	180	280	360	490	0	0	690	970	0	0	980
LINE 6	0.75 0.25 18.05	1.70 0.30 10.12	2.64 0.36 7.77	3.39 0.61 10.12	4.62 0.38 4.71	0.00 0.00 0.00	0.00 0.00 0.00	6.51 1.49 12.94	9.15 0.15 0.91	0.00 0.00 0.00	0.00 0.00 0.00	9.24 2.76 16.63
	80	180	270	0	0	640	0	0	940	0	790	0
LINE 7	0.75 0.25 18.05	1.70 0.30 10.12	2.55 0.45 10.12	0.00 0.00 0.00	0.00 0.00 0.00	6.03 0.03 0.32	0.00 0.00 0.00	0.00 0.00 0.00	8.86 0.14 0.89	0.00 0.00 0.00	7.45 3.55 25.49	0.00 0.00 0.00
	80	185	0	0	520	0	0	0	0	800	0	0
LINE 8	0.75 0.25 18.05	1.74 0.26 8.34	0.00 0.00 0.00	0.00 0.00 0.00	4.90 0.10 1.14	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	7.54 2.46 18.05	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Fe DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muerow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
Fe	3/8	1
Fe	3/9	1
Fe	3/10	4
Fe	3/11	4
Fe	3/12	4
Fe	5/9	1
Fe	5/11	4
Fe	6/8	3
Fe	6/9	1
Fe	6/12	4
Fe	7/6	1
Fe	7/9	1
Fe	7/11	4
Fe	8/5	1
Fe	8/10	4

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. He DATE : 8-30-84

N to S 45 deg TRANSDUCER

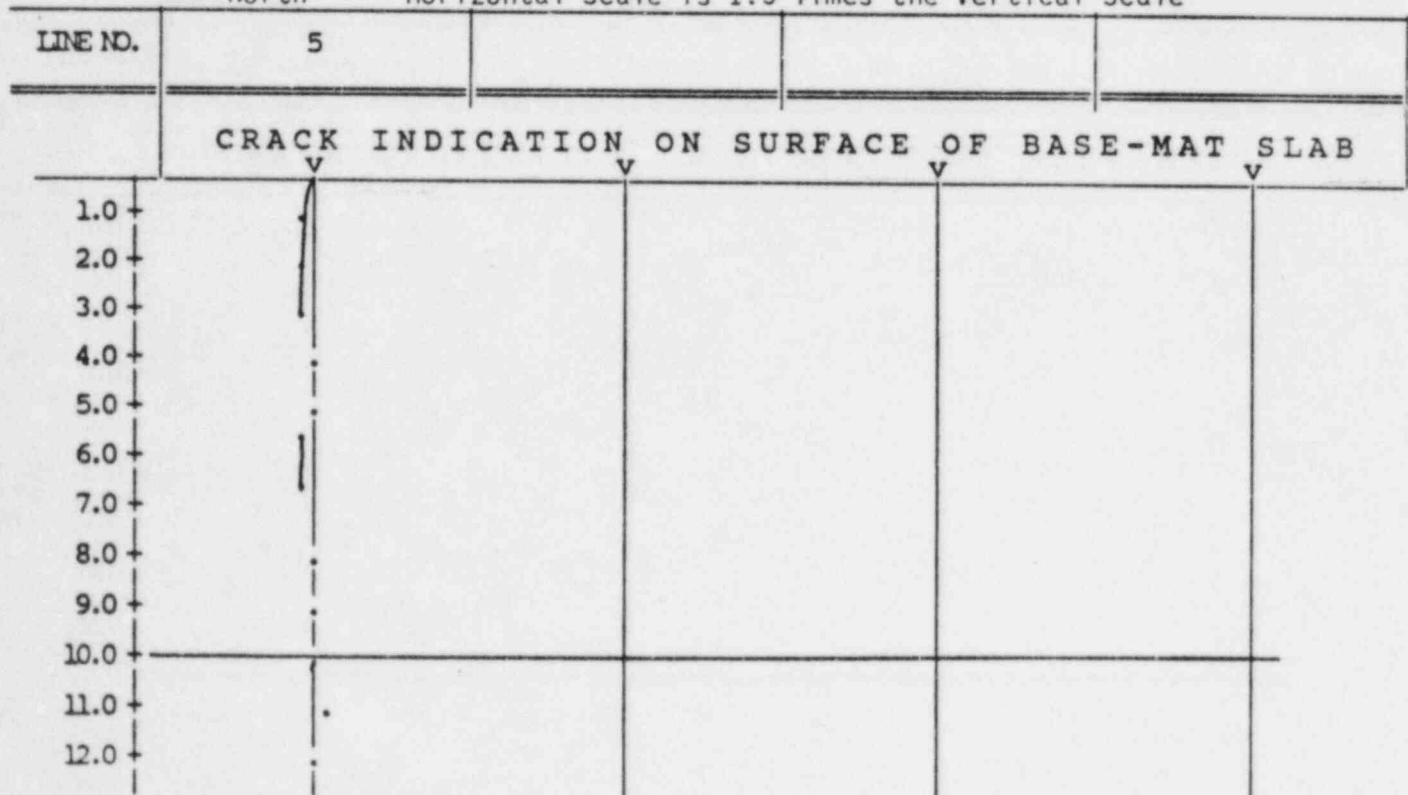
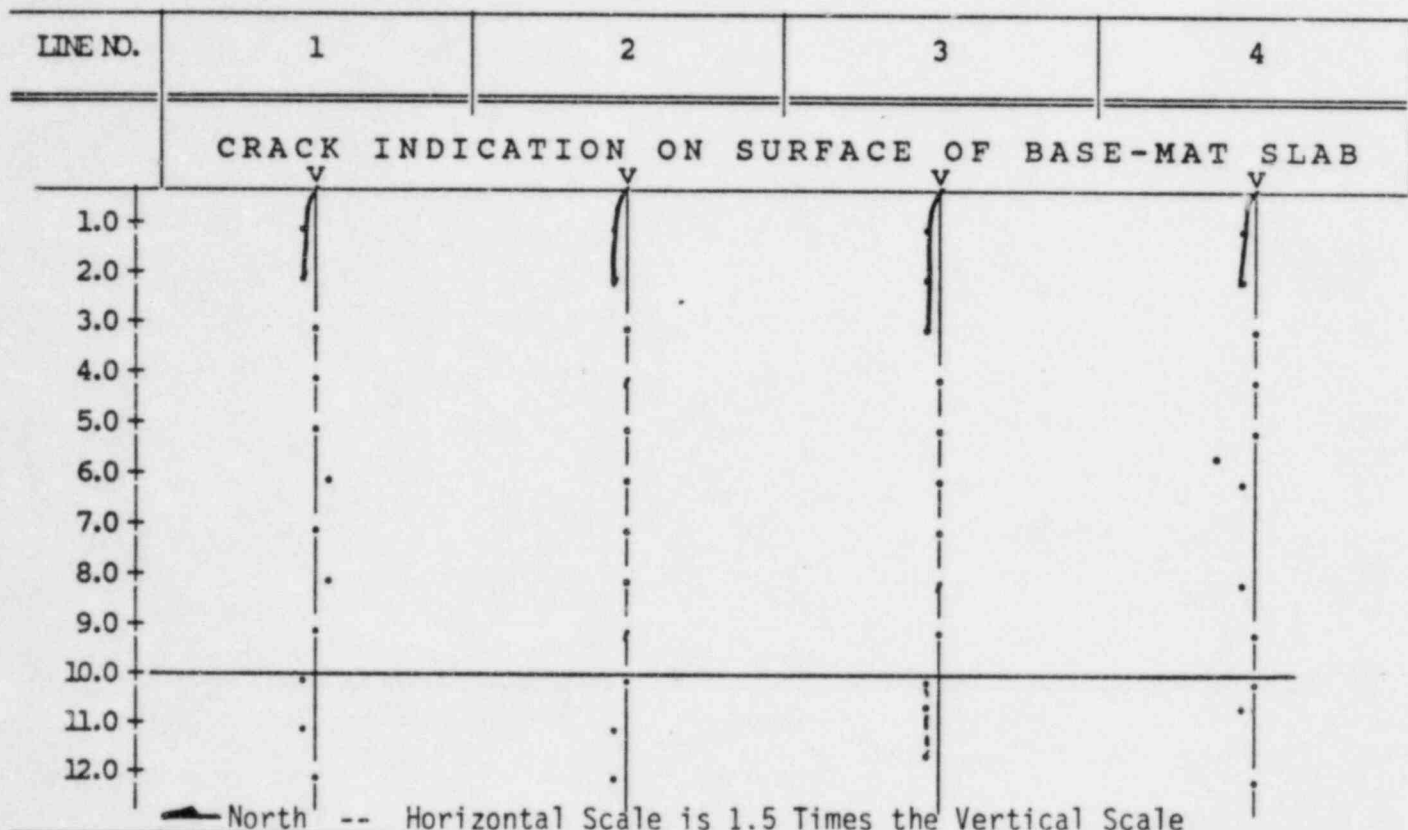
TEST # ME to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	90	190	0	0	0	640	0	850	0	1050	1150	0
LINE 1	0.85 0.15 10.12	1.79 0.21 6.64	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	6.03 0.03 0.32	0.00 0.00 0.00	8.01 0.01 0.10	0.00 0.00 0.00	9.90 0.10 0.58	10.84 0.16 0.83	0.00 0.00 0.00
	100	190	0	150	0	0	0	0	190	0	1150	1250
LINE 2	0.94 0.06 3.47	1.79 0.21 6.64	0.00 0.00 0.00	1.41 2.59 61.32	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	1.79 7.21 76.04	0.00 0.00 0.00	10.84 0.16 0.83	11.79 0.21 1.04
	100	190	300	0	0	0	0	410	0	1050	1130	1240
LINE 3	0.94 0.06 3.47	1.79 0.21 6.64	2.83 0.17 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	3.87 4.13 46.93	0.00 0.00 0.00	9.90 0.10 0.58	10.65 0.35 1.86	11.69 0.31 1.51
	90	190	0	0	0	610	600	840	0	0	1140	0
LINE 4	0.85 0.15 10.12	1.79 0.21 6.64	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.75 0.25 2.48	5.66 1.34 13.36	7.92 0.08 0.58	0.00 0.00 0.00	0.00 0.00 0.00	10.75 0.25 1.34	0.00 0.00 0.00
	90	190	310	0	0	605	700	0	0	530	1170	0
LINE 5	0.85 0.15 10.12	1.79 0.21 6.64	2.92 0.08 1.51	0.00 0.00 0.00	0.00 0.00 0.00	5.70 0.30 2.97	6.60 0.40 3.47	0.00 0.00 0.00	0.00 0.00 0.00	5.00 5.00 45.04	11.03 0.03 0.16	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. He DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
He	1/6	1
He	1/8	1
He	1/10	4
He	1/11	4
He	2/4	3
He	2/9	3
He	2/11	4
He	2/12	4
He	3/8	3
He	4/11	4
He	5/10	4
He	5/11	4

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Je DATE : 8-30-84

N to S 45 deg TRANSDUCER

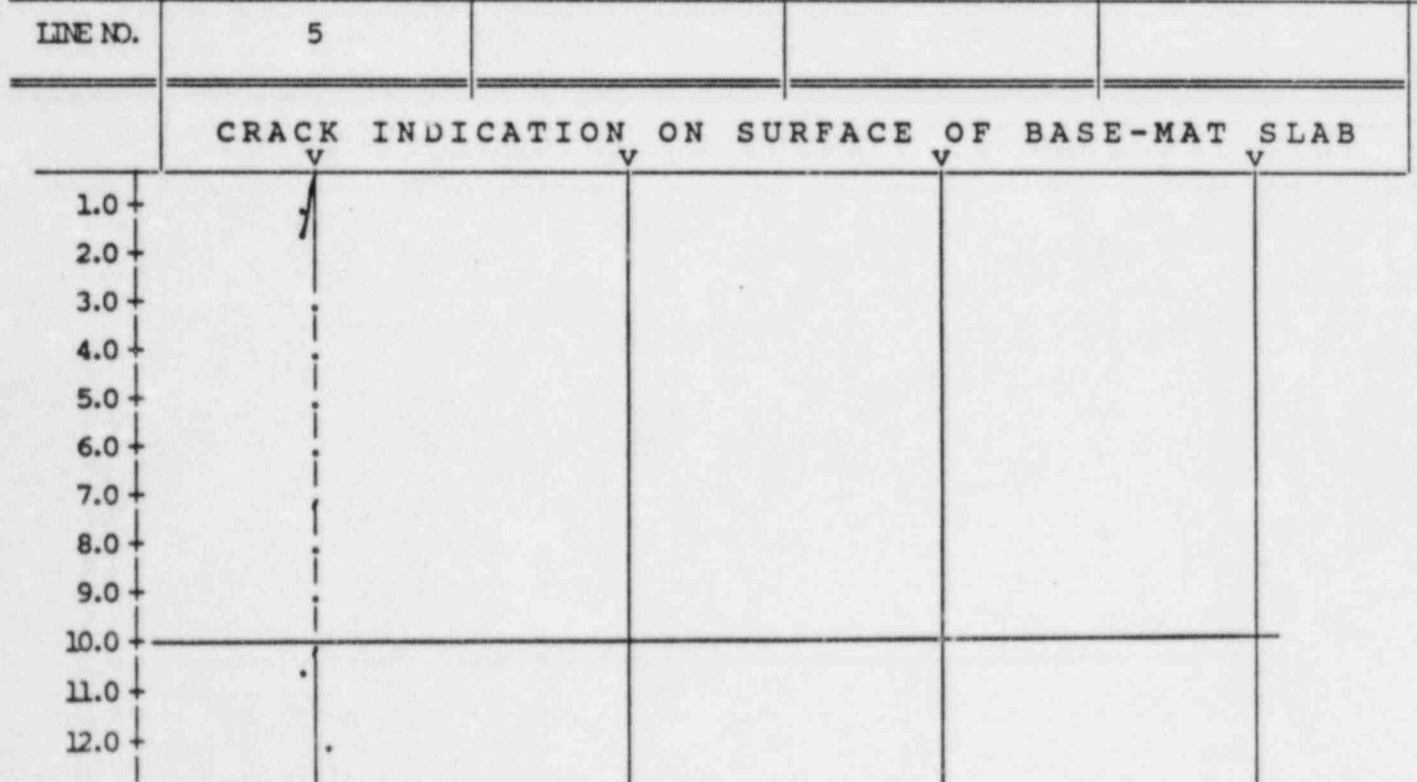
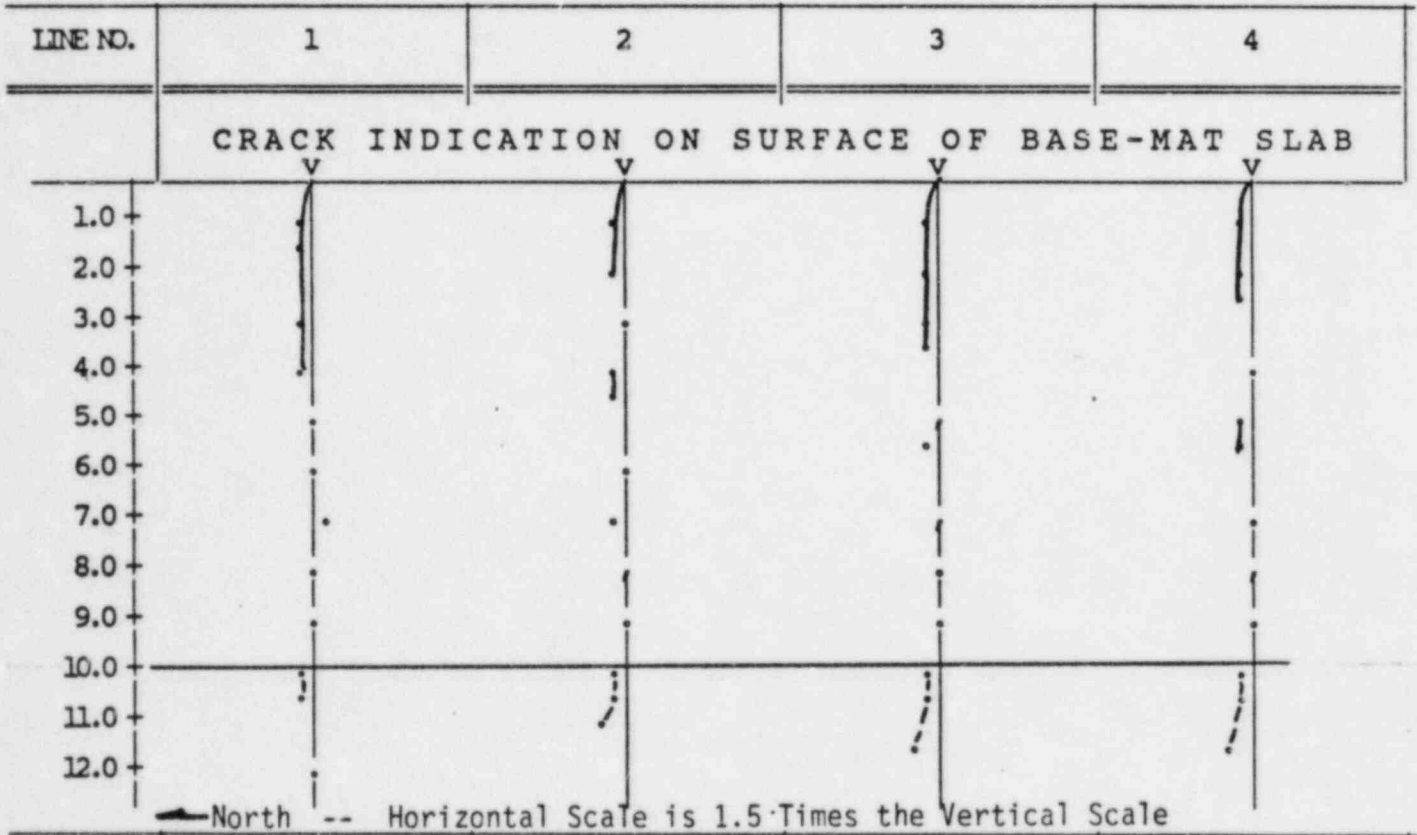
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	85	180	310	410		0	760	0	0	1040	1120	0
LINE 1	0.80 0.20 13.92	1.70 0.30 10.12	2.92 0.08 1.51	3.87 0.13 1.99	0.00 0.00 0.00	0.00 0.00 0.00	7.17 0.17 1.32	0.00 0.00 0.00	0.00 0.00 0.00	9.81 0.19 1.14	10.56 0.44 2.39	0.00 0.00 0.00
	90	190	0	410	500	0	740	430	0	1040	1120	1190
LINE 2	0.85 0.15 10.12	1.79 0.21 6.64	0.00 0.00 0.00	3.87 0.13 1.99	4.71 0.29 3.47	0.00 0.00 0.00	6.98 0.02 0.19	4.05 3.95 44.23	0.00 0.00 0.00	9.81 0.19 1.14	10.56 0.44 2.39	11.22 0.78 3.98
	90	190	310	370	220	600	410	0	0	1040	1130	1200
LINE 3	0.85 0.15 10.12	1.79 0.21 6.64	2.92 0.08 1.51	3.49 0.51 8.34	2.07 2.93 54.67	5.66 0.34 3.47	3.87 3.13 39.04	0.00 0.00 0.00	0.00 0.00 0.00	9.81 0.19 1.14	10.65 0.35 1.86	11.31 0.69 3.47
	90	190	290	0	530	600	0	400	0	1040	1130	1200
LINE 4	0.85 0.15 10.12	1.79 0.21 6.64	2.73 0.27 5.55	0.00 0.00 0.00	5.00 0.00 0.04	5.66 0.34 3.47	0.00 0.00 0.00	3.77 4.23 48.27	0.00 0.00 0.00	9.81 0.19 1.14	10.65 0.35 1.86	11.31 0.69 3.47
	90	180	0	0	0	0	390	0	0	770	1140	1290
LINE 5	0.85 0.15 10.12	1.70 0.30 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	3.68 3.32 42.11	0.00 0.00 0.00	0.00 0.00 0.00	7.26 2.74 20.68	10.75 0.25 1.34	12.16 0.16 0.76

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Je DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

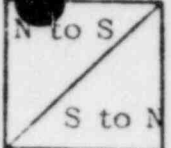
MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
Je	1/7	3
Je	2/7	3
Je	2/8	2
Je	3/5	2
Je	3/7	1
Je	4/8	1
Je	5/7	1
Je	5/10	4
Je	5/11	4
Je	5/12	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION Ke

OPERATOR R.A. MLENOW

P.E. INSTRUMENT NO. B542588

TEST NO. MSEC TO \perp	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	90 110	190 0	300 0	370 0	460 600	NA NA	680 800	820 0	890 0	990 0	1100 0	1150 0
LINE NO. 2	80 0	190 0	280 0	370 450	470 580	570 0	670 0	800 880	890 0	890 1090	1010 0	1210 1340
LINE NO. 3	80 120	170 0	270 340	340 500	450 0	NA 0	640 0	710* 0	880 1020	1000 1070	1020 0	1190 0
LINE NO. 4	NA 0	170 240	260 360	380 460	460 600	600 0	670 0	740 930	900 0	940 0	1040 1210	1100 0
LINE NO. 5	90 110	180 0	270 0	340 500	440 680	540 0	620 0	710* 0	920 980	970 0	1010 1210	1100 0
LINE NO. 6	90 110	180 240	290 0	370 470	460 600	600 680	700 0	750 0	900 1000	1100 0	1110 0	1190 1380
LINE NO. 7	100 110	200 220	300 320	340 0	480 580	NA 0	NA 0	NA 890	870 0	980 0	1060 0	1200 1310
LINE NO. 8	90 110	180 220	310 320	340 510	500 0	600 670	700 0	740 0	940 0	1010 1080	1100 1220	1210 0

211

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Ke DATE : 8-30-84 N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	90	190	300	370	460	0	680	820	890	990	1100	1150
LINE 1	0.85 0.15 10.12	1.79 0.21 6.64	2.83 0.17 3.47	3.49 0.51 8.34	4.34 0.66 8.69	0.00 0.00 0.00	6.41 0.59 5.25	7.73 0.27 1.99	8.39 0.61 4.15	9.33 0.67 4.08	10.37 0.63 3.47	10.84 1.16 6.09
	80	190	280	370	470	570	670	800	890	1010	1090	1210
LINE 2	0.75 0.25 18.05	1.79 0.21 6.64	2.64 0.36 7.77	3.49 0.51 8.34	4.43 0.57 7.31	5.37 0.63 6.64	6.32 0.68 6.17	7.54 0.46 3.47	8.39 0.61 4.15	9.52 0.48 2.87	10.28 0.72 4.03	11.41 0.59 2.97
	80	170	270	340	450	0	640	710	880	1000	1020	1190
LINE 3	0.75 0.25 18.05	1.60 0.40 13.92	2.55 0.45 10.12	3.21 0.79 13.92	4.24 0.76 10.12	0.00 0.00 0.00	6.03 0.97 9.10	6.69 1.31 11.04	8.30 0.70 4.85	9.43 0.57 3.47	9.62 1.38 8.19	11.22 0.78 3.98
	0	170	260	380	460	600	670	740	900	940	1040	1100
LINE 4	0.00 0.00 0.00	1.60 0.40 13.92	2.45 0.55 12.62	3.58 0.42 6.64	4.34 0.66 8.69	5.66 0.34 3.47	6.32 0.68 6.17	6.98 1.02 8.34	8.49 0.51 3.47	8.86 1.14 7.31	9.81 1.19 6.95	10.37 1.63 8.93
	90	180	270	340	440	540	620	710	920	970	1010	1100
LINE 5	0.85 0.15 10.12	1.70 0.30 10.12	2.55 0.45 10.12	3.21 0.79 13.92	4.15 0.85 11.60	5.09 0.91 10.12	5.85 1.15 11.17	6.69 1.31 11.04	8.67 0.33 2.15	9.15 0.85 5.34	9.52 1.48 8.82	10.37 1.63 8.93
	90	180	290	370	460	600	700	750	900	1100	1110	1190
LINE 6	0.85 0.15 10.12	1.70 0.30 10.12	2.73 0.27 5.55	3.49 0.51 8.34	4.34 0.66 8.69	5.66 0.34 3.47	6.60 0.40 3.47	7.07 0.93 7.48	8.49 0.51 3.47	10.37 0.37 2.05	10.47 0.53 2.93	11.22 0.78 3.98
	100	200	300	340	480	0	0	0	870	980	1060	1200
LINE 7	0.94 0.06 3.47	1.89 0.11 3.47	2.83 0.17 3.47	3.21 0.79 13.92	4.53 0.47 5.99	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	8.20 0.80 5.55	9.24 0.76 4.71	9.99 1.01 5.75	11.31 0.69 3.47
	90	180	310	340	500	600	700	740	940	1010	1100	1210
LINE 8	0.85 0.15 10.12	1.70 0.30 10.12	2.92 0.08 1.51	3.21 0.79 13.92	4.71 0.29 3.47	5.66 0.34 3.47	6.60 0.40 3.47	6.98 1.02 8.34	8.36 0.14 0.89	9.52 0.48 2.87	10.37 0.63 3.47	11.41 0.59 2.97

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Ke DATE : 8-30-84

N to S 45 deg TRANSDUCER

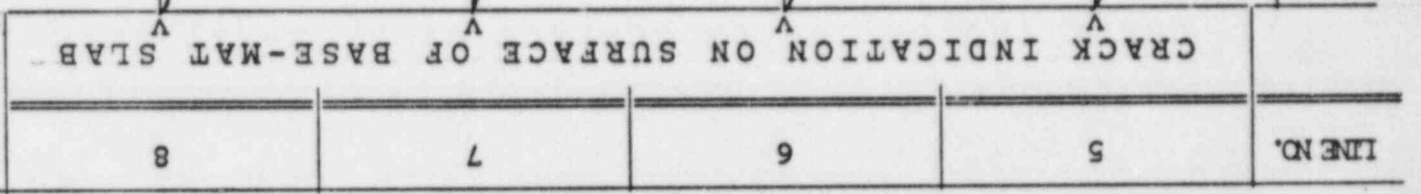
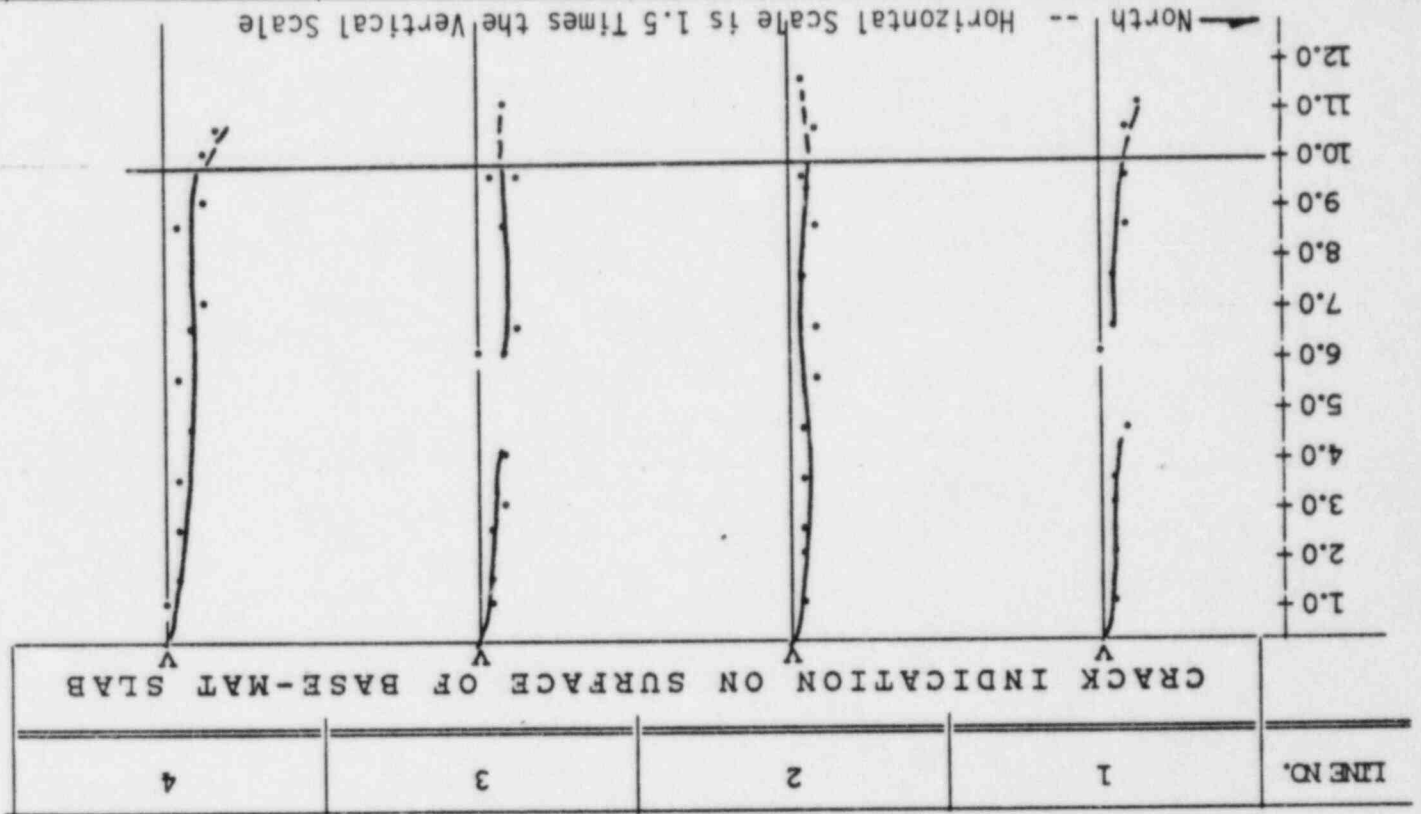
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	90	170	260	360	440	520	610	700	780	890	990	1200
LINE 9	0.85 0.15 10.12	1.60 0.40 13.92	2.45 0.55 12.62	3.39 0.61 10.12	4.15 0.85 11.60	4.90 1.10 12.62	5.75 1.25 12.25	6.60 1.40 11.98	7.35 1.65 12.62	8.39 1.61 10.85	9.33 1.67 10.12	11.31 0.69 3.47
	75	160	270	340	440	510	640	700	800	1080	1100	1150
LINE 10	0.71 0.29 22.50	1.51 0.49 18.05	2.55 0.45 10.12	3.21 0.79 13.92	4.15 0.85 11.60	4.81 1.19 13.92	6.03 0.97 9.10	6.60 1.40 11.98	7.54 1.46 10.94	10.18 0.18 1.03	10.37 0.63 3.47	10.84 1.16 6.09
	70	150	230	360	0	0	0	0	0	0	0	0
LINE 11	0.66 0.34 27.26	1.41 0.59 22.50	2.17 0.83 20.98	3.39 0.61 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	75	160	250	330	470	0	0	0	0	0	0	0
LINE 12	0.71 0.29 22.50	1.51 0.49 18.05	2.36 0.64 15.26	3.11 0.89 15.94	4.43 0.57 7.31	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	70	170	260	340	490	0	0	0	0	0	0	0
LINE 13	0.66 0.34 27.26	1.60 0.40 13.92	2.45 0.55 12.62	3.21 0.79 13.92	4.62 0.38 4.71	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	80	160	270	340	470	0	0	0	0	0	0	0
LINE 14	0.75 0.25 18.05	1.51 0.49 18.05	2.55 0.45 10.12	3.21 0.79 13.92	4.43 0.57 7.31	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	70	175	270	380	470	0	0	0	0	0	0	0
LINE 15	0.66 0.34 27.26	1.65 0.35 11.98	2.55 0.45 10.12	3.58 0.42 6.64	4.43 0.57 7.31	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Ke DATE : 8-30-84 N to S 45 deg TRANSDUCER

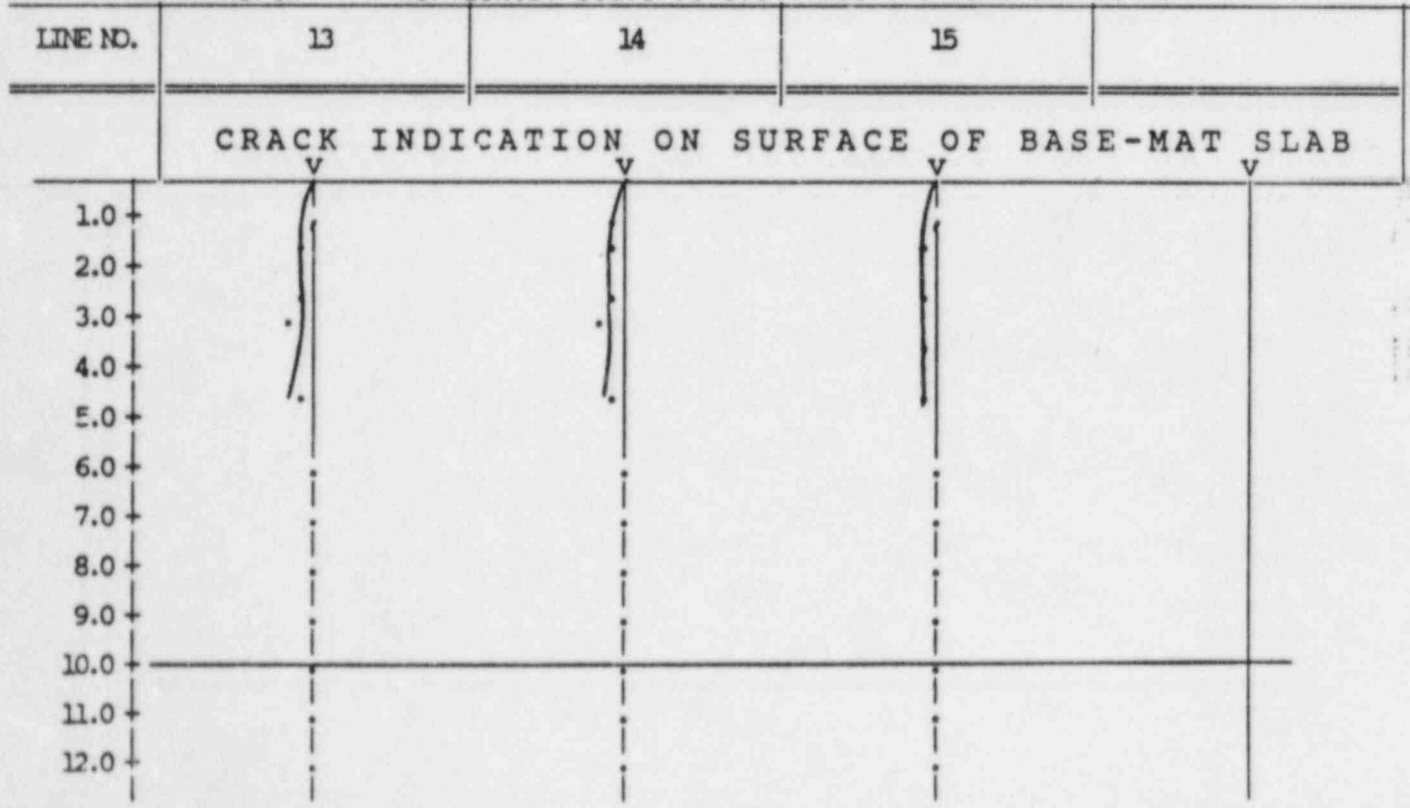
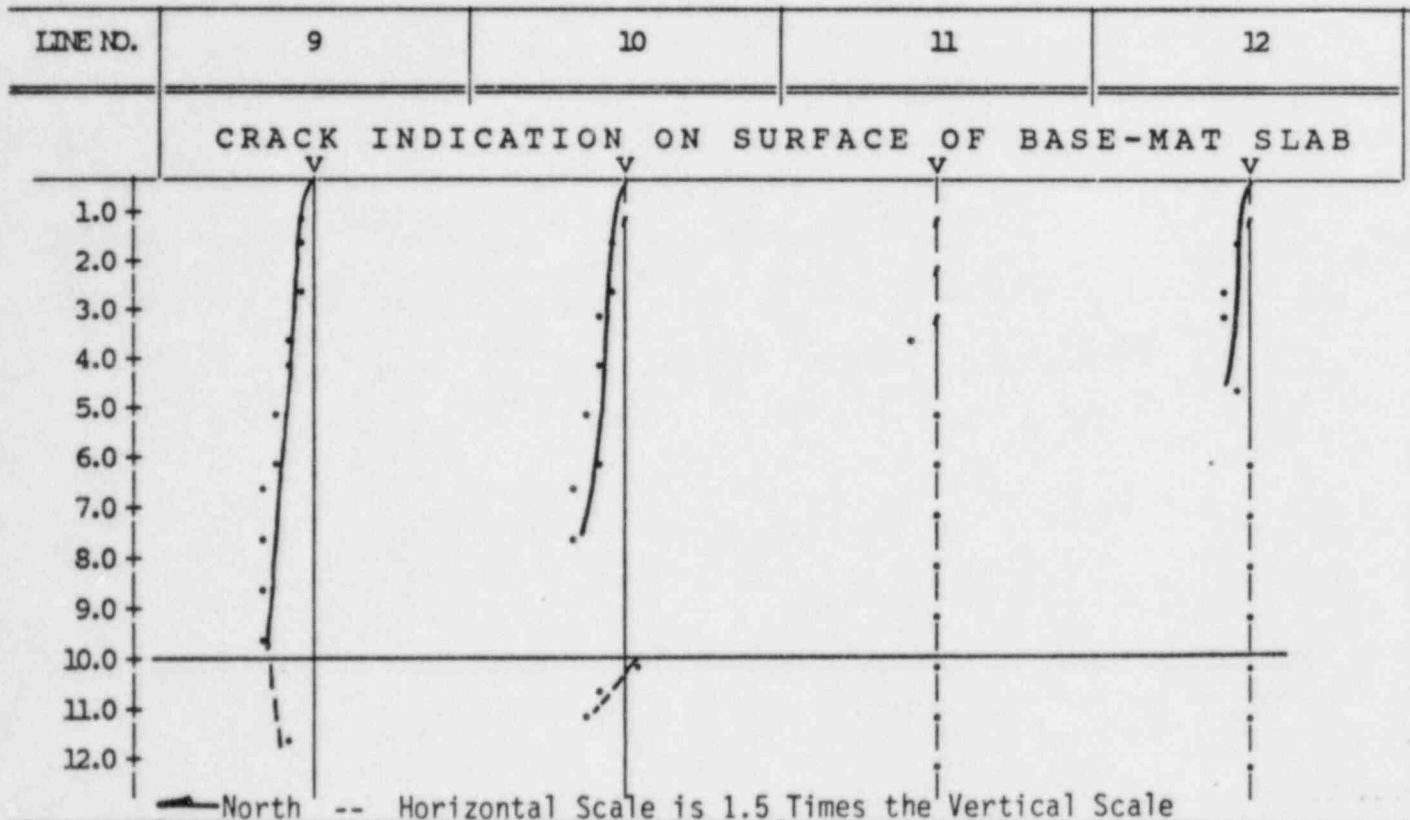


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Ke DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

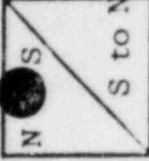
IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
Ke	6/10	4
Ke	6/11	4
Ke	6/12	4
Ke	11/1	1
Ke	11/2	1
Ke	11/3	1
Ke	11/4	1

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

CRACK IDENTIFICATION Le OPERATOR R. A. MUENOW P. E. INSTRUMENT NO. B542588



TEST NO. SPEC TO ⊥	1	2	3	4	5	6	7	8	9	10	11	12
LINE NO. 1	90 106	190 212	310 318	400 425	500 530	600 636	690 742	800 848	900 955	1000 1060	1140 1166	1240 1272
LINE NO. 2	90 110	180 210	280 320	370 440	500 570	580 670	740 740	810 870	900 1010	1000 1000	1170 1210	1210 0
LINE NO. 3	90 110	190 195	270 340	370 470	480 570	600 670	740 0	810 0	900 480	1000 1120	1140 0	1240 0
LINE NO. 4	90 0	180 0	270 340	380 470	480 0	590 0	740 750	790 0	470* 0	0 1080	1120 0	1210 0
LINE NO. 5	80 0	180 0	280 0	370 0	470 590	500 0	0 740	0 390*	510 0	1040 1050	1120 1210	1240 0
LINE NO. 6	80 0	180 0	300 310	350 500	540 510	0 0	0 290*	370* 0	0 0	1040 1070	1120 0	1200 0
LINE NO. 7	90 0	180 0	310 310	0 0	0 0	0 640	0 740	0 430*	480 950	0 0	1150 0	1200 1290
LINE NO. 8	100 110	190 0	300 0	370 0	0 0	0 0	0 0	440* 850	0 0	0 0	1140 0	0 0

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. Le DATE : 8-30-84

N to S 45 deg TRANSDUCER

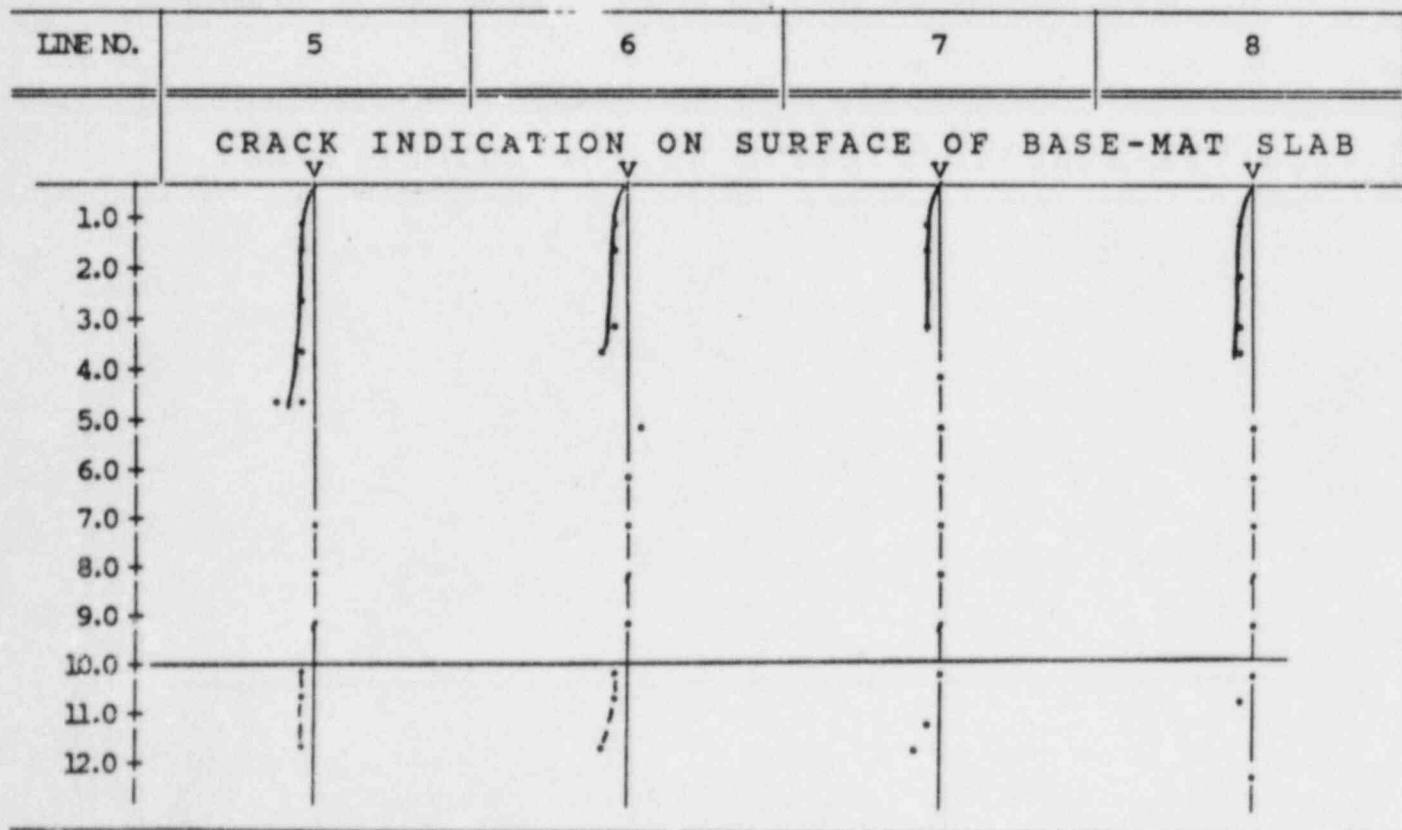
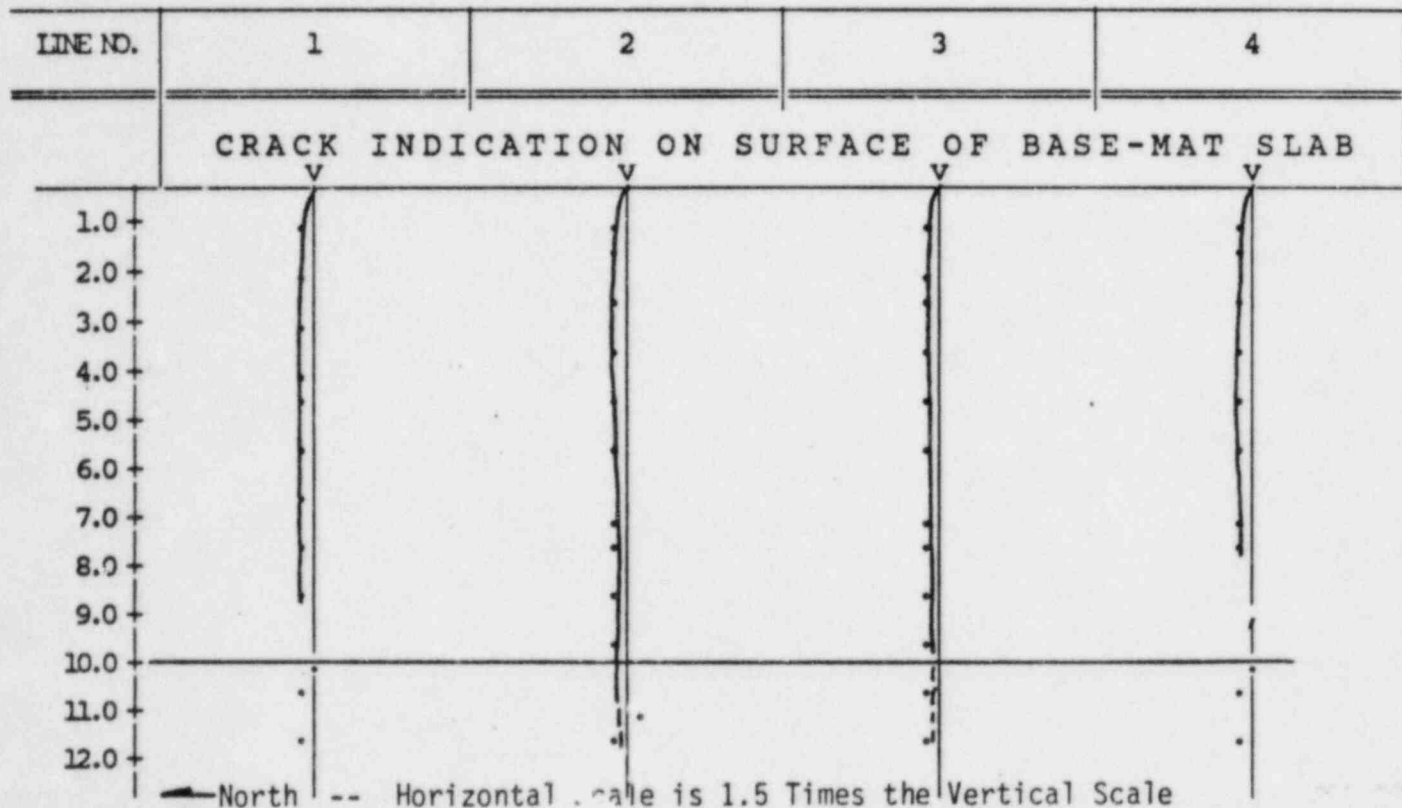
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	90 0.85 0.15 10.12	190 1.79 0.21 6.64	310 2.92 0.08 1.51	400 3.77 0.23 3.47	500 4.71 0.29 3.47	600 5.66 0.34 3.47	690 6.51 0.49 4.35	800 7.54 0.46 3.47	900 8.49 0.51 3.47	0 0.00 0.00 0.00	1140 10.75 0.25 1.34	1240 11.69 0.31 1.51
LINE 2	90 0.85 0.15 10.12	180 1.70 0.30 10.12	280 2.64 0.36 7.77	370 3.49 0.51 8.34	500 4.71 0.29 3.47	580 5.47 0.53 5.55	740 6.98 0.02 0.19	810 7.64 0.36 2.72	900 8.49 0.51 3.47	1000 9.43 0.57 3.47	1170 11.03 0.03 0.16	1210 11.41 0.59 2.97
LINE 3	90 0.85 0.15 10.12	190 1.79 0.21 6.64	270 2.55 0.45 10.12	370 3.49 0.51 8.34	480 4.53 0.47 5.99	600 5.66 0.34 3.47	740 6.98 0.02 0.19	810 7.64 0.36 2.72	900 8.49 0.51 3.47	1000 9.43 0.57 3.47	1140 10.75 0.25 1.34	1240 11.69 0.31 1.51
LINE 4	90 0.85 0.15 10.12	180 1.70 0.30 10.12	270 2.55 0.45 10.12	380 3.58 0.42 6.64	480 4.53 0.47 5.99	590 5.56 0.44 4.50	740 6.98 0.02 0.19	790 7.45 0.55 4.24	470 4.43 4.57 45.88	0 0.00 0.00 0.00	1120 10.56 0.44 2.39	1210 11.41 0.59 2.97
LINE 5	80 0.75 0.25 18.05	180 1.70 0.30 10.12	280 2.64 0.36 7.77	370 3.49 0.51 8.34	470 4.43 0.57 7.31	500 4.71 1.29 15.26	0 0.00 0.00 0.00	0 0.00 0.00 0.00	510 4.81 4.19 41.08	1040 9.81 0.19 1.14	1120 10.56 0.44 2.39	1240 11.69 0.31 1.51
LINE 6	80 0.75 0.25 18.05	180 1.70 0.30 10.12	300 2.83 0.17 3.47	350 3.30 0.70 11.98	540 5.09 0.09 1.03	0 0.00 0.00 0.00	0 0.00 0.00 0.00	370 3.49 4.51 52.29	0 0.00 0.00 0.00	1040 9.81 0.19 1.14	1120 10.56 0.44 2.39	1200 11.31 0.69 3.47
LINE 7	90 0.85 0.15 10.12	180 1.70 0.30 10.12	310 2.92 0.08 1.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	480 4.53 4.47 44.68	0 0.00 0.00 0.00	1150 10.84 0.16 0.83	1200 11.31 0.69 3.47
LINE 8	100 0.94 0.06 3.47	190 1.79 0.21 6.64	300 2.83 0.17 3.47	370 3.49 0.51 8.34	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	440 4.15 3.85 42.88	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1140 10.75 0.25 1.34	0 0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. Le DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
Le	1/11	4
Le	1/12	4
Le	4/9	1
Le	4/11	4
Le	4/12	4
Le	5/9	1
Le	6/5	1
Le	6/8	1
Le	7/9	3
Le	7/11	4
Le	7/12	4
Le	8/8	3
Le	8/11	4

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. 1e DATE : 8-30-84

N to S 45 deg TRANSDUCER

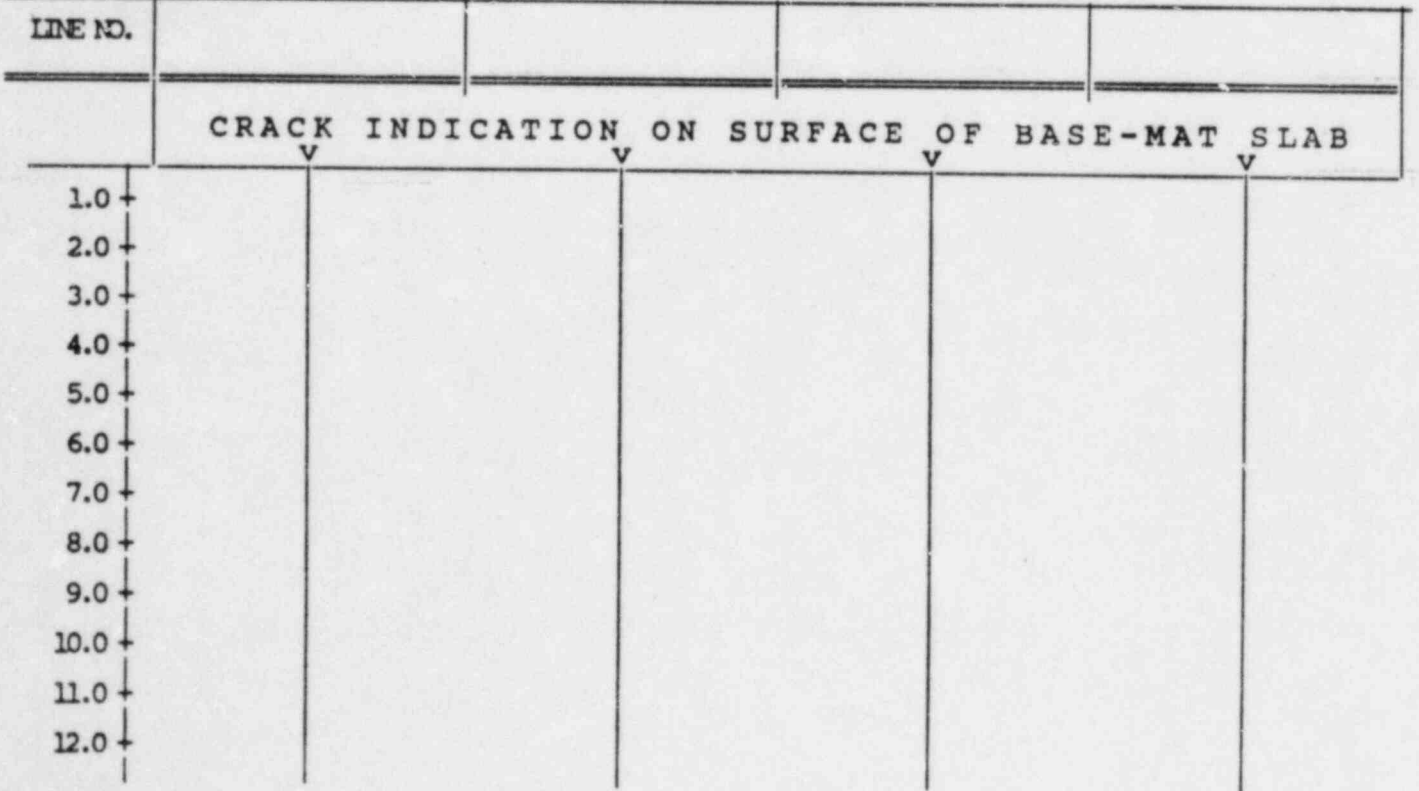
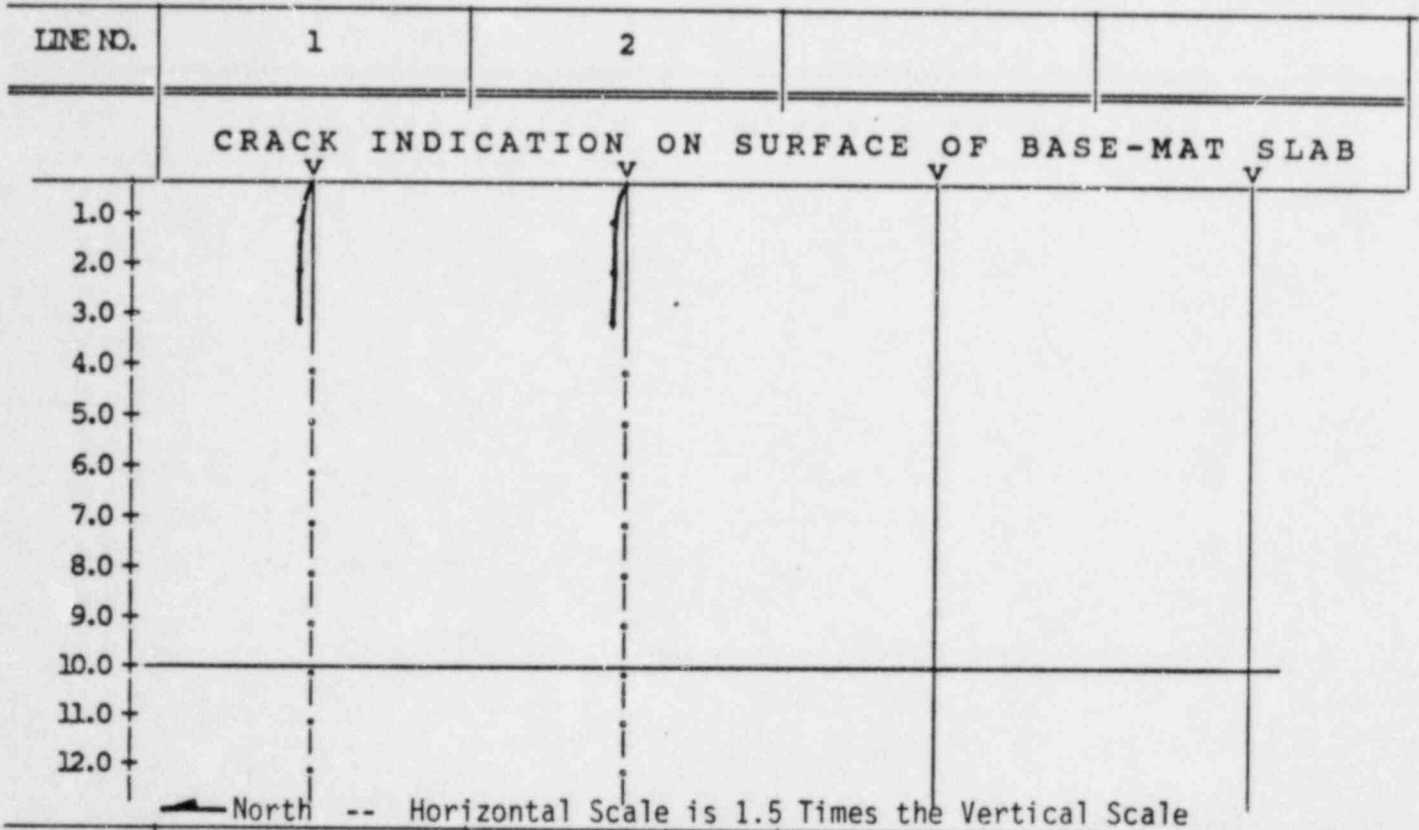
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	105	210	310	0	0	0	0	0	0	0	0	0
LINE 1	0.99 0.01 0.58	1.98 0.02 0.58	2.92 0.08 1.51	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	105	210	300	0	0	0	0	0	0	0	0	0
LINE 2	0.99 0.01 0.58	1.98 0.02 0.58	2.83 0.17 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. 1e DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
1e	NONE NOTED	

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAel DATE : 8-30-84

N to S 45 deg TRANSDUCER

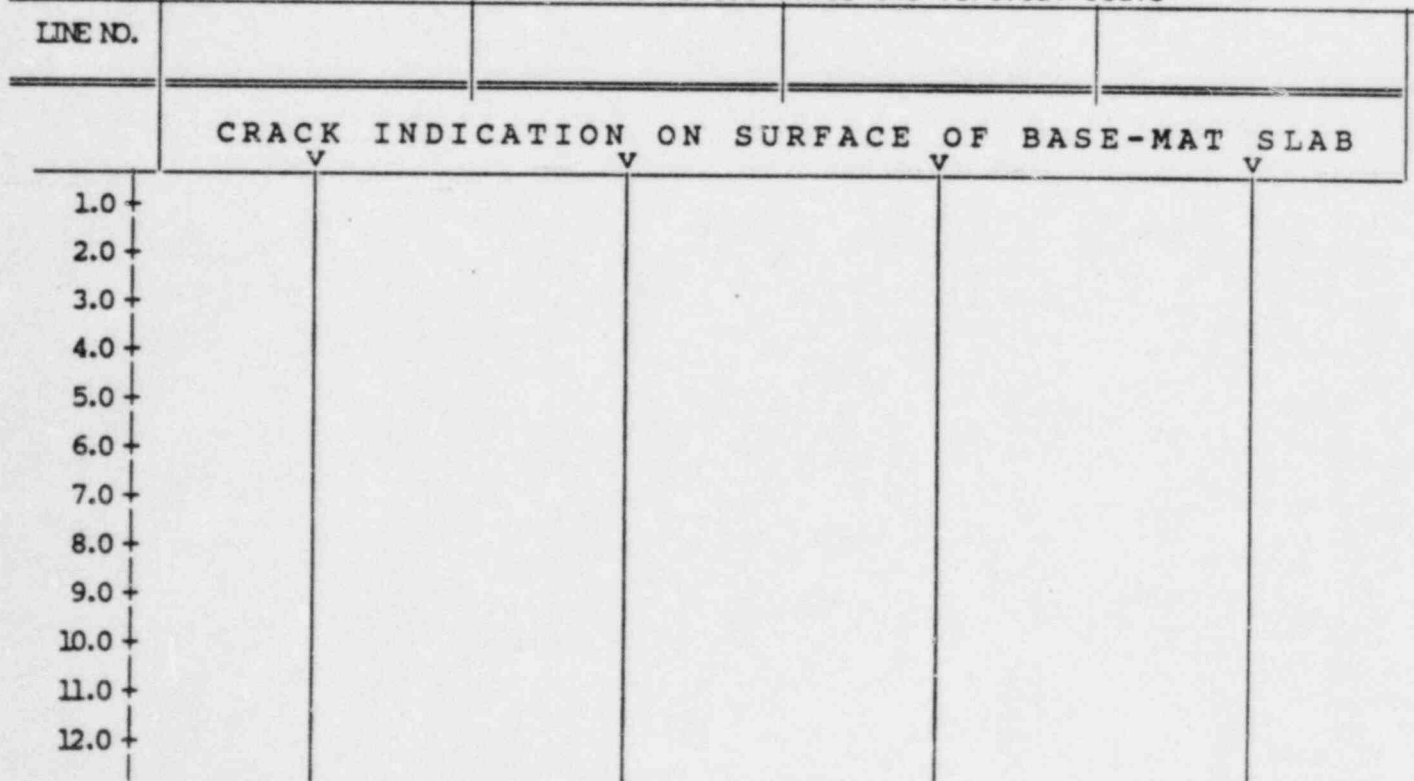
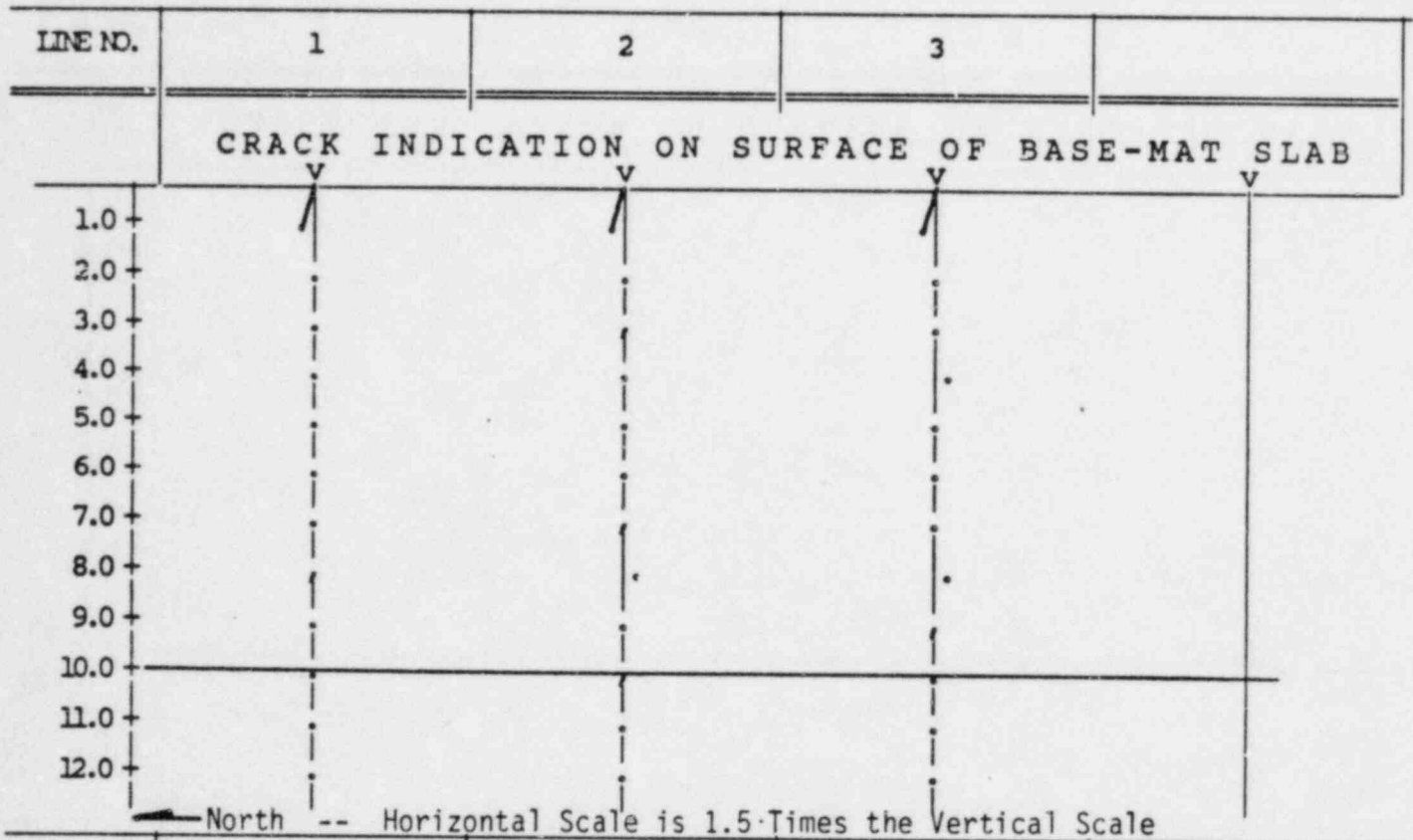
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	90	0	0	0	0	0	0	410	0	0	0	0
LINE 1	0.85 0.15 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	3.87 4.13 46.93	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	155	0	0	0	370	870	0	540	0	0
LINE 2	0.85 0.15 10.12	0.00 0.00 0.00	1.46 1.54 46.48	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	3.49 3.51 45.19	8.20 0.20 1.41	0.00 0.00 0.00	5.09 4.91 43.96	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	0	450	0	0	0	870	530	0	0	0
LINE 3	0.85 0.15 10.12	0.00 0.00 0.00	0.00 0.00 0.00	4.24 0.24 3.27	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	8.20 0.20 1.41	5.00 4.00 38.70	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe1 DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

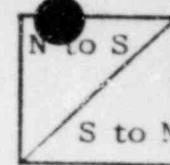
MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
DIA e1	1/8	3
DIA e1	2/3	1
DIA e1	2/7	2
DIA e1	2/8	2
DIA e1	2/10	4
DIA e1	3/4	3
DIA e1	3/8	3
DIA e1	3/9	3

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION EAST DIA. OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588
 e 3

TEST NO. MSEC TO ⊥	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	90 110	180 210	280 340	370 460	470 0	580 0	0 430	420* 870	0 980	0 0	NA NA	
LINE NO. 2	100 110	190 210	290 0	370 0	495 540	0 0	0 0	0 0	0 0	1070 1090	0 0	0 0
LINE NO. 3	90 0	180 0	300 0	0 0	0 370	390* 0	740 0	0 0	0 990	0 0	0 0	1240 0
LINE NO. 4	90 0	190 0	300 0	0 210	380* 570	0 0	0 360	480* 0	0 0	1070 0	0 0	0 0
230 LINE NO. 5	90 0	195 0	0 0	190* 0	0 0	590 310	370* 0	0 0	0 1100	0 510*	540* 0	1280 0
LINE NO. 6	90 0	180 0	300 310	0 0	0 290*	310* 0	750 0	0 0	1010 410*	510* 0	0 910*	0 1290
LINE NO. 7	90 0	180 240	290 330	0 0	0 580	0 0	0 0	0 0	540* 0	0 170*	810* 0	0 0
LINE NO. 8	90 120	180 0	0 0	0 0	0 0	0 0	770 0	870 0	0 0	190* 0	0 0	0 0

TEST DIRECTION

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1934



CRACK IDENTIFICATION EAST DIA. OPERATOR R. A. MUENOW P. E. INSTRUMENT NO. B542588

TEST NO. MSEC TO ↓	1	2	3	4	5	6	7	8	9	10	11	12
LINE NO. 9	90 106	180 212	0 318	0 425	0 530	0 636	0 742	0 848	0 955	1040 1060	0 1166	0 1272
LINE NO. 10	100 0	180 0	0 340	210* 0	0 440	0 680	0 0	0 0	0 0	0 1100	0 0	0 0
LINE NO. 11	90 0	0 100	190 0	0 0	0 260	340* 0	0 0	0 890	0 0	0 0	0 1100	0 0
LINE NO. 12	90 0	100 0	0 340	0 210	270* 0	0 0	0 360	410* 0	0 1010	0 0	0 0	0 810
LINE NO. 13	90 110	0 0	0 0	210* 0	0 0	680 320	370* 0	0 0	0 0	1090 0	0 940	910* 0
LINE NO. 14	90 0	0 0	0 0	430 0	0 0	310* 0	790 0	0 0	1000 980	0 760	890* 0	0 0
LINE NO. 15	90 120	0 0	0 0	410 0	NA 0	640 0	0 0	0 870	0 0	NA 0	NA 0	0 0
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe3 DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	90 0.85 0.15 10.12	180 1.70 0.30 10.12	280 2.64 0.36 7.77	370 3.49 0.51 8.34	470 4.43 0.57 7.31	580 5.47 0.53 5.55	0 0.00 0.00 0.00	420 3.96 4.04 45.58	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 2	100 0.94 0.06 3.47	190 1.79 0.21 6.64	290 2.73 0.27 5.55	370 3.49 0.51 8.34	495 4.67 0.33 4.08	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1070 10.09 0.09 0.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 3	90 0.85 0.15 10.12	180 1.70 0.30 10.12	300 2.83 0.17 3.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	390 3.68 2.32 32.28	740 6.98 0.02 0.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1240 11.69 0.31 1.51
LINE 4	90 0.85 0.15 10.12	190 1.79 0.21 6.64	300 2.83 0.17 3.47	0 0.00 0.00 0.00	380 3.58 1.42 21.58	0 0.00 0.00 0.00	0 0.00 0.00 0.00	480 4.53 3.47 37.52	0 0.00 0.00 0.00	1070 10.09 0.09 0.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 5	90 0.85 0.15 10.12	195 1.84 0.16 5.02	0 0.00 0.00 0.00	190 1.79 2.21 50.96	0 0.00 0.00 0.00	590 5.56 0.44 4.50	370 3.49 3.51 45.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	540 5.09 5.91 49.25	1280 12.07 0.07 0.32
LINE 6	90 0.85 0.15 10.12	180 1.70 0.30 10.12	300 2.83 0.17 3.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	310 2.92 3.08 46.48	750 7.07 0.07 0.58	0 0.00 0.00 0.00	1010 9.52 0.52 3.14	510 4.81 5.19 47.20	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 7	90 0.85 0.15 10.12	180 1.70 0.30 10.12	290 2.73 0.27 5.55	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	540 5.09 3.91 37.52	0 0.00 0.00 0.00	810 7.64 3.36 23.77	0 0.00 0.00 0.00
LINE 8	90 0.85 0.15 10.12	180 1.70 0.30 10.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	770 7.26 0.26 2.05	870 8.20 0.20 1.41	0 0.00 0.00 0.00	190 1.79 8.21 77.69	0 0.00 0.00 0.00	0 0.00 0.00 0.00

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe3 DATE : 8-30-84

N to S 45 deg TRANSDUCER

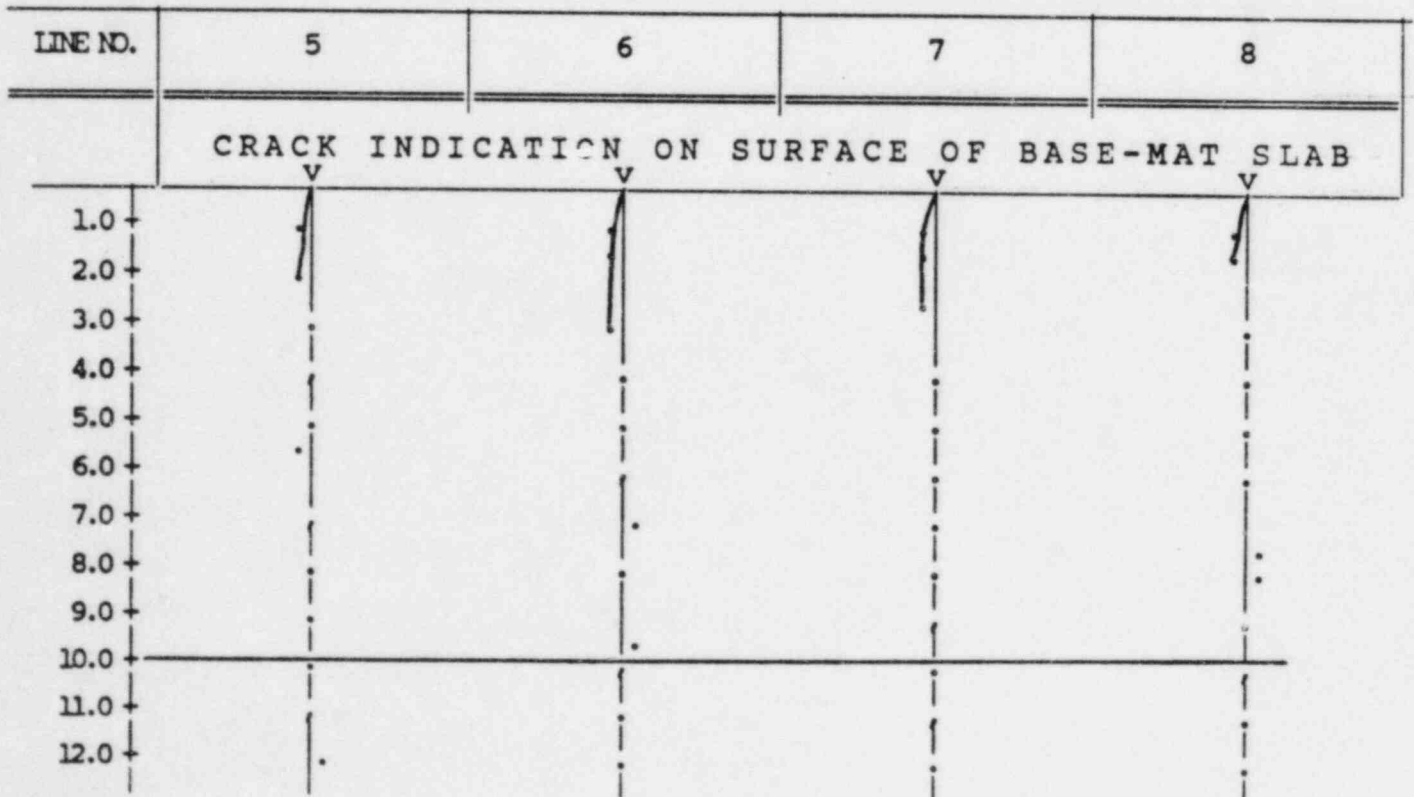
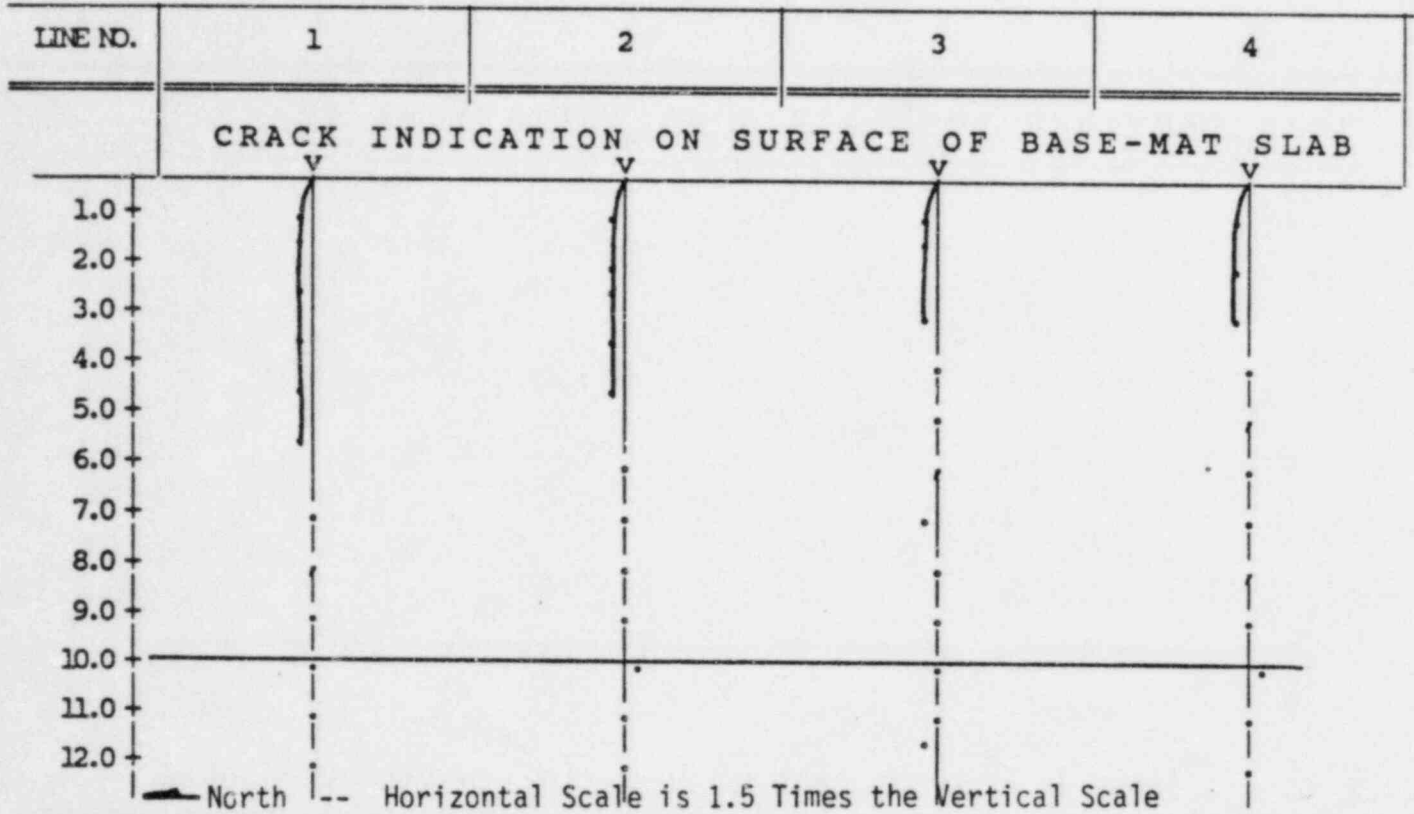
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 9	90 0.85 0.15 10.12	180 1.70 0.30 10.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1040 9.81 0.19 1.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 10	100 0.94 0.06 3.47	180 1.70 0.30 10.12	0 0.00 0.00 0.00	210 1.98 2.02 45.58	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 11	90 0.85 0.15 10.12	0 0.00 0.00 0.00	190 1.79 1.21 34.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	340 3.21 2.79 41.08	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 12	90 0.85 0.15 10.12	100 0.94 1.06 48.27	0 0.00 0.00 0.00	0 0.00 0.00 0.00	270 2.55 2.45 43.96	0 0.00 0.00 0.00	0 0.00 0.00 0.00	410 3.87 4.13 46.93	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 13	90 0.85 0.15 10.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	210 1.98 2.02 45.58	0 0.00 0.00 0.00	680 6.41 0.41 3.67	370 3.49 3.51 45.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1090 10.28 0.28 1.54	0 0.00 0.00 0.00	910 8.58 3.42 21.74
LINE 14	90 0.85 0.15 10.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	430 4.05 0.05 0.76	0 0.00 0.00 0.00	310 2.92 3.08 46.48	790 7.45 0.45 3.44	0 0.00 0.00 0.00	1000 9.43 0.43 2.60	0 0.00 0.00 0.00	890 8.39 2.61 17.27	0 0.00 0.00 0.00
LINE 15	90 0.85 0.15 10.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	410 3.87 0.13 1.99	0 0.00 0.00 0.00	640 6.03 0.03 0.32	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe3 DATE : 8-30-84

N to S 45 deg TRANSDUCER

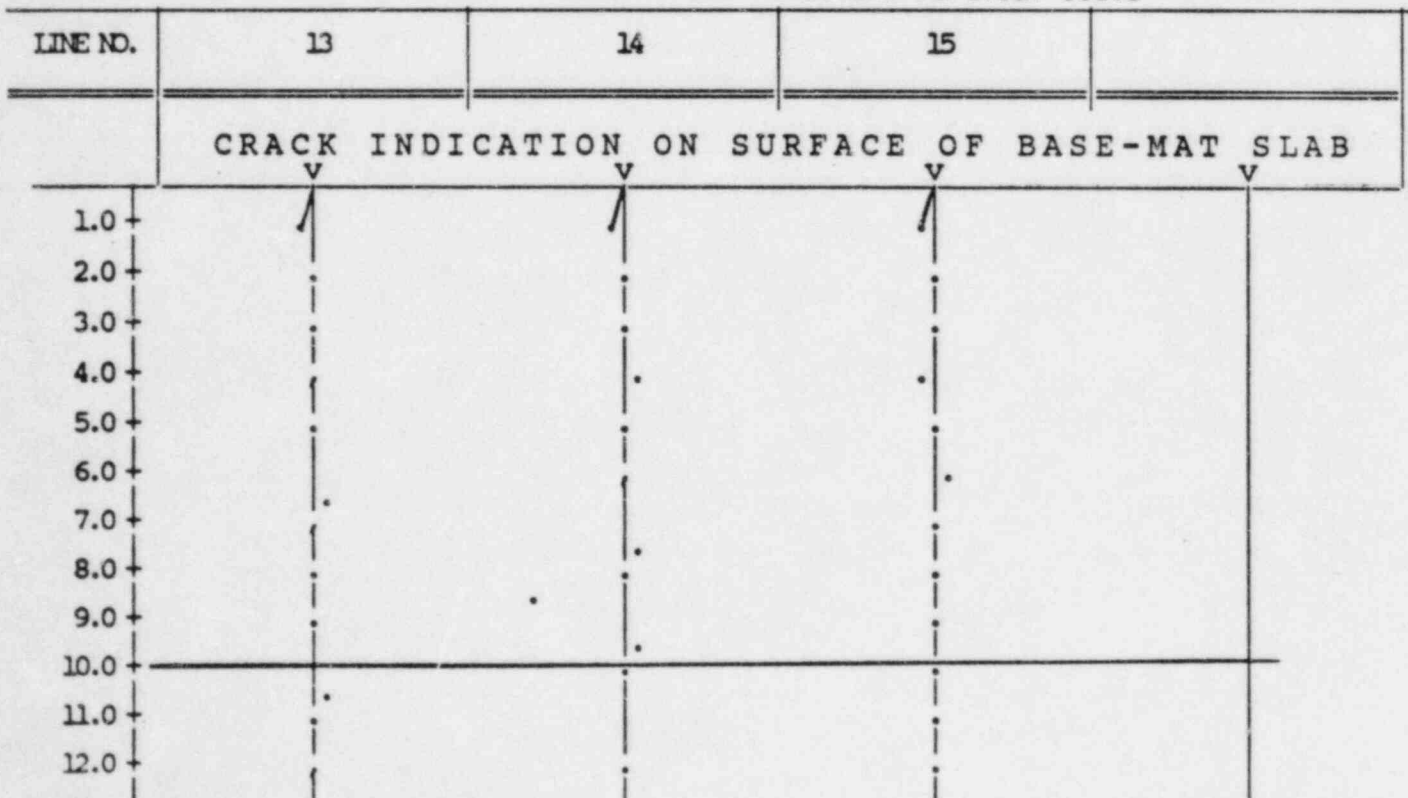
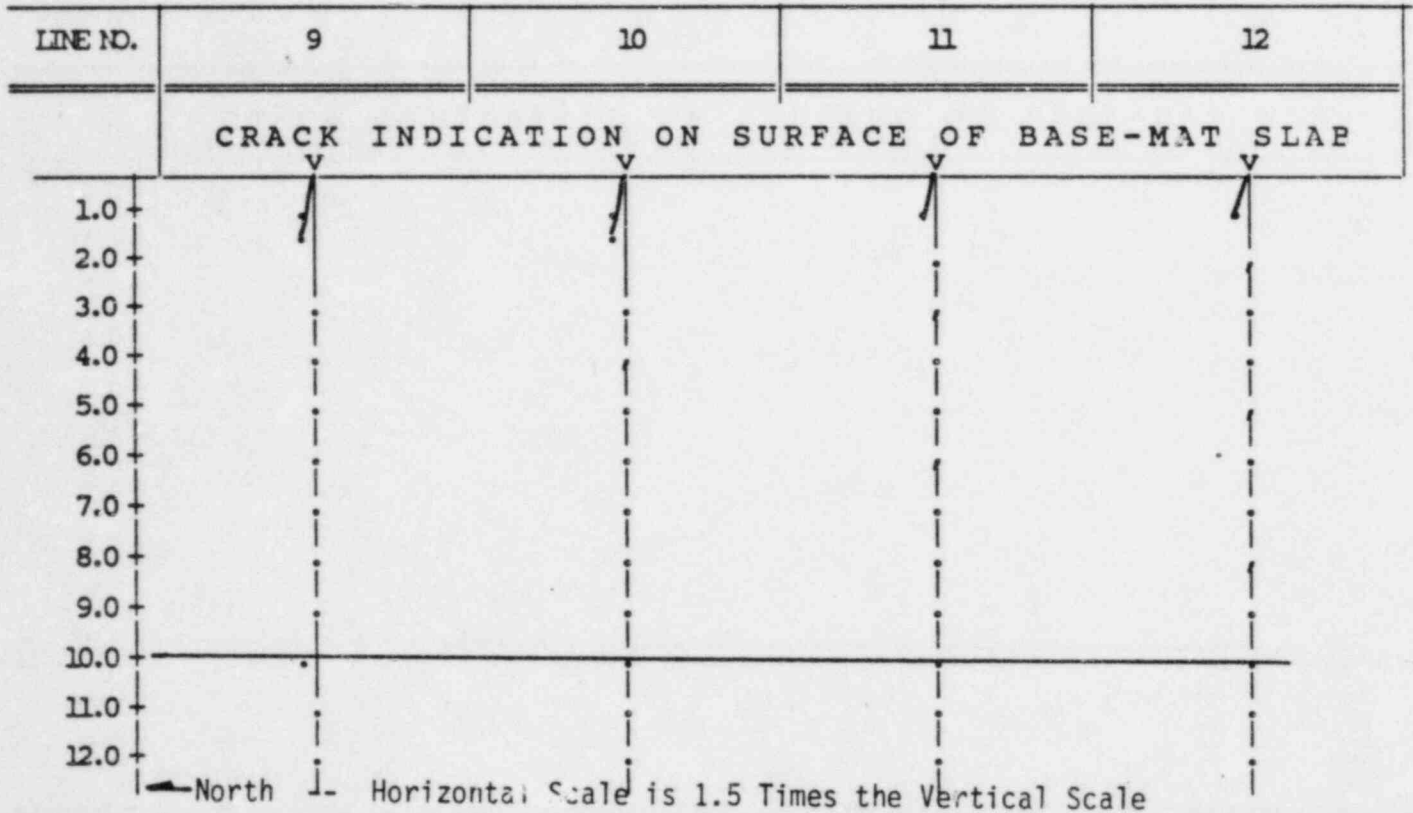


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe3 DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3950 HUNTCLEFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
DIA e3	1/8	1
DIA e3	2/10	4
DIA e3	3/6	1
DIA e3	3/7	1
DIA e3	3/12	4
DIA e3	4/5	1
DIA e3	4/8	1
DIA e3	4/10	3
DIA e3	5/4	2
DIA e3	5/6	3
DIA e3	5/7	3
DIA e3	5/11	4
DIA e3	5/12	4
DIA e3	6/6	2
DIA e3	6/7	2
DIA e3	6/10	4
DIA e3	7/9	3
DIA e3	7/11	4
DIA e3	8/7	2
DIA e3	8/8	3
DIA e3	8/10	4
DIA e3	9/10	4
DIA e3	10/4	2
DIA e3	11/3	2
DIA e3	11/6	1
DIA e3	12/2	1
DIA e3	12/5	1
DIA e3	12/8	1
DIA e3	13/4	1
DIA e3	13/6	2
DIA e3	13/7	1
DIA e3	13/10	4
DIA e3	13/12	4
DIA e3	14/4	1
DIA e3	14/6	2
DIA e3	14/7	1
DIA e3	14/11	4
DIA e3	15/4	1
DIA e3	15/6	2

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe4 DATE : 8-30-84

N to S 45 deg TRANSDUCER

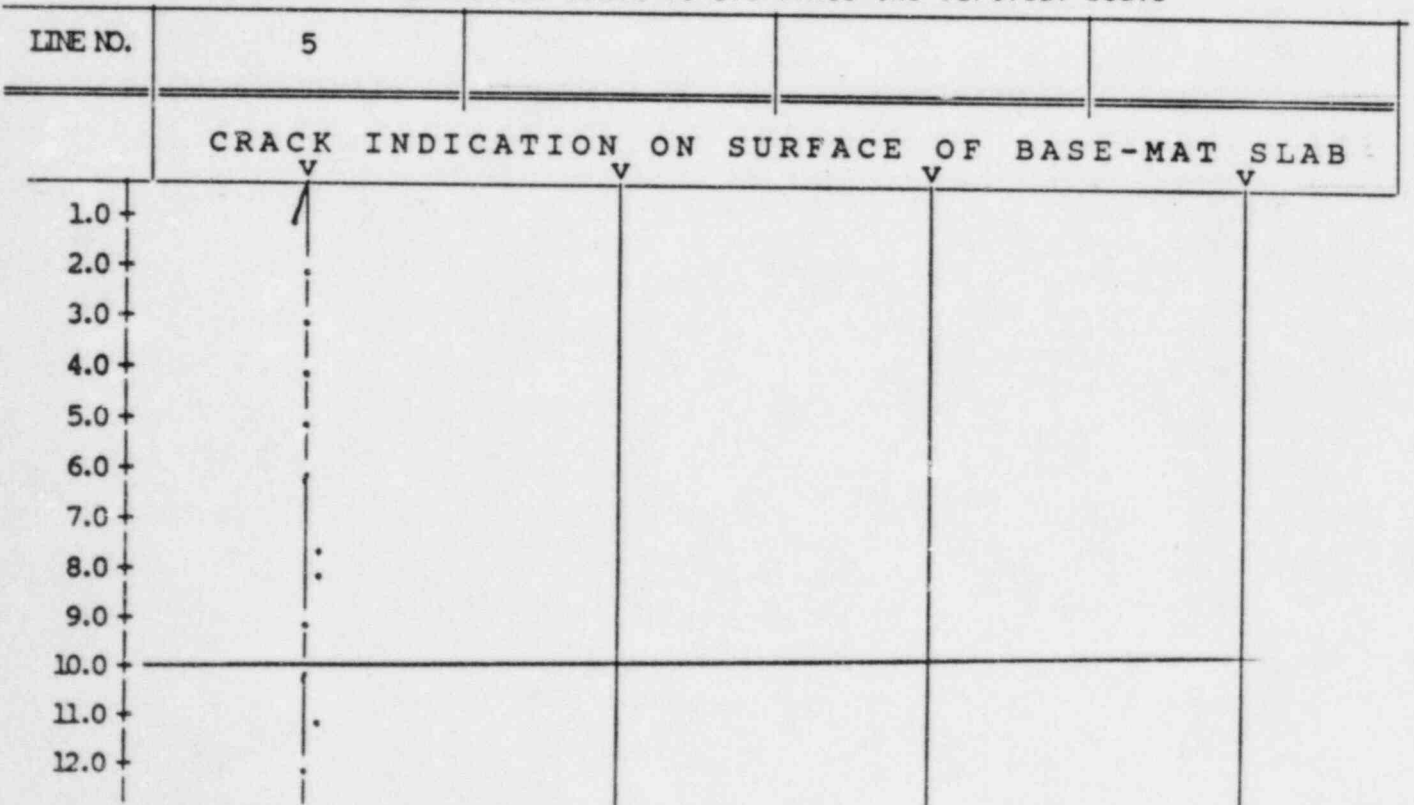
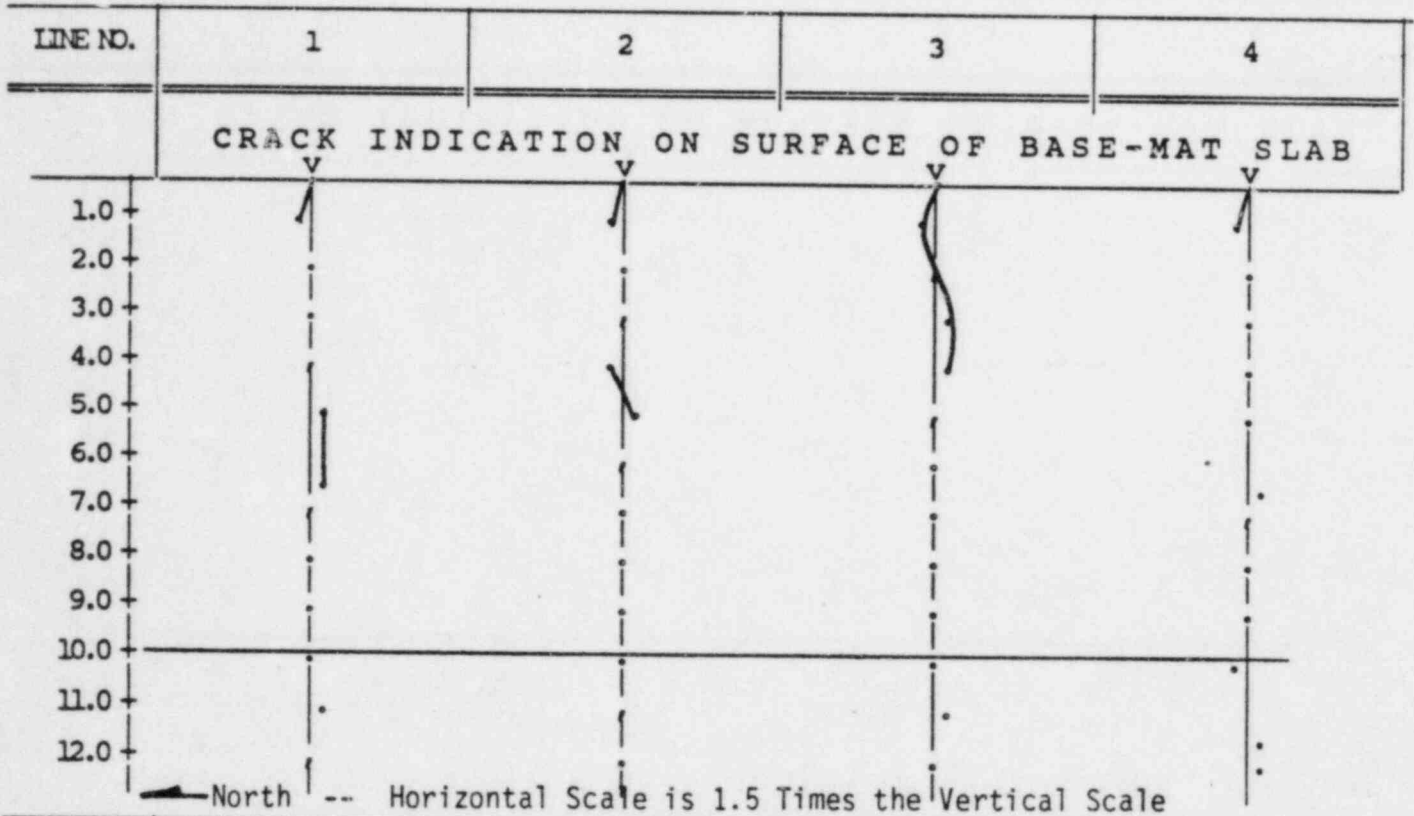
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	90	0	0	220	540	680	350	0	0	0	1180	600
	0.85	0.00	0.00	2.07	5.09	6.41	3.30	0.00	0.00	0.00	11.13	5.66
	0.15	0.00	0.00	1.93	0.09	0.41	3.70	0.00	0.00	0.00	0.13	6.34
	10.12	0.00	0.00	42.88	1.03	3.67	48.27	0.00	0.00	0.00	0.64	48.27
LINE 2	80	0	150	410	540	310	0	0	0	0	550	0
	0.75	0.00	1.41	3.87	5.09	2.92	0.00	0.00	0.00	0.00	5.19	0.00
	0.25	0.00	1.59	0.13	0.09	3.08	0.00	0.00	0.00	0.00	5.81	0.00
	18.05	0.00	48.27	1.99	1.03	46.48	0.00	0.00	0.00	0.00	48.27	0.00
LINE 3	80	95	340	440	260	0	0	0	0	0	1180	0
	0.75	0.90	3.21	4.15	2.45	0.00	0.00	0.00	0.00	0.00	11.13	0.00
	0.25	1.10	0.21	0.15	2.55	0.00	0.00	0.00	0.00	0.00	0.13	0.00
	18.05	50.96	3.67	2.05	46.12	0.00	0.00	0.00	0.00	0.00	0.64	0.00
LINE 4	85	0	0	0	0	690	370	0	0	1060	1200	1280
	0.80	0.00	0.00	0.00	0.00	6.51	3.49	0.00	0.00	9.99	11.31	12.07
	0.20	0.00	0.00	0.00	0.00	0.51	3.51	0.00	0.00	0.01	0.31	0.07
	13.92	0.00	0.00	0.00	0.00	4.44	45.19	0.00	0.00	0.04	1.59	0.32
LINE 5	90	0	0	0	0	340	770	870	0	510	1180	0
	0.85	0.00	0.00	0.00	0.00	3.21	7.26	8.20	0.00	4.81	11.13	0.00
	0.15	0.00	0.00	0.00	0.00	2.79	0.26	0.20	0.00	5.19	0.13	0.00
	10.12	0.00	0.00	0.00	0.00	41.08	2.05	1.41	0.00	47.20	0.64	0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe4 DATE : 8-30-84

N to S 45 deg TRANSDUCER



Wuenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING

3940 HUNTCLIFF DR

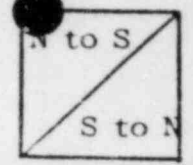
CHARLOTTE, NORTH CAROLINA 28211

(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
DIA e4	1/4	1
DIA e4	1/7	1
DIA e4	1/11	4
DIA e4	1/12	4
DIA e4	2/6	2
DIA e4	2/11	4
DIA e4	3/2	1
DIA e4	3/5	1
DIA e4	3/11	4
DIA e4	4/6	2
DIA e4	4/7	2
DIA e4	4/10	4
DIA e4	4/11	4
DIA e4	4/12	4
DIA e4	5/6	1
DIA e4	5/7	2
DIA e4	5/8	1
DIA e4	5/10	4
DIA e4	5/11	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION EAST DIA.

OPERATOR R.A. MUENOW

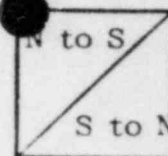
P.E. INSTRUMENT NO. B542588

e 5

TEST NO. MSEC TO <u>1</u>	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	80 110	180 210	270 0	395 0	470 590	590 0	670 810	875 0	940 980	1000 1140	1100 0	1210 0
LINE NO. 2	75* 120	165 240	270 0	340 0	480 580	590 0	640 0	790 0	0 0	0 0	1140 550*	1200 0
LINE NO. 3	90 0	180 0	270 0	390 450	480 0	0 0	0 0	0 410*	0 0	0 490*	500* 0	0 0
LINE NO. 4	80 120	185 0	270 350	380 460	0 0	600 0	715 360*	430* 0	0 980	490* 0	0 0	1280 0
LINE NO. 5	80 120	180 240	0 0	400 0	480 500	595 310*	380* 0	0 0	0 480*	0 1090	1180 0	0 0
LINE NO. 6	75 120	180 0	310 0	370 470	NA 0	290* 0	0 0	0 0	460* 980	0 0	1150 0	1280 0
LINE NO. 7	80 125	180 230	0 340	0 0	0 0	0 0	710 0	800 0	0 0	0 1090	1140 0	1240 0
LINE NO. 8	85 115	180 0	280 0	0 0	490 570	550 0	690 0	840 850	0 0	0 0	1140 0	1220 0

241

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION EAST DIA. OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

e 5

TEST NO. MSEC TO ⊥	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 9	85 0	190 215	0 0	400 440	470 0	0 290*	0 0	0 890	0 0	0 0	1170 510*	640* 0
LINE NO. 10	85 115	190 210	280 0	0 0	0 260*	310* 680	0 0	0 0	915 0	1000 0	520* 0	0 0
LINE NO. 11	90 110	190 210	270 340	0 210*	265* 0	0 670	0 0	840 0	0 0	0 0	1140 0	1240 0
LINE NO. 12	0 0	0 0	0 0	215* 0	0 0	620 640	710 780	800 440*	470* 0	0 0	1140 0	1240 0
242 LINE NO. 13	85 115	0 0	310 0	365 0	0 0	600 650	675 0	420* 890	0 0	0 0	1140 0	1220 0
LINE NO. 14	85 115	0 0	290 0	370 450	0 0	0 0	700 770	740 930	0 470*	1010 0	1140 0	1210 0
LINE NO. 15	90 0	0 0	270 0	370 450	0 0	600 670	710 760	0 410*	440* 0	0 0	1140 0	1240 0
LINE NO. 16	0 0	0 0	0 380	0 0	0 0	570 670	675 0	790 0	0 990	0 0	1140 0	1230 0

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe5 DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	80	180	270	395	470	590	670	875	940	1000	1100	1210
LINE 1	0.75 0.25 18.05	1.70 0.30 10.12	2.55 0.45 10.12	3.72 0.28 4.24	4.43 0.57 7.31	5.56 0.44 4.50	6.32 0.68 6.17	8.25 0.25 1.73	8.86 0.14 0.89	9.43 0.57 3.47	10.37 0.63 3.47	11.41 0.59 2.97
	75	165	270	340	480	590	640	790	0	0	1140	1200
LINE 2	0.71 0.29 22.50	1.56 0.44 15.94	2.55 0.45 10.12	3.21 0.79 13.92	4.53 0.47 5.99	5.56 0.44 4.50	6.03 0.97 9.10	7.45 0.55 4.24	0.00 0.00 0.00	0.00 0.00 0.00	10.75 0.25 1.34	11.31 0.69 3.47
	90	180	270	390	480	0	0	0	0	0	500	0
LINE 3	0.85 0.15 10.12	1.70 0.30 10.12	2.55 0.45 10.12	3.68 0.32 5.02	4.53 0.47 5.99	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	4.71 6.29 53.13	0.00 0.00 0.00
	80	185	270	380	0	600	715	430	0	490	0	1280
LINE 4	0.75 0.25 18.05	1.74 0.26 8.34	2.55 0.45 10.12	3.58 0.42 6.64	0.00 0.00 0.00	5.66 0.34 3.47	6.74 0.26 2.20	4.05 3.95 44.23	0.00 0.00 0.00	4.62 5.38 49.35	0.00 0.00 0.00	12.07 0.07 0.32
	80	180	0	400	480	595	380	0	0	0	1180	0
LINE 5	0.75 0.25 18.05	1.70 0.30 10.12	0.00 0.00 0.00	3.77 0.23 3.47	4.53 0.47 5.99	5.61 0.39 3.98	3.58 3.42 43.65	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	11.13 0.13 0.64	0.00 0.00 0.00
	75	180	310	370	0	290	0	0	460	0	1150	1280
LINE 6	0.71 0.29 22.50	1.70 0.30 10.12	2.92 0.08 1.51	3.49 0.51 8.34	0.00 0.00 0.00	2.73 3.27 50.06	0.00 0.00 0.00	0.00 0.00 0.00	4.34 4.66 47.08	0.00 0.00 0.00	10.84 0.16 0.83	12.07 0.07 0.32
	80	180	0	0	0	0	710	800	0	0	1140	1240
LINE 7	0.75 0.25 18.05	1.70 0.30 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	6.69 0.31 2.62	7.54 0.46 3.47	0.00 0.00 0.00	0.00 0.00 0.00	10.75 0.25 1.34	11.69 0.31 1.51
	85	180	280	0	490	550	690	840	0	0	1140	1220
LINE 8	0.80 0.20 13.92	1.70 0.30 10.12	2.64 0.36 7.77	0.00 0.00 0.00	4.62 0.38 4.71	5.19 0.81 8.93	6.51 0.49 4.35	7.92 0.08 0.58	0.00 0.00 0.00	0.00 0.00 0.00	10.75 0.25 1.34	11.50 0.50 2.48

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe5 DATE : 8-30-84

N to S 45 deg TRANSDUCER

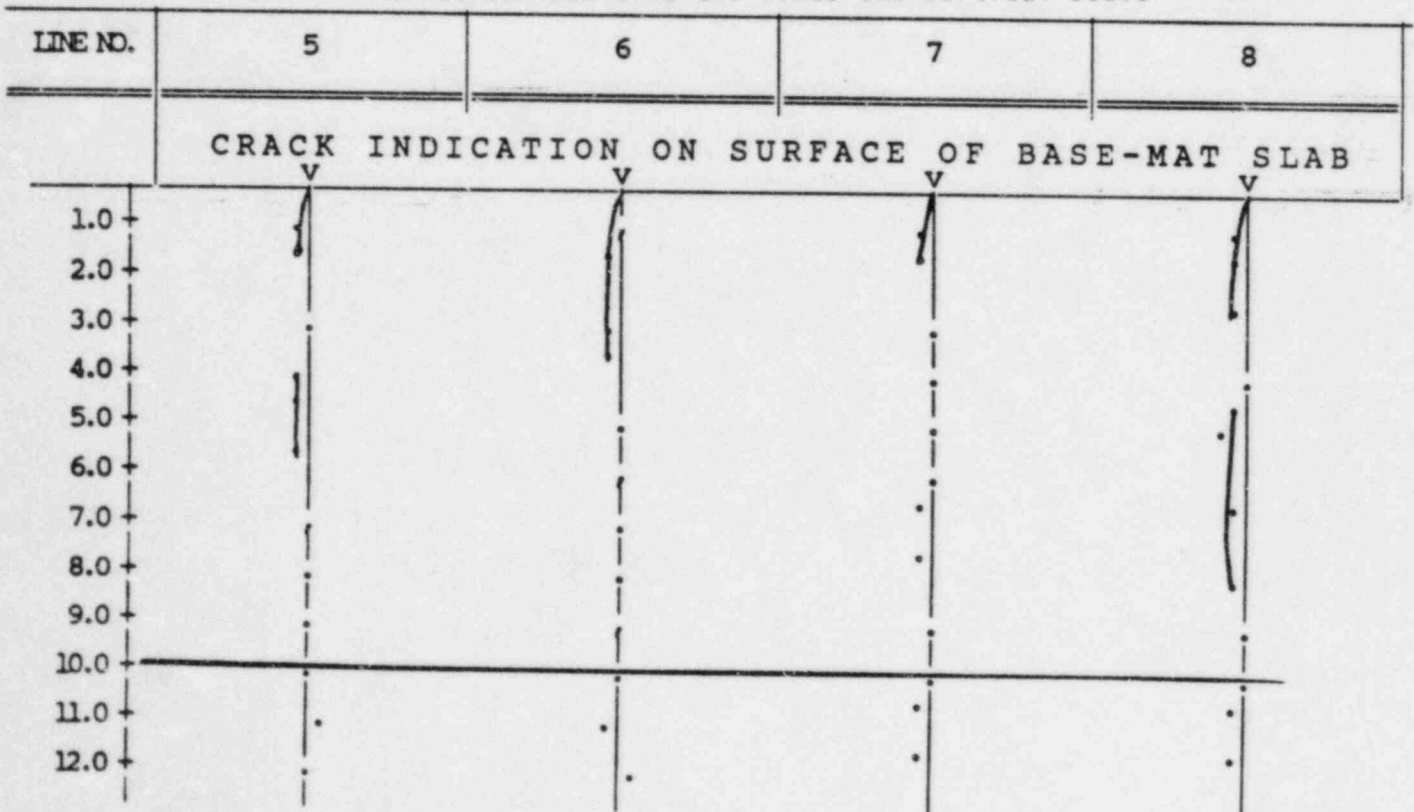
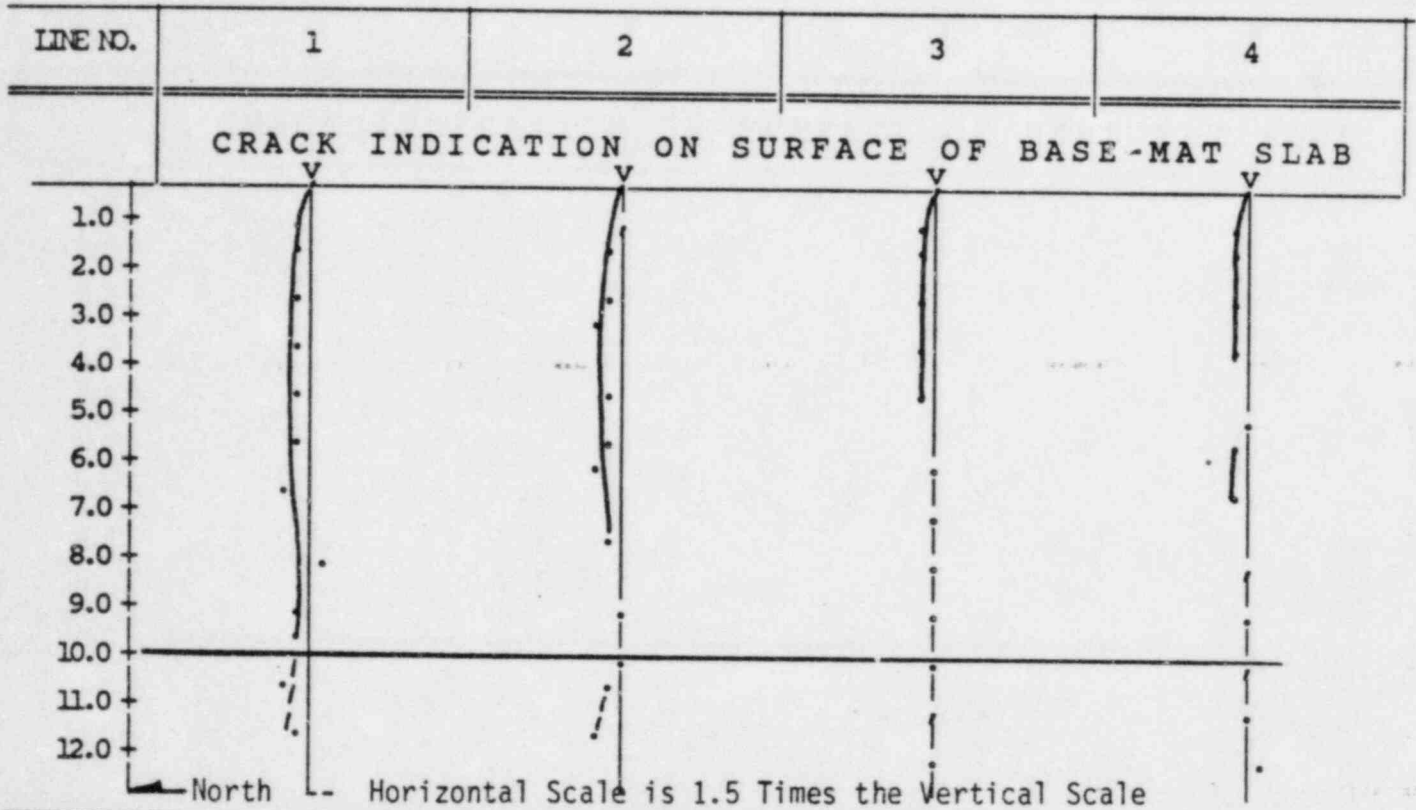
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 9	85 0.80 0.20 13.92	190 1.79 0.21 6.64	0 0.00 0.00 0.00	400 3.77 0.23 3.47	470 4.43 0.57 7.31	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1170 11.03 0.03 0.16	640 6.03 5.97 44.68
LINE 10	85 0.80 0.20 13.92	190 1.79 0.21 6.64	280 2.64 0.36 7.77	0 0.00 0.00 0.00	0 0.00 0.00 0.00	310 2.92 3.08 46.48	0 0.00 0.00 0.00	0 0.00 0.00 0.00	915 8.63 0.37 2.48	1000 9.43 0.57 3.47	520 4.90 6.10 51.20	0 0.00 0.00 0.00
LINE 11	90 0.85 0.15 10.12	190 1.79 0.21 6.64	270 2.55 0.45 10.12	0 0.00 0.00 0.00	265 2.50 2.50 45.04	0 0.00 0.00 0.00	0 0.00 0.00 0.00	840 7.92 0.08 0.58	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1140 10.75 0.25 1.34	1240 11.69 0.31 1.51
LINE 12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	215 2.03 1.97 44.23	0 0.00 0.00 0.00	620 5.85 0.15 1.51	710 6.69 0.31 2.62	800 7.54 0.46 3.47	470 4.43 4.57 45.88	0 0.00 0.00 0.00	1140 10.75 0.25 1.34	1240 11.69 0.31 1.51
LINE 13	85 0.80 0.20 13.92	0 0.00 0.00 0.00	310 2.92 0.08 1.51	365 3.44 0.56 9.22	0 0.00 0.00 0.00	600 5.66 0.34 3.47	675 6.36 0.64 5.71	420 3.96 4.04 45.58	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1140 10.75 0.25 1.34	1220 11.50 0.50 2.48
LINE 14	85 0.80 0.20 13.92	0 0.00 0.00 0.00	290 2.73 0.27 5.35	370 3.49 0.51 8.34	0 0.00 0.00 0.00	0 0.00 0.00 0.00	700 6.60 0.40 3.47	740 6.98 1.02 8.34	0 0.00 0.00 0.00	1010 9.52 0.48 2.87	1140 10.75 0.25 1.34	1210 11.41 0.59 2.97
LINE 15	90 0.85 0.15 10.12	0 0.00 0.00 0.00	270 2.55 0.45 10.12	370 3.49 0.51 8.34	0 0.00 0.00 0.00	600 5.66 0.34 3.47	710 6.69 0.31 2.62	0 0.00 0.00 0.00	440 4.15 4.85 49.47	0 0.00 0.00 0.00	1140 10.75 0.25 1.34	1240 11.69 0.31 1.51
LINE 16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	570 5.37 0.63 6.64	695 6.55 0.45 3.91	790 7.45 0.55 4.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1140 10.75 0.25 1.34	1230 11.60 0.40 1.99
LINE 17	0 0.00 0.00 0.00	0 0.00 0.00 0.00	280 2.64 0.36 7.77	280 2.64 1.36 27.26	0 0.00 0.00 0.00	0 0.00 0.00 0.00	360 3.39 3.61 46.73	800 7.54 0.46 3.47	900 8.49 0.51 3.47	1080 10.18 0.18 1.03	0 0.00 0.00 0.00	0 0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe5 DATE : 8-30-84

N to S 45 deg TRANSDUCER

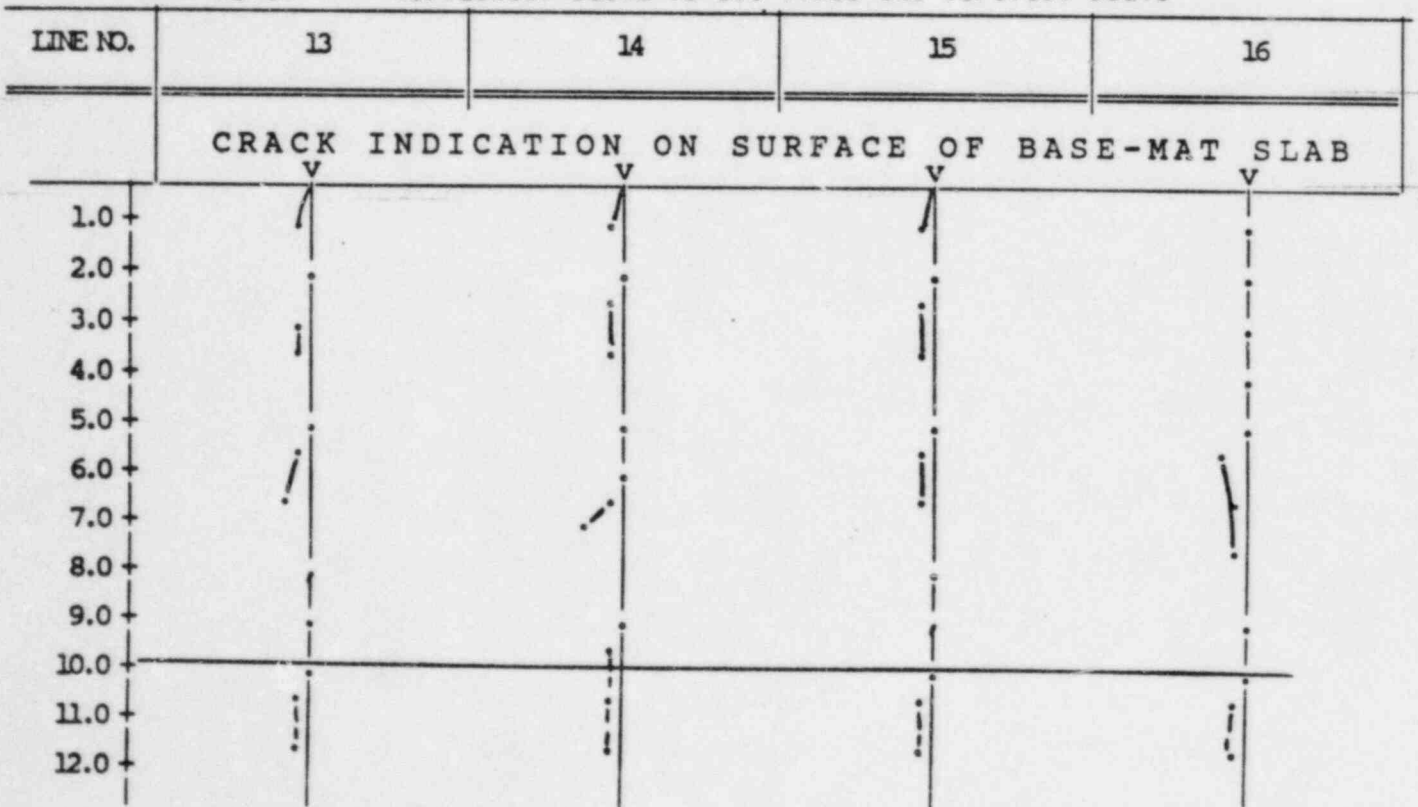
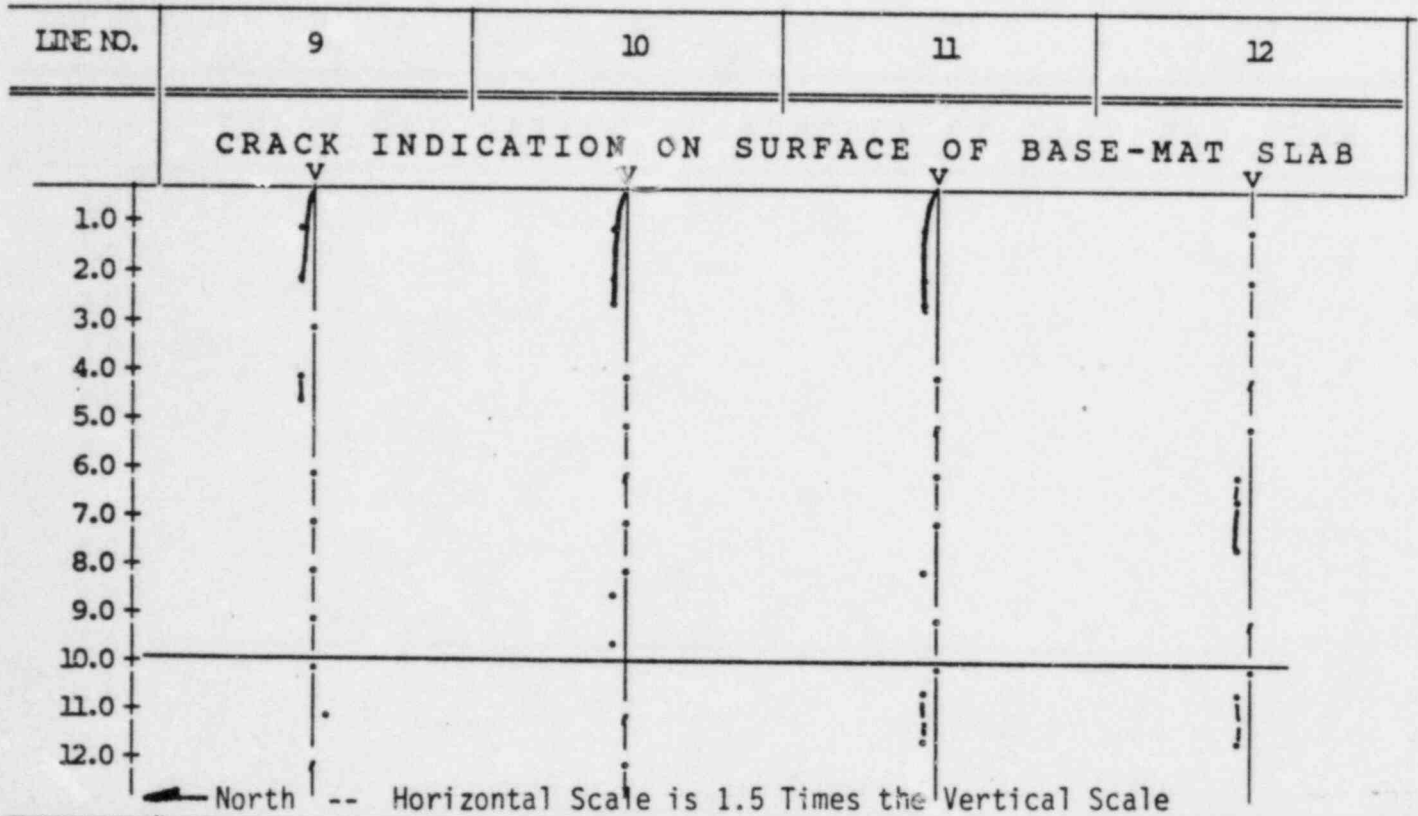


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe5 DATE : 8-30-84

N to S 45 deg TRANSDUCER

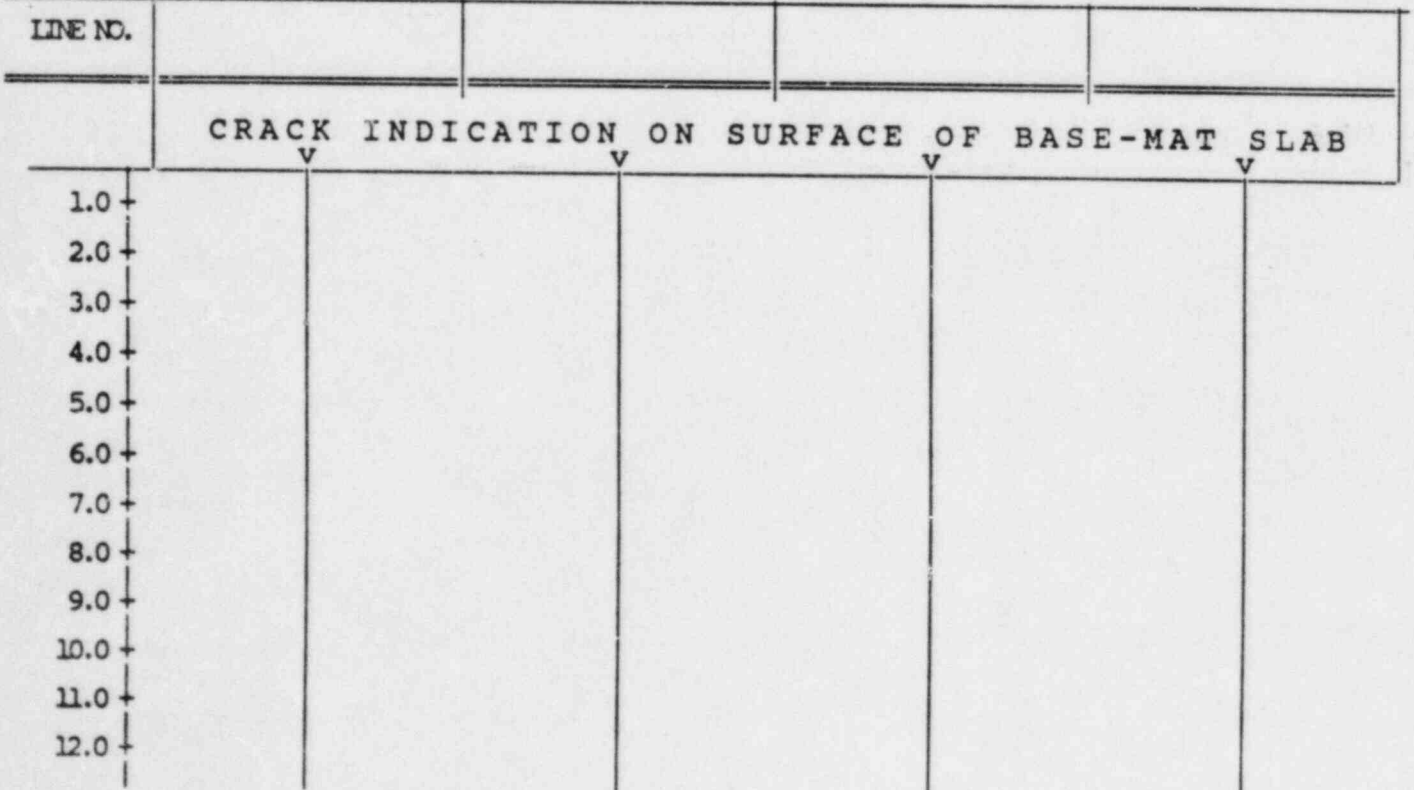
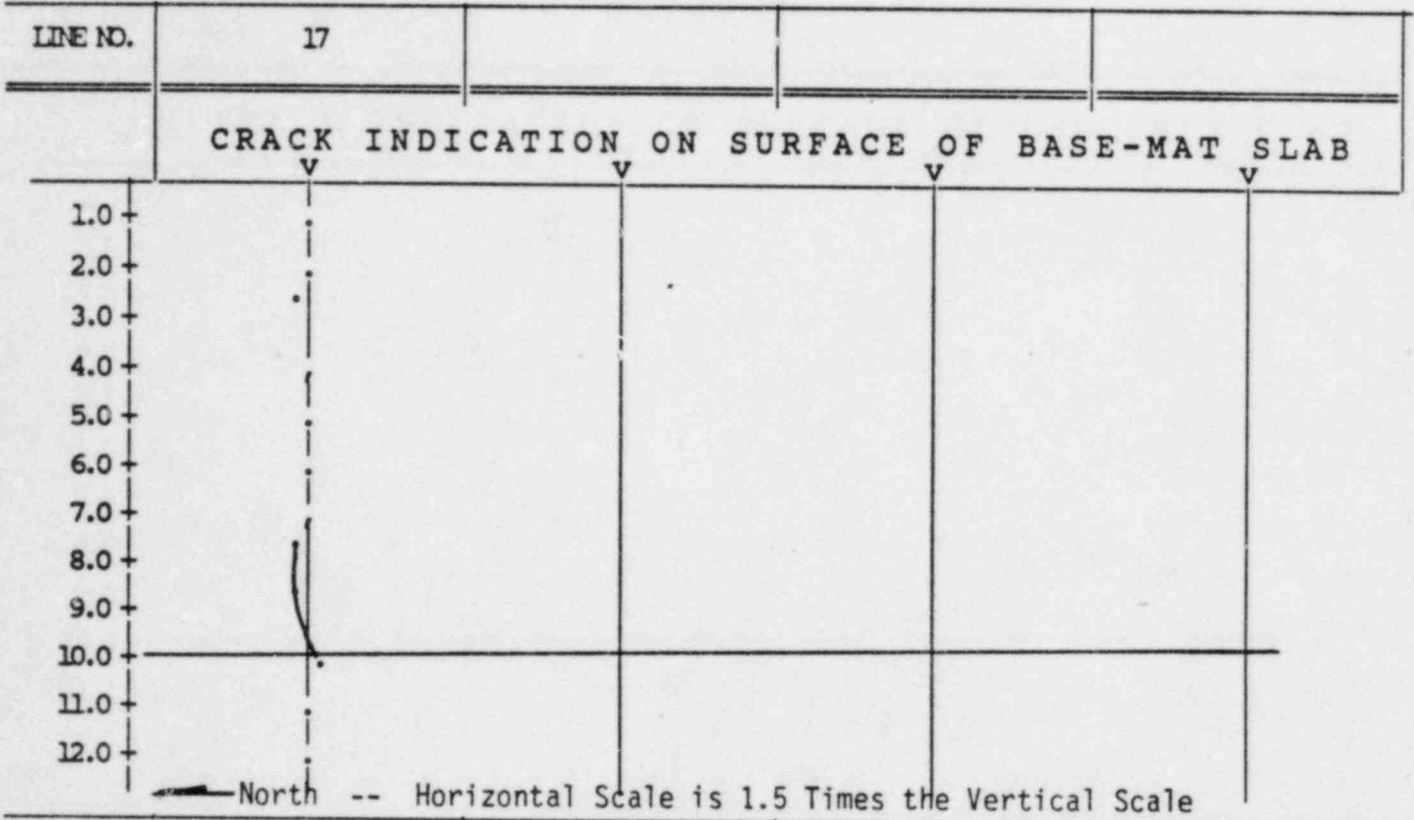


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe5 DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2723

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
DIA e5	3/11	4
DIA e5	4/8	2
DIA e5	4/10	4
DIA e5	4/12	4
DIA e5	5/7	1
DIA e5	5/11	4
DIA e5	6/6	2
DIA e5	6/9	2
DIA e5	6/11	4
DIA e5	6/12	4
DIA e5	7/11	4
DIA e5	7/12	4
DIA e5	8/11	4
DIA e5	8/12	4
DIA e5	9/11	4
DIA e5	9/12	4
DIA e5	10/6	1
DIA e5	10/9	3
DIA e5	10/10	4
DIA e5	10/11	4
DIA e5	11/5	1
DIA e5	12/4	1
DIA e5	12/9	1
DIA e5	13/9	1
DIA e5	13/11	4
DIA e5	13/12	4
DIA e5	15/9	1
DIA e5	17/3	1
DIA e5	17/4	1
DIA e5	17/7	1

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe6 DATE : 8-30-84

N to S 45 deg TRANSDUCER

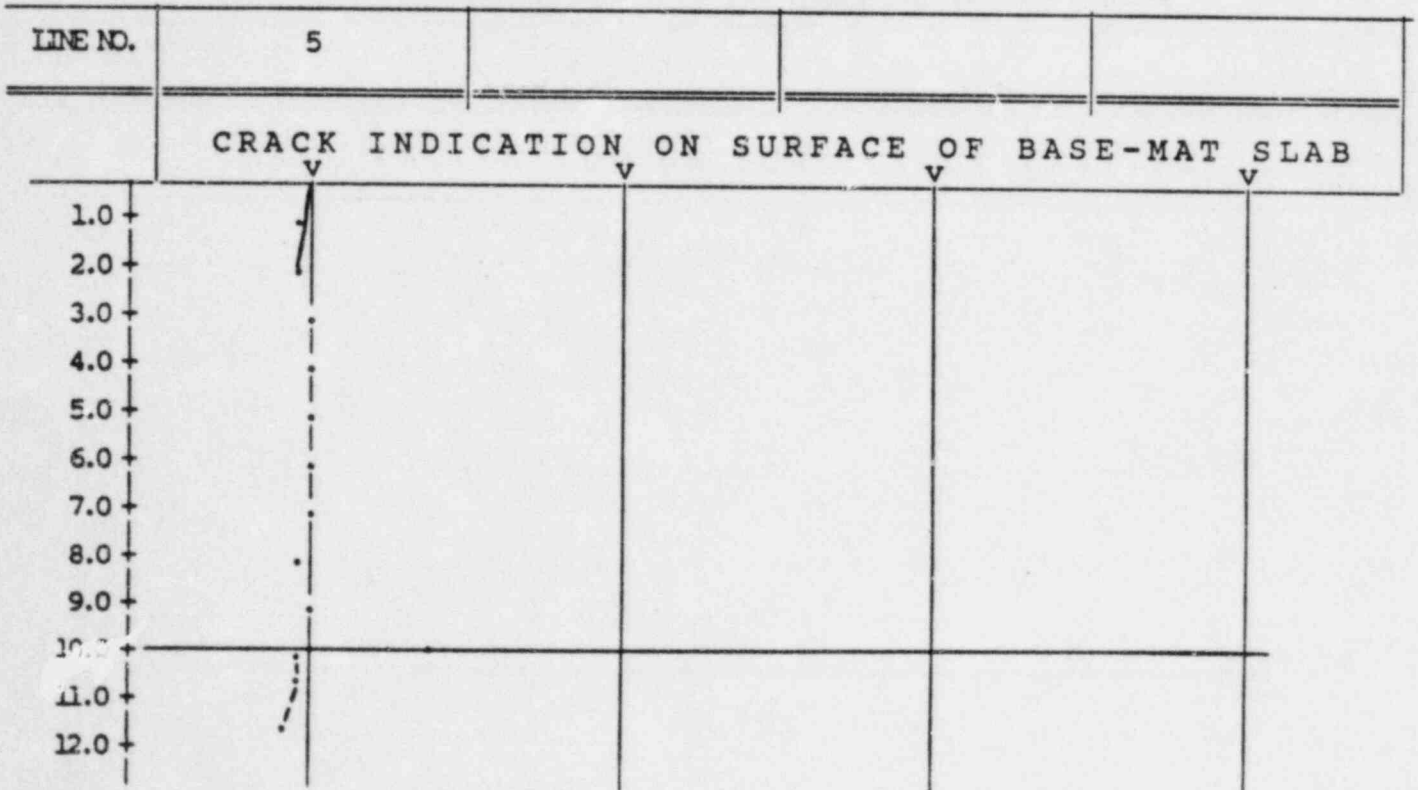
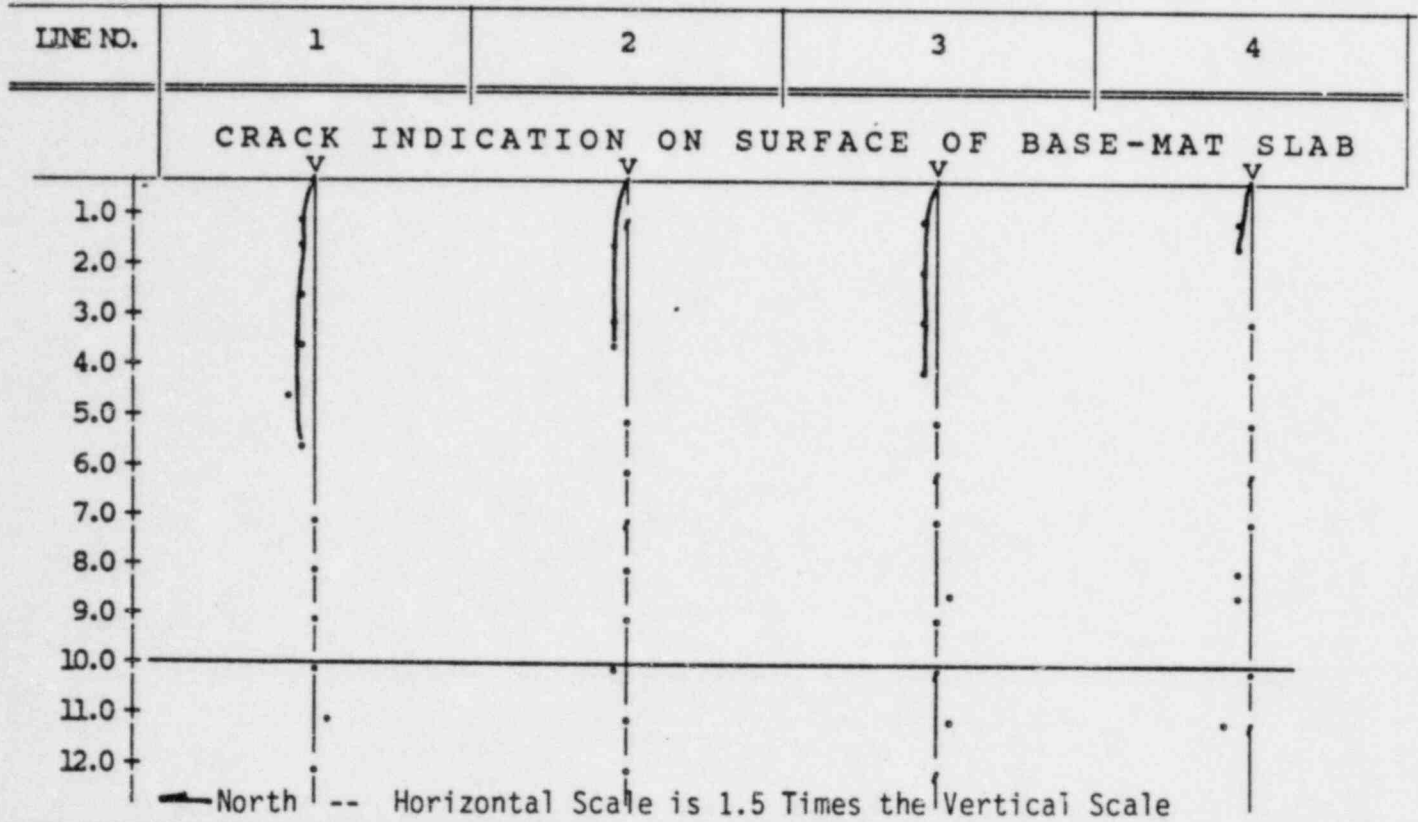
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	85	170	270	395	460	580	0	0	0	0	1180	0
LINE 1	0.80 0.20 13.92	1.60 0.40 13.92	2.55 0.45 10.12	3.72 0.28 4.24	4.34 0.66 8.69	5.47 0.53 5.55	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	11.13 0.13 0.64	0.00 0.00 0.00
	75	180	295	375	0	0	360	0	0	1040	0	0
LINE 2	0.71 0.29 22.50	1.70 0.30 10.12	2.73 0.22 4.50	3.54 0.45 7.48	0.00 0.00 0.00	0.00 0.00 0.00	3.39 3.61 46.73	0.00 0.00 0.00	0.00 0.00 0.00	9.81 0.19 1.14	0.00 0.00 0.00	0.00 0.00 0.00
	90	190	310	410	0	320	0	890	0	550	1180	600
LINE 3	0.85 0.15 10.12	1.79 0.21 6.64	2.92 0.08 1.51	3.87 0.13 1.99	0.00 0.00 0.00	3.02 2.98 44.68	0.00 0.00 0.00	8.39 0.39 2.67	0.00 0.00 0.00	5.19 4.81 42.88	11.13 0.13 0.64	5.66 6.34 48.27
	90	190	0	0	0	410	0	840	900	0	570	1190
LINE 4	0.85 0.15 10.12	1.70 0.30 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	3.87 2.13 28.91	0.00 0.00 0.00	7.92 0.08 0.58	8.49 0.51 3.47	0.00 0.00 0.00	5.37 5.63 46.31	11.22 0.78 3.98
	90	190	0	0	0	0	0	840	0	1050	1130	1200
LINE 5	0.85 0.15 10.12	1.79 0.21 6.64	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	7.92 0.08 0.58	0.00 0.00 0.00	9.90 0.10 0.58	10.65 0.35 1.86	11.31 0.69 3.47

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe6 DATE : 8-30-84

N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

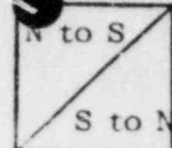
MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
DIA e6	1/11	4
DIA e6	2/7	2
DIA e6	2/10	4
DIA e6	3/6	2
DIA e6	3/8	1
DIA e6	3/10	4
DIA e6	3/12	4
DIA e6	4/6	2
DIA e6	4/11	4
DIA e6	5/8	3

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984

TEST DIRECTION



CRACK IDENTIFICATION EAST DIA. OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

e7

TEST NO. MSEC TO ⊥	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	100 0	180 220	275 330	370 0	450 610	590 0	0 0	810 870	885 850 0	930* 510*	1120 0	1180 0
LINE NO. 2	90 110	180 215	280 0	380 460	470 580	0 0	650 0	790 0	0 470*	490* 0	0 0	0 1340
LINE NO. 3	90 0	180 220	275 0	0 0	500 540	570 690	715 770	790 0	0 0	1030 1090	1120 0	1210 0
LINE NO. 4	90 110	180 0	0 150	400 450	470 0	0 700	0 790	0 0	900 1010	1000 0	0 0	0 0
254 LINE NO. 5	90 115	0 0	145* 0	370 460	480 570	0 0	0 0	820 0	910 0	0 1100	0 0	0 0
LINE NO. 6	90 0	0 100	145* 0	0 0	0 0	610 660	700 770	820 0	0 0	0 550*	0 0	1260 0
LINE NO. 7	90 115	0 0	0 320	0 0	0 0	600 0	710 0	810 0	900 0	490* 1090	0 1180	0 0
LINE NO. 8	85 0	180 0	0 0	400 440	500 550	600 680	730 750	0 0	0 0	0 0	1130 0	1240 0

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe7 DATE : 8-30-84

N to S 45 deg TRANSDUCER

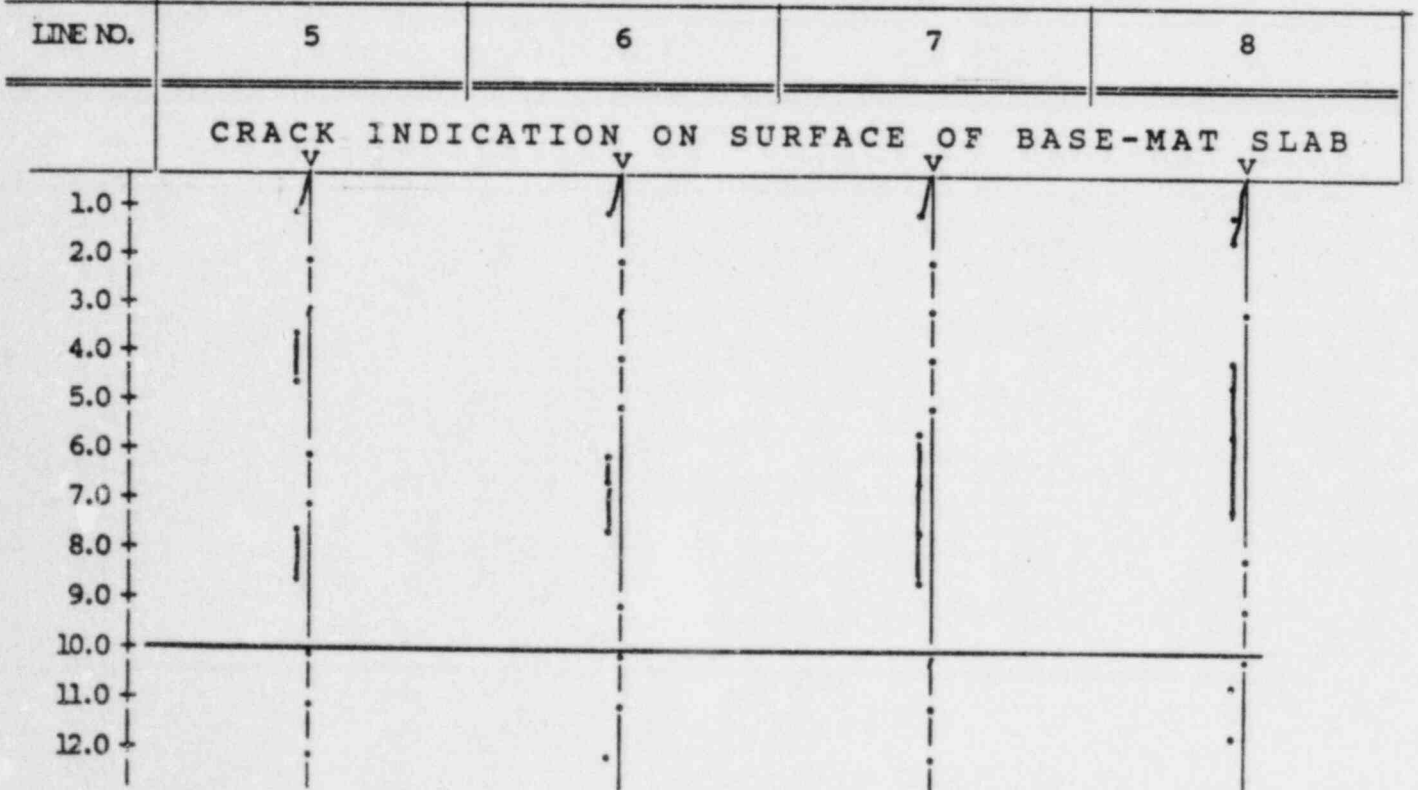
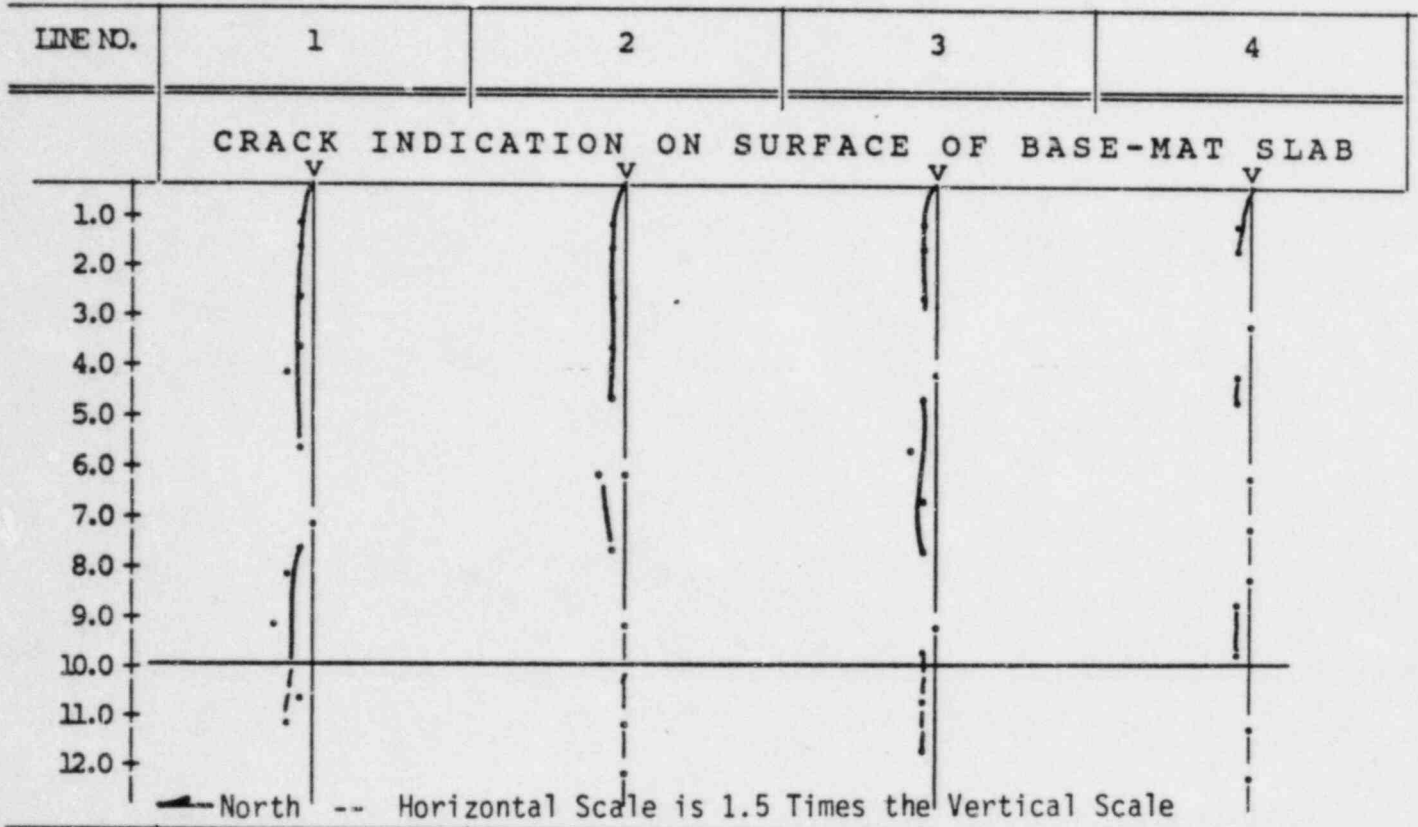
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	180	275	370	450	590	0	810	850	930	1120	1180
LINE 1	0.94 0.06 3.47	1.70 0.30 10.12	2.59 0.41 8.93	3.49 0.51 8.34	4.24 0.76 10.12	5.56 0.44 4.50	0.00 0.00 0.00	7.64 0.36 2.72	8.01 0.99 7.02	8.77 1.23 8.00	10.56 0.44 2.39	11.13 0.87 4.50
	90	180	280	380	470	0	650	790	0	490	0	0
LINE 2	0.85 0.15 10.12	1.70 0.30 10.12	2.64 0.36 7.77	3.58 0.42 6.64	4.43 0.57 7.31	0.00 0.00 0.00	6.13 0.87 8.10	7.45 0.55 4.24	0.00 0.00 0.00	4.62 5.38 49.35	0.00 0.00 0.00	0.00 0.00 0.00
	90	180	275	0	500	570	715	790	0	1030	1120	1210
LINE 3	0.85 0.15 10.12	1.70 0.30 10.12	2.59 0.41 8.93	0.00 0.00 0.00	4.71 0.29 3.47	5.37 0.63 6.64	6.74 0.26 2.20	7.45 0.55 4.24	0.00 0.00 0.00	9.71 0.29 1.71	10.56 0.44 2.39	11.41 0.59 2.97
	90	180	0	400	470	0	0	0	900	1000	0	0
LINE 4	0.85 0.15 10.12	1.70 0.30 10.12	0.00 0.00 0.00	3.77 0.23 3.47	4.43 0.57 7.31	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	8.49 0.51 3.47	9.43 0.57 3.47	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	145	370	480	0	0	820	910	0	0	0
LINE 5	0.85 0.15 10.12	0.00 0.00 0.00	1.37 1.63 50.06	3.49 0.51 8.34	4.53 0.47 5.99	0.00 0.00 0.00	0.00 0.00 0.00	7.73 0.27 1.99	8.58 0.42 2.81	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	90	0	145	0	0	610	700	820	0	0	0	1260
LINE 6	0.85 0.15 10.12	0.00 0.00 0.00	1.37 1.63 50.06	0.00 0.00 0.00	0.00 0.00 0.00	5.75 0.25 2.48	6.60 0.40 3.47	7.73 0.27 1.99	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	11.88 0.12 0.58
	90	0	0	0	0	600	710	810	900	490	0	0
LINE 7	0.85 0.15 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.66 0.34 3.47	6.69 0.31 2.62	7.64 0.36 2.72	8.49 0.51 3.47	4.62 5.38 49.35	0.00 0.00 0.00	0.00 0.00 0.00
	85	180	0	400	500	600	730	0	0	0	1130	1240
LINE 8	0.80 0.20 13.92	1.70 0.30 10.12	0.00 0.00 0.00	3.77 0.23 3.47	4.71 0.29 3.47	5.66 0.34 3.47	6.88 0.12 0.98	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.65 0.35 1.86	11.69 0.31 1.51

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe7 DATE : 8-30-84

N to S 45 deg TRANSDUCER



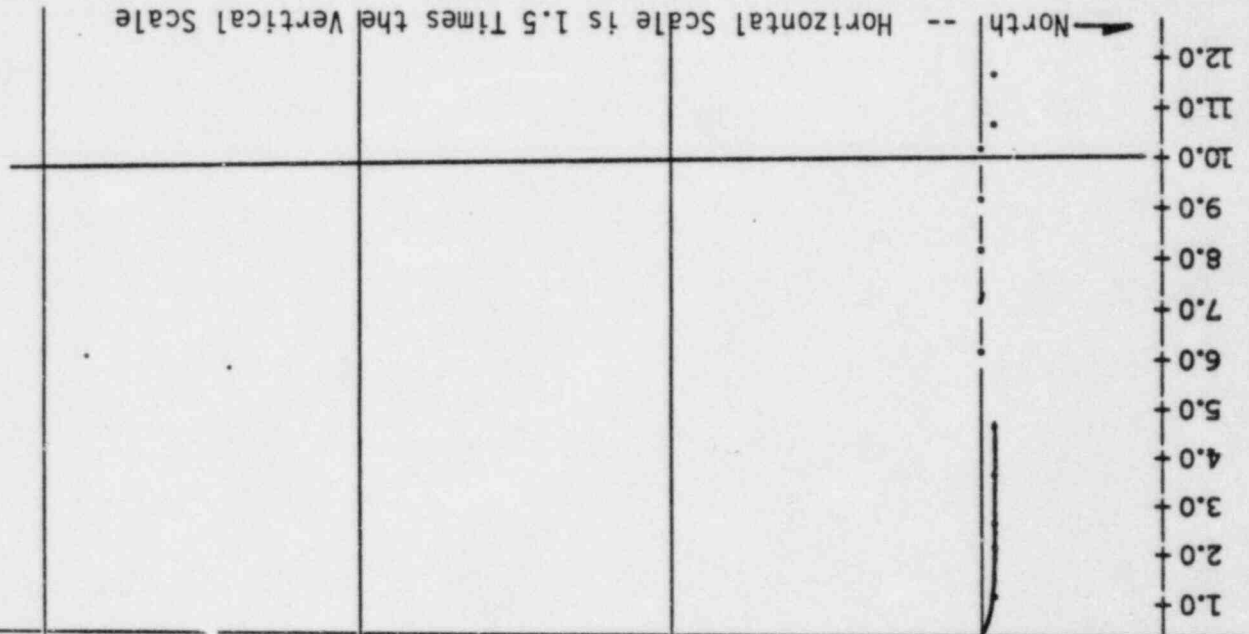
MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIA#7 DATE : 8-30-84 N to S 45 deg TRANSDUCER

LINE NO.	9	CRACK INDICATION ON SURFACE OF BASE-MAT SLAB
----------	---	--



LINE NO.		CRACK INDICATION ON SURFACE OF BASE-MAT SLAB
----------	--	--

1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
DIA e7	2/10	4
DIA e7	5/3	2
DIA e7	6/3	1
DIA e7	6/12	4
DIA e7	7/10	4
DIA e7	8/11	4
DIA e7	8/12	4
DIA e7	9/7	1
DIA e7	9/11	4
DIA e7	9/12	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION EAST DIA. OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588
 e 8

TEST NO. MSEC TO ⊥	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	75* 115	170 230	260 330	0 0	0 580	0 0	740 370	0 0	0 990	0 0	1140 0	1210 0
LINE NO. 2	85 115	180 210	0 0	0 0	0 590	0 310*	390* 0	0 0	0 995	0 0	0 0	0 1210
LINE NO. 3	0 0	0 0	310 0	0 0	0 590	0 0	0 0	0 0	930 980	1010 1090	1110 0	1190 0
LINE NO. 4	85 115	180 215	0 180*	225* 0	480 570	570 690	0 0	810 0	990 1010	1010 0	1120 0	0 0
LINE NO. 5	85 115	0 0	185* 0	0 0	490 560	580 310*	360* 0	800 890	890 0	1010 1100	1110 0	0 0
LINE NO. 6	85 0	0 0	0 0	450 0	0 0	320* 0	770 0	0 0	470* 480*	0 0	1140 0	1220 0
LINE NO. 7	90 0	0 0	300 320	350 500	490 560	0 0	710 780	790 0	470* 0	1005 1090	1110 0	1170 0
LINE NO. 8	85 0	0 0	0 0	0 0	0 0	0 0	0 0	800 910	890 1020	970 0	1110 0	0 0

260

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe8 DATE : 8-30-84

N to S 45 deg TRANSDUCER

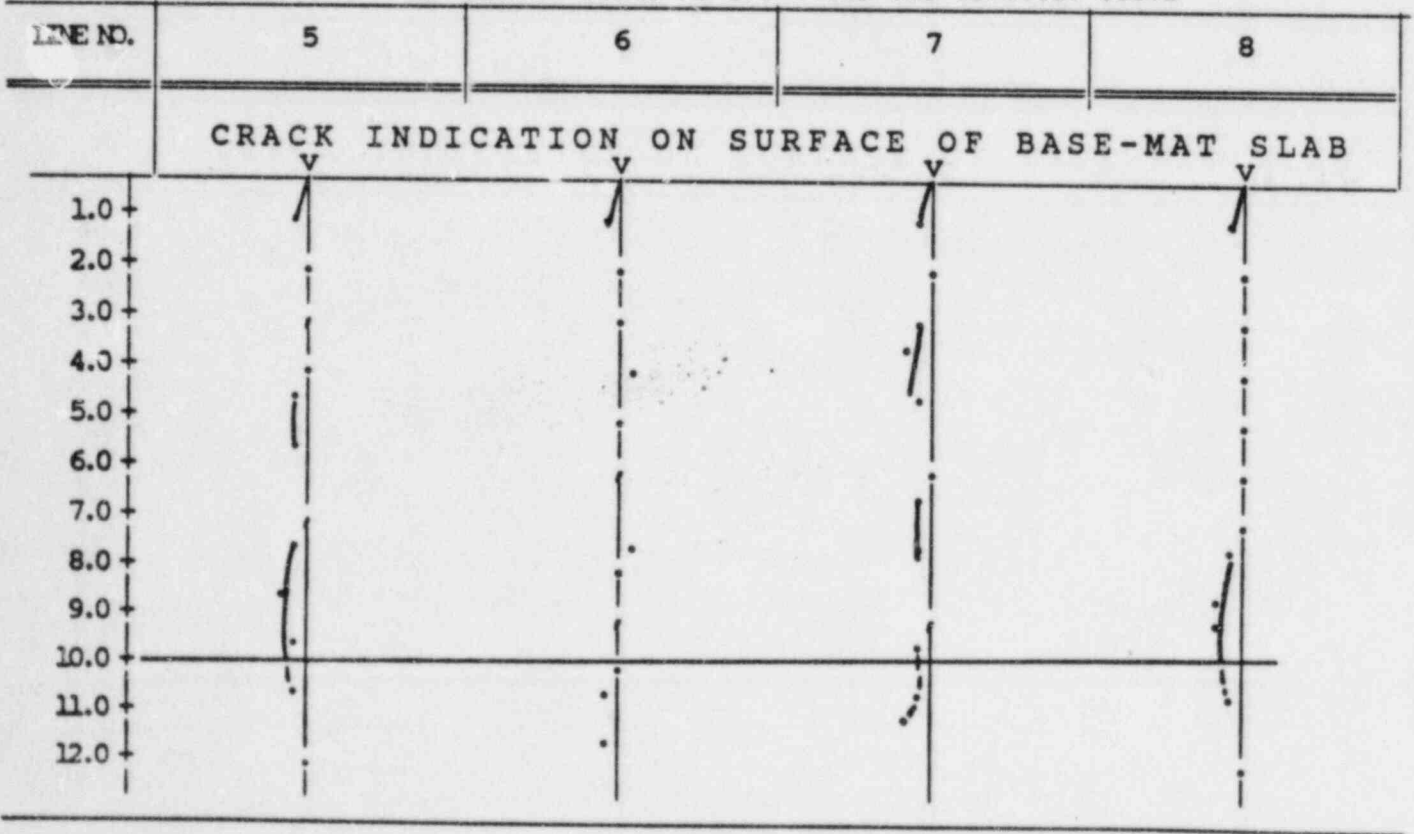
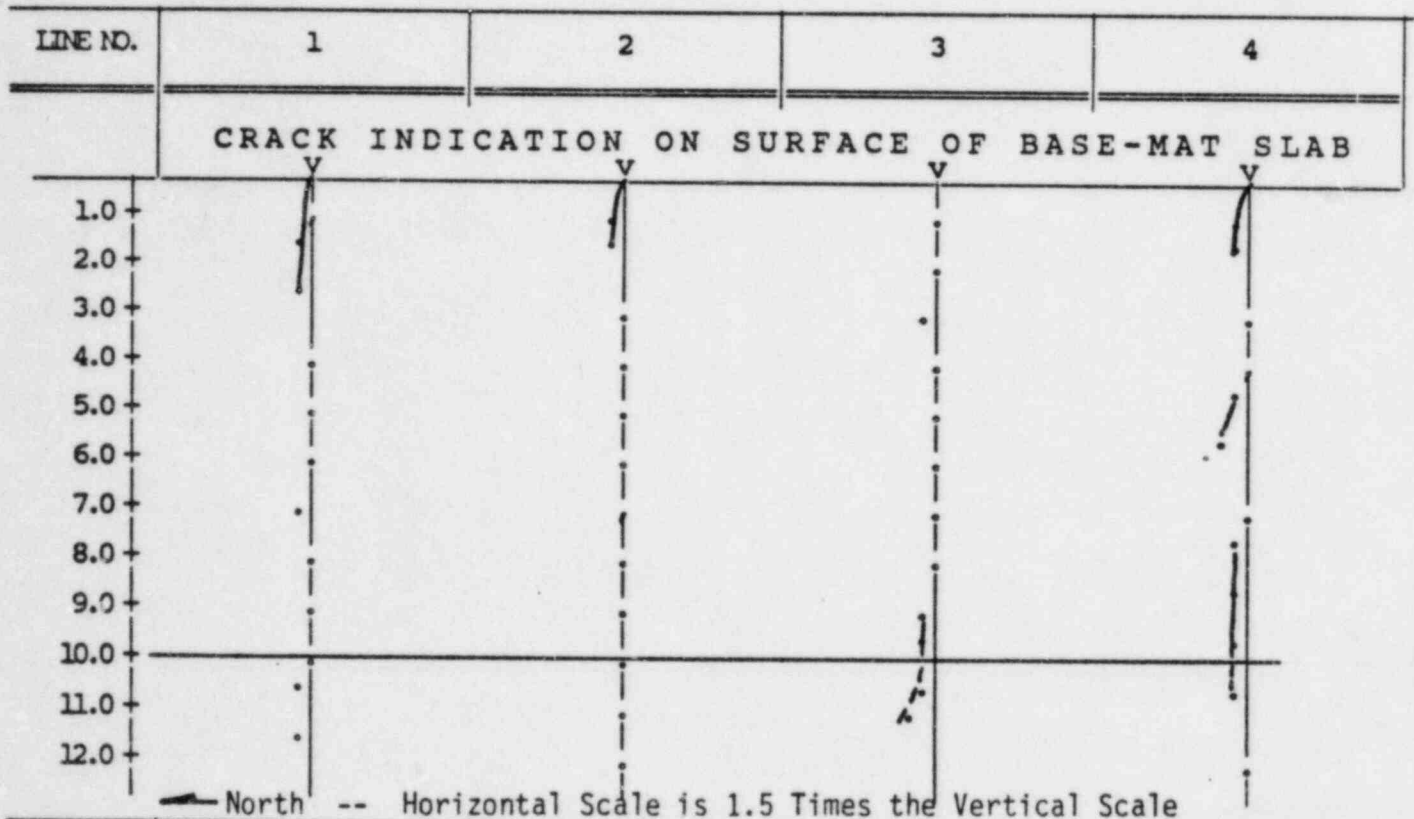
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	75	170	260	0	0	0	740	0	0	0	1140	1210
LINE 1	0.71 0.29 22.50	1.60 0.40 13.92	2.45 0.55 12.62	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	6.98 0.02 0.19	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.75 0.25 1.34	11.41 0.59 2.97
	85	180	0	0	0	0	390	0	0	0	0	0
LINE 2	0.80 0.20 13.92	1.70 0.30 10.12	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	3.68 3.32 42.11	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	0	0	310	0	0	0	0	0	930	1010	1110	1190
LINE 3	0.00 0.00 0.00	0.00 0.00 0.00	2.92 0.08 1.51	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	8.77 0.23 1.51	9.52 0.48 2.87	10.47 0.53 2.93	11.22 0.78 3.98
	85	180	0	225	480	570	0	810	900	1010	1120	0
LINE 4	0.80 0.20 13.92	1.70 0.30 10.12	0.00 0.00 0.00	2.12 1.88 41.53	4.53 0.47 5.99	5.37 0.63 6.64	0.00 0.00 0.00	7.64 0.36 2.72	8.49 0.51 3.47	9.52 0.48 2.87	10.56 0.44 2.39	0.00 0.00 0.00
	85	0	185	0	490	580	360	800	890	1010	1110	0
LINE 5	0.80 0.20 13.92	0.00 0.00 0.00	1.74 1.26 35.75	0.00 0.00 0.00	4.62 0.38 4.71	5.47 0.53 5.55	3.39 3.61 46.73	7.54 0.46 3.47	8.39 0.61 4.15	9.52 0.48 2.87	10.47 0.53 2.93	0.00 0.00 0.00
	85	0	0	450	0	320	770	0	470	0	1140	1220
LINE 6	0.80 0.20 13.92	0.00 0.00 0.00	0.00 0.00 0.00	4.24 0.24 3.27	0.00 0.00 0.00	3.02 2.98 44.68	7.26 0.26 2.05	0.00 0.00 0.00	4.43 4.57 45.88	0.00 0.00 0.00	10.75 0.25 1.34	11.50 0.50 2.48
	90	0	300	350	490	0	710	790	470	1005	1110	1170
LINE 7	0.85 0.15 10.12	0.00 0.00 0.00	2.83 0.17 3.47	3.30 0.70 11.98	4.62 0.38 4.71	0.00 0.00 0.00	6.69 0.31 2.62	7.45 0.55 4.24	4.43 4.57 45.88	9.48 0.52 3.17	10.47 0.53 2.93	11.03 0.97 5.02
	85	0	0	0	0	0	0	800	890	970	1110	0
LINE 8	0.80 0.20 13.92	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	7.54 0.46 3.47	8.39 0.61 4.15	9.15 0.85 5.34	10.47 0.53 2.93	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe8 DATE : 8-30-84

N to S 45 deg TRANSDUCER



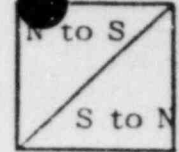
Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
DIA e8	1/7	1
DIA e8	1/11	4
DIA e8	1/12	4
DIA e8	2/7	1
DIA e8	3/3	2
DIA e8	5/3	2
DIA e8	5/7	2
DIA e8	6/4	1
DIA e8	6/6	1
DIA e8	6/7	1
DIA e8	6/9	1
DIA e8	6/11	4
DIA e8	6/12	4
DIA e8	7/8	1

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION EAST DIA. OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588
 e 9

TEST NO. MEQC TO ⊥	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	100 105	190 180	305 0	405 0	540 510	0 0	0 790	0 0	0 480*	580* 0	1170 1150	1240 0
LINE NO. 2	100 100	180 210	310 310	390 0	480 580	0 0	0 0	0 0	490* 1000	0 0	1150 0	0 0
LINE NO. 3	95 115	180 210	290 310	0 210*	0 0	0 310*	0 0	940 800	0 990	0 0	1150 0	0 0
LINE NO. 4	100 0	0 0	0 150*	230* 0	515 270*	330* 0	0 0	800 0	0 0	0 1090	0 0	1280 0
LINE NO. 5	105 0	0 0	165* 0	440 0	280* 0	0 0	750 375*	800 0	0 0	0 0	1170 0	0 0
LINE NO. 6	100 105	0 0	0 0	0 0	510 540	640 300	365* 0	0 880	0 0	1060 0	0 0	0 1270
LINE NO. 7	95 0	0 0	0 0	410 430	500 570	290* 0	0 0	810 0	0 0	0 0	1170 0	1270 0
LINE NO. 8	90 115	0 0	0 0	400 440	490 570	0 0	0 0	790 0	0 0	0 0	0 1190	1270 0

264

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe9 DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	190	305	405	540	0	0	0	0	580	1170	1240
LINE 1	0.94 0.06 3.47	1.79 0.21 6.64	2.88 0.12 2.48	3.82 0.18 2.72	5.09 0.09 1.03	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.47 4.53 39.65	11.03 0.03 0.16	11.69 0.31 1.51
	100	180	310	390	480	0	0	0	490	0	1150	0
LINE 2	0.94 0.06 3.47	1.70 0.30 10.12	2.92 0.08 1.51	3.68 0.32 5.02	4.53 0.47 5.99	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	4.62 4.38 43.48	0.00 0.00 0.00	10.84 0.16 0.83	0.00 0.00 0.00
	95	180	290	0	0	0	0	940	0	0	1150	0
LINE 3	0.90 0.10 6.64	1.70 0.30 10.12	2.73 0.27 5.55	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	8.86 0.86 5.56	0.00 0.00 0.00	0.00 0.00 0.00	10.84 0.16 0.83	0.00 0.00 0.00
	100	0	0	230	515	330	0	800	0	0	0	1280
LINE 4	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	2.17 1.83 40.19	4.86 0.14 1.71	3.11 2.89 42.88	0.00 0.00 0.00	7.54 0.46 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	12.07 0.07 0.32
	105	0	165	440	280	0	750	800	0	0	1170	0
LINE 5	0.99 0.01 0.58	0.00 0.00 0.00	1.56 1.44 42.88	4.15 0.15 2.05	2.64 2.36 41.80	0.00 0.00 0.00	7.07 0.07 0.58	7.54 0.46 3.47	0.00 0.00 0.00	0.00 0.00 0.00	11.03 0.03 0.16	0.00 0.00 0.00
	100	0	0	0	510	640	365	0	0	1060	0	0
LINE 6	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	4.81 0.19 2.28	6.03 0.03 0.32	3.44 3.56 45.96	0.00 0.00 0.00	0.00 0.00 0.00	9.99 0.01 0.04	0.00 0.00 0.00	0.00 0.00 0.00
	95	0	0	410	500	290	0	810	0	0	1170	1270
LINE 7	0.90 0.10 6.64	0.00 0.00 0.00	0.00 0.00 0.00	3.87 0.13 1.99	4.71 0.29 3.47	2.73 3.27 50.06	0.00 0.00 0.00	7.64 0.36 2.72	0.00 0.00 0.00	0.00 0.00 0.00	11.03 0.03 0.16	11.97 0.03 0.13
	90	0	0	400	490	0	0	790	0	0	0	1270
LINE 8	0.85 0.15 10.12	0.00 0.00 0.00	0.00 0.00 0.00	3.77 0.23 3.47	4.62 0.38 4.71	0.00 0.00 0.00	0.00 0.00 0.00	7.45 0.55 4.24	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	11.97 0.03 0.13

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. EAST DIAe9 DATE : 8-30-84

N to S 45 deg TRANSDUCER

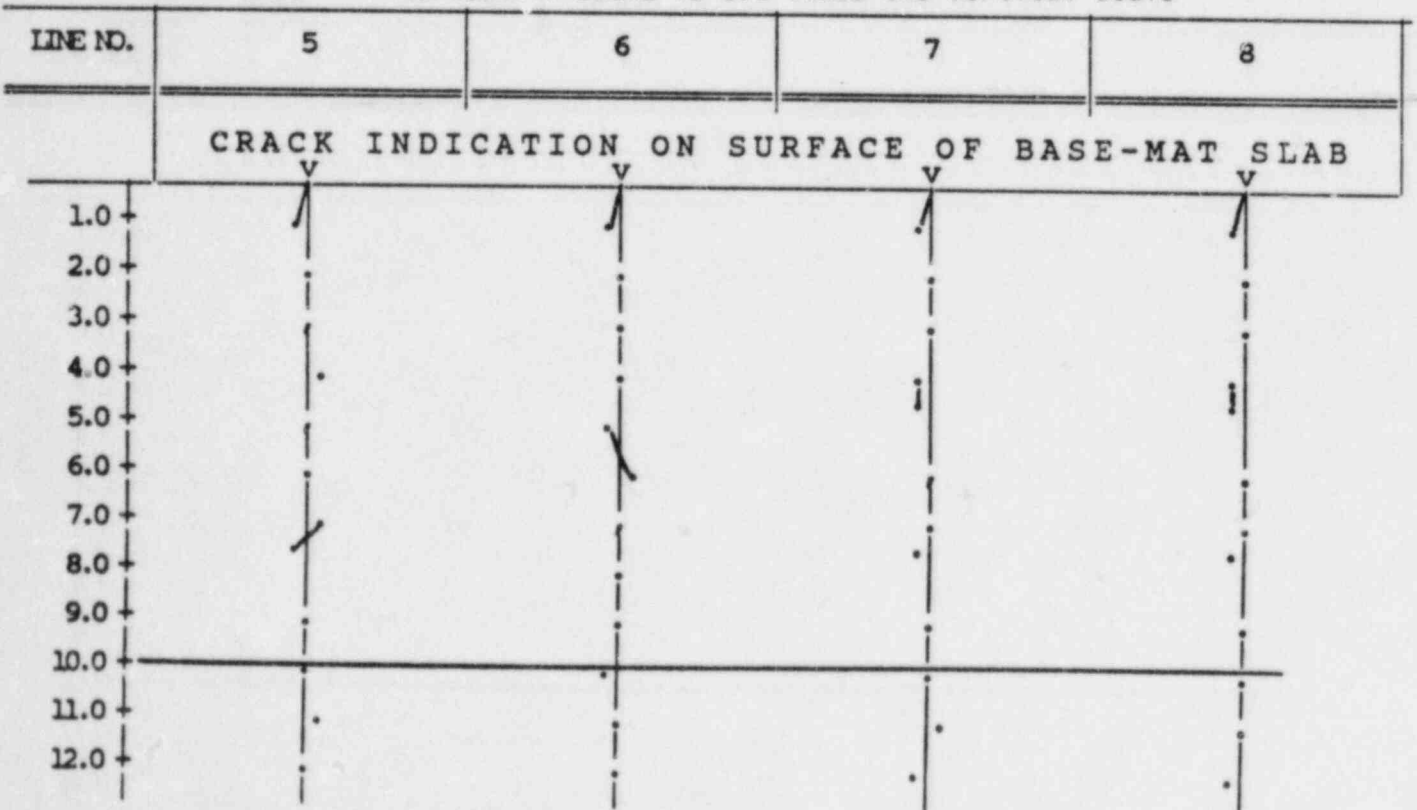
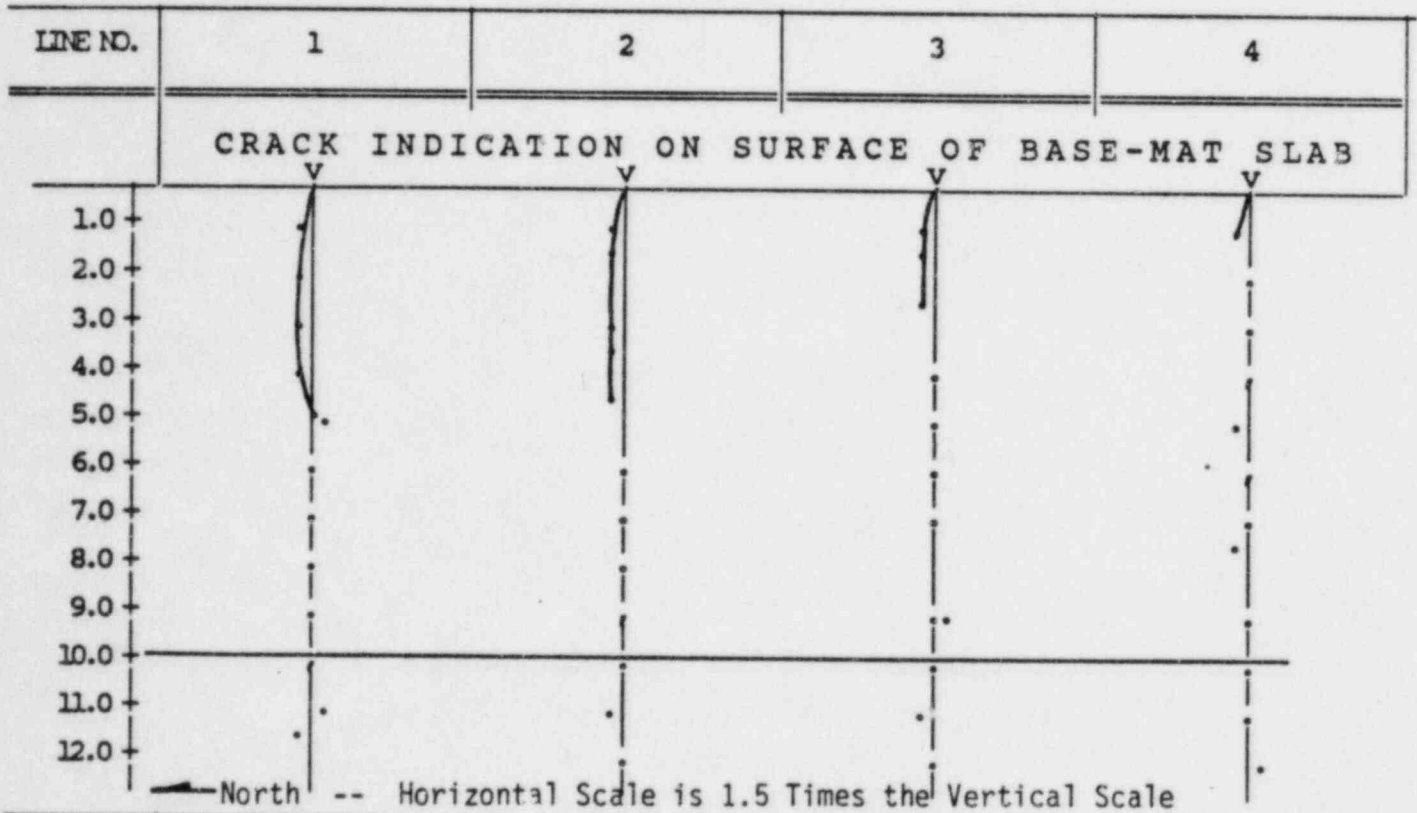
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	85	0	0	0	510	610	0	0	0	1070	1170	1270
LINE 9	0.80 0.20 13.92	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	4.81 0.19 2.28	5.75 0.25 2.48	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.09 0.09 0.50	11.03 0.03 0.16	11.97 0.03 0.13
	85	0	310	0	510	590	0	0	480	1080	1180	1260
LINE 10	0.80 0.20 13.92	0.00 0.00 0.00	2.92 0.08 1.51	0.00 0.00 0.00	4.81 0.19 2.28	5.56 0.44 4.50	0.00 0.00 0.00	0.00 0.00 0.00	4.53 4.47 44.68	10.18 0.18 1.03	11.13 0.13 0.64	11.88 0.12 0.58
	95	0	310	215	0	300	0	850	0	0	1270	1280
LINE 11	0.90 0.10 6.64	0.00 0.00 0.00	2.92 0.08 1.51	2.03 1.97 44.23	0.00 0.00 0.00	2.83 3.17 48.27	0.00 0.00 0.00	8.01 0.01 0.10	0.00 0.00 0.00	0.00 0.00 0.00	11.97 0.97 4.65	12.07 0.07 0.32

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe9 DATE : 8-30-84

N to S 45 deg TRANSDUCER

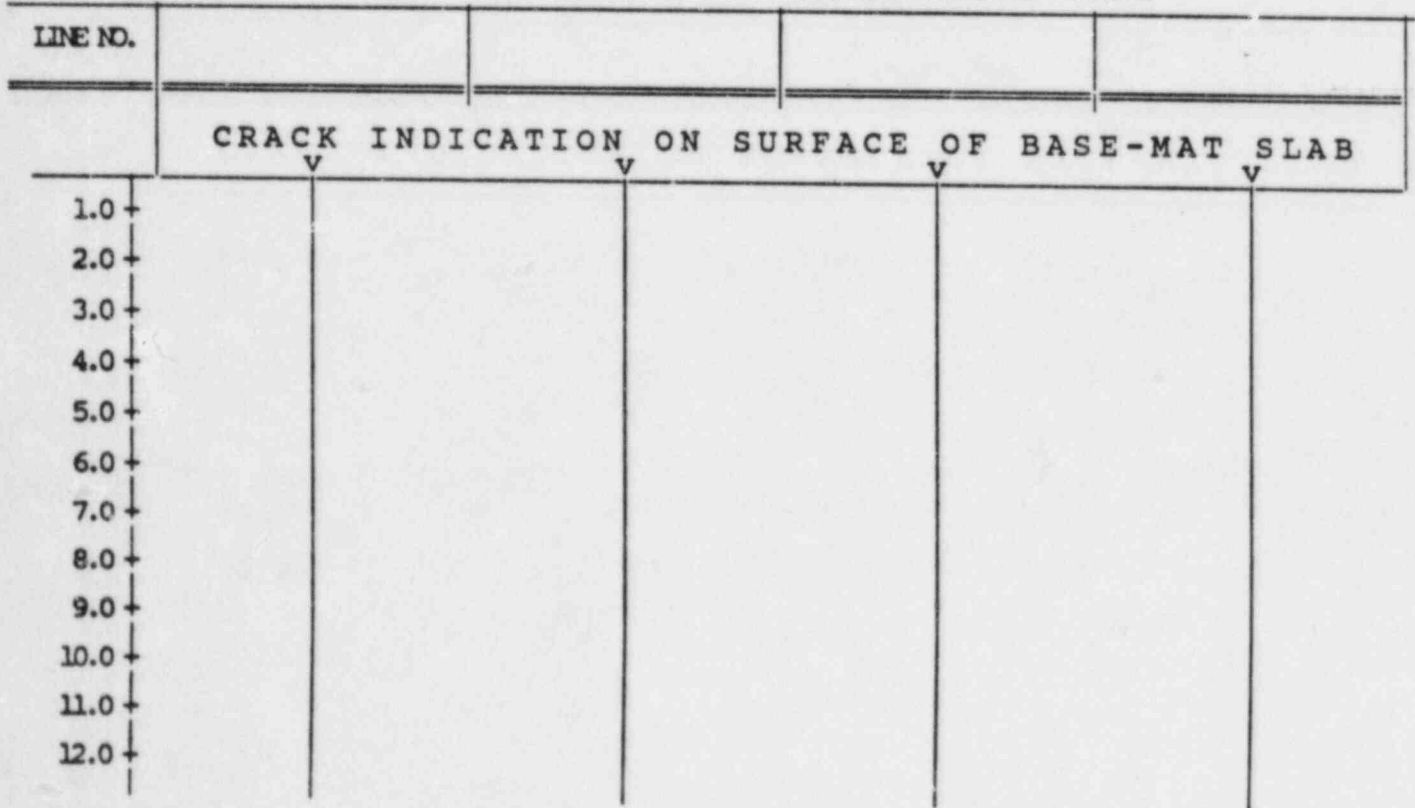
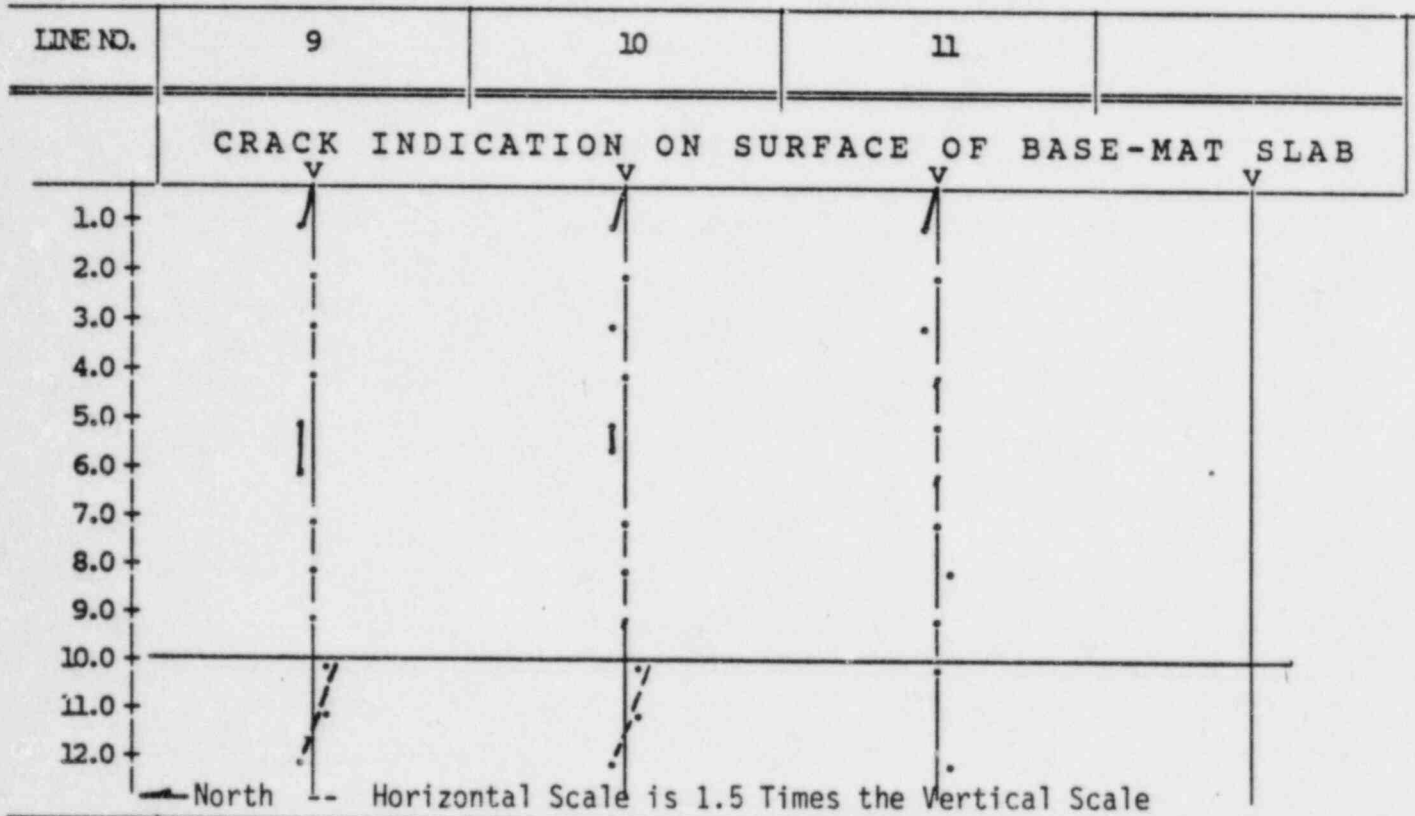


LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. EAST DIAe9 DATE : 8-30-84

N to S 45 deg TRANSDUCER



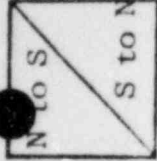
Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLEFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542 2223

IDENTIFICATION AND DESCRIPTION OF
RANDOM REFLECTORS

<u>CRACK I.D.</u>	<u>LINE NO.</u> <u>TEST NO.</u>	<u>EXPLANATION*</u>
DIA e9	1/10	4
DIA e9	1/11	4
DIA e9	1/12	4
DIA e9	2/9	1
DIA e9	2/11	4
DIA e9	3/8	1
DIA e9	3/11	4
DIA e9	4/4	1
DIA e9	4/5	1
DIA e9	4/6	1
DIA e9	4/8	1
DIA e9	4/12	4
DIA e9	5/3	2
DIA e9	5/4	2
DIA e9	5/5	2
DIA e9	5/11	4
DIA e9	6/7	1
DIA e9	6/10	4
DIA e9	7/6	2
DIA e9	7/8	2
DIA e9	7/11	4
DIA e9	7/12	4
DIA e9	8/8	3
DIA e9	8/12	4
DIA e9	10/9	3
DIA e9	11/5	1
DIA e9	11/7	1
DIA e9	11/9	±
DIA e9	11/12	4

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION RCB 1 OPERATOR R.A. MUENOW P.E. INSTRUMENT NO. B542588

TEST NO. MSIC TO ⊥	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 1	100	0	0	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0	0	0
LINE NO. 2	100	0	0	0	0	0	0	NA	0	0	0	0
	95	0	0	0	0	0	0	NA	0	0	0	0
LINE NO. 3	95	0	0	0	0	0	0	NA	0	0	0	0
	115	0	0	0	0	0	0	NA	0	0	0	0
LINE NO. 4	0	0	0	0	0	0	0	NA	0	0	0	0
	0	0	0	0	0	0	0	NA	0	0	0	0
LINE NO. 5	0	0	0	0	NA	0	0	0	0	0	0	0
	0	0	0	0	NA	0	0	0	0	0	0	0
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. RCB 1 DATE : 8-30-84

N to S 45 deg TRANSDUCER

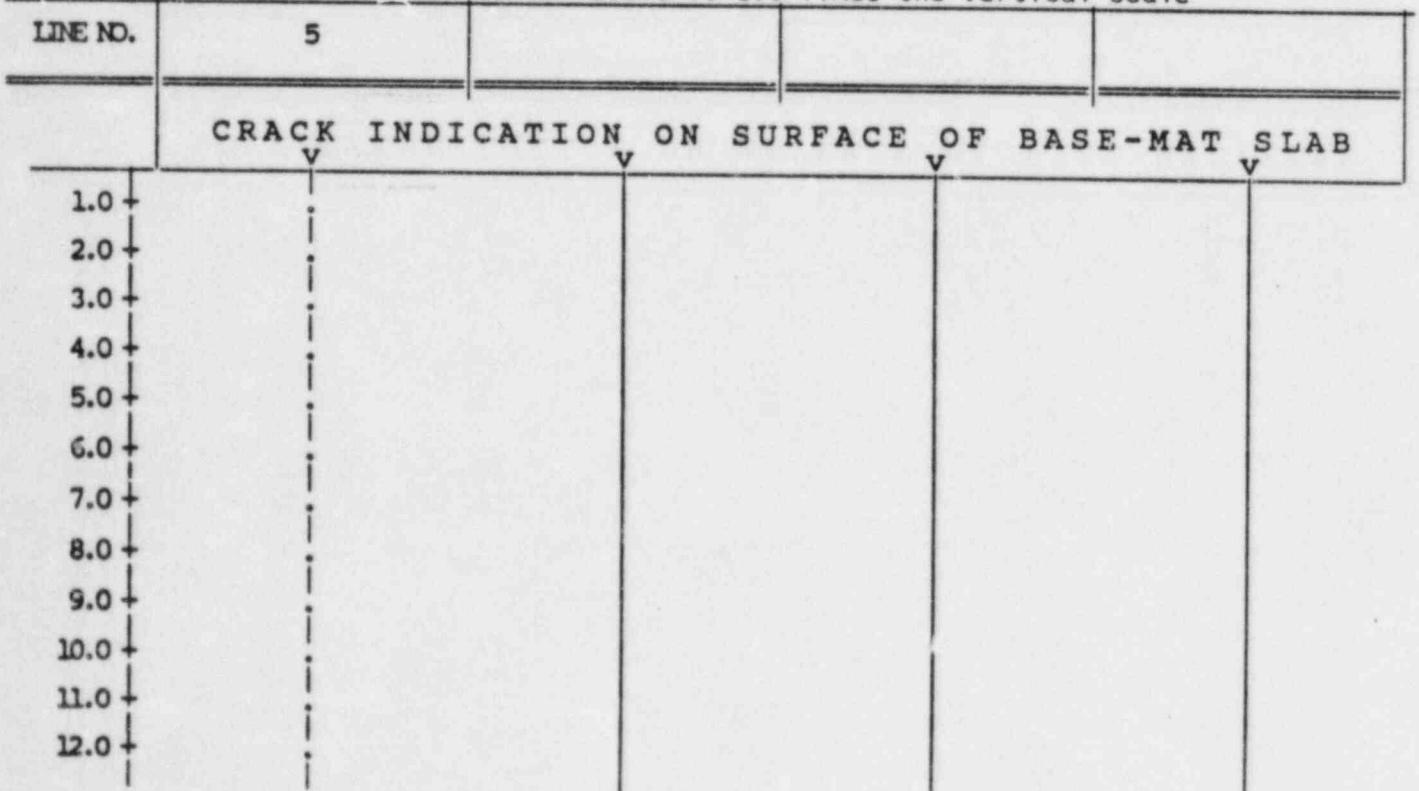
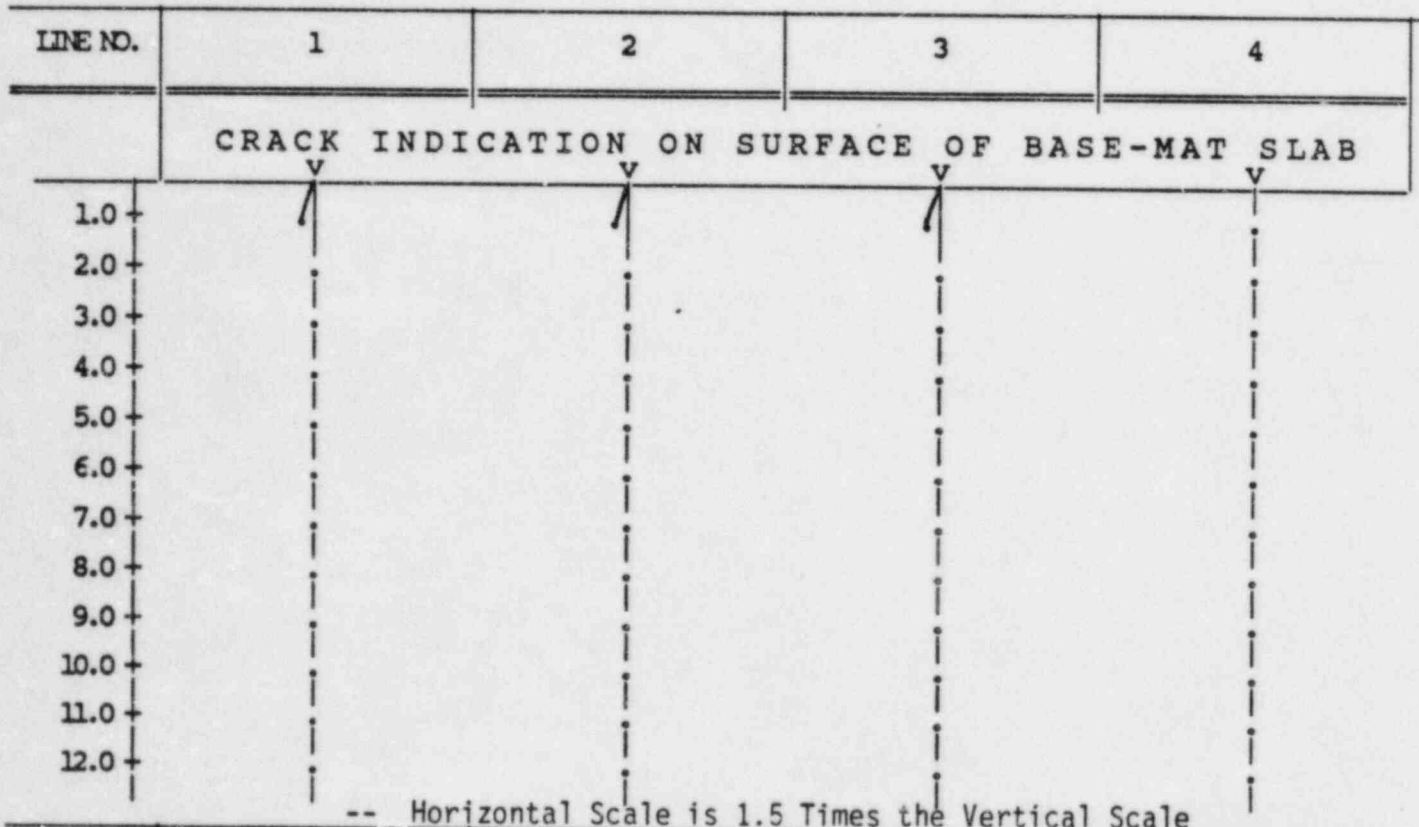
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 1	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 2	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	95	0	0	0	0	0	0	0	0	0	0	0
LINE 3	0.90 0.10 6.64	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	0	0	0	0	0	0	0	0	0	0	0	0
LINE 4	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	0	0	0	0	0	0	0	0	0	0	0	0
LINE 5	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. RCB 1 DATE : 8-30-84

N to S 45 deg TRANSDUCER



LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. RCB 2 DATE : 8-30-84

N to S 45 deg TRANSDUCER

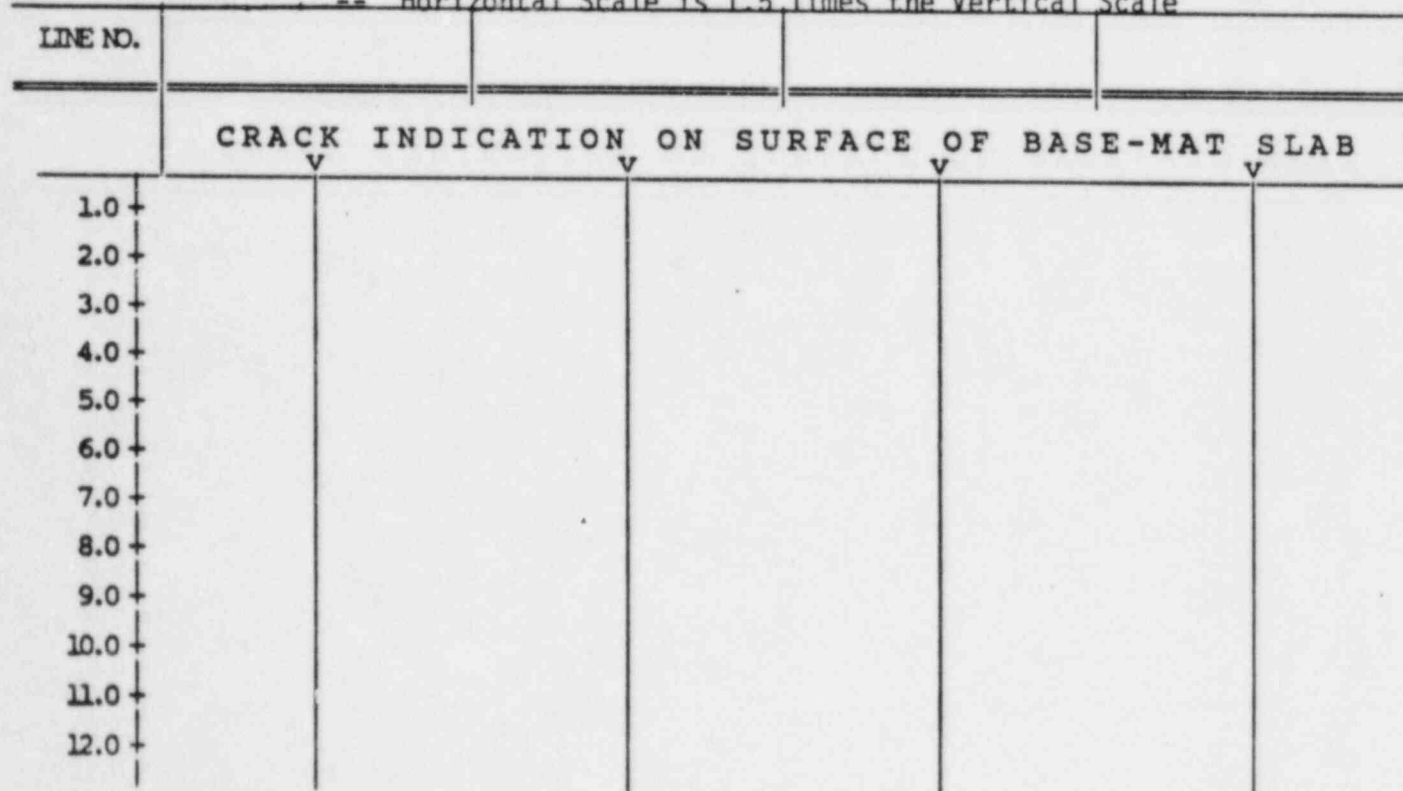
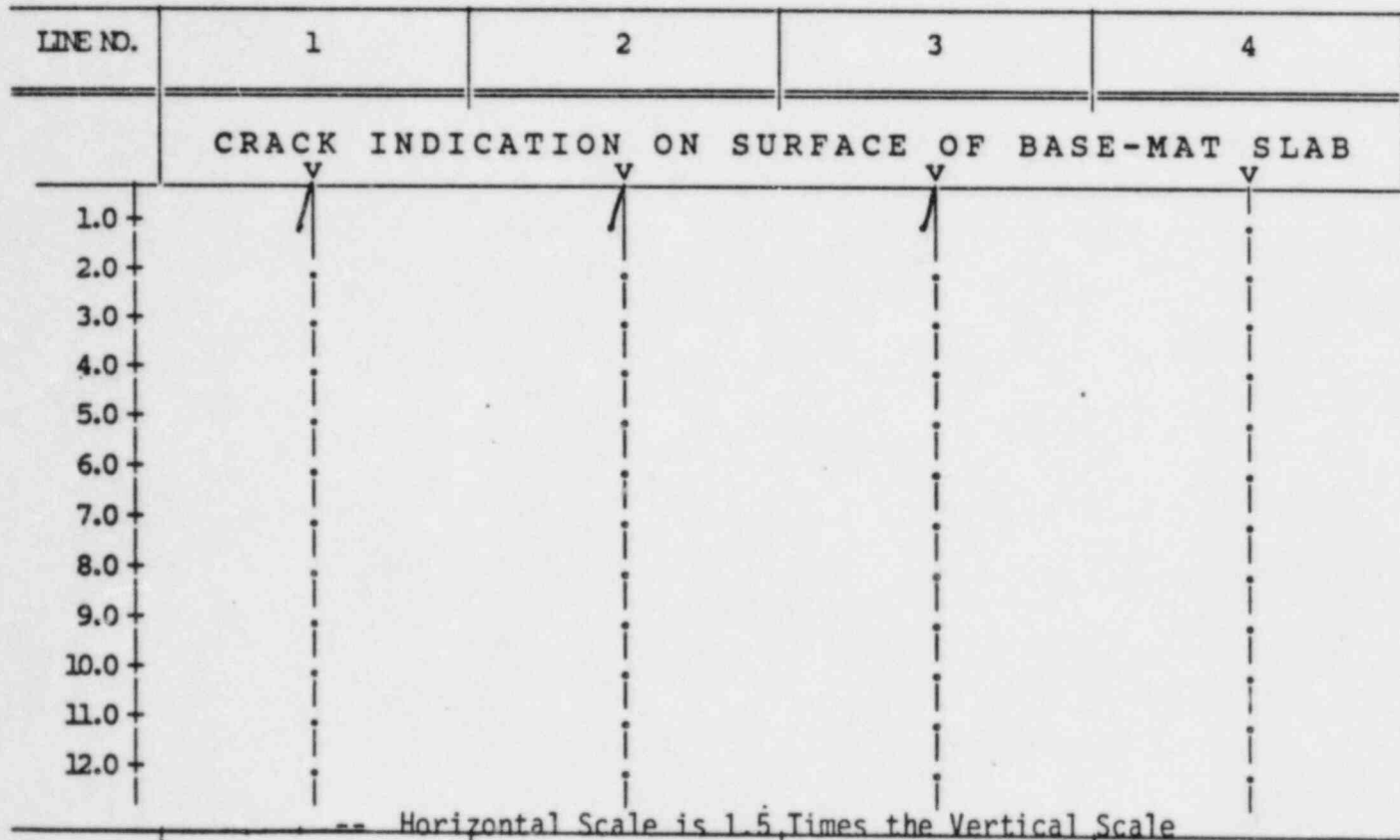
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 1	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 2	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	105	0	0	0	0	0	0	0	0	0	0	0
LINE 3	0.99 0.01 0.58	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	0	0	0	0	0	0	0	0	0	0	0	0
LINE 4	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. RCB 2 DATE : 8-30-84

N to S 45 deg TRANSDUCER



LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. RCB 3 DATE : 8-30-84

N to S 4' deg TRANSDUCER

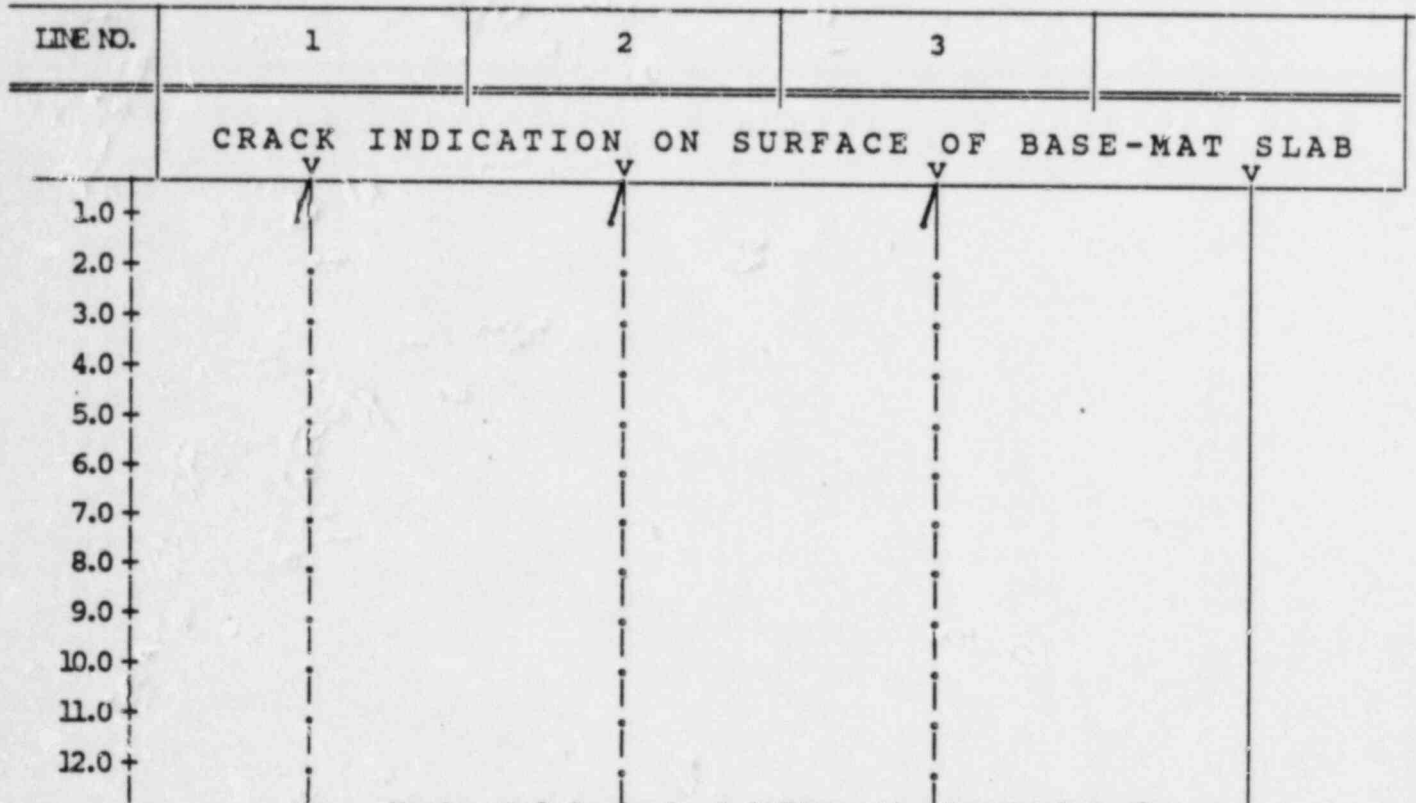
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 1	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	105	0	0	0	0	0	0	0	0	0	0	0
LINE 2	0.99 0.01 0.58	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 3	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

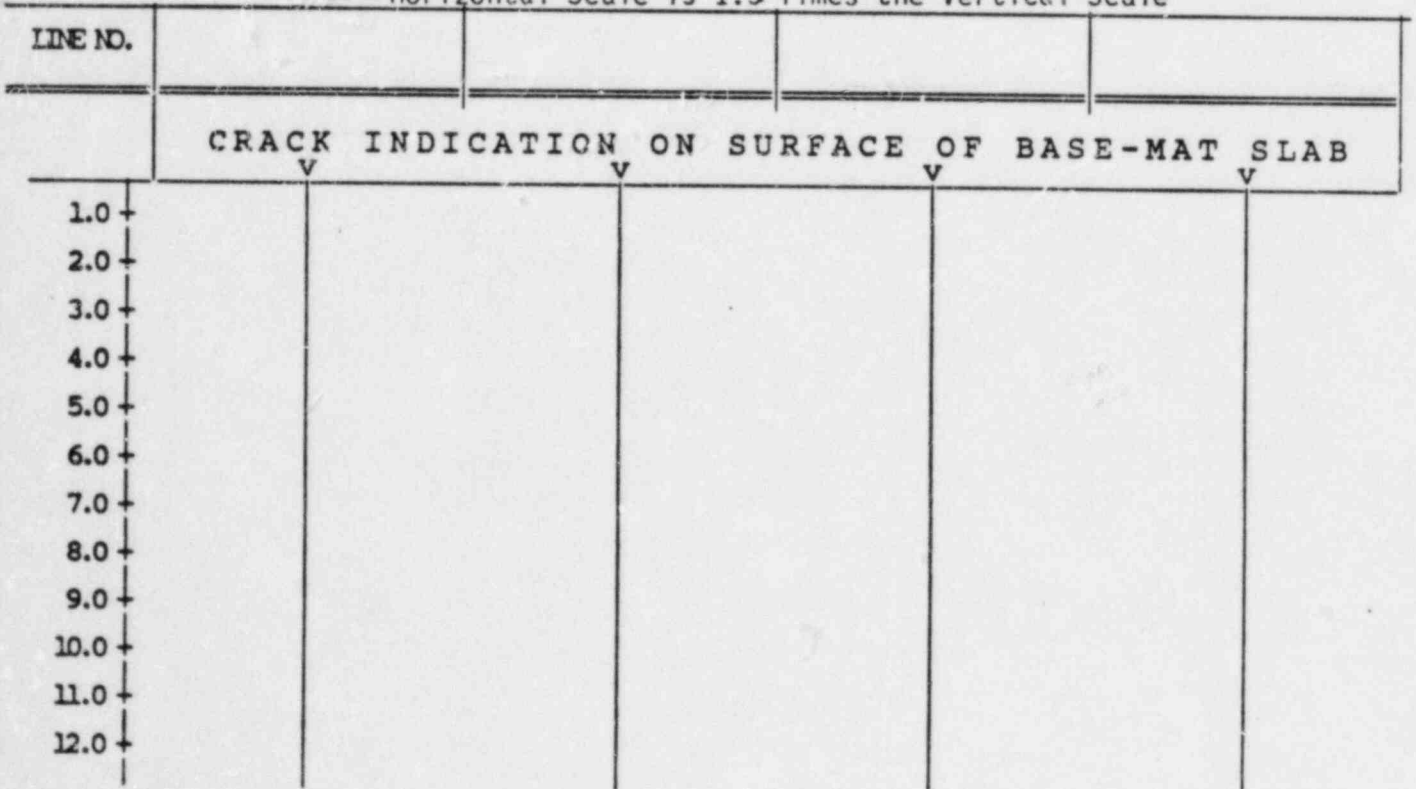
CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. RCB 3 DATE : 8-30-84

N to S 45 deg TRANSDUCER



-- Horizontal Scale is 1.5 Times the Vertical Scale



LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. *RCB 4 DATE : 8-30-84

N to S 45 deg TRANSDUCER

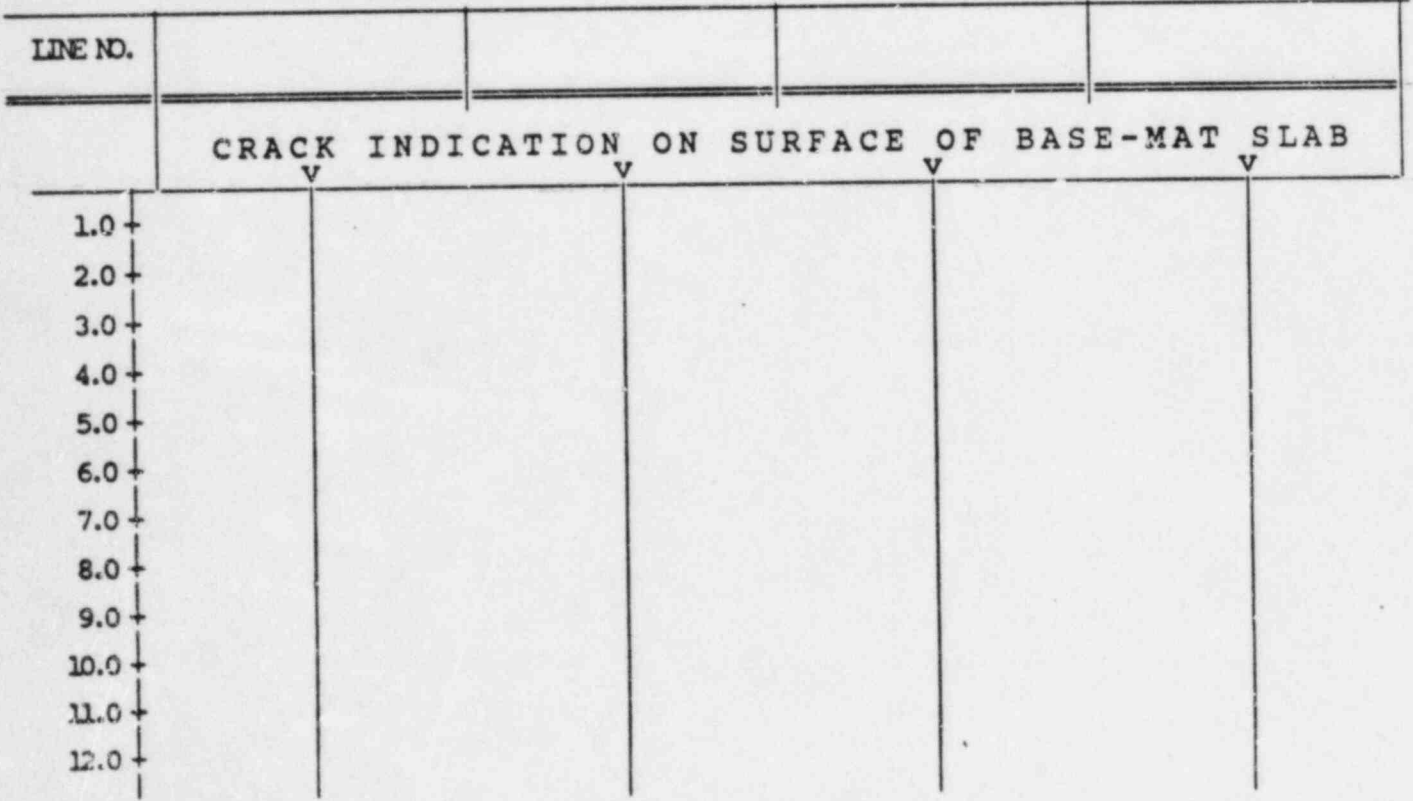
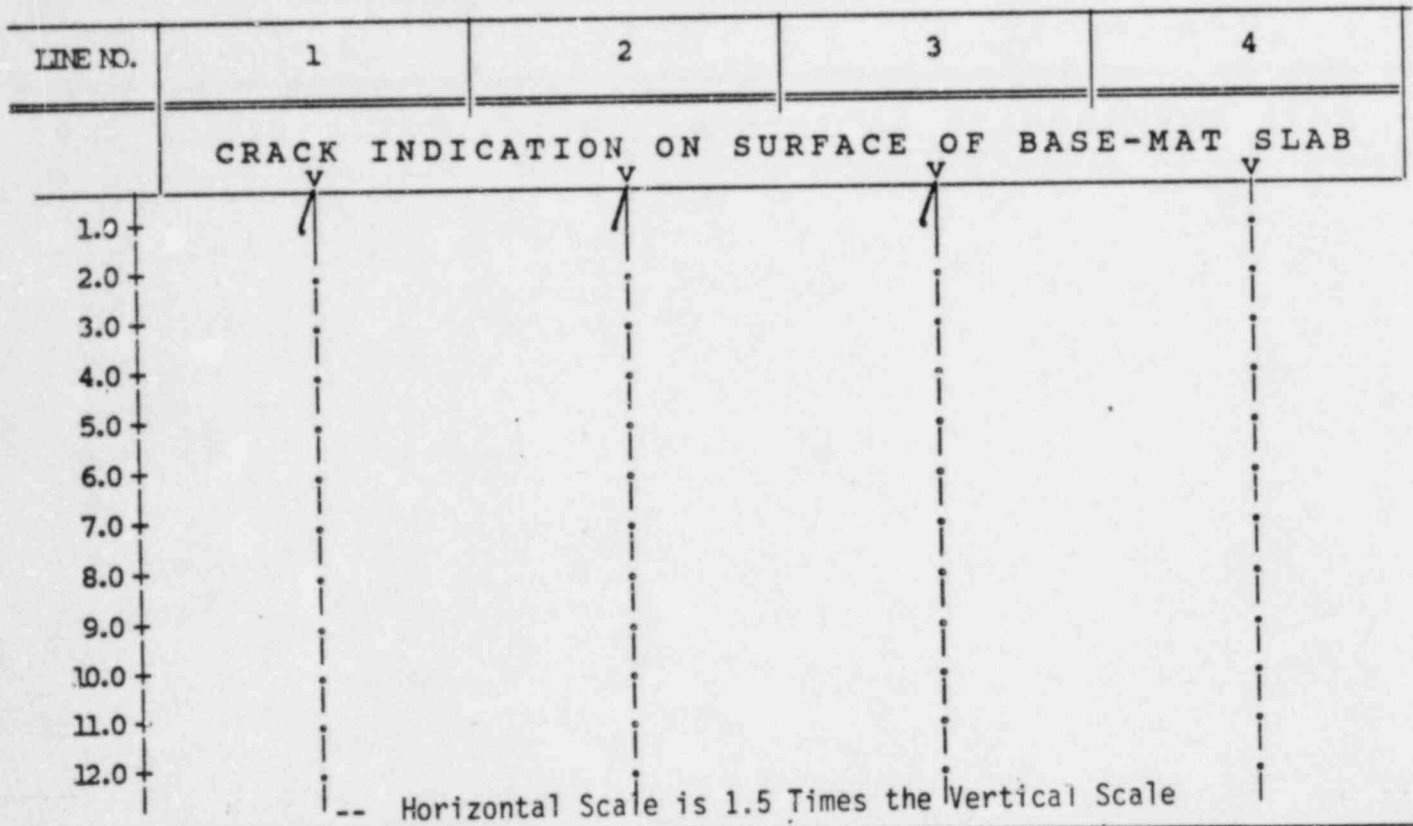
TEST # MS to VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 1	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	95	0	0	0	0	0	0	0	0	0	0	0
LINE 2	0.90 0.10 6.64	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	95	0	0	0	0	0	0	0	0	0	0	0
LINE 3	0.90 0.10 6.64	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	0	0	0	0	0	0	0	0	0	0	0	0
LINE 4	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. *RCB 4 DATE : 8-30-84

N to S 45 deg TRANSDUCER

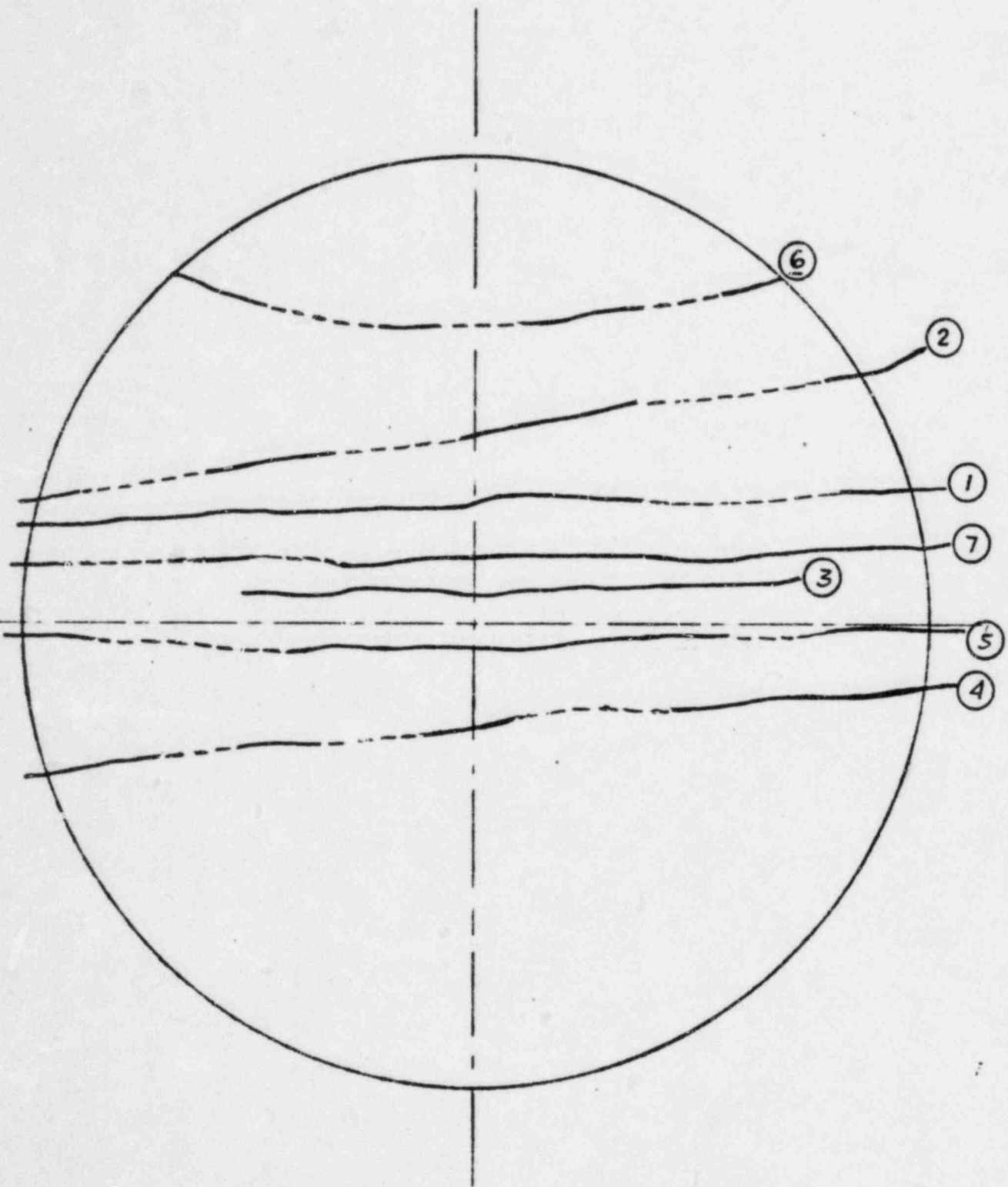
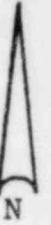


Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHIC SHEETS
60° TRANSDUCER



MUENOW AND ASSOICATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHIC SHEET
60° TRANSDUCER

MUENOW AND ASSOCIATES, INC.
 CHARLOTTE, NORTH CAROLINA

LOUISIANA POWER AND LIGHT WATERFORD NO. 3

DESCRIPTION OF
 60° TRANSDUCER
 INTERNAL REFLECTOR DATA

These Microsecond Readings Are For General Location of The Cracks Only And Are Related To The 105 Foot Line ①	Crack ID 1 ②	Crack ID 2	
Line No. 0 Microsecond to Re- flector ③ ④ Horizontal ft. to reflector ⑤	7800 6 90 ⑦	7450 86	

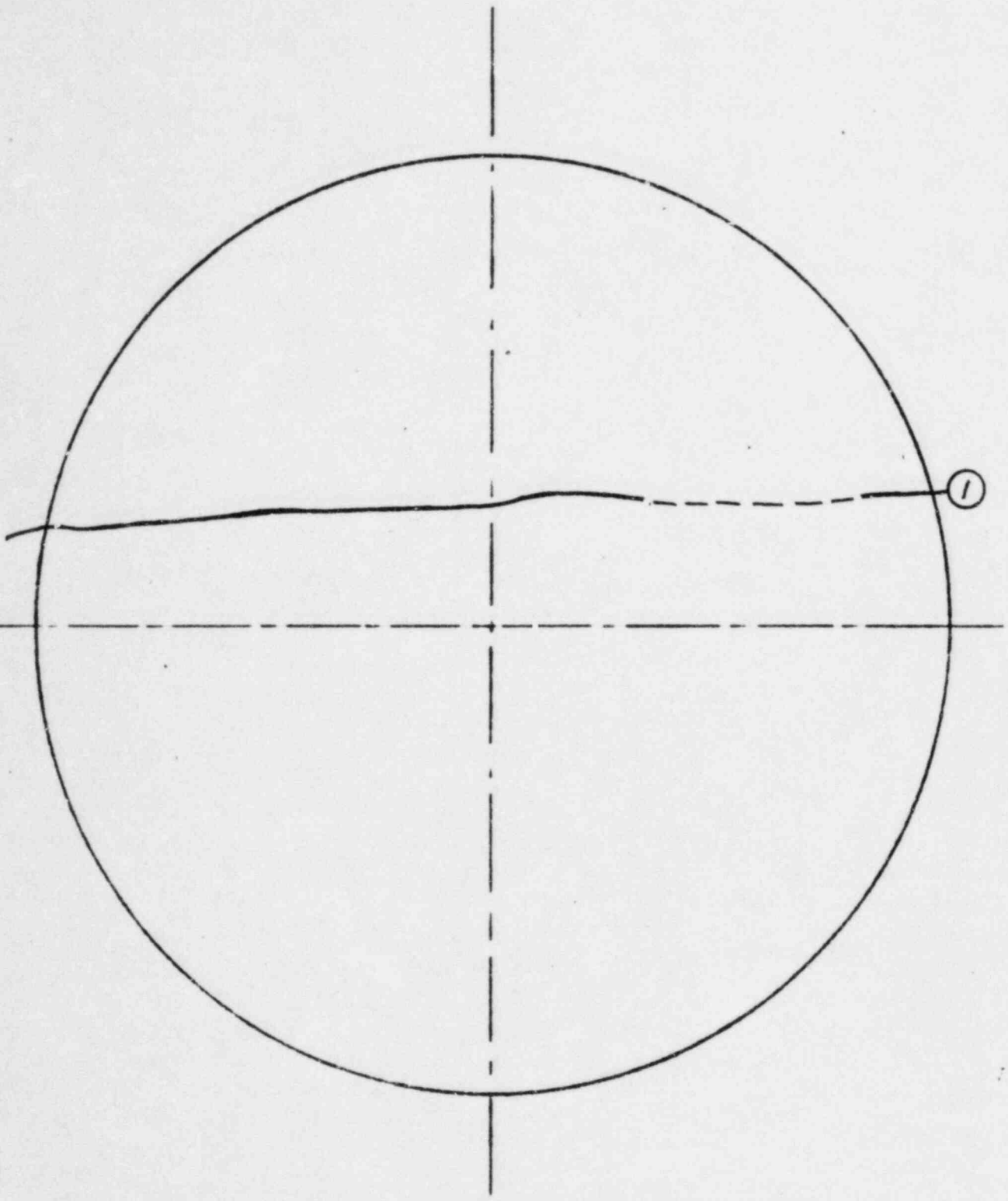
- ① General Description of Data Related to 105 Foot Test Line
- ② Crack Identification Number
- ③ Test Line Number (See Drawing No. 11)
- ④ Microseconds to Internal Reflector
- ⑤ Horizontal Distance to Internal Reflector from 105 Foot Test Line
- ⑥ Actual Microsecond Reading
- ⑦ Actual Horizontal Distance to Reflector from 105 Foot Test Line

MUELOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEETS
 60° TRANSDUCER

These microsecond readings are for general location of the cracks only and are related to the 105' line	CRACK ID. 1	CRACK ID. 2	CRACK ID. 3	CRACK ID. 4	CRACK ID. 5	CRACK ID. 6	CRACK ID. 7	
LINE NO. 0 msec. to refl. horiz. ft. to refl.	7800 90	7450 86	0	11350 131	9360 108	0	8400 97	
LINE NO. 30 "	7800 90	7360 85	0	11260 130	9360 108	0	8400 97	
LINE NO. 35 "	7800 90	7360 85	0	11260 130	9360 108	0	8320 96	
LINE NO. 40 "	7800 90	7280 84	0	11260 130	9360 108	0	8400 97	
LINE NO. 45 "	7710 89	7280 84	0	11090 128	9440 109	0	8490 98	
LINE NO. 50 "	7710 89	7190 83	0	11170 129	9360 108	0	8320 96	
LINE NO. 55 "	7710 89	7100 82	0	11170 129	9270 107	4160 48	8320 46	
LINE NO. 60 "	7620 88	7020 81	0	11090 128	9270 107	4240 49	8230 95	
LINE NO. 65 "	7620 88	6930 80	8750 101	11100 127	9530 110	4500 52	8320 96	
LINE NO. 70 "	7620 88	6840 79	8750 101	10910 126	9620 111	4680 54	8140 94	
LINE NO. 75 "	7540 87	6670 77	8660 100	10830 125	9530 110	4940 57	8320 96	
LINE NO. 77 "	7450 86	6500 75	8600 100	10740 124	9530 110	4940 57	8230 95	
NORTH-SOUTH CENTERLINE	86	75	100	124	110	57	95	



CRACK NO. 1



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHIC SHEET
60° TRANSDUCER

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

CRACK NO. 1

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.

TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER
 WEST SIDE OF RCB

LINE NO.	MICRO SEC TO REFLECTOR FT. TO REFLECTOR	105'	110'	115'	120'	125'	130'	135'	140'
		0	7800 90	7710 89	7710 89	7540 87	7620 88	7800 90	7880 91
30	"	7800 90	7800 90	7800 90	7880 91	7710 89	7800 90	7880 91	7800 90
35	"	7800 90	7800 90	7800 90	7710 89	7710 89	7710 89	7710 89	7800 90
40	"	7800 90	7800 90	7880 91	7710 89	7800 90	7710 89	7620 88	7800 90
45	"	7710 89	7710 89	7520 88	7800 90	7710 89	7800 90	7880 91	7710 89
50	"	7710 89	7710 89	7800 90	7880 91	7880 91	7880 91	7800 90	7710 89
55	"	7710 89	7710 89	7710 89	7800 90	7800 90	7800 90	7880 91	7800 90
60	"	7620 88	7800 90	7710 89	7620 88	7540 87	7620 88	7710 89	7800 90
65	"	7620 88	7710 89	7710 89	7800 90	7710 89	7800 90	7710 89	7800 90
70	"	7620 88	7540 87	7710 89	7710 89	7800 90	7880 91	7710 89	7620 88
75	"	7540 87	7620 88	7710 89	7540 87	7450 86	7540 87	7620 88	7540 87
77	"	7450 86	7360 85	7450 86	7540 87	7540 87	7540 87	7540 87	7540 87
NORTH/SOUTH CENTERLINE		86	85	86	87	87	87	87	87

289

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

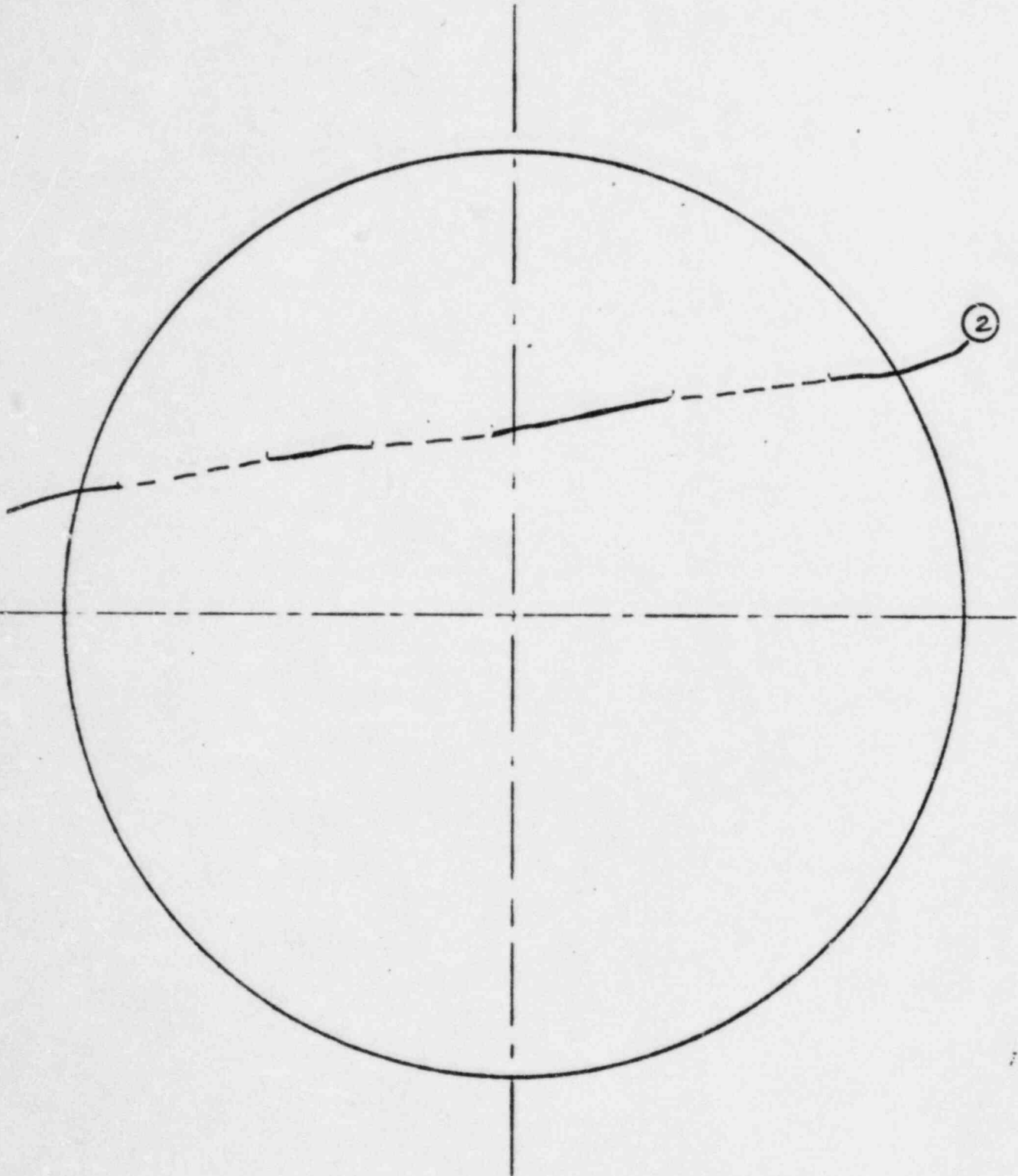
CRACK NO. 1

8/84

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER EAST SIDE OF RCB								
	105'	110'	115'	120'	125'	130'	135'	140'	
LINE NO. 75e msec to reflec. horiz. ft. to reflec.	7450 84	7450 86	7280 84	7360 85	7450 86	7280 84	7360 85	7360 85	
LINE NO. 70e "	7450 86	7450 86	7280 84	7190 83	7280 84	7280 84	7360 85	7450 86	
LINE NO. 65e "	7450 86	7450 87	7620 88	7540 87	7620 88	7360 85	7280 84	7360 85	
LINE NO. 60e "	7360 85	7360 85	7360 85	7360 85	7360 85	7280 84	7190 83	7280 84	
LINE NO. 55e "	7360 85	7280 84	7360 85	7360 85	7360 85	7280 84	7360 85	7360 85	
LINE NO. 50e "	7360 85	7360 85	7360 85	7360 85	7360 85	7450 86	7510 87	7450 86	290
LINE NO. 45e "	7360 85	7280 84	7190 83	7280 84	7190 83	7280 84	7190 83	7190 83	
LINE NO. 40e "	7280 84	7100 82	7020 81	7020 81	7190 83	7280 84	7280 84	7280 84	
LINE NO. 35e "	7280 84	7280 84	7190 83	7100 82	7020 81	6930 80	7190 83	7100 82	
LINE NO. 30e "	7280 84	7280 84	7190 83	7190 83	7100 82	7190 83	7280 84	7190 83	
LINE NO. 0e "	7280 84	7280 84	7190 83	7100 82	7190 83	7280 84	7280 84	7100 82	



CRACK NO. 2



MUENOW AND ASSOCIATES, INC.. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHIC SHEET
60° TRANSDUCER

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

CRACK NO. 2

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER EAST SIDE OF RCB							
	105'	110'	115'	120'	125'	130'	135'	140'
CRACK NO. 70e MICRO SEC TO REFLECTOR FT. TO REFLECTOR	6240 72	6320 73	6410 74	6320 73	6240 72	6150 71	6150 71	6240 72
CRACK NO. 65e "	5980 69	5980 69	5890 63	5800 67	5290 63	5980 69	6060 70	5290 68
CRACK NO. 60e "	5890 63	5800 67	5720 66	5800 67	5890 68	5890 68	5890 68	5890 68
CRACK NO. 55e "	5800 67	5800 67	5980 69	5890 68	5800 67	5800 67	5890 68	5800 67
CRACK NO. 50e "	5720 66	5720 66	5630 65	5540 64	5630 65	5630 65	5720 66	5720 66
CRACK NO. 45e "	5720 66	5720 66	5800 67	5890 63	5200 67	5720 66	5800 67	5800 67
CRACK NO. 40e "	5630 65	5540 64	5460 63	5630 65	5720 66	5800 67	5800 67	5720 66
CRACK NO. 35e "	5540 64	5540 64	5460 63	5540 64	5460 63	5460 63	5540 60	5540 62
CRACK NO. 30e "	5460 63	5460 63	5460 63	5370 62	5280 61	5200 61	5200 60	5370 62
CRACK NO. 0e "	5280 61	5280 61	5280 61	5200 60	5110 59	5200 60	5280 61	5110 59

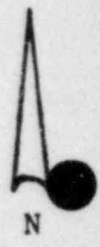
202

MUFNOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

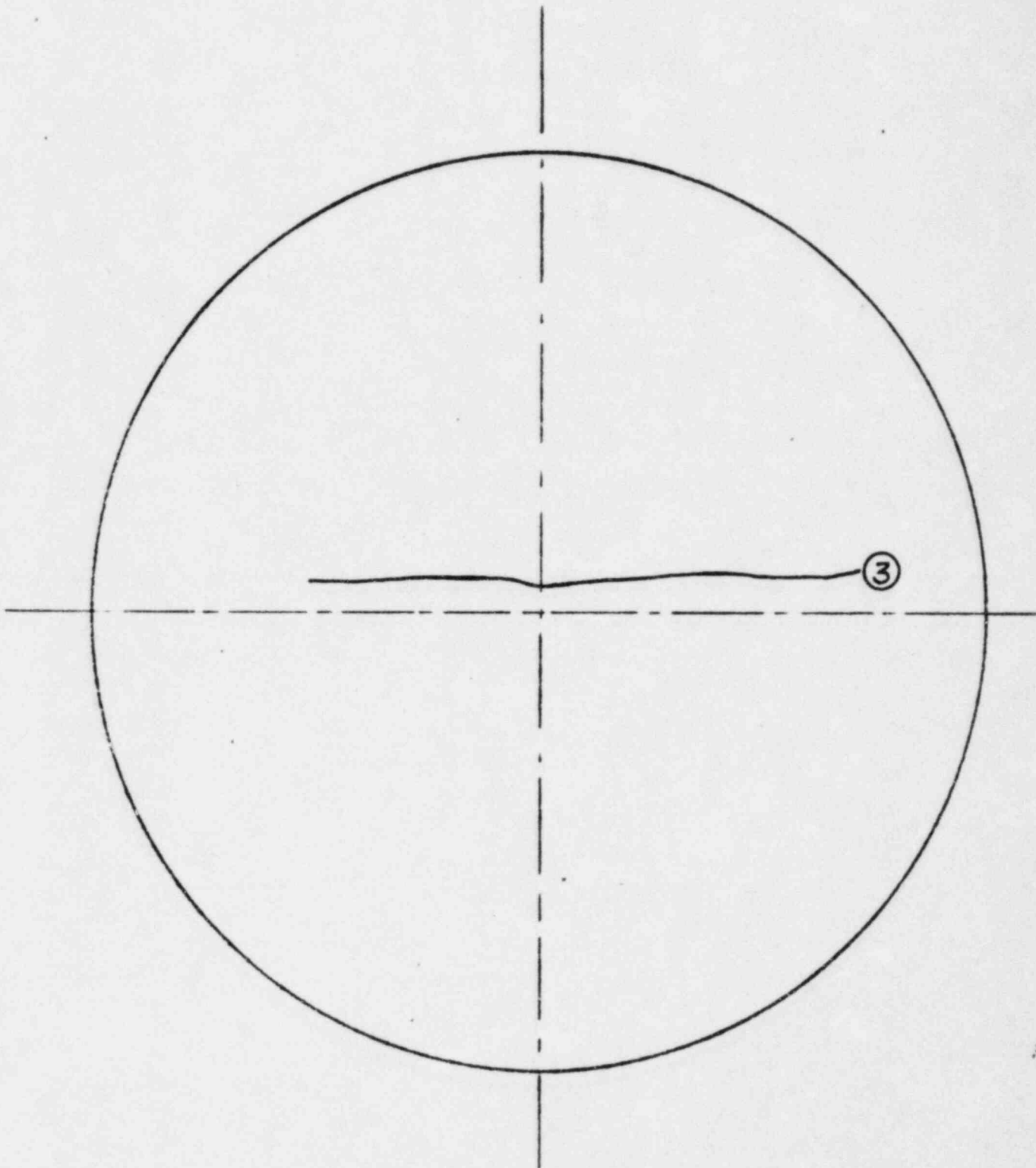
CRACK NO. 2

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER WEST SIDE OF RCB							
	105'	110'	115'	120'	125'	130'	135'	140'
	CRACK NO. 0 MICRO SEC TO REFLECTOR FT. TO REFLECTOR	7450 86	7540 87	7540 87	7620 88	7540 87	7450 86	7280 84
CRACK NO. 30 "	7360 85	7450 86	7540 87	7540 87	7450 86	7360 85	7280 84	7280 84
CRACK NO. 35 "	7360 85	7540 87	7620 88	7450 86	7450 86	7280 84	7100 82	7020 81
CRACK NO. 40 "	7280 84	7360 85	7450 86	7450 86	7360 85	7280 84	7280 84	7100 82
CRACK NO. 45 "	7280 84	7360 85	7450 86	7280 84	7190 83	7100 82	7020 81	7020 81
CRACK NO. 50 "	7190 83	*7280 84	7360 85	7280 84	7360 85	7100 82	7020 81	7100 82
CRACK NO. 55 "	7100 82	7190 83	7280 84	7190 83	7280 84	7020 81	7020 81	7100 82
CRACK NO. 60 "	7020 81	7100 81	7190 83	7280 84	7190 83	7100 82	7020 81	7100 82
CRACK NO. 65 "	6930 80	6840 79	6930 80	7020 81	6930 80	7100 82	6930 80	6840 79
CRACK NO. 70 "	6840 79	6930 80	7020 81	6930 80	6840 79	6930 80	6930 80	6840 79
CRACK NO. 75 "	6670 77	6580 76	6500 75	6690 77	6690 77	6760 78	6840 79	6670 77
CRACK NO. 77 NORTH/SOUTH CENTERLINE	6500 75	6410 74	6580 76	6670 77	6780 78	6410 74	6500 75	6410 74

203



CRACK NO. 3



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHIC SHEET
60° TRANSDUCER

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 CRACK NO. 3 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER							
	WEST SIDE OF RCB							
	105'	110'	115'	120'	125'	130'	135'	140'
LINE NO. 0 MICRO SEC TO REFLECTOR FT. TO REFLECTOR	0							
LINE NO. 30 "	0							
LINE NO. 35 "	0							
LINE NO. 40 "	0							
LINE NO. 45 "	0							
LINE NO. 50 "	0							
LINE NO. 55 "	0							
LINE NO. 60 "	0							
LINE NO. 65 "	8750 101	8660 100	8580 99	8490 98	8660 100	8750 101	8750 101	8560 100
LINE NO. 70 "	8750 101	8660 100	8590 99	8580 99	8490 93	8580 99	8660 100	8660 100
LINE NO. 75 "	8660 100	8660 100	8660 100	8660 100	8660 100	8660 100	8660 100	8750 101
LINE NO. 77 "	8660	8560	8660	8750	8830	8750	8660	8750
NORTH/SOUTH CENTERLINE	100	100	100	101	102	101	100	101

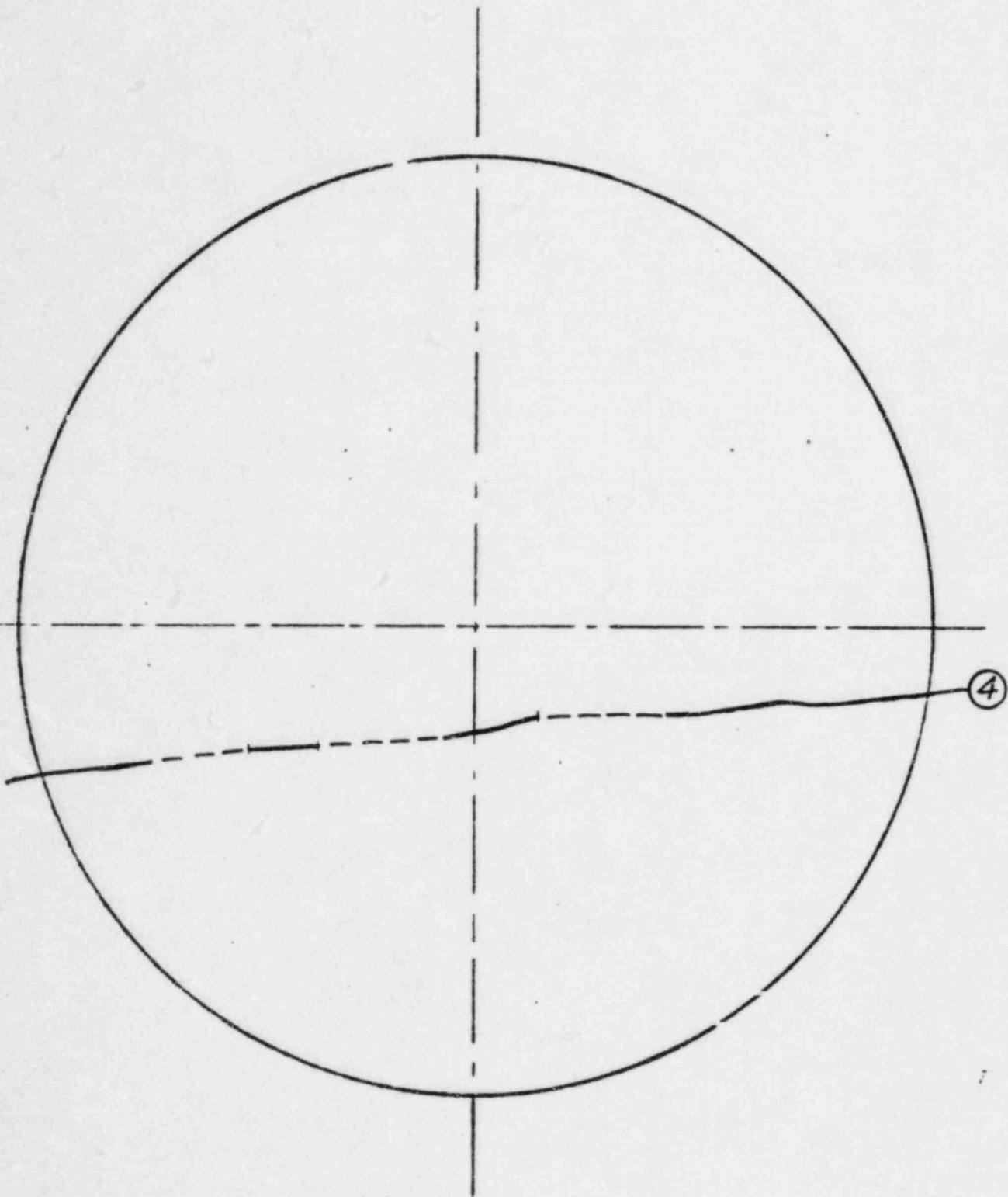
295

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 CRACK NO. 3 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

8/84

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER EAST SIDE OF RCB							
	105'	110'	115'	120'	125'	130'	135'	140'
LINE NO. 75e msec to reflector, horz. ft. to rf	8660 100	8660 100	8580 99	8490 98	8660 100	8570 101	8660 100	8660 100
LINE NO. 70e "	8660 100	8660 100	8580 99	8660 100	8660 100	8660 100	8660 100	8660 100
LINE NO. 65e "	8660 100	8660 100	8660 100	8660 100	8490 98	8660 100	8750 101	8750 101
LINE NO. 60e "	8660 100	8660 100	8660 100	8660 100	8750 101	8750 101	8660 100	8660 100
LINE NO. 55e "	8580 99	8660 100	8750 101	8750 101	8660 100	8660 100	8660 100	8660 100
LINE NO. 50e "	0							
LINE NO. 45e "	0							
LINE NO. 40e "	0							
LINE NO. 35e "	0							
LINE NO. 30e "	0							
LINE NO. 0e "	0							

CRACK NO. 4



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHIC SHEET
60° TRANSDUCER

MUELOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 CRACK NO. 4 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

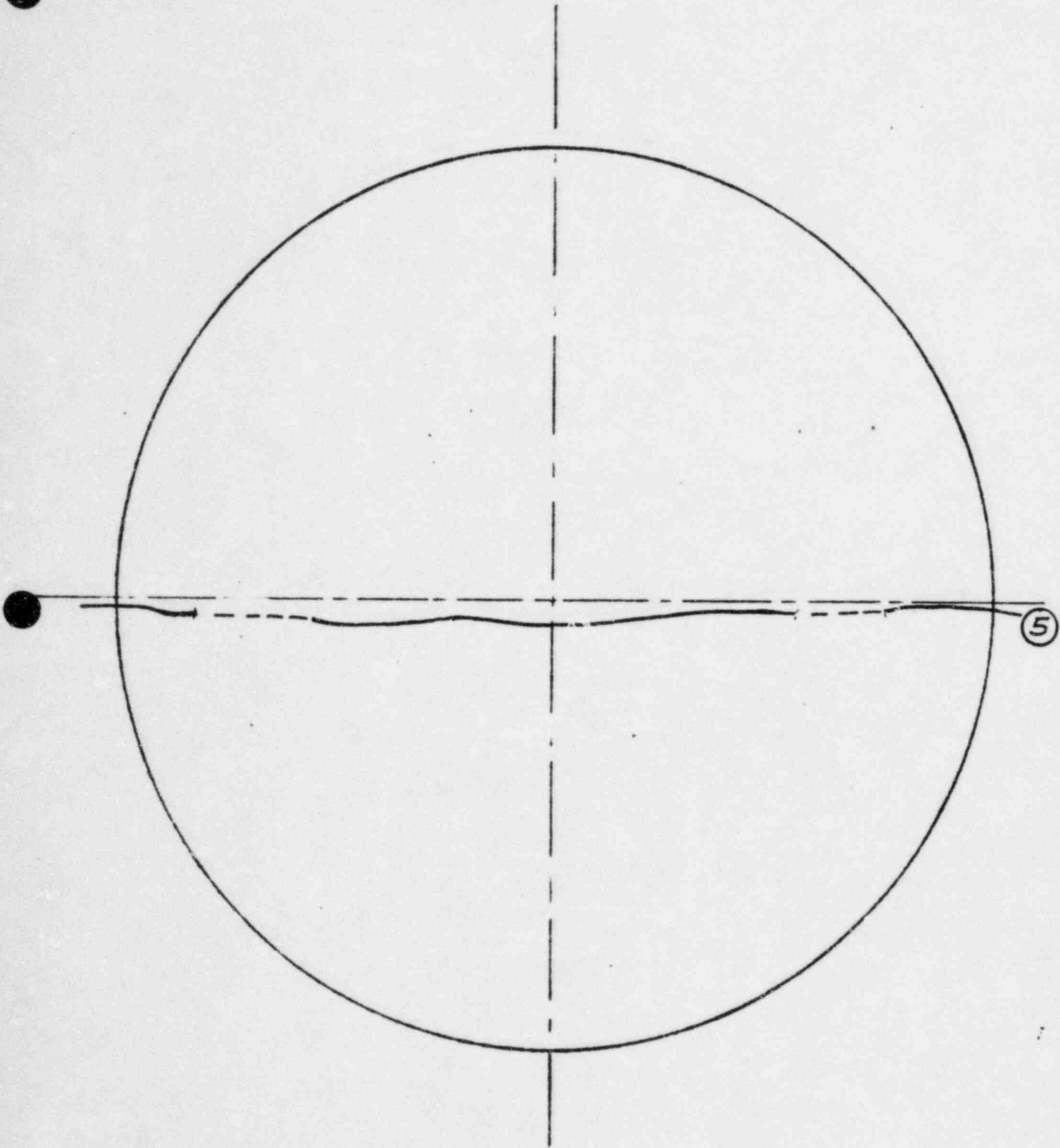
Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER WEST SIDE OF RCB							
	105'	110'	115'	120'	125'	130'	135'	140'
LINE NO. 0 MICRO SEC TO REFLECTOR FT. TO REFLECTOR	11350 131	11350 131	11430 132	11520 133	11610 134	11430 132	11430 132	11430 132
LINE NO. 30 "	11260 130	11260 130	11350 131	11430 132	11520 133	11350 131	11430 132	11430 132
LINE NO. 35 "	11260 130	11170 129	11350 131	11350 131	11350 131	11350 131	11610 134	11350 131
LINE NO. 40 "	11260 130	11260 130	11350 131	11610 134	11610 134	11430 132	11520 133	11430 132
LINE NO. 45 "	11090 128	11090 128	11170 129	11170 129	11260 130	11350 131	11170 129	11170 129
LINE NO. 50 "	11170 129	11170 129	11170 129	1088 128	11170 129	11260 130	11170 129	11260 130
LINE NO. 55 "	11174 129	11170 129	11170 129	11170 129	11000 127	11090 123	11170 129	11350 131
LINE NO. 60 "	11090 128	11090 128	11000 127	11090 128	11090 127	11090 128	11170 129	11260 130
LINE NO. 65 "	11000 127	11000 127	11000 127	10910 126	11090 128	11090 128	11170 129	11170 129
LINE NO. 70 "	10910 126	10910 126	10830 125	10740 124	10830 125	10910 126	11000 127	11090 128
LINE NO. 75 "	10830 125	10830 125	10910 126	11000 127	11090 128	10910 126	11000 127	11090 128
LINE NO. 77	10740	10740	10830	10910	11000	10740	10830	10830
ORTH/SOUTH CENTERLINE	124	124	125	126	127	124	125	125

MUELOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 CRACK NO. 4 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

8/84

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER								
	EAST SIDE OF RCC								
	105'	110'	115'	120'	125'	130'	135'	140'	
CRACK NO. 75e msec to reflect. horiz. ft to reflect.	10570 122	10570 122	10660 123	10740 124	10830 125	10740 124	10570 122	10570 122	
CRACK NO. 70e "	10480 121	10480 121	10480 121	10570 122	10660 123	10570 122	10480 121	10480 121	
CRACK NO. 65e "	10400 120	10400 120	10400 120	10310 119	10220 118	10310 119	10400 120	10400 120	
CRACK NO. 60e "	10440 120	10400 120	10310 119	10220 118	10310 119	10310 119	10220 118	10400 120	
CRACK NO. 55e "	10310 119	10310 119	10310 119	10220 118	10140 117	10220 118	10140 117	10310 119	296
CRACK NO. 50e "	10220 118	10220 118	10220 118	10140 117	10220 118	10310 119	10140 117	10220 118	
CRACK NO. 45e "	10220 118	10220 118	10220 118	10140 117	10140 117	10220 118	10220 118	10220 118	
CRACK NO. 40e "	10220 118	10220 118	10220 118	10140 117	10140 117	10140 117	10140 117	10140 117	
CRACK NO. 35e "	10220 118	10220 118	10220 118	10140 117	10140 117	10140 117	10220 118	10310 119	
CRACK NO. 30e "	10140 117	10220 118	10310 119	10400 120	10480 121	10400 120	10140 117	10220 118	
CRACK NO. 0e "	10140 117	10140 117	10220 118	10140 117	10220 118	10140 117	10220 118	10050 116	

CRACK NO. 5



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHIC SHEET
60° TRANSDUCER

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

CRACK NO. 5

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.		TEST LOCATION - HORIZONTAL DISTANCE FROM EAST - WEST CENTERLINE (FT.) 60° TRANSDUCER							
		WEST SIDE OF RCB							
		105'	110'	115'	120'	125'	130'	135'	140'
LINE NO. 29	MICRO SEC TO REFLECTOR	9360	9270	9440	9360	9270	9360	9440	9270
	FT. TO REFLECTOR	108	107	109	108	107	109	109	107
LINE NO. 30	"	9360	9360	9360	9360	9180	9270	9360	9270
		108	108	108	108	106	107	108	107
LINE NO. 35	"	9360	9360	9440	9440	9530	9440	9360	9270
		108	108	109	109	110	109	108	107
LINE NO. 40	"	9360	9360	9440	9440	9530	9530	9440	9360
		108	108	109	109	110	110	109	108
LINE NO. 45	"	9440	9440	9530	9620	9530	9440	9360	9270
		109	109	110	111	110	109	108	107
LINE NO. 50	"	9360	9360	9440	9530	9530	9440	9360	9270
		108	108	109	110	110	109	108	107
LINE NO. 55	"	9270	9270	9270	9270	9270	9270	9360	9360
		107	107	107	107	107	107	108	108
LINE NO. 60	"	9270	9270	9360	9270	9360	9440	9360	9270
		107	107	108	107	108	109	108	107
LINE NO. 65	"	9530	9620	9700	9790	9620	9700	9700	9700
		110	111	112	113	111	112	112	112
LINE NO. 70	"	9620	9700	9620	9620	9530	9530	9440	9620
		111	112	111	111	110	110	109	111
LINE NO. 75	"	9530	9530	9620	9620	9700	9530	9530	9530
		110	110	111	111	112	110	110	110
LINE NO. 77	"	9530	9620	9700	9530	9620		9360	9530
	ORTH/SOUTH CENTERLINE	110	111	112	110	111	109	108	110

301

CRACK NO. 5

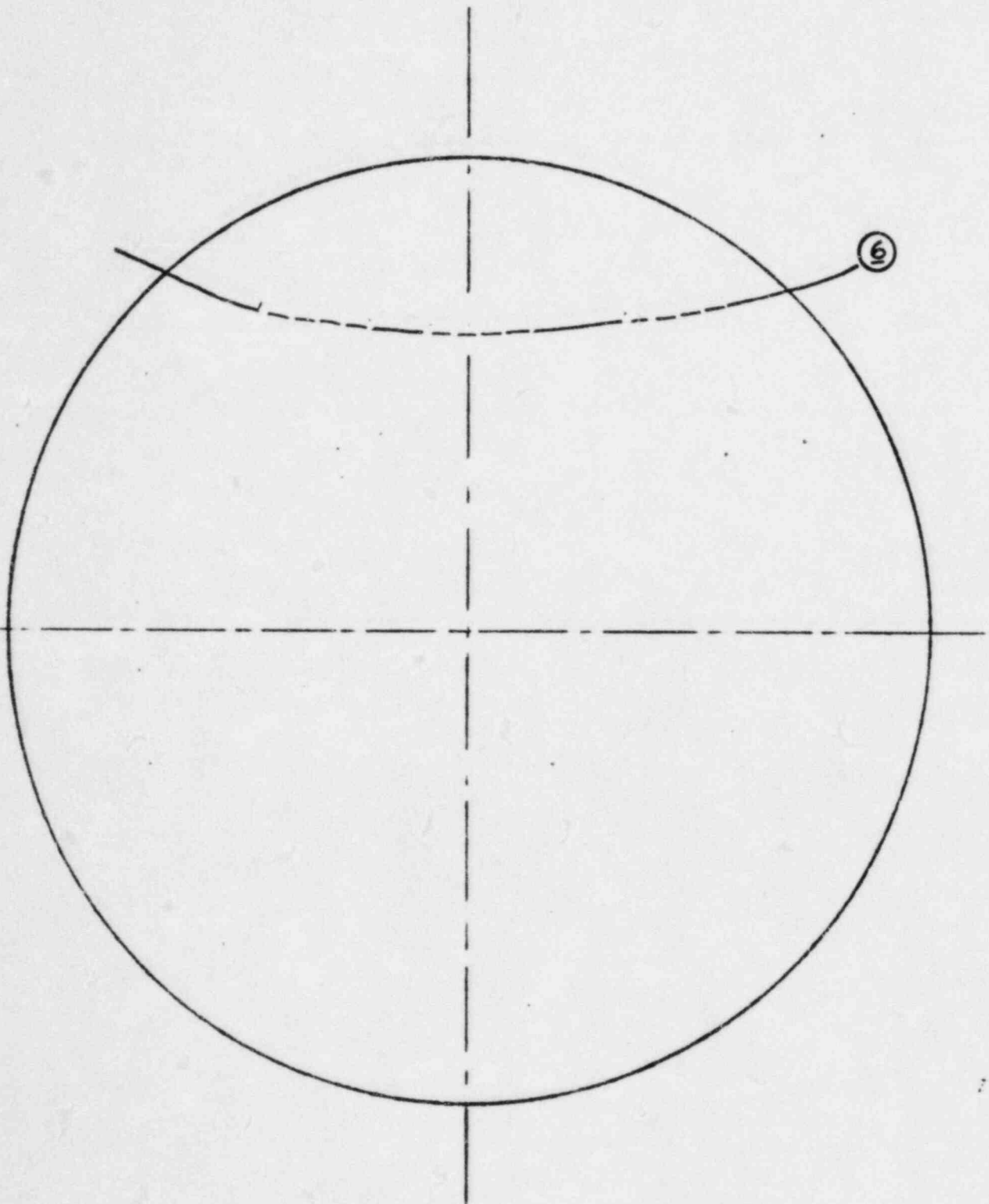
MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

8/84

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER EAST SIDE OF RCB								
	105'	110'	115'	120'	125'	130'	135'	140'	
LINE NO. 75e msec to reflect. horiz. ft. to reflect.	9530 110	9530 110	9530 110	9530 110	9140 109	9360 108	9440 109	9530 110	
LINE NO. 70e "	9140 109	0140 109	9620 111	9620 111	9440 109	9530 110	9530 110	9530 110	
LINE NO. 65e "	9360 108	9270 107	9270 107	9270 107	9360 108	9440 109	9440 109	9530 110	
LINE NO. 60e "	9360 108	9440 109	9270 107	9270 107	9270 107	9360 108	9440 109	9530 110	
LINE NO. 55e "	9440 109	9530 110	9530 110	9530 110	9620 111	9440 109	9530 110	9530 110	202
LINE NO. 50e "	9440 109	9440 109	9410 109	9360 108	9270 107	9270 107	9360 108	9440 109	
LINE NO. 45e "	9360 108	9360 108	9360 108	9440 109	9530 111	9440 109	9440 109	9360 108	
LINE NO. 40e "	9360 108	9440 109	9440 109	9530 110	9620 111	9440 109	9530 110	9440 109	
LINE NO. 35e "	9270 107	9180 106	9180 106	9270 107	9360 108	9440 109	9440 109	9440 109	
LINE NO. 30e "	9270 107	9360 108	9360 108	9360 108	9440 109	9440 109	9440 109	9360 108	
LINE NO. 0e "	9270 107	9270 107	9270 107	9360 108	9440 109	9360 108	9360 108	9360 108	

CRACK NO. 6

N



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHIC SHEET
60° TRANSDUCER

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

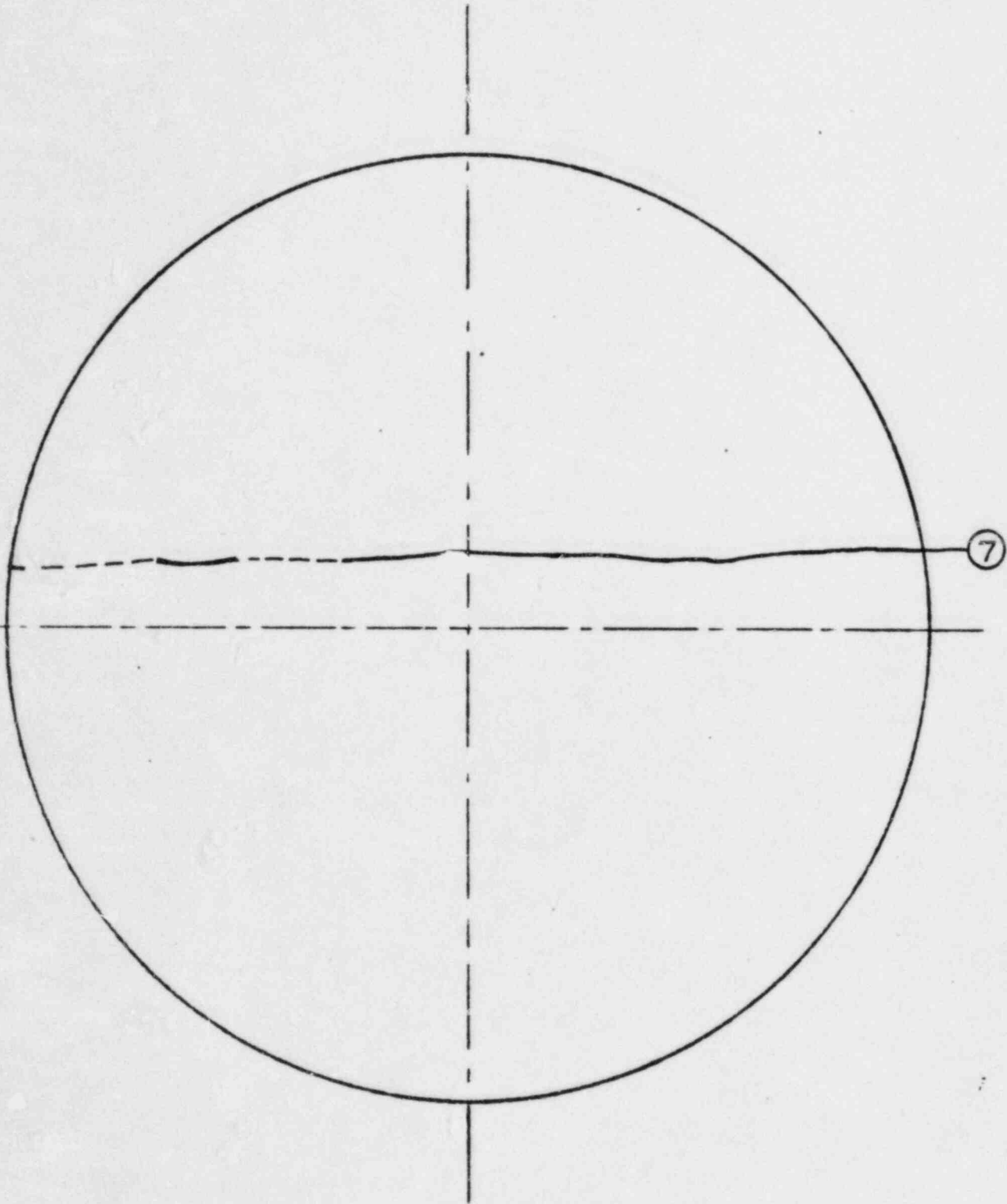
CRACK NO. 6

8/84

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER EAST SIDE OF RCB							
	105'	110'	115'	120'	125'	130'	135'	140'
LINE NO. 75e msec to reflec. horiz. ft. to reflec.	4850 56	4760 55	4680 54	4760 55	4850 56	4760 55	4680 54	4760 55
LINE NO. 70e "	4590 53	4680 54	4680 54	4500 52	4590 53	4680 54	4680 54	4760 55
LINE NO. 65e "	4500 52	4420 51	4500 52	4420 51	4330 50	4240 49	4330 50	4420 51
LINE NO. 60e "	4330 50	4240 49	4160 48	4240 49	4330 50	4420 51	4330 50	4330 50
LINE NO. 55e "	0							
LINE NO. 50e "	0							
LINE NO. 45e "	0							
LINE NO. 40e "	0							
LINE NO. 35e "	0							
LINE NO. 30e "	0							
LINE NO. 0e "	0							

305

CRACK NO. 7



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHIC SHEET
60° TRANSDUCER

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

CRACK NO. 7

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER							
	WEST SIDE OF RCB							
	105'	110'	115'	120'	125'	130'	135'	140'
LINE NO. 0 MICRO SEC TO REFLECTOR FT. TO REFLECTOR	8400 97	8400 97	8400 97	8400 97	8320 96	8230 95	8320 96	8400 97
LINE NO. 30 "	8400 97	8400 97	8490 98	8400 97	8400 97	8400 97	8490 98	8400 97
LINE NO. 35 "	8320 96	8320 96	8230 95	8320 96	8320 96	8400 97	8320 96	8230 95
LINE NO. 40 "	8400 97	8490 98	8580 99	8490 98	8400 97	8400 97	8490 98	8400 97
LINE NO. 45 "	8490 98	8490 99	8400 97	8400 97	8400 97	8490 98	8400 97	8490 98
LINE NO. 50 "	8320 96	8140 94	8230 95	8320 96	8230 95	8320 96	8140 94	8230 95
LINE NO. 55 "	8320 96	8140 94	8230 95	8230 96	8230 95	8320 96	8320 96	8400 97
LINE NO. 60 "	8230 95	8230 95	8320 96	8320 96	8400 97	8490 98	8320 96	8230 95
LINE NO. 65 "	8320 96	8230 95	8230 95	8230 94	8230 95	8320 96	8230 95	8320 96
LINE NO. 70 "	8140 94	8140 93	8140 94	8230 95	8230 95	8230 95	8320 96	8140 94
LINE NOT. 75 "	8320 96	8140 94	8230 95	8140 94	8230 95	8230 95	8230 95	8320 96
LINE NO. 77	8230 95	8230 95	8230 95	8140 94	8230 93	8230 95	8230 95	8230 95
ORTH/SOUTH CENTERLINE	95	95	95	94	93	95	95	95

307

CRACK NO. 7

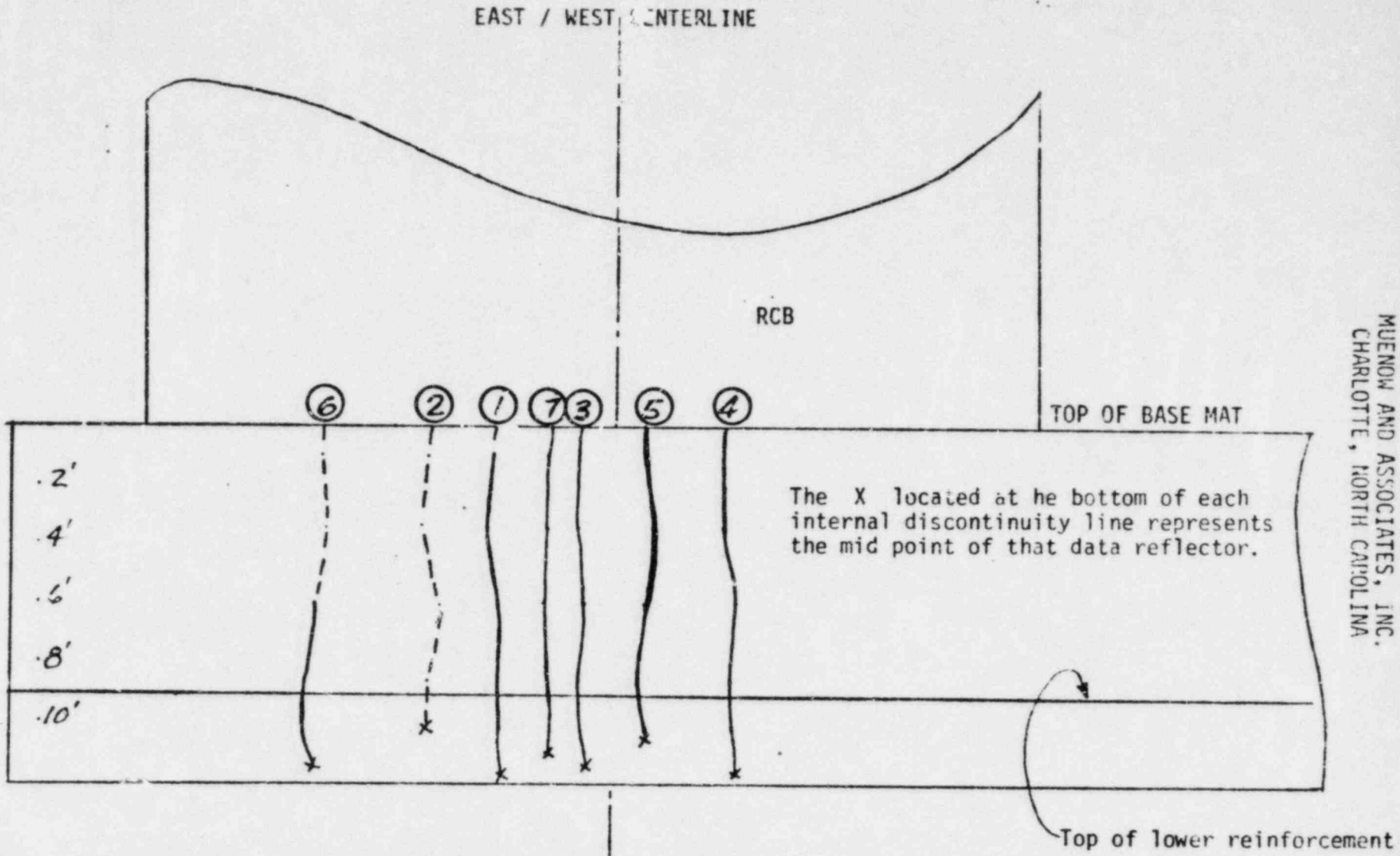
MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER & LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET
 60° TRANSDUCER

8/84

Distance to reflector as shown, is data processed, so that 105 foot test location is base line.	TEST LOCATION - HORIZONTAL DISTANCE FROM EAST WEST CENTERLINE (FT.) 60° TRANSDUCER EAST SIDE OF RCB							
	105'	110'	115'	120'	125'	130'	135'	140'
LINE NO. 75e msec to reflec. horiz. ft. to reflec.	8230 95	8230 95	8140 94	8060 93	8140 94	7970 92	9230 95	9140 94
LINE NO. 70e "	8320 96	8230 95	8320 96	8320 96	8400 97	8320 96	8400 97	8490 98
LINE NO. 65e "	8140 94	8140 94	8230 95	8320 96	8230 95	8320 96	8400 97	8230 95
LINE NO. 60e "	8230 95	8230 95	8230 95	8320 96	8140 94	8230 95	8320 96	8230 95
LINE NO. 55e "	8230 95	8230 95	8230 95	8320 96	8140 94	8230 95	8230 95	8140 94
LINE NO. 50e "	8140 94	8140 94	8060 93	8140 94	8060 93	8140 94	8230 95	8230 95
LINE NO. 45e "	8060 93	8140 94	8230 95	8140 94	7970 92	7880 91	8060 93	7970 92
LINE NO. 40e "	8140 94	8140 94	8140 94	8140 94	8230 95	8140 94	8060 93	7970 92
LINE NO. 35e "	7970 92	8140 94	8060 93	8140 94	8230 95	8320 96	8140 94	8060 93
LINE NO. 30e "	8060 93	8060 93	8140 94	8140 94	8140 94	8230 95	8320 96	8230 95
LINE NO. 0e "	8140 94	8140 94	8230 95	8320 96	8400 97	8320 96	8140 94	8230 95

308

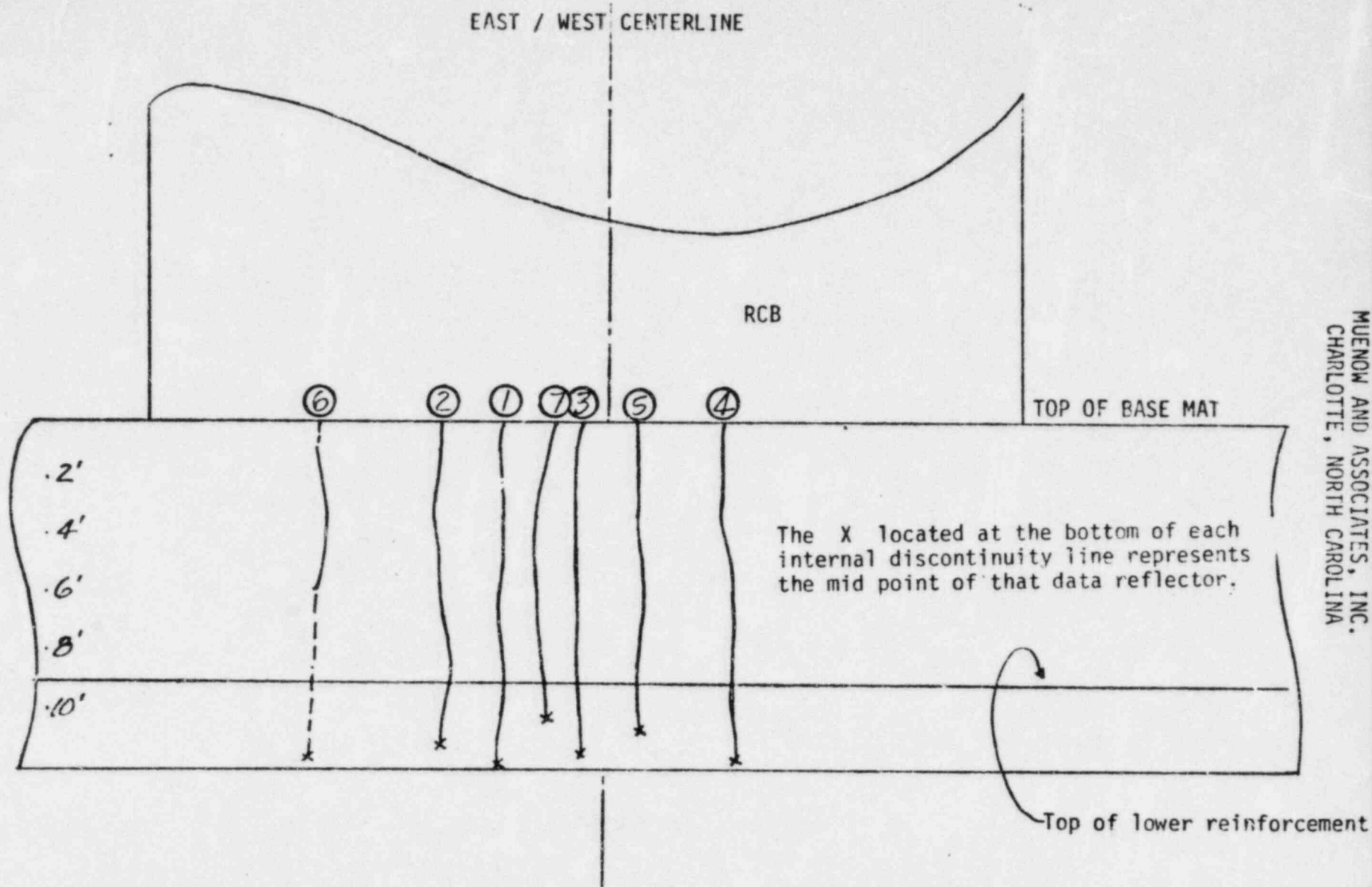
3.19



MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

CROSS SECTION AT
LINE 77

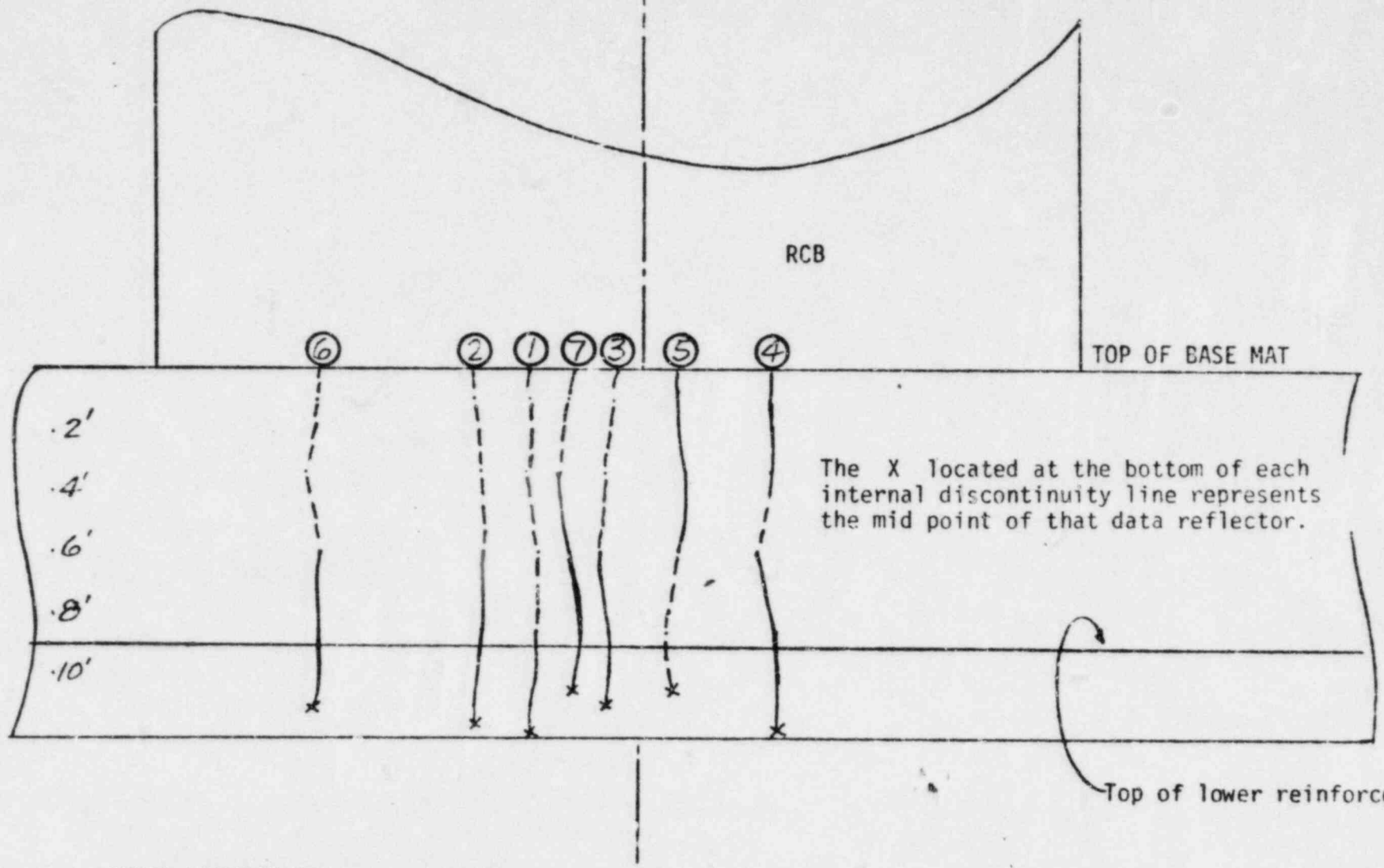
Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab



CROSS SECTION AT
LINE 75

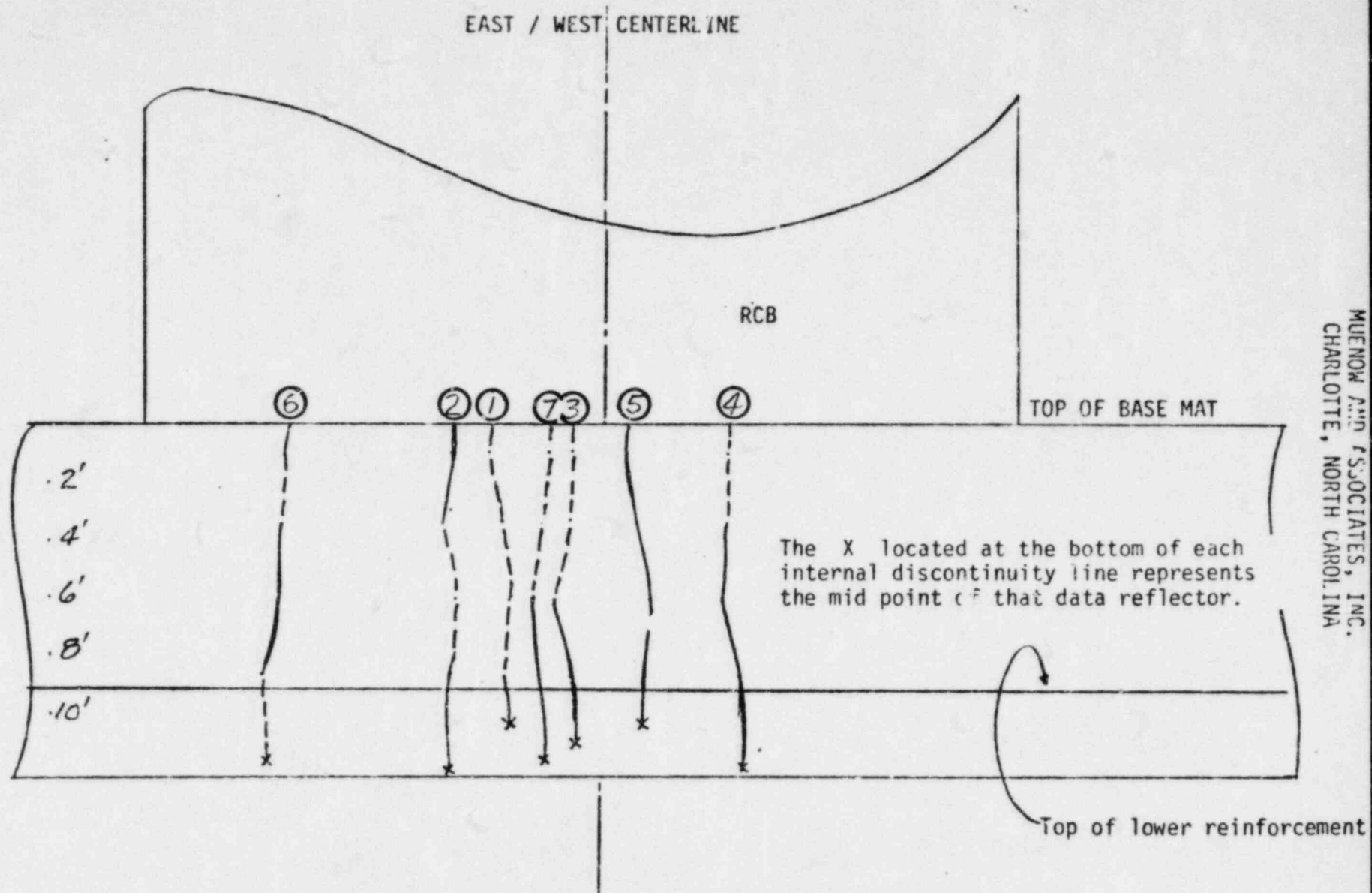
Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

EAST / WEST CENTERLINE



CROSS SECTION AT
LINE 70

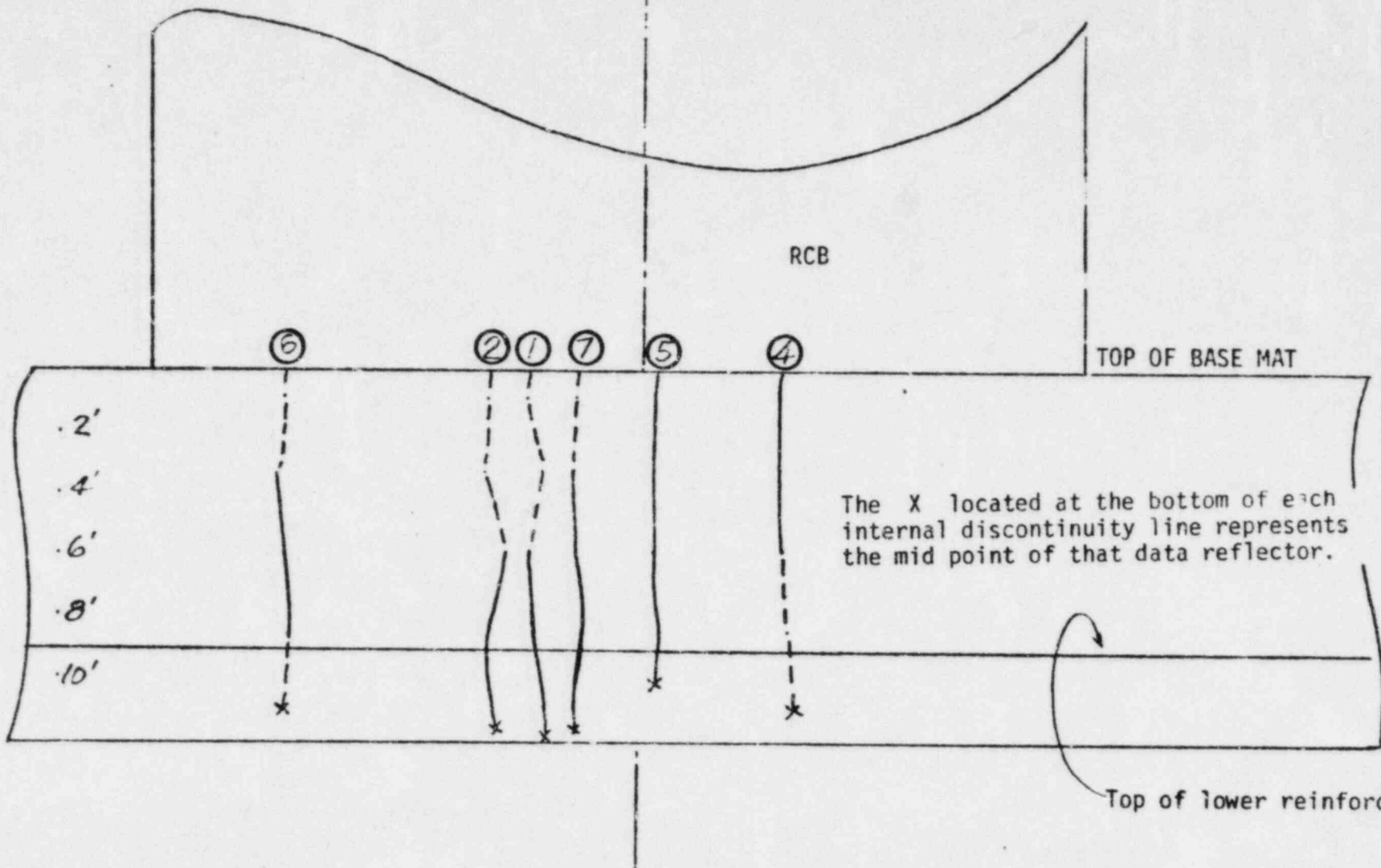
Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab



CROSS SECTION AT
LINE 65

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

EAST / WEST CENTERLINE



TOP OF BASE MAT

The X located at the bottom of each internal discontinuity line represents the mid point of that data reflector.

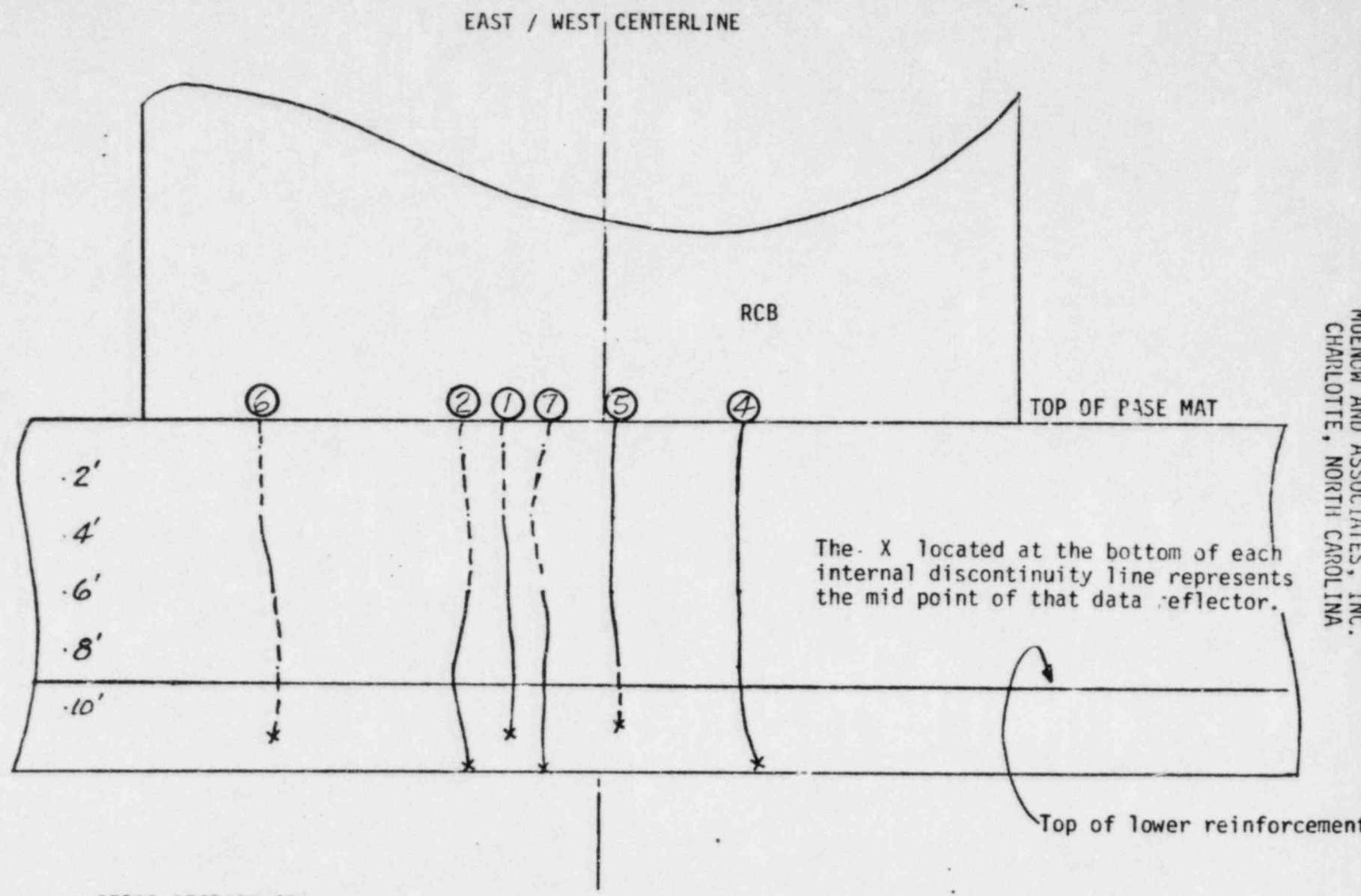
Top of lower reinforcement

CROSS SECTION AT
LINE 60

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

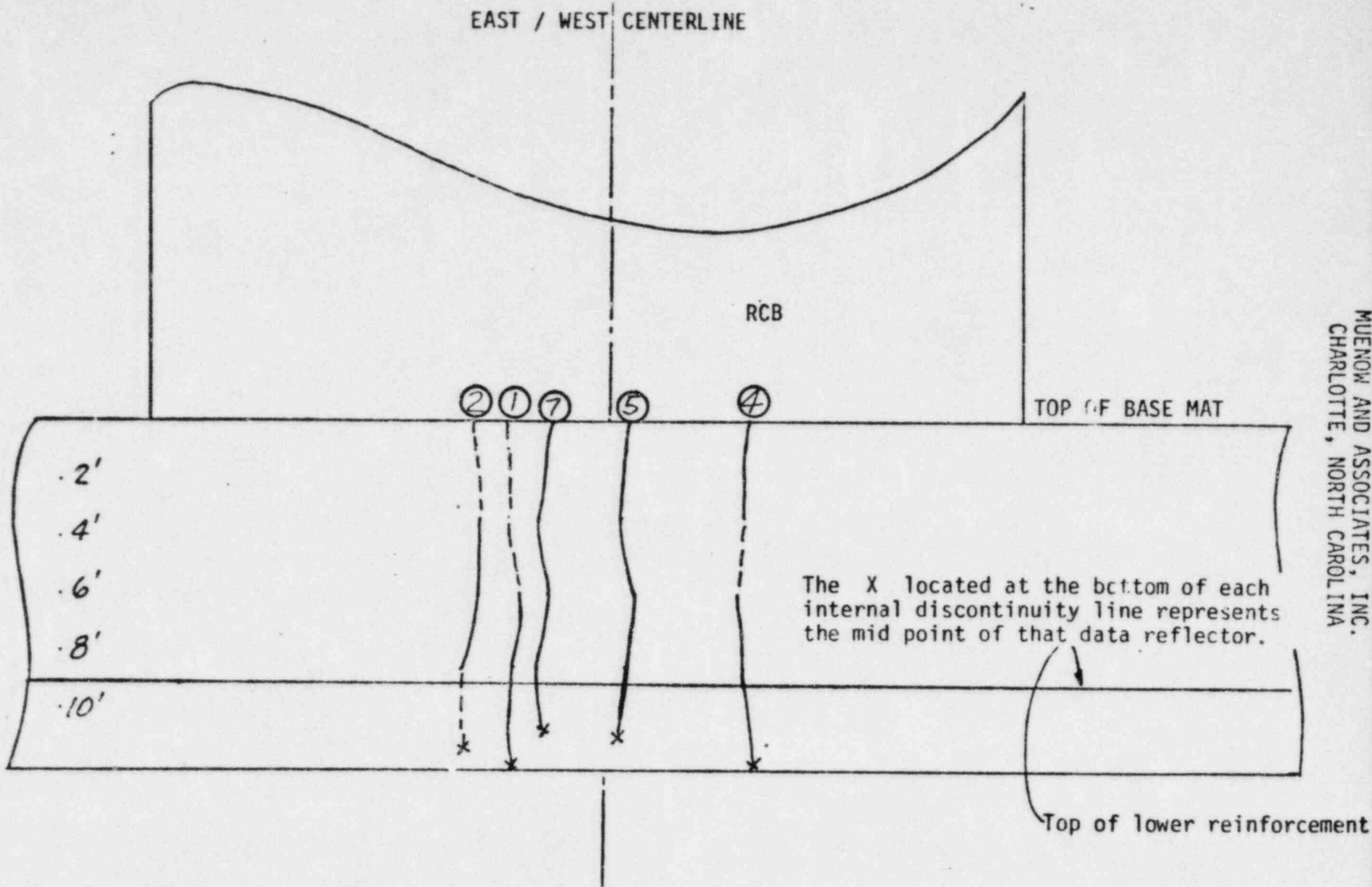
315



MUDENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

CROSS SECTION AT
LINE 55

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

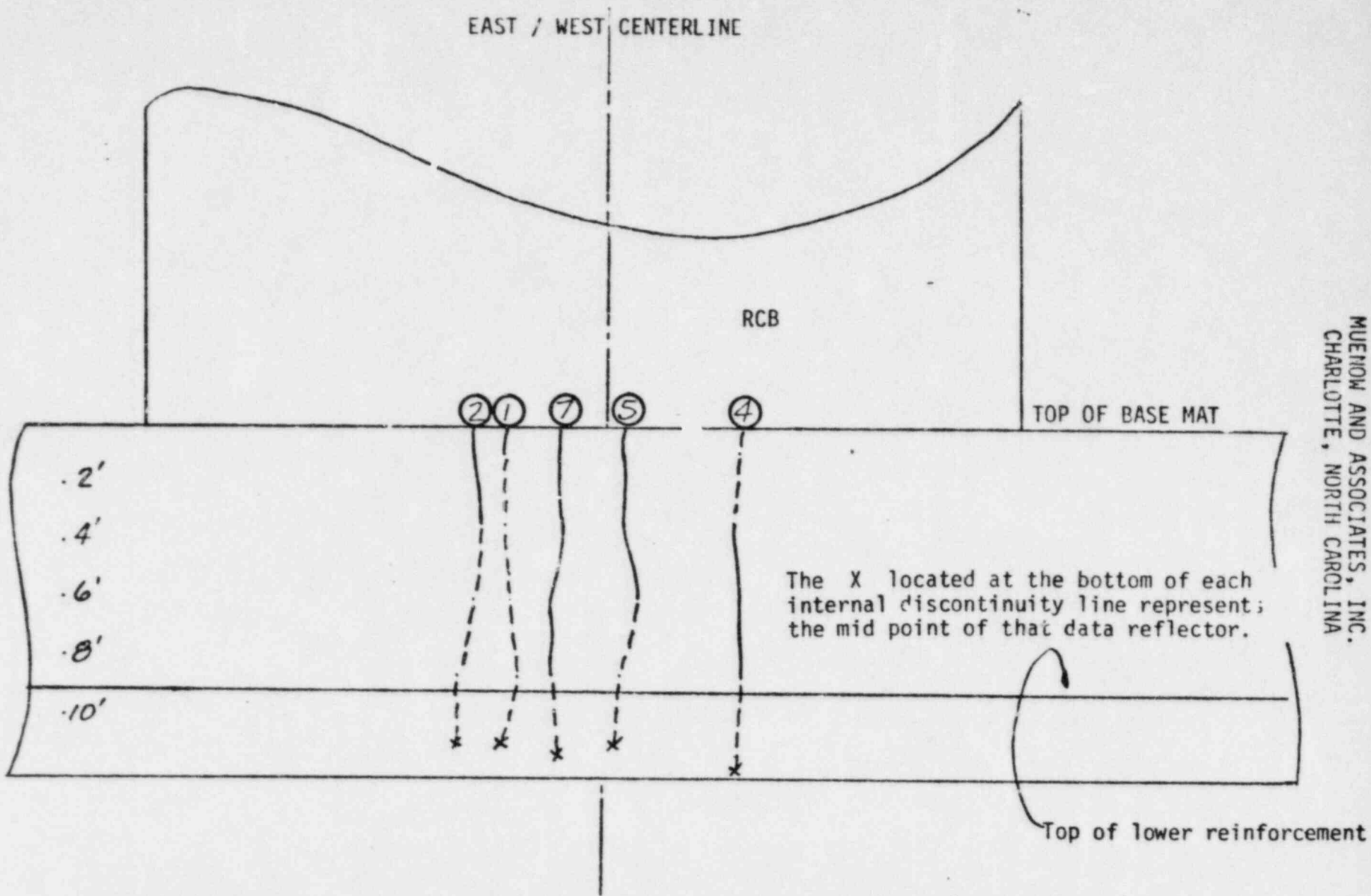


316

MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

CROSS SECTION AT
LINE 50

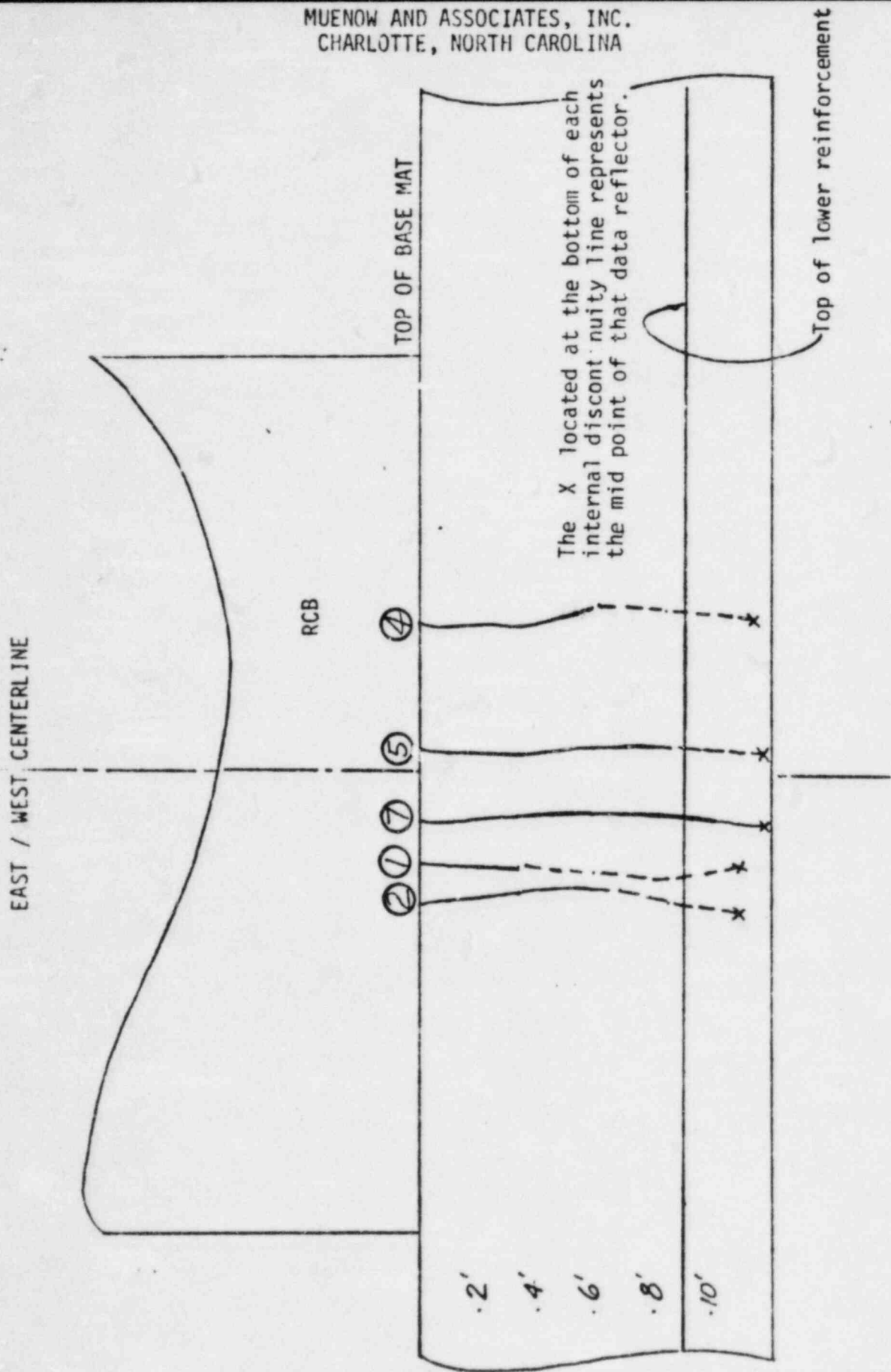
Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab



The X located at the bottom of each internal discontinuity line represent; the mid point of that data reflector.

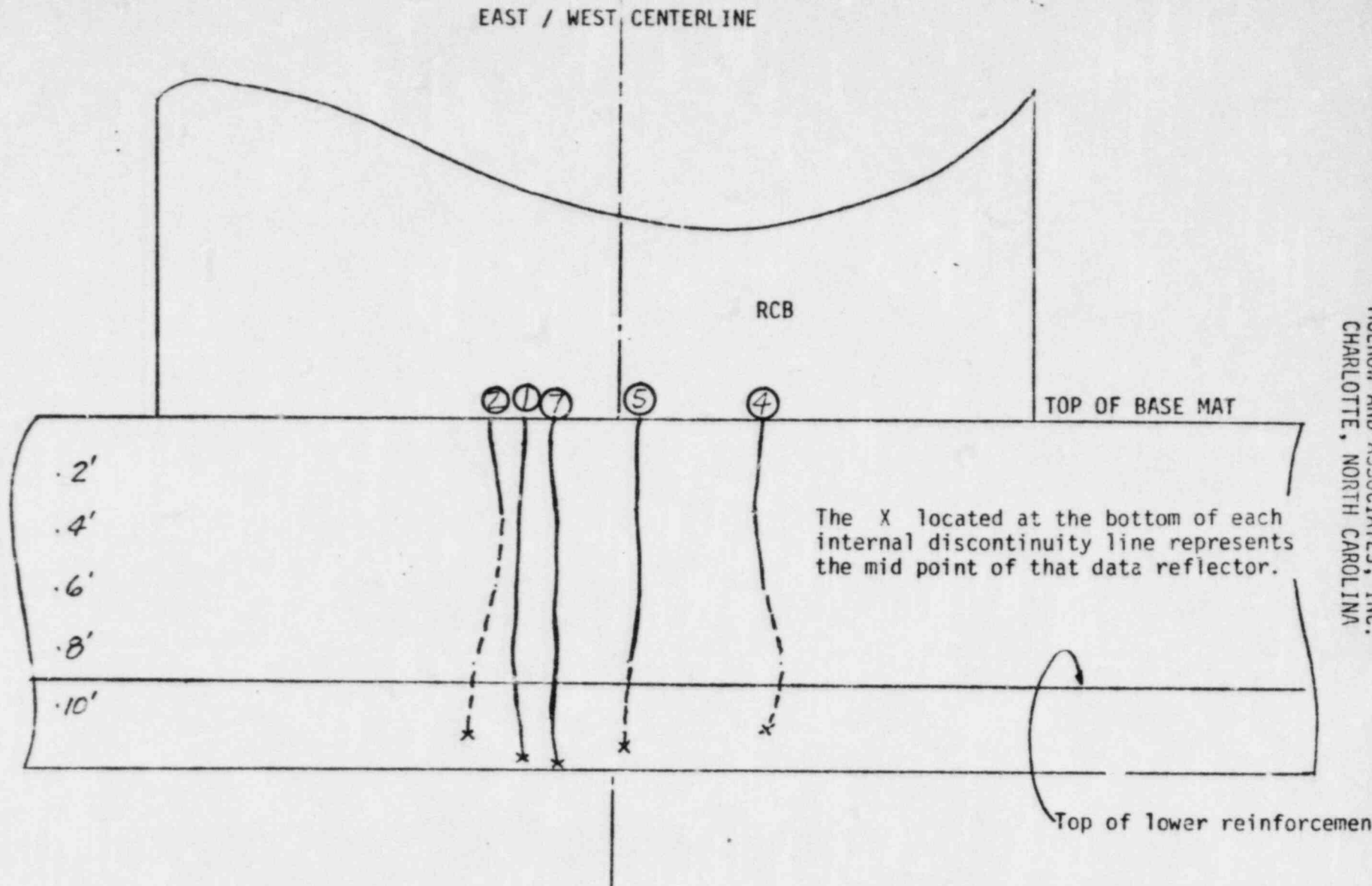
CROSS SECTION AT
LINE 45

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab



CROSS SECTION AT
 LINE 40

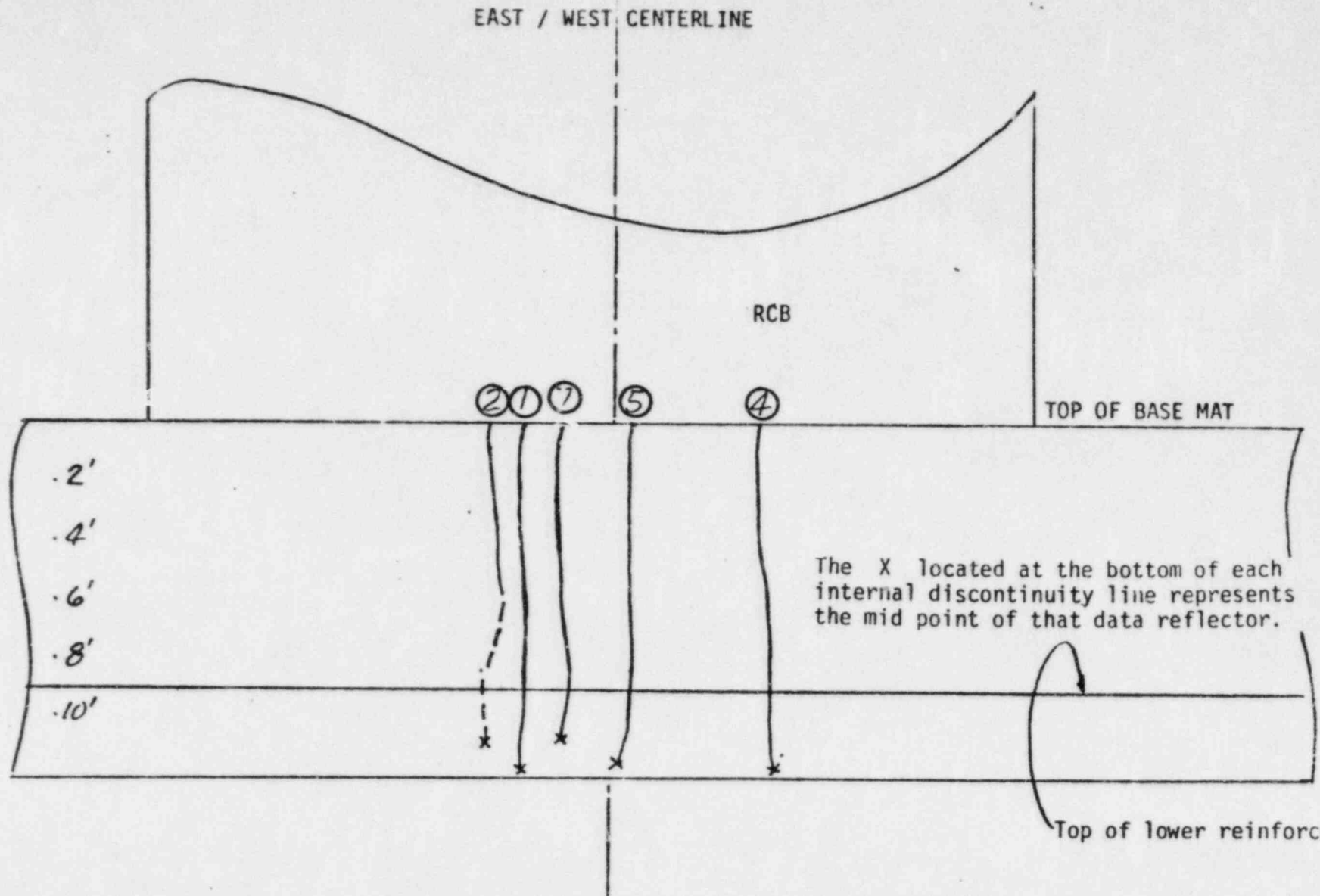
319



CROSS SECTION AT
LINE 35

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

MOENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

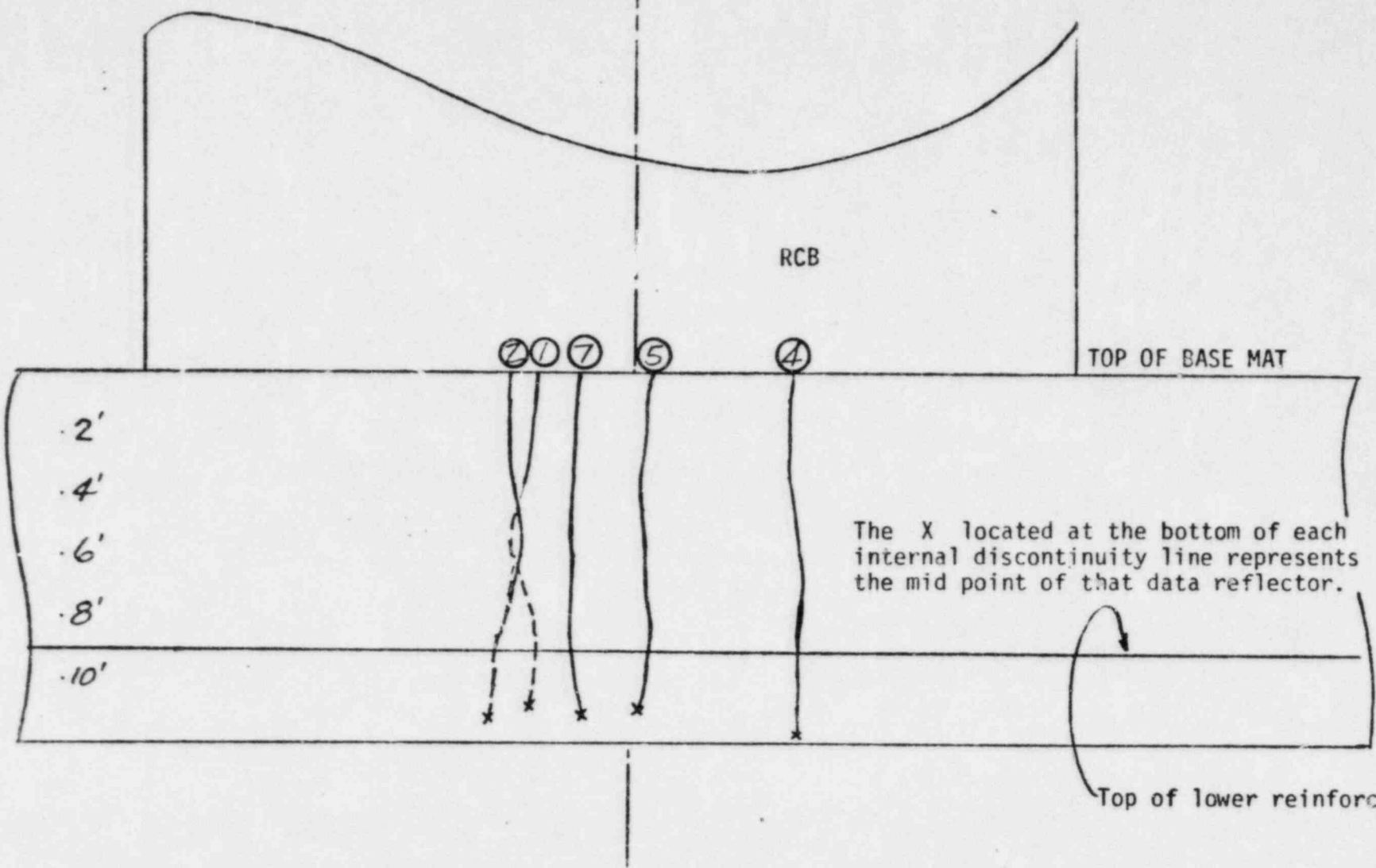


MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

CROSS SECTION AT
LINE 30

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

EAST / WEST CENTERLINE

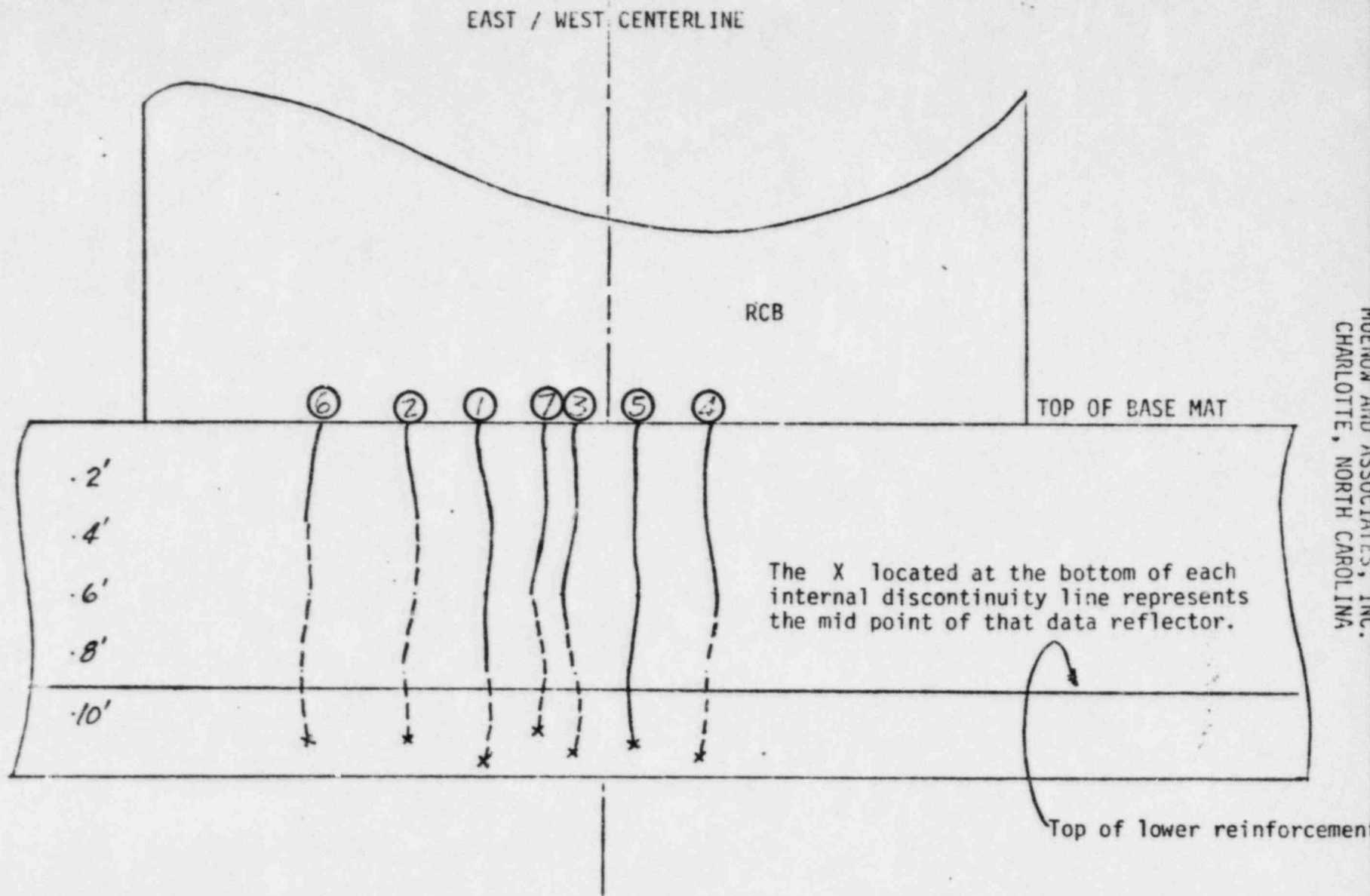


The X located at the bottom of each internal discontinuity line represents the mid point of that data reflector.

CROSS SECTION AT
LINE 0

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

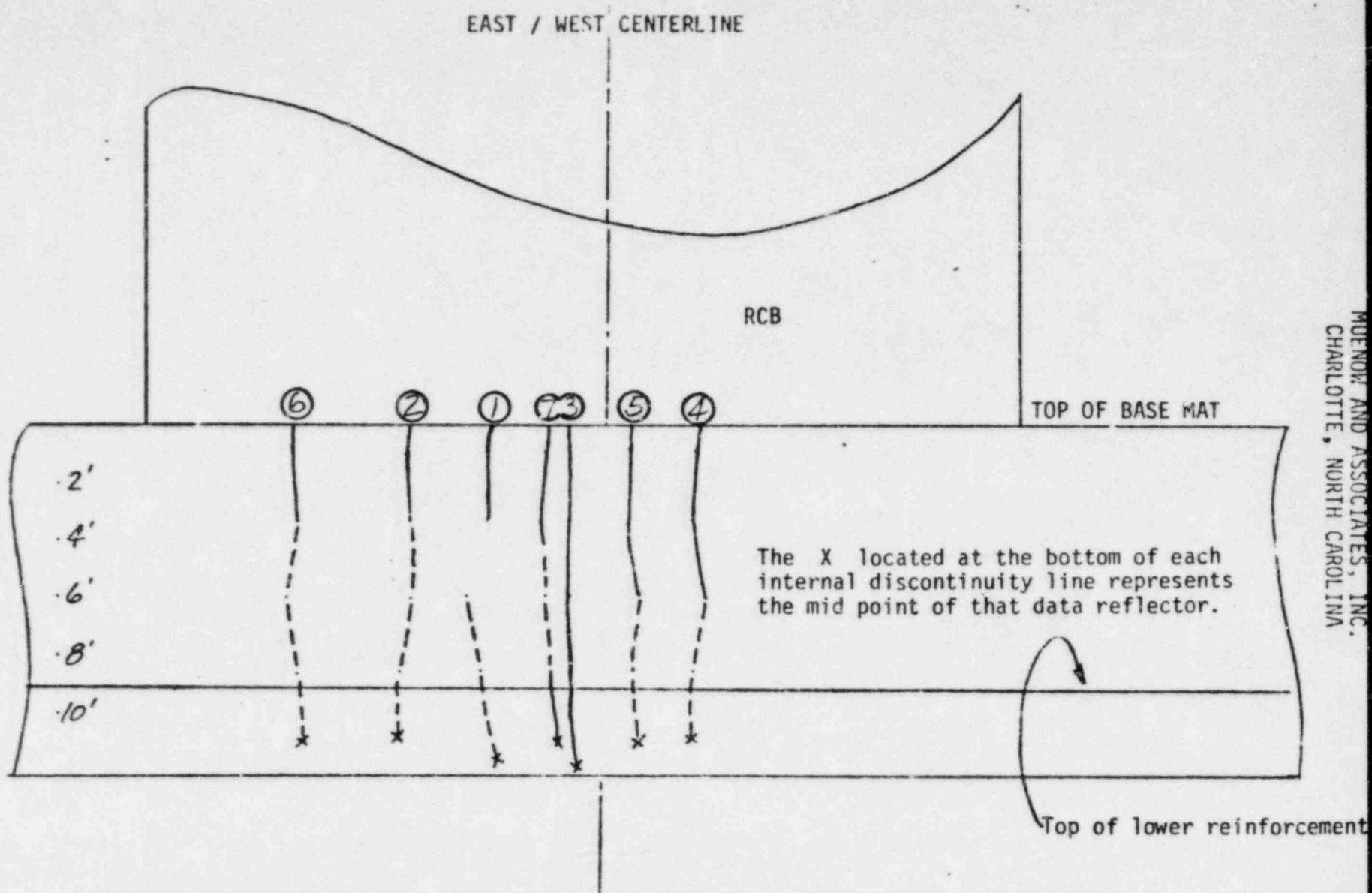
322



CROSS SECTION AT
LINE 75e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

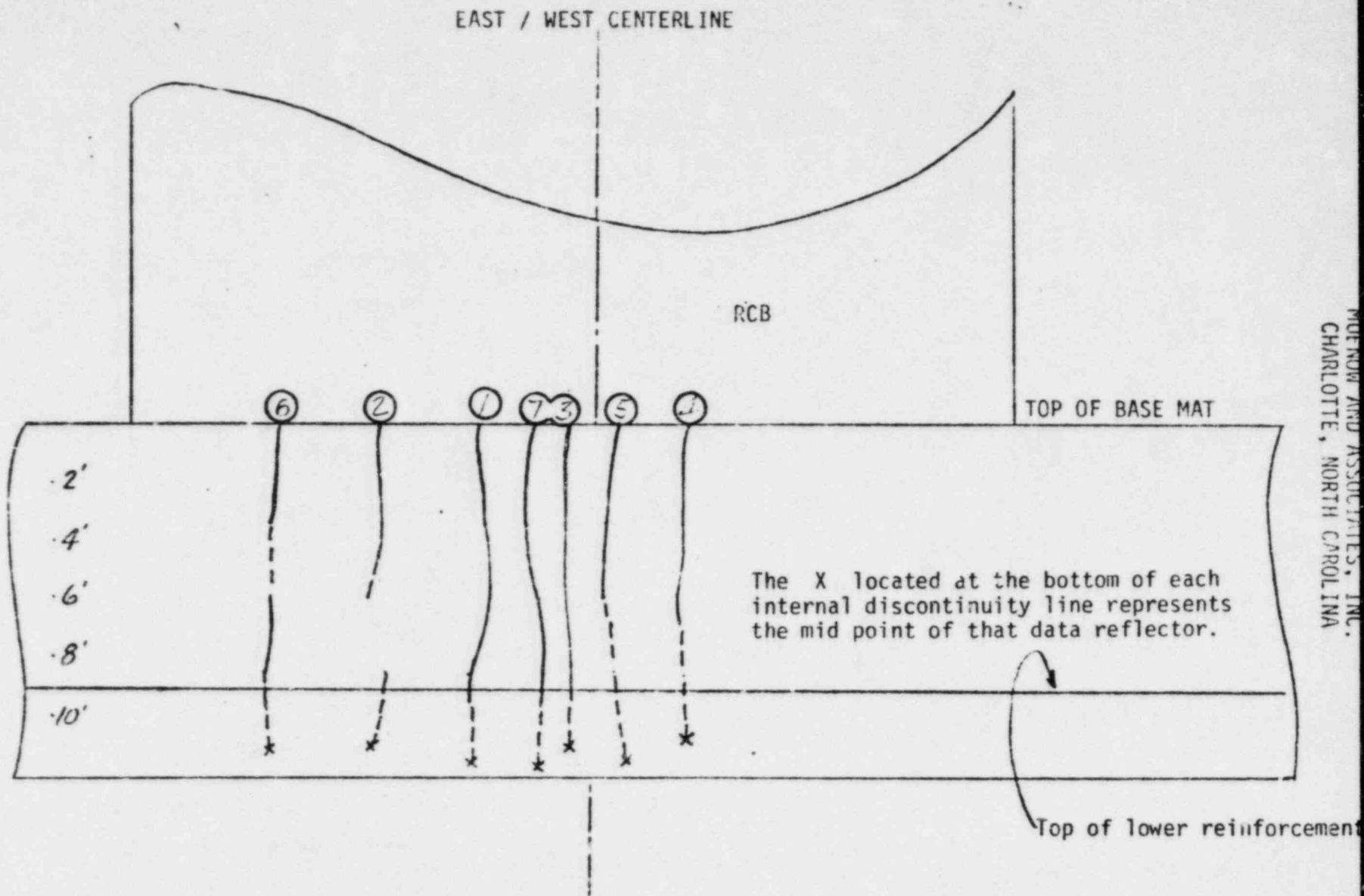
MOENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA



CROSS SECTION AT
LINE 70e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

324

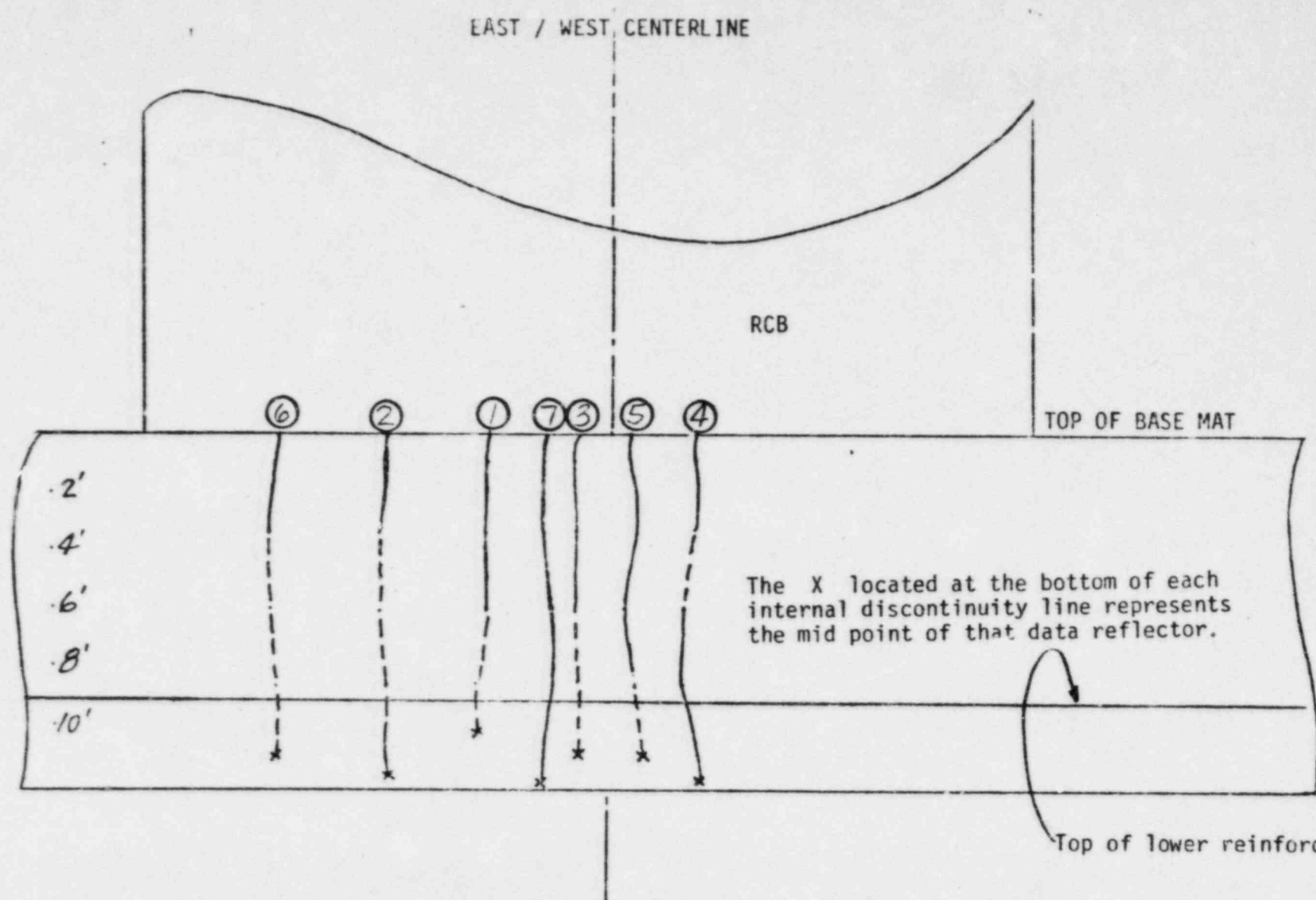


MURPHY AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

CROSS SECTION AT
LINE 65e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

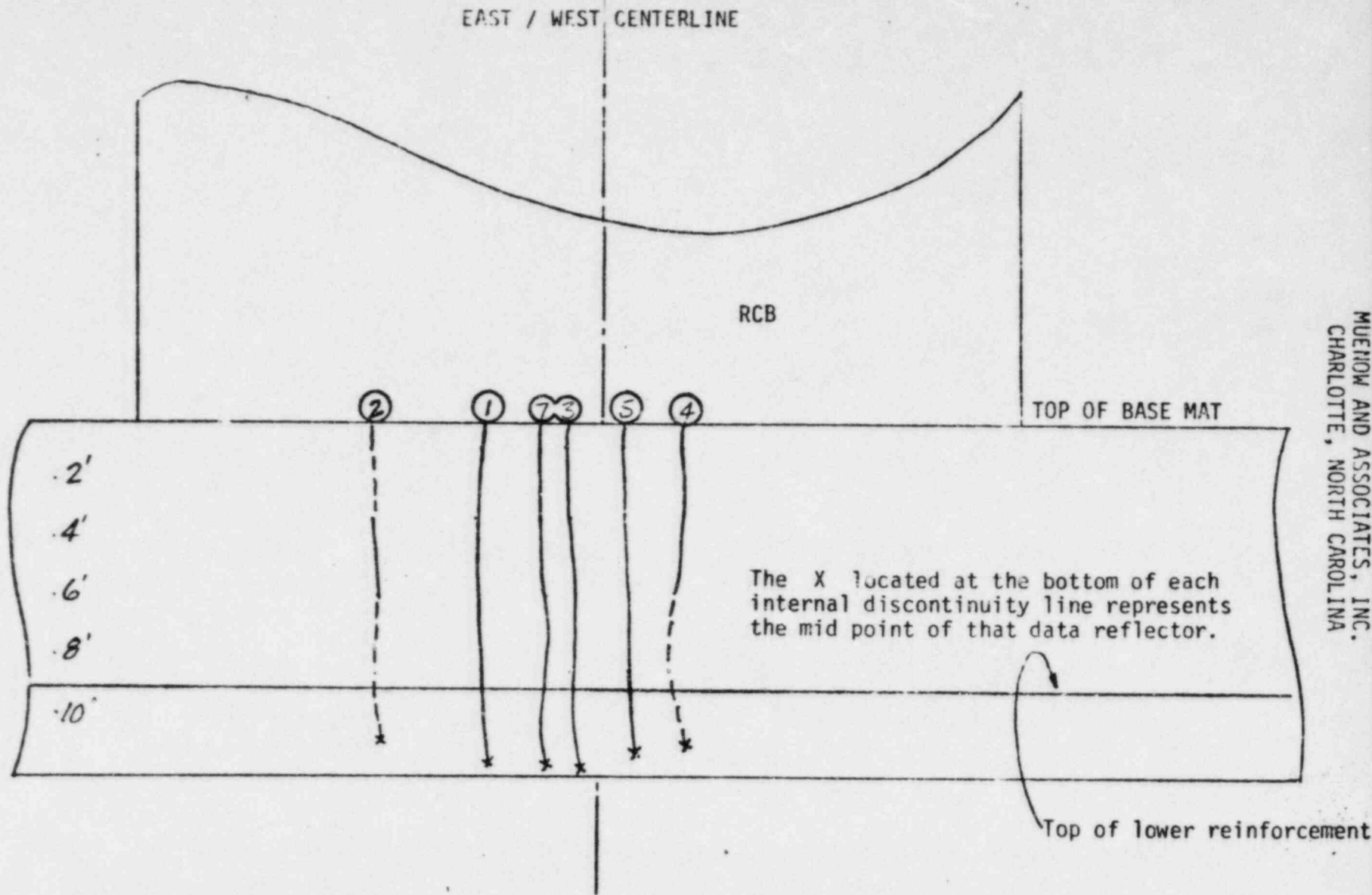
325



CROSS SECTION AT
LINE 60e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

MOENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

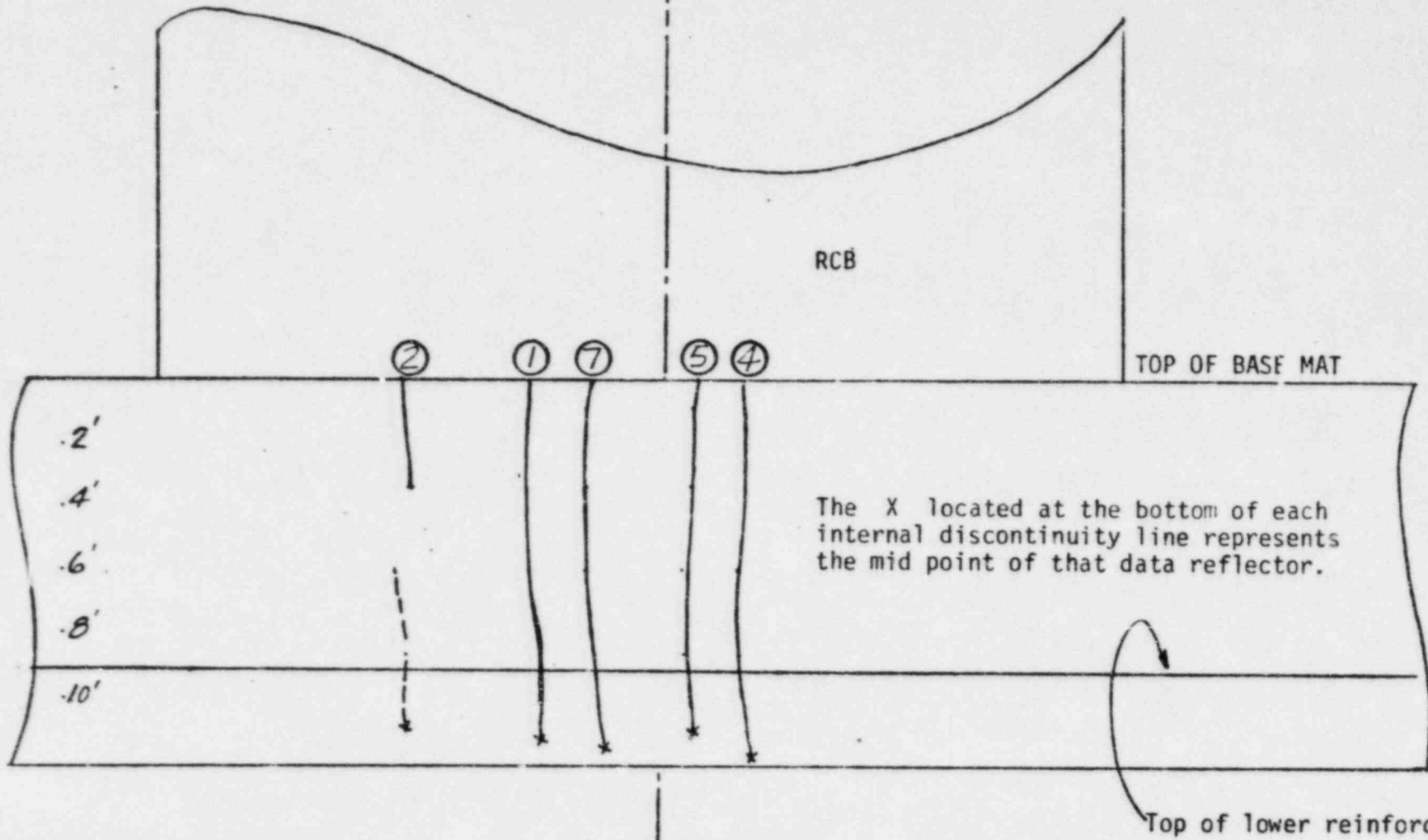


MUEHLOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

CROSS SECTION AT
LINE 55e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

EAST / WEST CENTERLINE

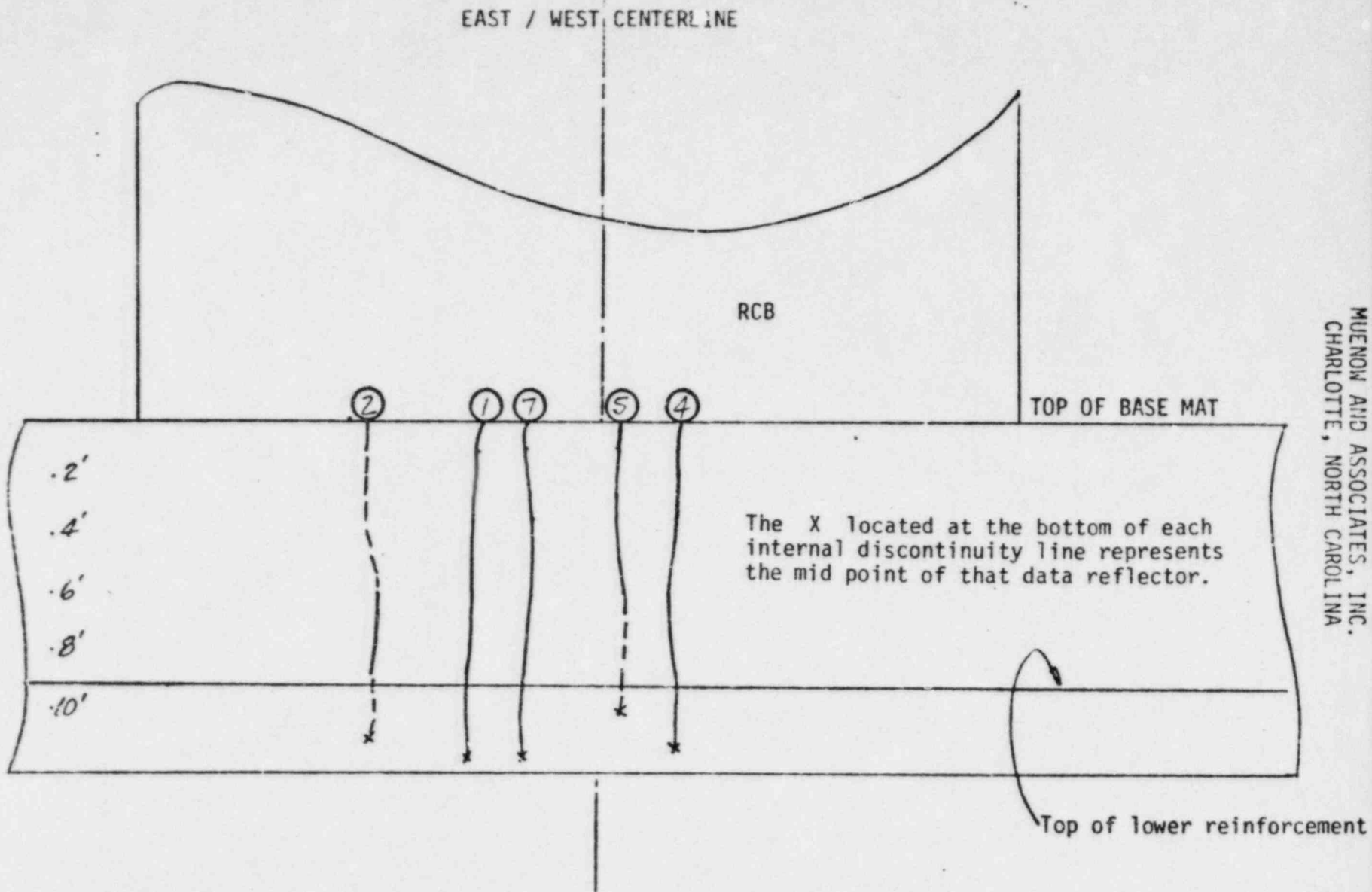


MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

CROSS SECTION AT
LINE 50e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

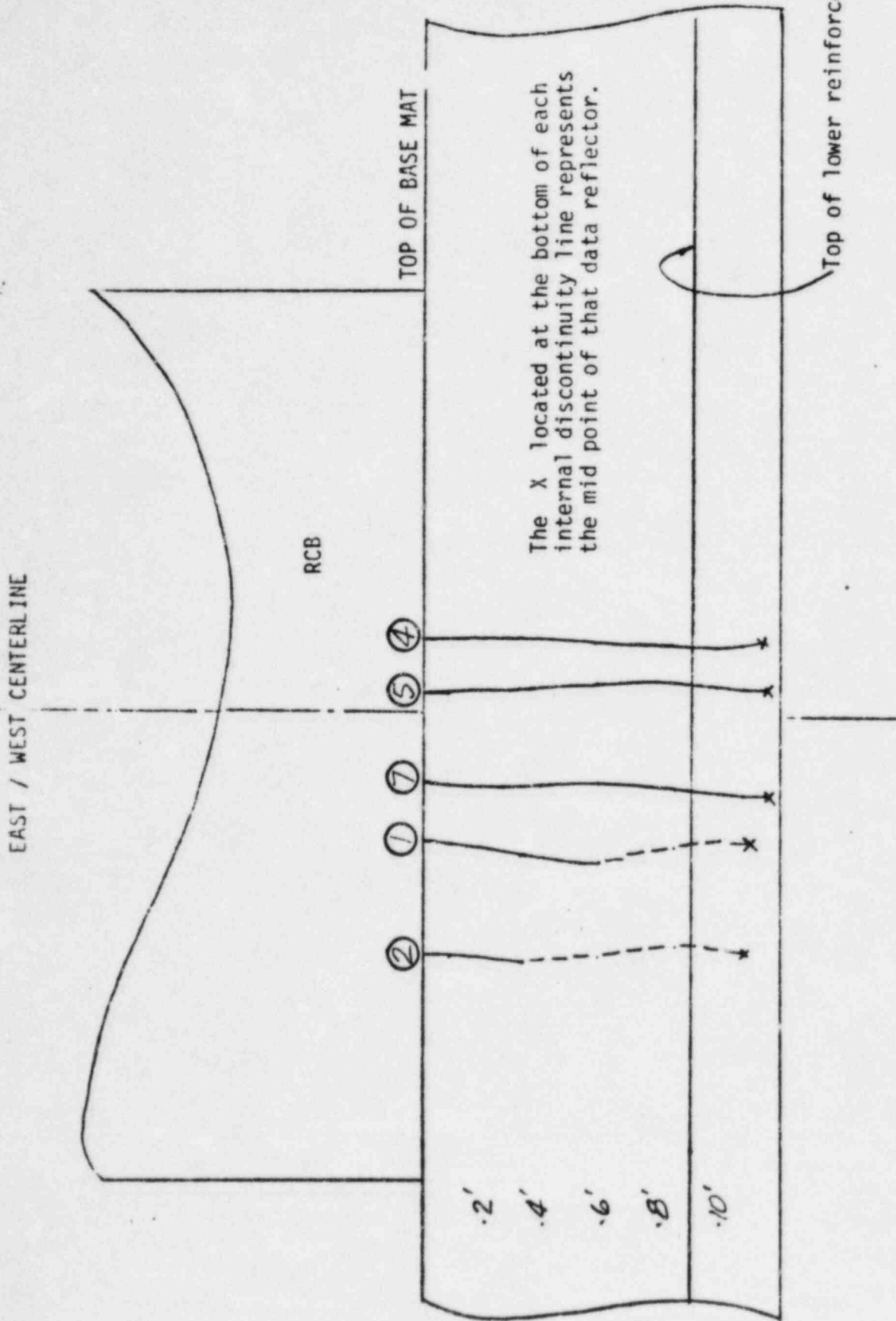
327



MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

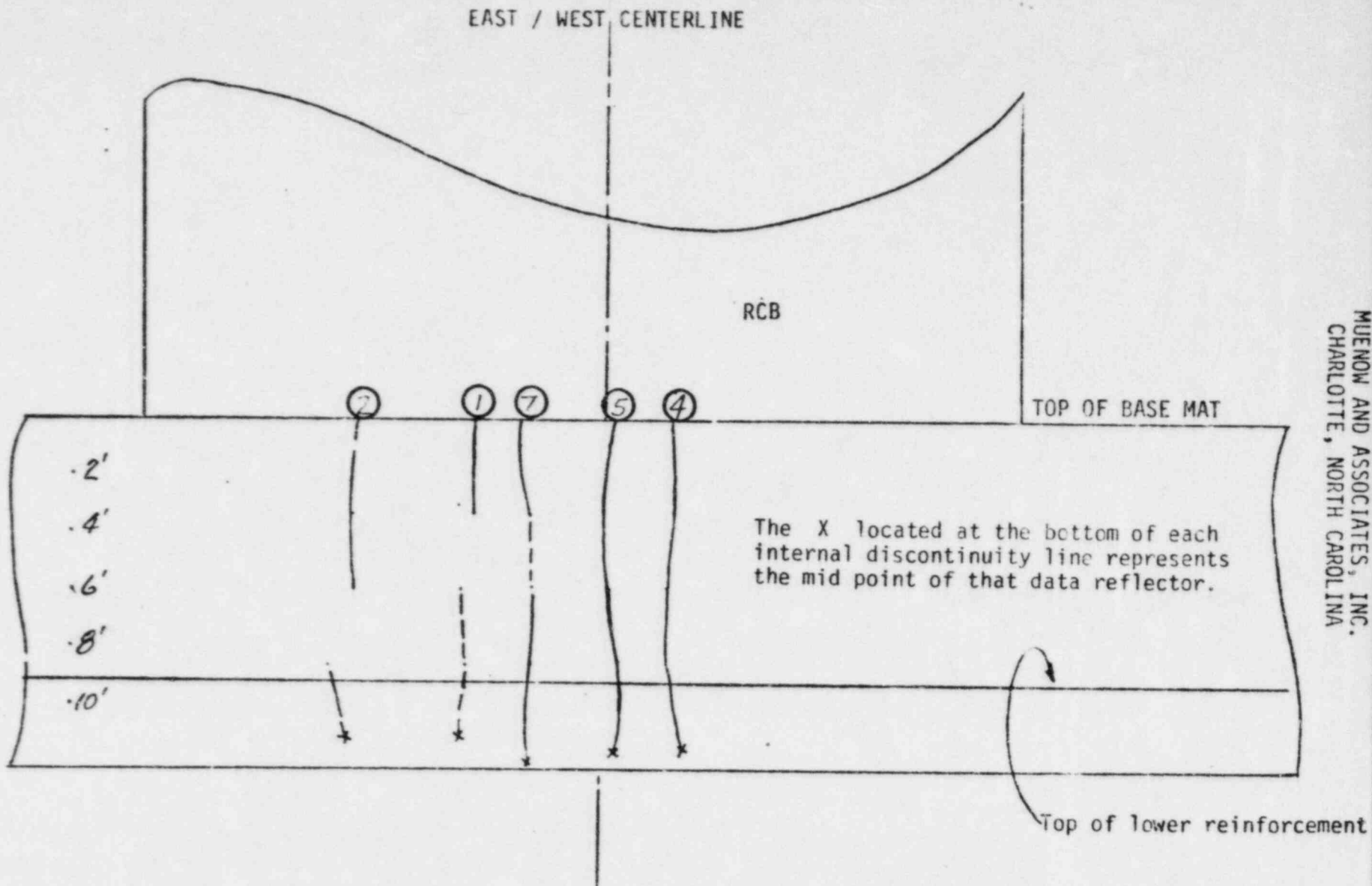
CROSS SECTION AT
LINE 45e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab



Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

CROSS SECTION AT
LINE 40e

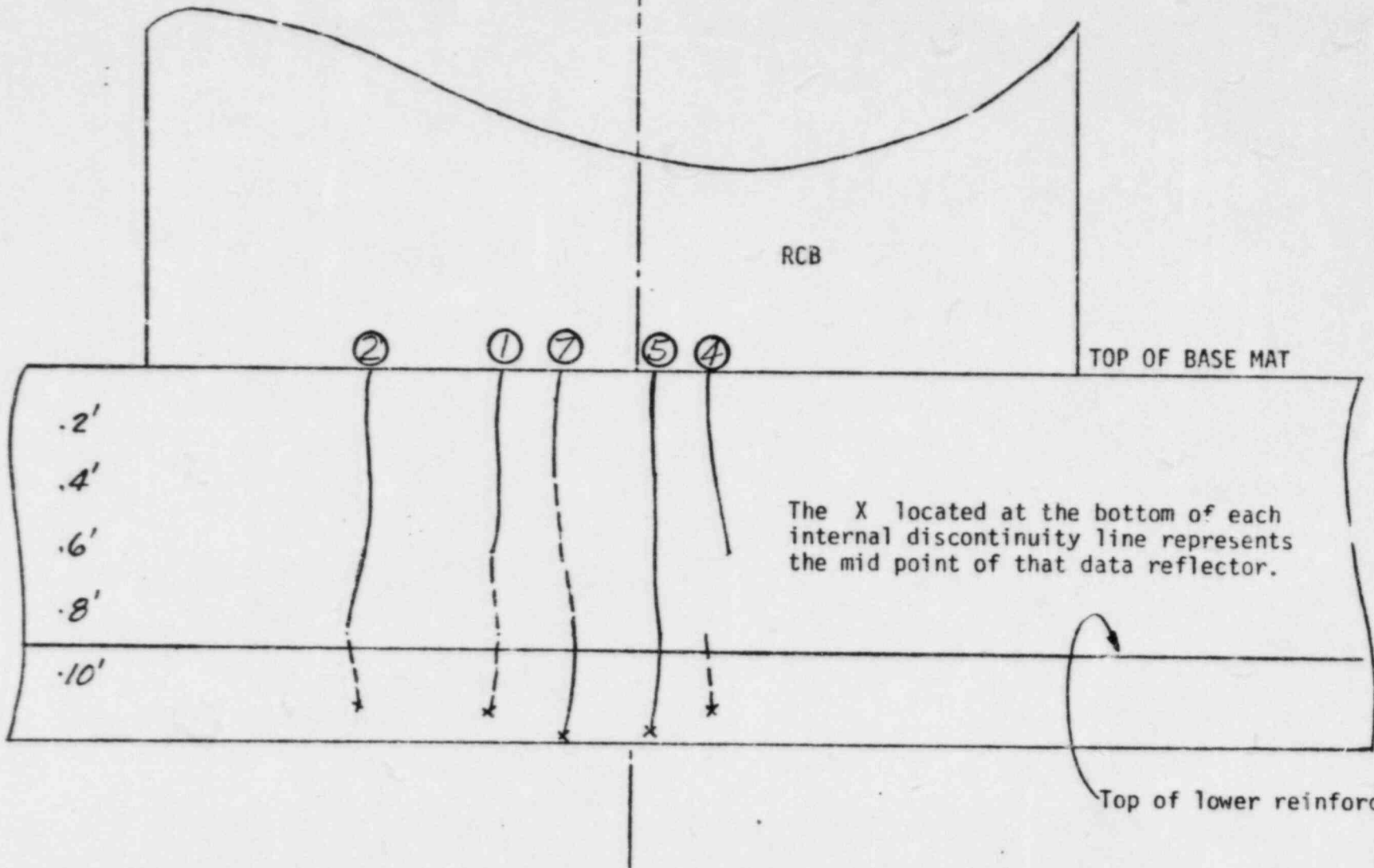


MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

CROSS SECTION AT
LINE 35e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

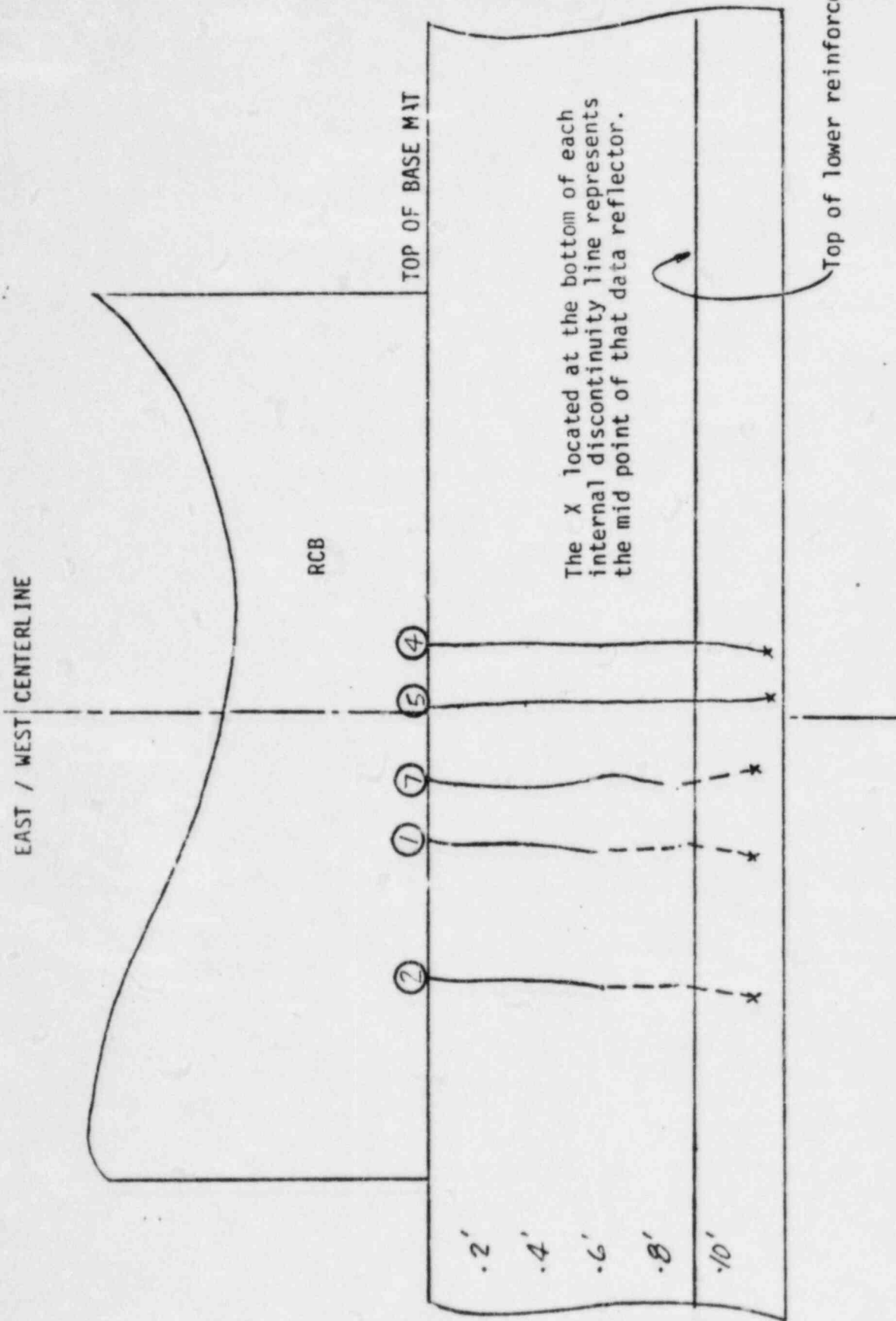
EAST / WEST CENTERLINE



MOENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

CROSS SECTION AT
LINE 30e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab



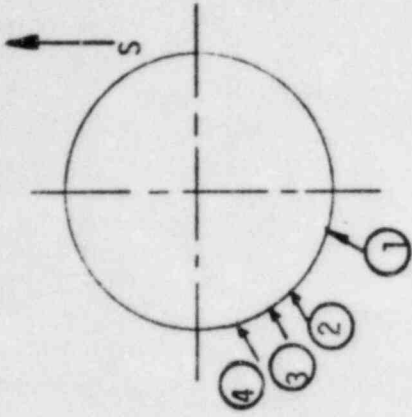
CROSS SECTION AT
LINE 0e

Scales:
Vertical 1cm=2ft in slab
Horizontal 1mm=1ft along top of slab

MUENOW AND ASSOCIATES, INC.
CHARLOTTE, NORTH CAROLINA

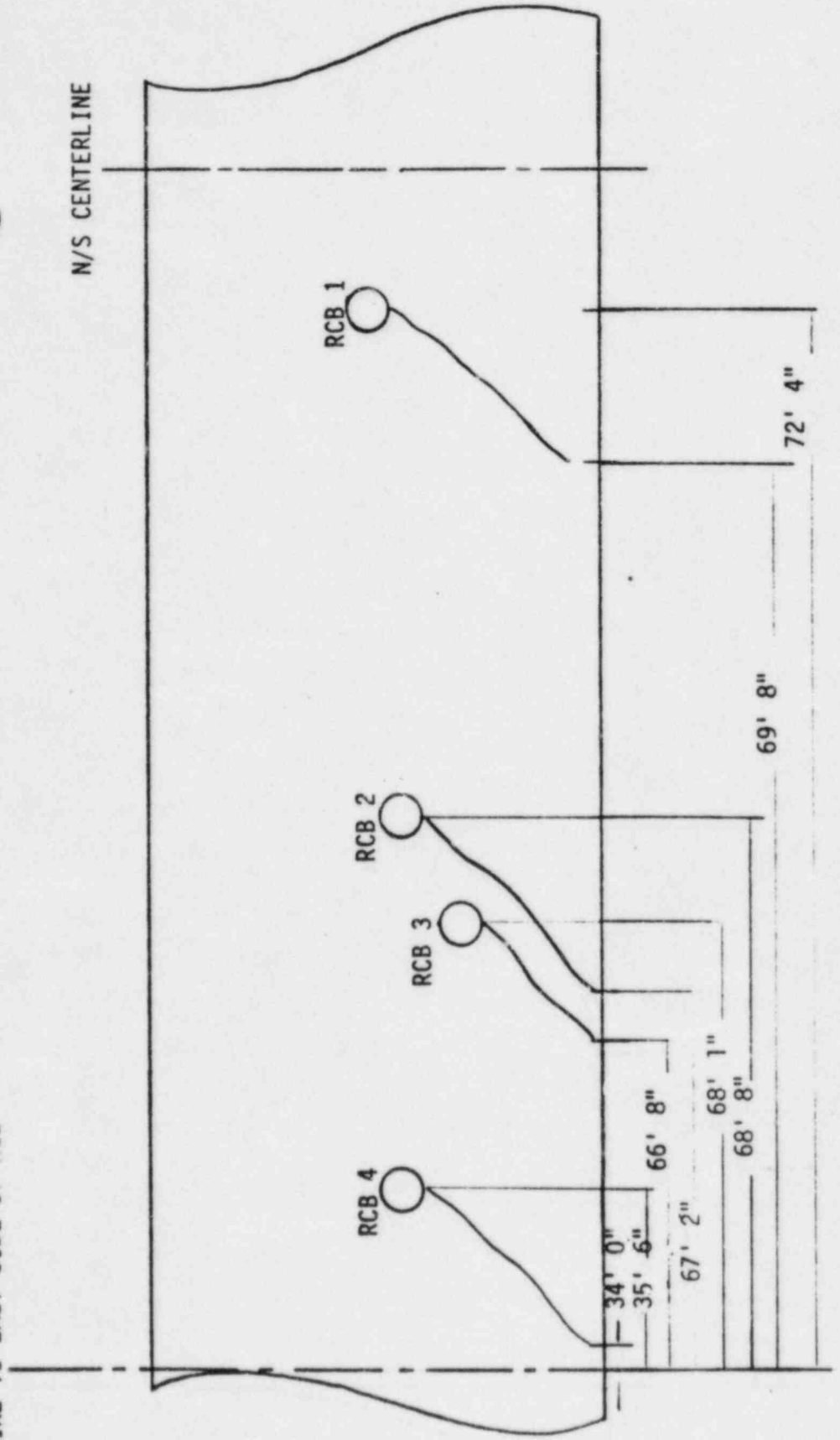
DRAWING NO. 14

LOCATION AND IDENTIFICATION
OF TEST POINTS ON SURFACE
INDICATIONS ON RCB WALL



N/S TANGENT LINE TO EAST SIDE OF RCB

N/S CENTERLINE



MUEWY AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERWORK NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION RCB 1 OPERATOR R.A. MUEWY P.F. INSTRUMENT NO. 15-12548

TEST NO. MSIC TO J	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 1	100	0	0	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0	0	0
LINE NO. 2	100	0	0	0	0	0	0	NA	0	0	0	0
	95	0	0	0	0	0	0	NA	0	0	0	0
LINE NO. 3	95	0	0	0	0	0	0	NA	0	0	0	0
	115	0	0	0	0	0	0	NA	0	0	0	0
LINE NO. 4	0	0	0	0	0	0	0	NA	0	0	0	0
	0	0	0	0	0	0	0	NA	0	0	0	0
LINE NO. 5	0	0	0	0	NA	0	0	0	0	0	0	0
	0	0	0	0	NA	0	0	0	0	0	0	0
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. RCB 1 DATE : 8-30-84

N to S 45 deg TRANSDUCER

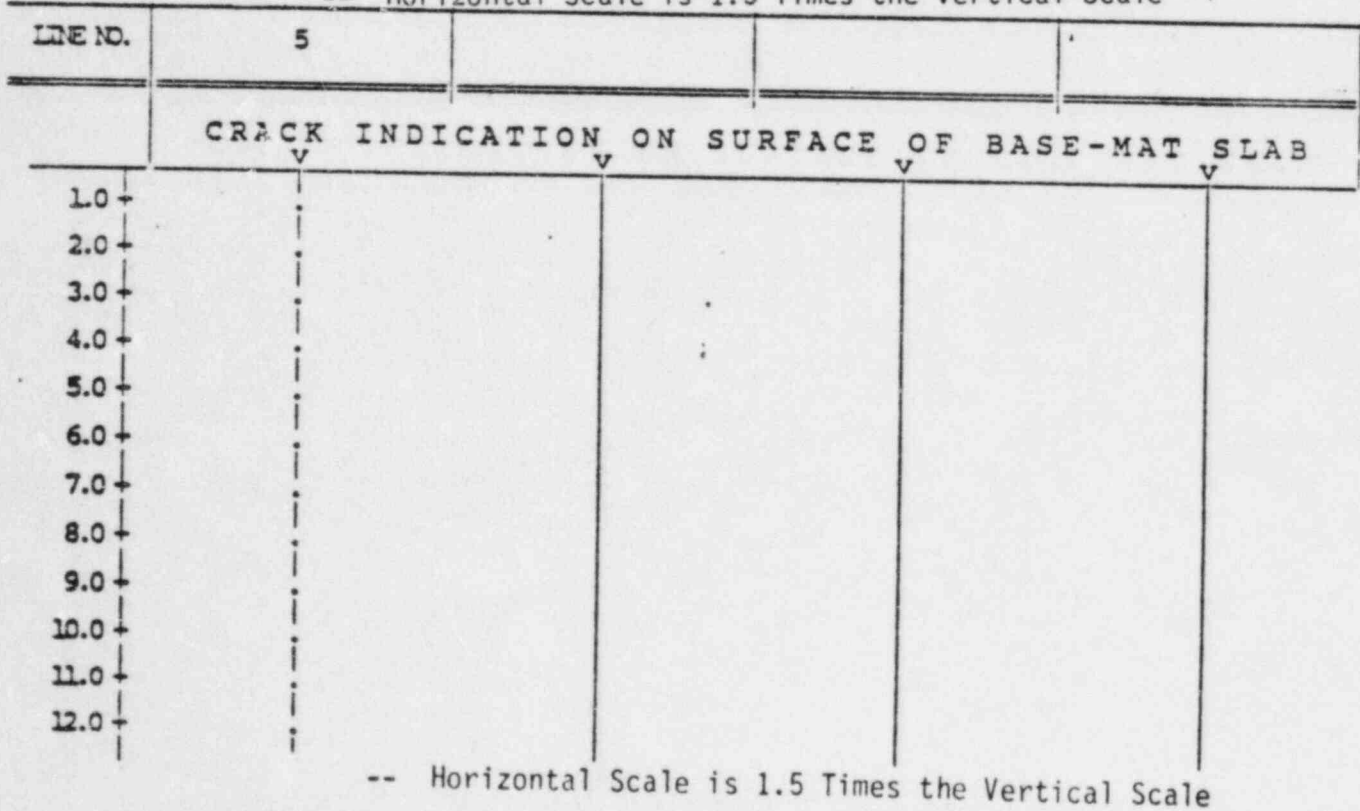
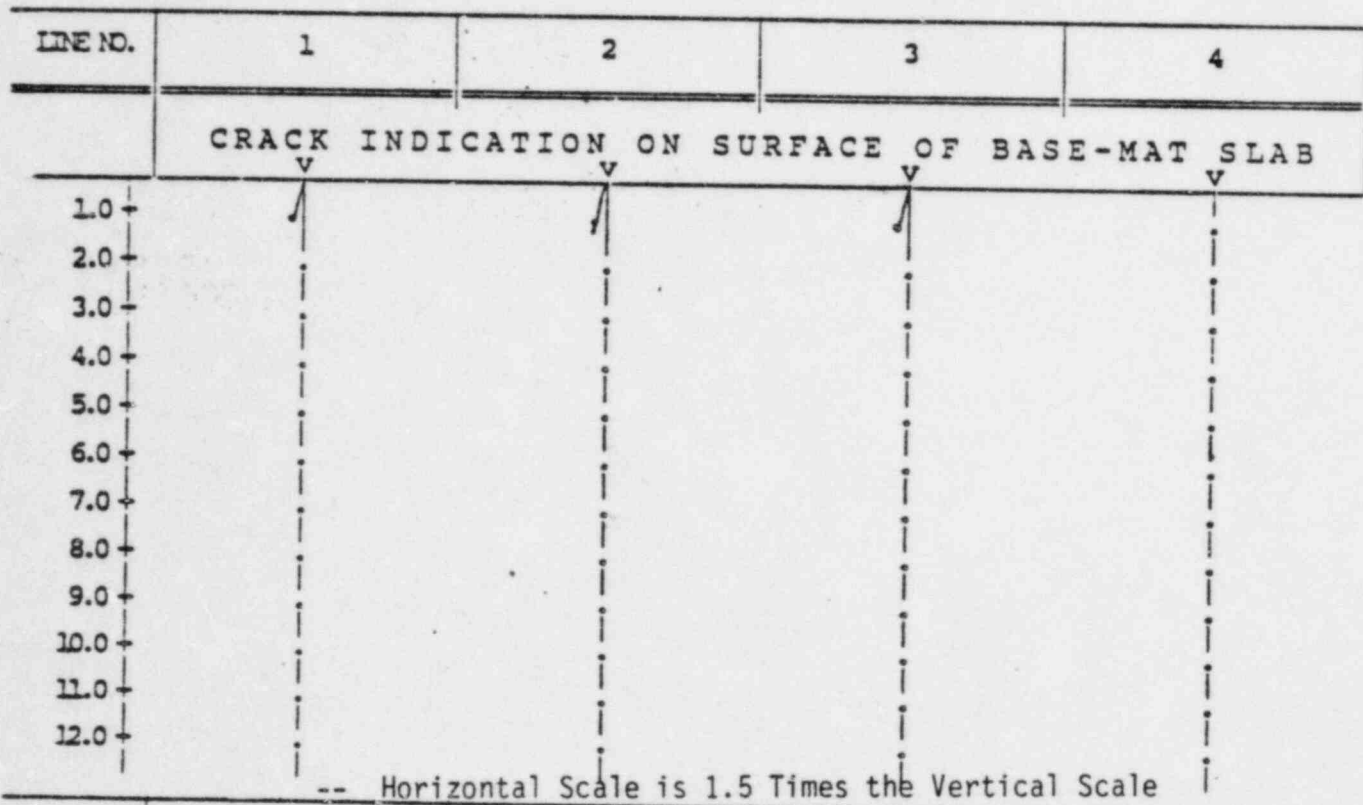
TEST # MS TO VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	100 0.94 0.06 3.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 2	100 0.94 0.06 3.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 3	95 0.90 0.10 6.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 4	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 5	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. RCB 1 DATE : 8-30-84

N to S 45 deg TRANSDUCER





CRACK IDENTIFICATION RCB 2 OPERATOR R.A. MUDNOR P.E. INSTRUMENT NO. 1542588

TEST NO. MSEC TO ⊥	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE NO. 1	100 115	0	0	0	0	0	NA	NA	0	0	0	0
LINE NO. 2	100 110	0	0	0	0	0	0	NA	0	0	0	0
LINE NO. 3	105 115	0	0	0	0	NA	0	0	0	0	0	0
LINE NO. 4	0	0	0	0	NA	0	0	0	0	0	0	0
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. RCB 2 DATE : 8-30-84

N to S 45 deg TRANSDUCER

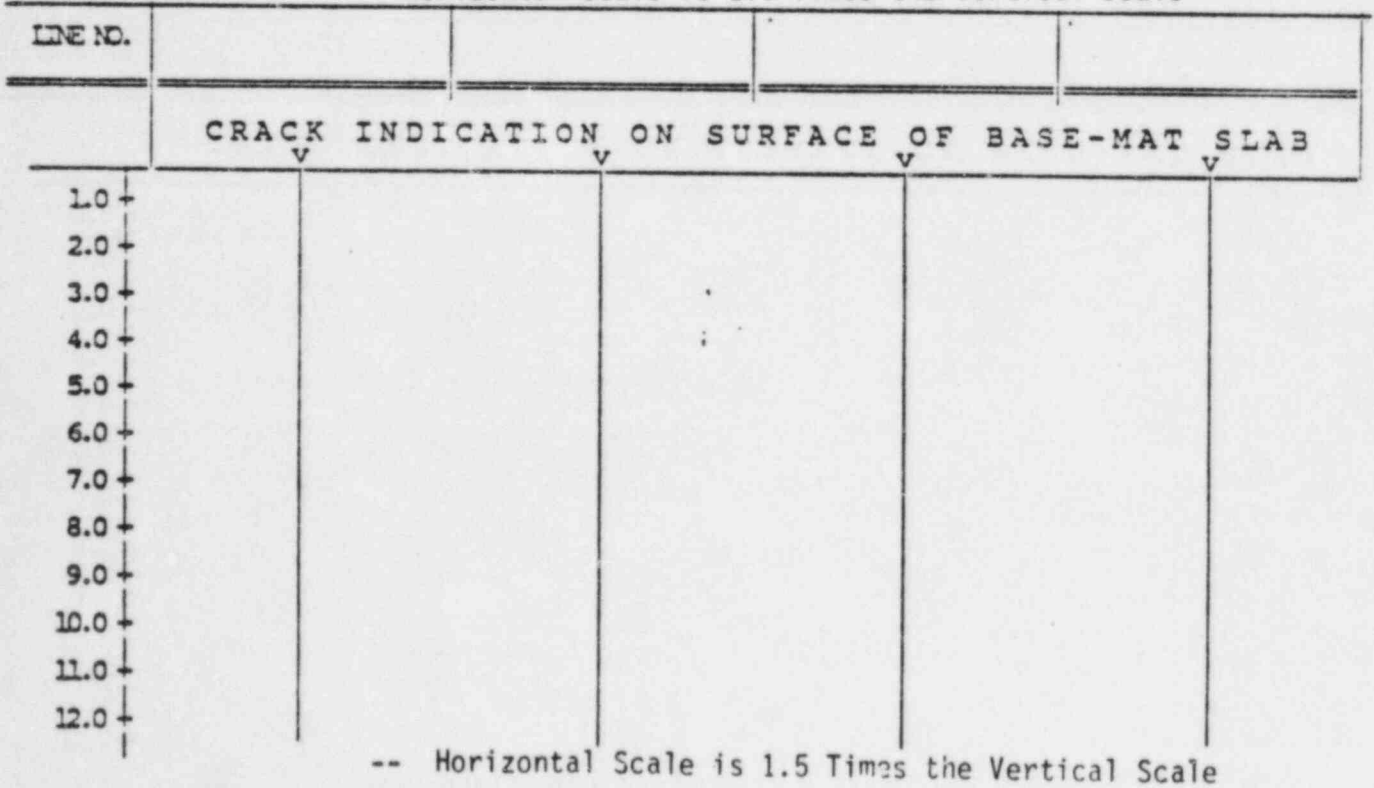
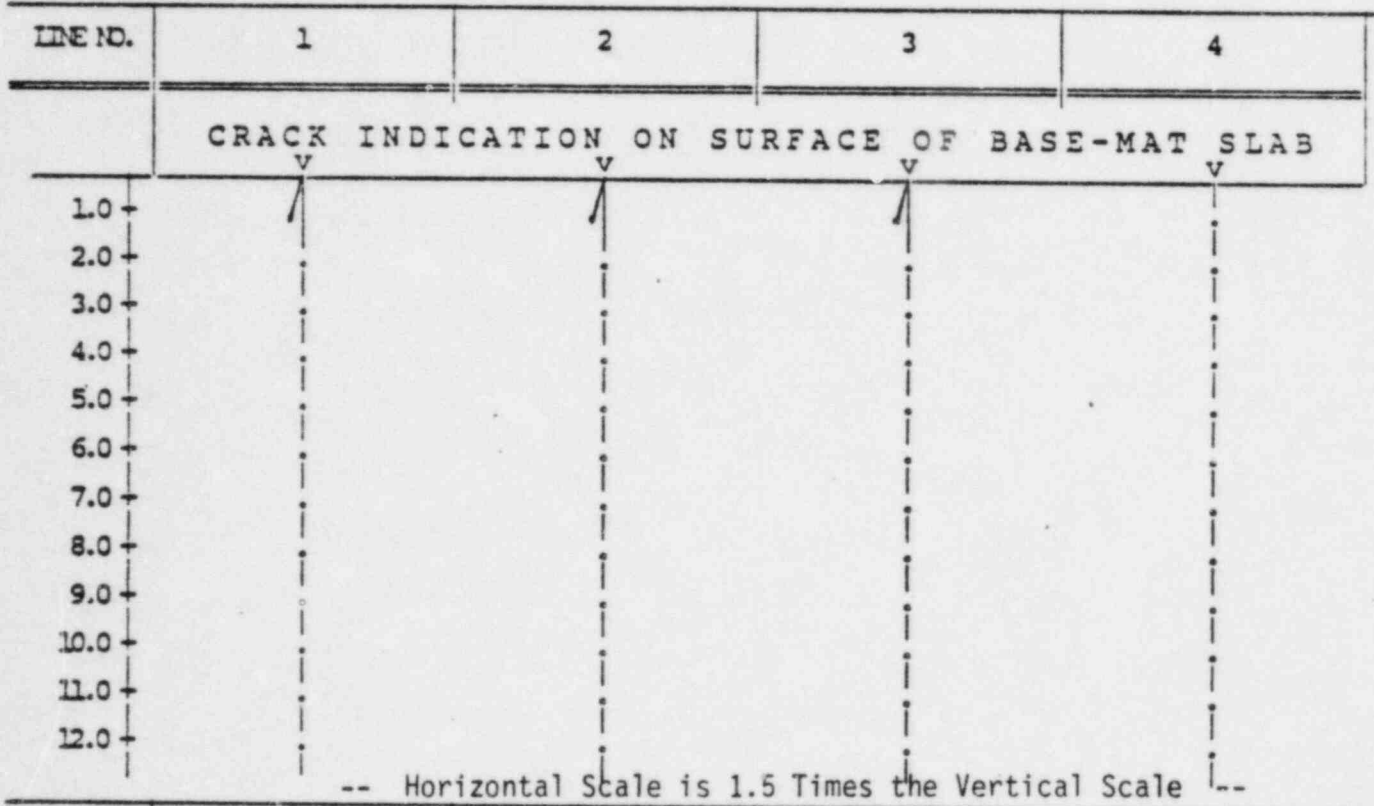
TEST # MS to VEPT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	100	0	0	0	0	0	0	0	0	0	0	0
	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LINE 2	100	0	0	0	0	0	0	0	0	0	0	0
	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LINE 3	105	0	0	0	0	0	0	0	0	0	0	0
	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LINE 4	C	0	0	0	0	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. RCB 2 DATE : 8-30-84

N to S 45 deg TRANSDUCER



MUELOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA POWER AND LIGHT WATERBOD NO. 3
 DESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION RCB 3 OPERATOR R. A. MUELOW P. E. INSTRUMENT NO. 15-12588

TEST NO. MSLC TO L	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 1	100	0	0	0	0	0	NA	0	0	0	0	0
	105	0	0	0	0	0	NA	0	0	0	0	0
LINE NO. 2	0	0	0	0	NA	0	0	0	0	0	0	0
	0	0	0	0	NA	0	0	0	0	0	0	0
LINE NO. 3	0	0	0	0	NA	0	0	0	0	0	0	0
	0	0	0	0	NA	0	0	0	0	0	0	0
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. RCB 3 DATE : 8-30-84

N to S 45 deg TRANSDUCER

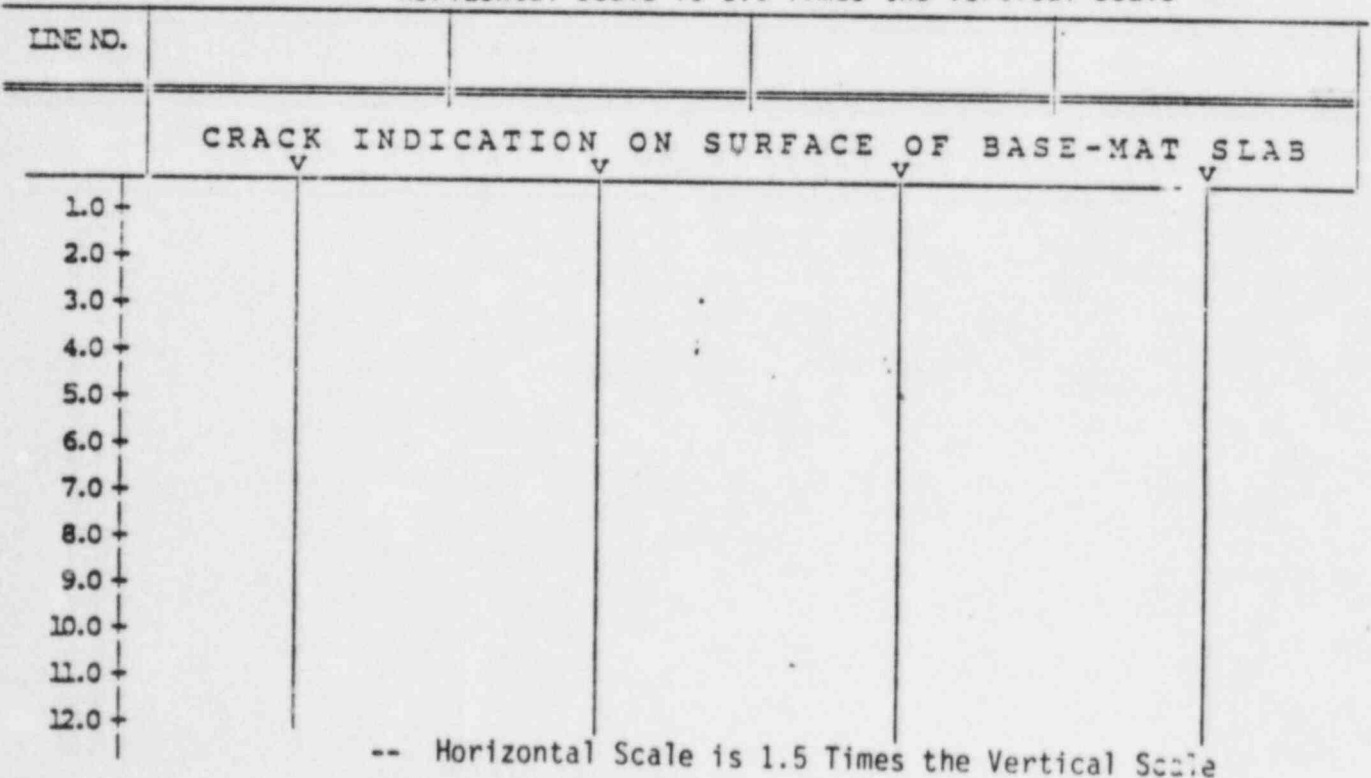
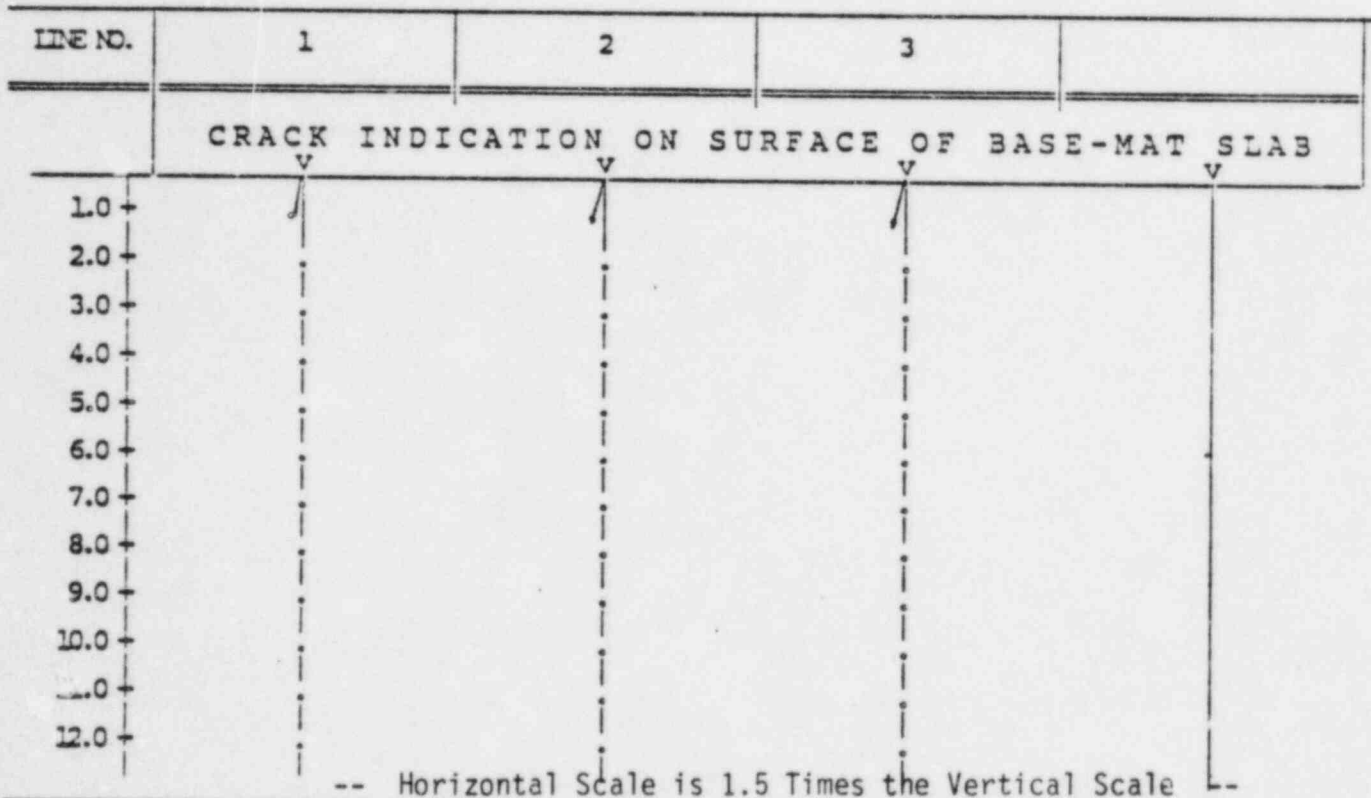
TEST # MS TO VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 1	0.94 0.06 3.47	0.00 0.00 3.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	105	0	0	0	0	0	0	0	0	0	0	0
LINE 2	0.99 0.01 0.58	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
	100	0	0	0	0	0	0	0	0	0	0	0
LINE 3	0.94 0.06 3.47	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. RCB 3 DATE : 8-30-84

N to S 45 deg TRANSDUCER



MURPHY AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 LOUISIANA TOWER AND #1 WATERFORD NO. 3
 NONDESTRUCTIVE EVALUATION OF BASE MAT CONCRETE
 CRACK DEPTH AND ORIENTATION DATA SHEET JULY--AUGUST 1984



CRACK IDENTIFICATION RCB 4 OPERATOR R.A. MUEYER P.E. INSTRUMENT NO. 1542588

TEST NO. MSIC TO L	1	2	3	4	5	6	7	8	9	10	11	12
	106	212	318	425	530	636	742	848	955	1060	1166	1272
LINE NO. 1	100 115	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	NA NA
LINE NO. 2	95 120	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	NA NA
LINE NO. 3	95 110	0 0	0 0	0 0	0 0	NA NA						
LINE NO. 4	0 0	0 0	0 0	0 0	0 0	NA NA						
LINE NO.												
LINE NO.												
LINE NO.												
LINE NO.												

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION CALCULATIONS

CRACK I.D. *RCB 4 DATE : 8-30-84

N to S 45 deg TRANSDUCER

TEST # MS TO VERT	1 106	2 212	3 318	4 425	5 530	6 636	7 742	8 848	9 955	10 1060	11 1166	12 1272
LINE 1	100 0.94 0.06 3.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 2	95 0.90 0.10 6.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 3	95 0.90 0.10 6.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00
LINE 4	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00

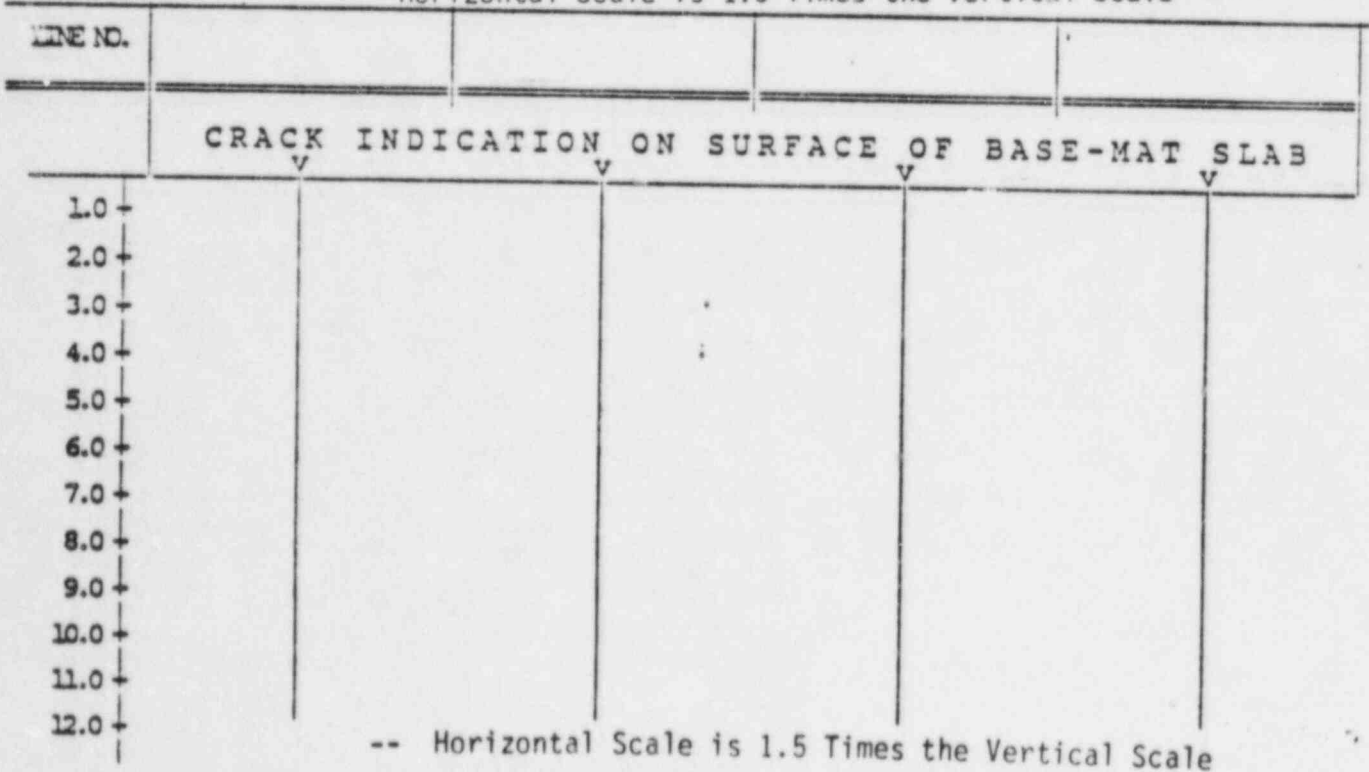
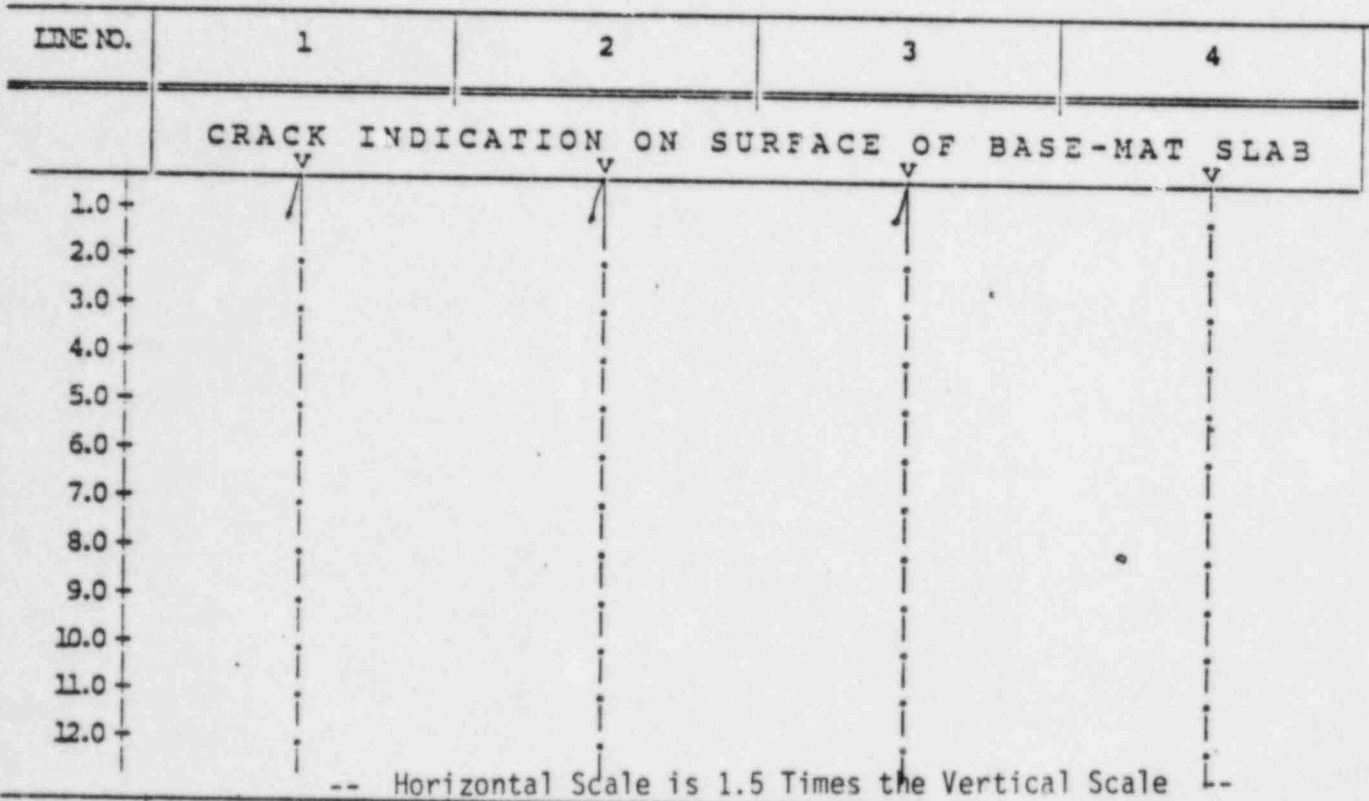
MUENOW AND ASSOCIATES, INC.

CHARLOTTE, NORTH CAROLINA

LOUISIANA POWER AND LIGHT WATERFORD NO. 3
NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE

CRACK DEPTH AND ORIENTATION GRAPHING

CRACK I.D. *RCB 4 DATE : 8-30-84 N to S 45 deg TRANSDUCER



Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 (704) 542-2223

APPENDIX NO. 1
SPECIFIC PROGRAM FOR NDT
EVALUATION OF BASE MAT CONCRETE
WATERFORD NO. 3

APPENDIX NO. 1

PROGRAM FOR THE NONDESTRUCTIVE EXAMINATION
OF CRACKS IN THE WATERFORD 3 BASEMAT

1. PURPOSE

The purpose of this program is to define the vertical extension of East-West cracks located at the top of the mat. The Program will attempt to define:

- A. crack depth
- B. crack length
- C. crack orientation
- D. proximity to or linkage with other cracks in the lower portion of the mat.
- E. estimate of crack width

2. DESCRIPTION

The Program will utilize the services of the R. A. Muenow and Associates to perform a nondestructive microseismic evaluation of the concrete using the pulse echo method. An evaluation of East-West oriented cracks located between column line R and about 6 feet south of column line P, including those beneath the reactor building will be accomplished. In addition, one crack, NE-SW trending, northeast of the reactor building and one crack, NW-SE trending, northwest of the reactor building will be examined and evaluated.

The elements of the program are as follows:

- A. A test grid system will be established by R. A. Muenow and Associates, utilizing areas of the basemat where no surface cracking appears. A construction joint will be tested to establish a baseline.
- B. A Pulse Echo evaluation of the concrete will be performed by

PROGRAM FOR THE NONDESTRUCTIVE EXAMINATION
OF CRACKS IN THE WATERFORD 3 BASEMAT

R. A. Muenow and Associates, Inc., in accordance with the Test Method for Pulse Echo Method which includes:

- 1) Each test point will be established by R. A. Muenow and Associates so that test data will reveal information relative to crack depth, length and orientation.
- 2) Each test point will be accomplished with a 3 transducer array with test angles of 30°, 45° and 60°.
- 3) Each test point will also be accomplished with a 0° transducer for completeness of data collection.
- 4) The 30° transducer shall have a variability angle between 20° and 40°, for final detailing.
- 5) A minimum of one polaroid picture of the CRT display shall be furnished at each grid location where additional testing is performed.
- 6) Furnishing of calibration records for the equipment used in the testing. Calibrations shall be traceable to a National Bureau of Standards standard.

3. EVALUATION

A report on the results of the test data will be furnished by R. A. Muenow and Associates, Inc. The report will evaluate each crack tested for depth, length, orientation, width and proximity to or linkage with other cracks in the lower portion of the mat. The report results will be evaluated to determine the effect of the results on the design assumptions, or any corrective actions required.

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

APPENDIX NO. 2

TEST PROCEDURE FOR
PULSE ECHO NONDESTRUCTIVE
TESTING OF CONCRETE AND
CONCRETE STRUCTURES

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542-2223

APPENDIX NO. 2

TEST PROCEDURE

TEST DESCRIPTION AND OBJECTIVES

This procedure establishes a systematic method for performing nondestructive volumetric examination of in-place concrete using the microseismic test method. This test method is based on the laws of wave propagation through an elastic medium and is performed using electronic equipment utilizing the theory of random signal analysis. The location and extent of internal discontinuities in existing concrete can be determined by interpreting microseismic test results.

THEORY TEST PARAMETERS

Data from the microseismic tests is interpreted utilizing the laws of wave reflection. The attached sketches designated A and B, the signal feature notes as (1) is an indication of the wave generated at the surface on which the receiver (transducer) and impactor (mechanical wave producer) are placed. The signal feature notes as (2) is an indication of the wave reflection from the rear surface.

Sketch A represents a signal from a concrete specimen with no internal discontinuities. Sketch B represents a signal from a concrete specimen with an internal discontinuity of approximately one-half the distance between the front and back surfaces. The signal feature noted as a reflector is an indication of the wave reflection from the discontinuity.

EQUIPMENT

Equipment consists of:

- (a) Cathode Ray Tube (CRT) for visual display of signal.
- (b) Time base generator for microsecond measurements.
- (c) Amplifier and processor circuitry for signal voltage measurements.
- (d) Electro-mechanical transducer (receiver) with piezoelectric and accelerator elements.
- (e) Impactor (mechanical wave generator) used to produce wide band frequency stress wave.
- (f) Couplant for contact of transducer (receiver) to the test specimen if required by surface condition.

- (g) Camera for recording CRT signal.

CALIBRATION AND PERFORMANCE OF EQUIPMENT

- 4.1 The microseismic test apparatus consists of a Cathode Ray Tube, timing device, amplitude device and transducer. The time base generator circuit is calibrated to a standard traceable to the National Bureau of Standards by an authorized service agency. Calibration frequency is 12 months.
- 4.2 The impactor (mechanical wave producer) is a rebound hammer conforming to ASTM Standard Method for Rebound Number of Hardened Concrete, ASTM Disignation: C805. The rebound hammer has a specific rebound characteristic from a known mass.

4.3 Microprocessor amplification circuitry and transducer performance are verified by testing for a full scale deletion of the CRT signal. This is accomplished by performing a microseismic test on a selected concrete specimen after setting the oscilloscope amplitude device to approximately 1 volt/cm for every foot of specimen thickness. The test specimen will be selected by the microseismic test equipment operator. This microprocessor and transducer performance test will be performed on the same selected specimen prior to and after completion of the day's testing. The test shall be performed by the day's testing. The test shall be performed by the microseismic test equipment operator and witnessed by appropriate parties.

PERSONNEL

Personnel performing testing in accordance with this procedure shall be experienced and qualified. Criteria for qualification shall include:

- (a) Prior experience with microseismic test equipment.
- (b) Experience in interpreting microseismic data.

ENVIRONMENTAL CONDITIONS

Testing may be conducted under wide range of ambient temperature conditions and with test surface either wet or dry.

DAILY TESTING SEQUENCE

- (a) Perform microprocessor and transducer performance test (see Section 4.3) prior to start of day's testing. Record on the Transducer Performance Test Record (Attachment 1) date of test, test specimen thickness, equipment and hammer identification number, time of test, signature of the microseismic test operator and signature of the test witness.

- (b) Inspect the test areas for roughness of concrete surface and determine couplant requirements, if any.

- (c) Record test area identification, date of testing, test area description, equipment identification number, hammer identification number and signatures of the microseismic test operator and test witness on the Microseismic Test Record (Attachment 2).

- (d) Connect all wires to interface CRT with microseismic processor. Energize system with 110-120 volt 60 Hz electrical power.

- (e) Set controls for predetermined depth inspection.

- (f) At each test location apply couplant, if required, to the concrete surface or rubber face of transducer and place transducer firmly against test surface.

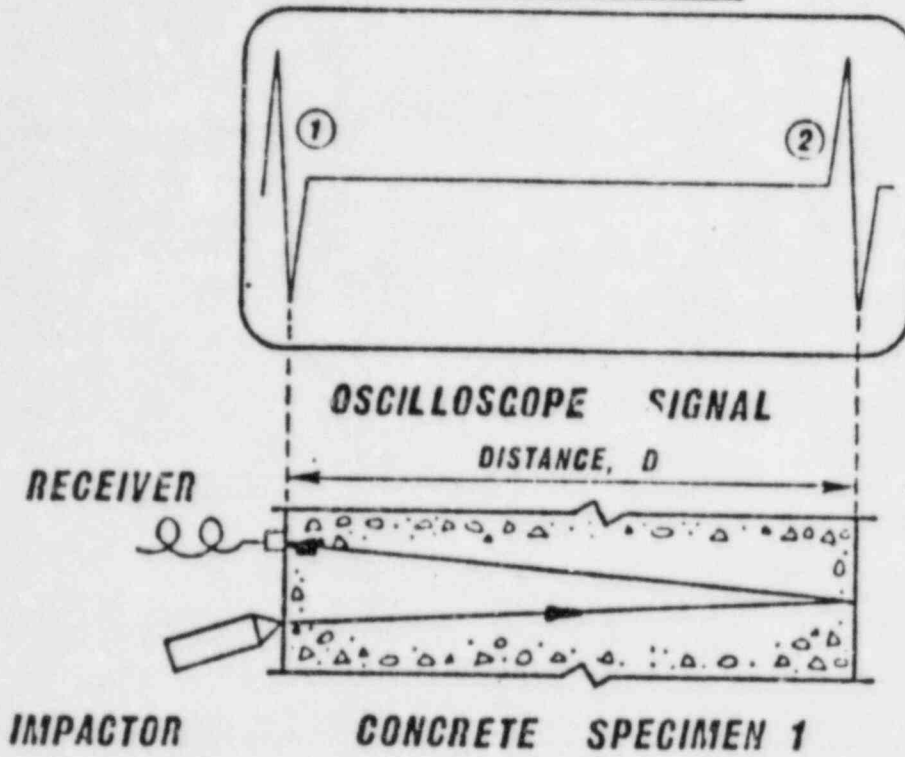
- (g) Place impactor (mechanical wave producer) against test surface approximately 1" away from transducer. Trigger impactor.
- (h) View the CRT signal.
- (i) Identify signal features in terms of internal discontinuities causing reflectors.
- (j) Record wave travel time for computation of pulse velocity if required by test specifications.
- (k) Photograph the CRT signal. Photographs will be taken at test locations exhibiting reflectors as directed by the field engineer. The back of all photographs will be labeled with test date, a sequential photograph identification number, test area number, and test grid location.
- (l) Record test grid location, specimen thickness, presence of reflectors, photo number with applicable remarks on Microseismic Test Record.
- (m) Proceed to next grid location to be tested.
- (n) At completion of area testing prepare field sketch of test area.
(Optional)

- (o) Upon completion of the day's testing, perform transducer and microprocessor performance tests (see Section 4.3) and record appropriate information on the day's Transducer Performance Test Record, (Attachment 1).

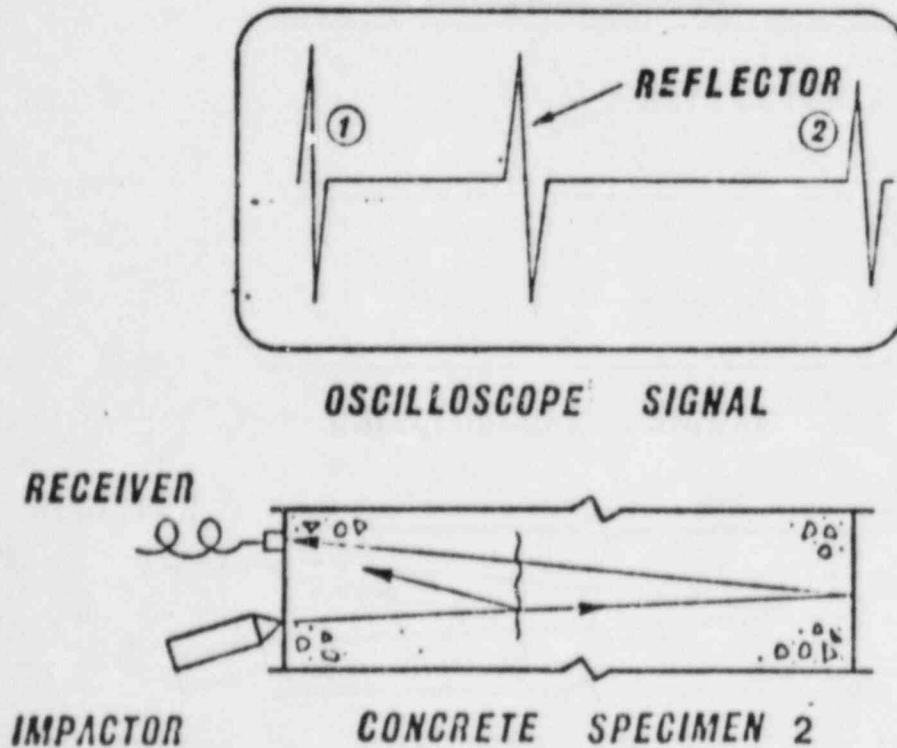
RECORDS

All personnel qualification certificates, equipment performance, field sketches and microseismic tests results will be documented. The records shall be complete and signatures provided where indicated. Photographic records of all tests shall be traceable to the applicable test. Copies of all records shall be maintained by Muenow and Associates, Inc. or as directed.

SKETCH A



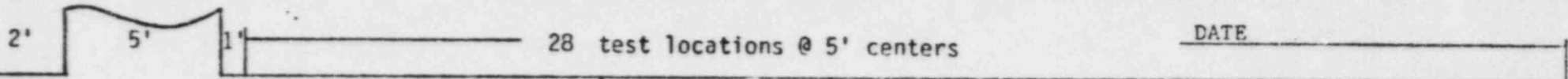
SKETCH B



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 CALIBRATION OF 60° TRANSDUCER

LOUISISANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

Attachment 1



R + R₂ = Construction Joint

NO.	MICROSECONDS	REFLECTION	NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS
1			12			23		
2			13			24		
3			14			25		
4			15			26		
5			16			27		
6			17			28		
7			18			29		
8			19			30		
9			20			31		
10			21			32		
11			22					

Muenow and Associates, Inc.

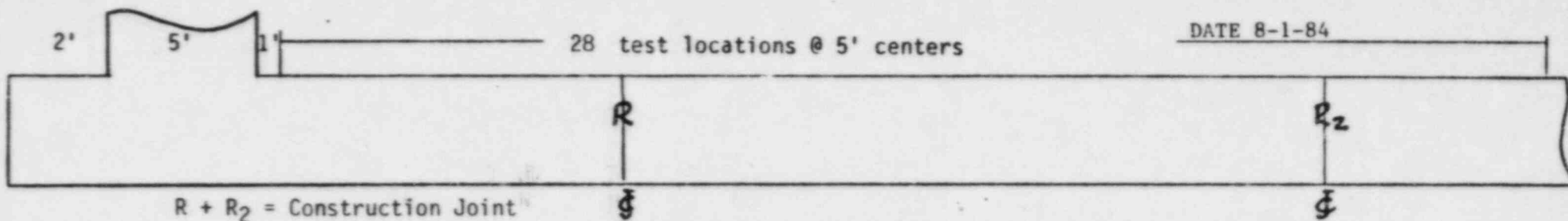
MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542 2223

APPENDIX NO. 3

DAILY CALIBRATION RECORDS
FOR 0° - 45° - 60° TRANSDUCERS
FOR DURATION OF TEST PROGRAM

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 CALIBRATION OF 60° TRANSDUCER

LOUISISANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION



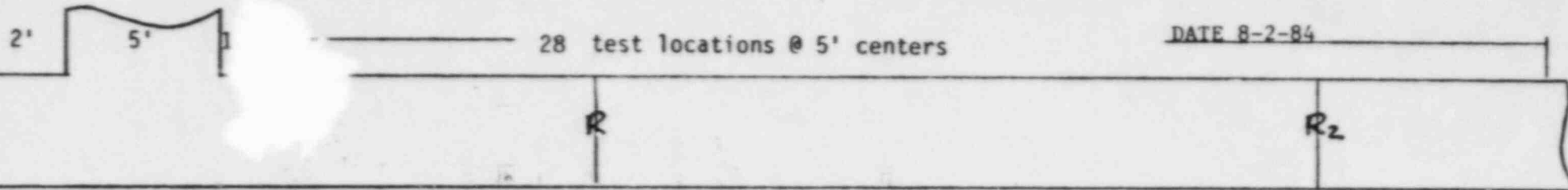
DATE 8-1-84

NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS
1	690	0	12	5460	0	23	10200	R
2	1140	0	13	5890	0	24	10600	R
3	1570	0	14	6320	R	25	11000	R
4	1980	0	15	6780	R	26	11450	R
5	2400	0	16	7190	R	27	11850	R1 R2
6	2840	0	17	7600	R	28	12450	R1 R2
7	3290	0	18	8050	R	29	12800	R1 R2
8	3700	0	19	8500	R	30	13200	R1 R2
9	4150	0	20	8900	R	31	13600	R1 R2
10	4600	0	21	9350	R	32	14100	R1 R2
11	5030	0	22	9780	R			

359

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 CALIBRATION OF 60° TRANSDUCER

LOUISISANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION



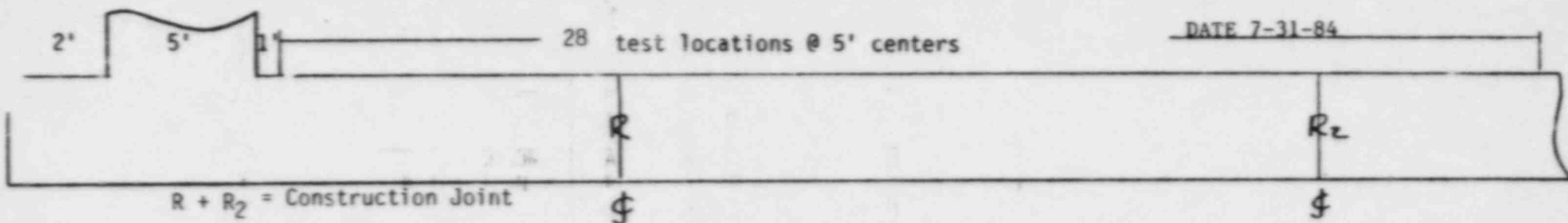
R + R₂ = Construction Joint

NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS
1	690	0	12	5450	0	23	10200	R
2	1140	0	13	5900	0	24	10600	R
3	1570	0	14	6350	R	25	11000	R
4	1980	0	15	6700	R	26	11450	R
5	2400	0	16	7150	R	27	11850	R1 R2
6	2850	0	17	7600	R	28	12450	R1 R2
7	3200	0	18	8050	R	29	12800	R1 R2
8	3700	0	19	8500	R	30	13200	R1 R2
9	4150	0	20	8900	R	31	13600	R1 R2
10	4600	0	21	9350	R	32	14100	R1 R2
11	5050	0	22	9780	R			

360

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 CALIBRATION OF 60° TRANSDUCER

LOUISISANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

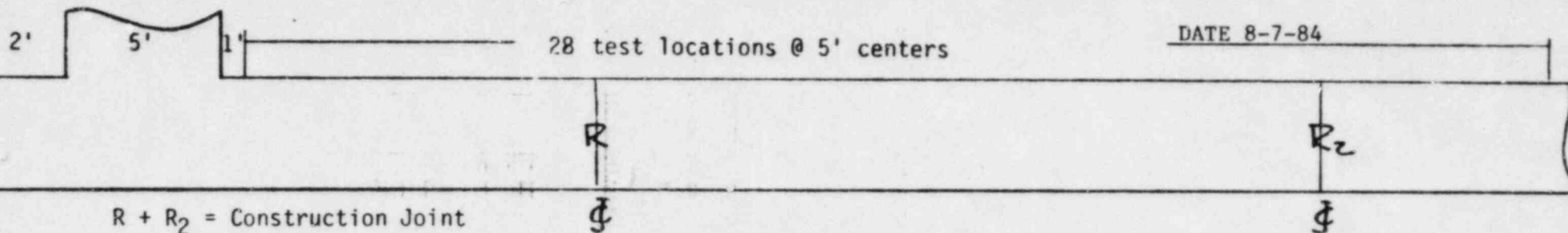


196

NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS
1	690	0	12	5460	0	23	10200	R1
2	1120	0	13	5890	0	24	10600	R1
3	1570	0	14	6320	R1	25	11000	R1
4	1990	0	15	6760	R1	26	11500	R1
5	2400	0	16	7180	R1	27	11850	R1 R2
6	2850	0	17	7620	R1	28	12400	R1 R2
7	3290	0	18	8050	R1	29	12800	R1 R2
8	3700	0	19	8500	R1	30	13200	R1 R2
9	4150	0	20	8910	R1	31	13600	R1 R2
10	4600	0	21	9350	R1	32	14100	R1 R2
11	5030	0	22	9780	R1			

MENNOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 CALIBRATION OF 60° TRANSDUCER

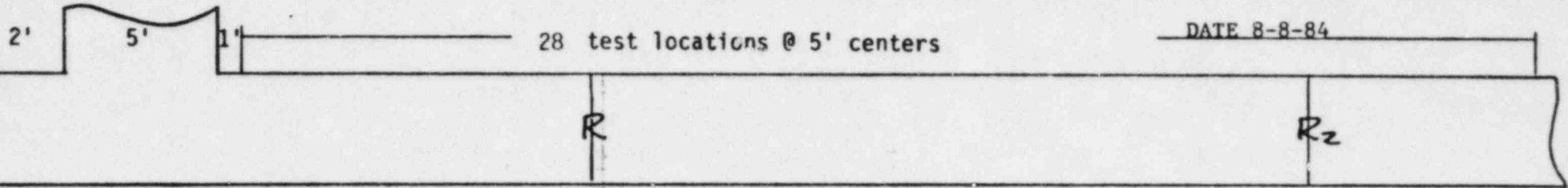
LOUISISANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION



NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS
1	680	0	12	5400	0	23	10200	R
2	1140	0	13	5900	0	24	10600	R
3	1580	0	14	6350	R	25	11000	R
4	1970	0	15	6700	R	26	11450	R
5	2350	0	16	7150	R	27	11850	R1 R2
6	2850	0	17	7600	R	28	12450	R1 R2
7	3150	0	18	8100	R	29	12800	R1 R2
8	3650	0	19	8500	R	30	13200	R1 R2
9	4150	0	20	8950	R	31	13600	R1 R2
10	4600	0	21	9300	R	32	14100	R1 R2
11	5050	0	22	9780	R			

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 CALIBRATION OF 60° TRANSDUCER

LOUISISANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION



R + R₂ = Construction Joint

§

§

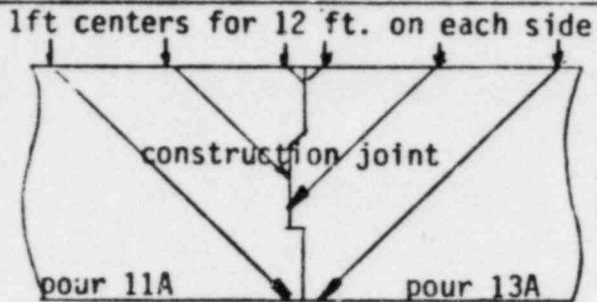
NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS	NO.	MICROSECONDS	REFLECTIONS
1	670	0	12	5500	0	23	10200	R
2	1130	0	13	5900	0	24	10600	R
3	1560	0	14	6400	R	25	11100	R
4	1980	0	15	6700	R	26	11400	R
5	2400	0	16	7200	R	27	11900	R1 R2
6	2900	0	17	7600	R	28	12500	R1 R2
7	3150	0	18	8100	R	29	12800	R1 R2
8	3600	0	19	8500	R	30	13200	R1 R2
9	4200	0	20	8900	R	31	13600	R1 R2
10	4600	0	21	9300	R	32	14100	R1 R2
11	5100	0	22	9750	R			

363

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

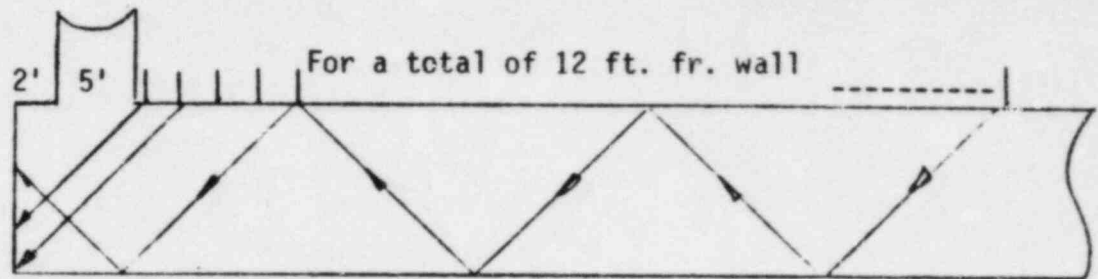
CALIBRATION OF 45° TRANSDUCER

DATE: 7-12-84



Pour 11A to 13A Pour 13A to 11A

1	106	1	106
2	212	2	212
3	318	3	318
4	420 R	4	420
5	450 R	5	610 R
6	560 R	6	720 R
7	660 R	7	820 R
8	770	8	850
9	950	9	950
10	1060	10	1060
11	1180	11	1170
12	1280	12	1272

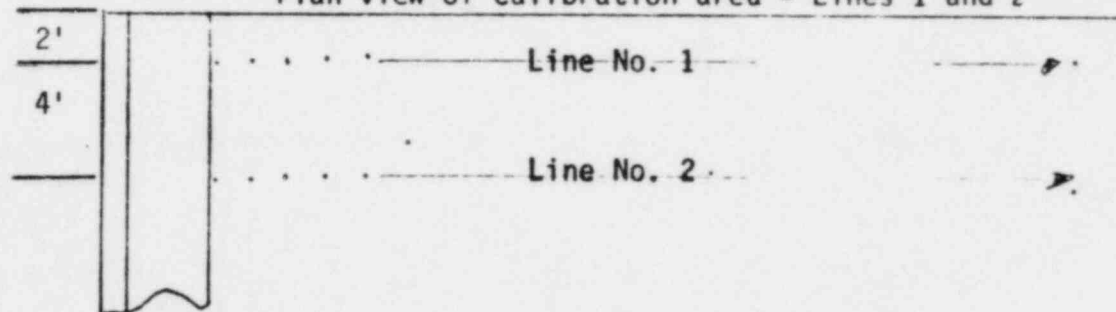


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	850	850
2	940	940
3	1070	1075
4	1170	1180
5	1290	1290
6	1450	1450

Plan view of calibration area - Lines 1 and 2

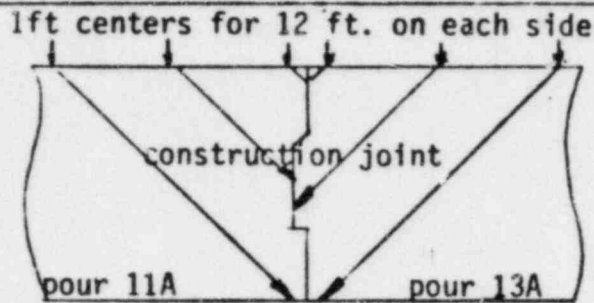


364

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

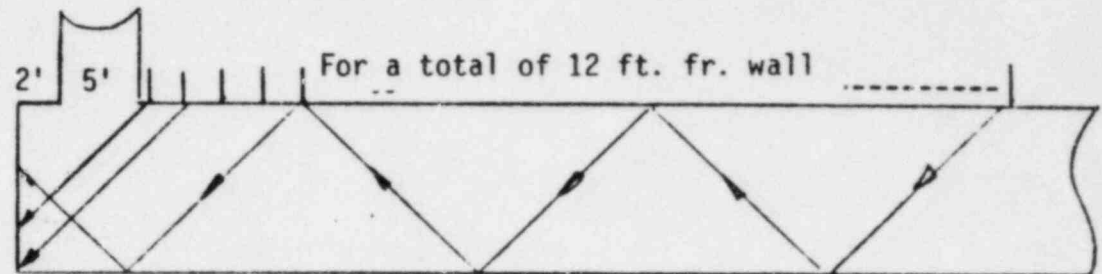
CALIBRATION OF 45° TRANSDUCER

DATE: 7-13-84



Pour 11A to 13A Pour 13A to 11A

1	107	1	110
2	212	2	215
3	318	3	330
4	420 R	4	430
5	450 R	5	610 R
6	560 R	6	720 R
7	660 R	7	830 R
8	770	8	860
9	940	9	950
10	1050	10	1060
11	1140	11	1120
12	1260	12	1270

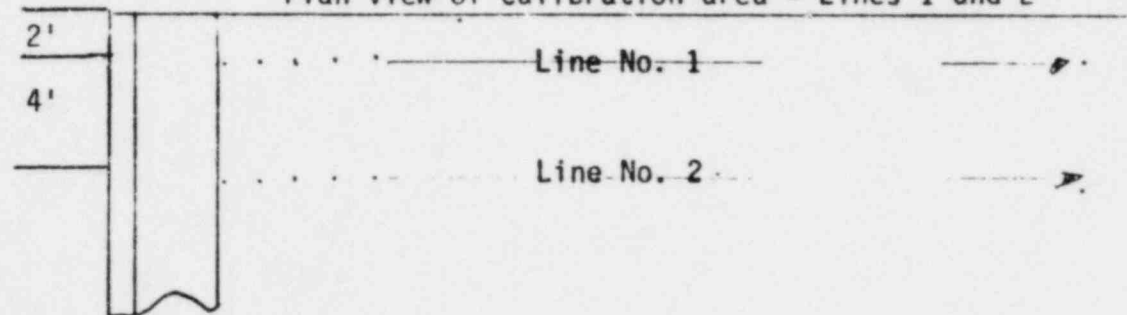


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	850	845
2	930	930
3	1080	1070
4	1170	1180
5	1290	1290
6	1470	1480

Plan view of calibration area - Lines 1 and 2



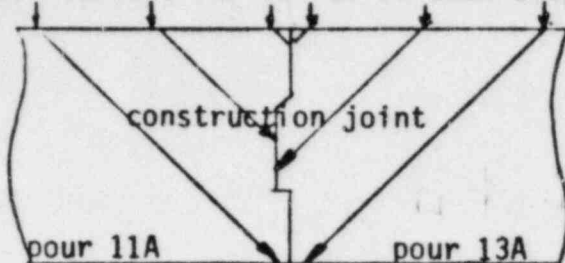
365

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

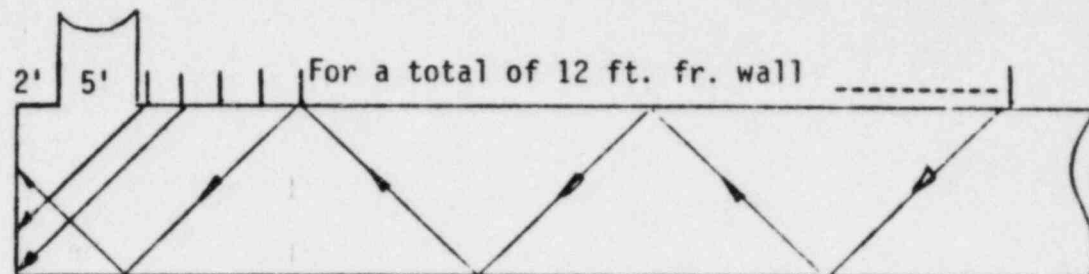
DATE: 7-16-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

1	106	1	110
2	210	2	214
3	318	3	320
4	420 R	4	440
5	460 R	5	600 R
6	550 R	6	710 R
7	650 R	7	830 R
8	760	8	860
9	960	9	960
10	1070	10	1060
11	1180	11	1160
12	1290	12	1270

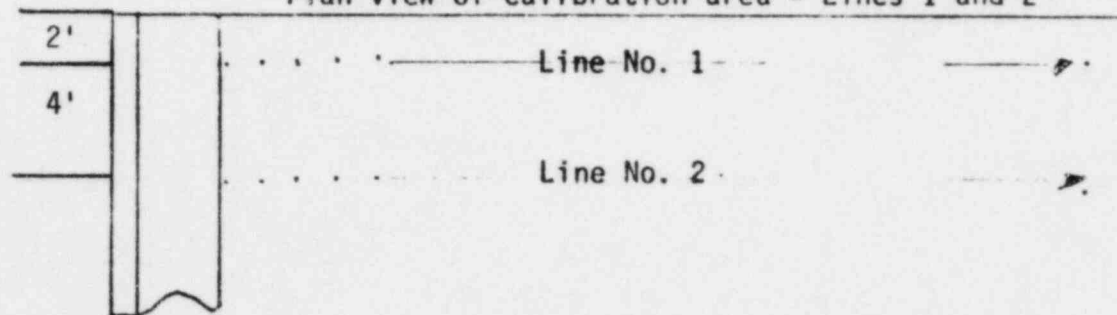


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	840	835
2	945	940
3	1060	1050
4	1150	1140
5	1270	1290
6	1470	1480

Plan view of calibration area - Lines 1 and 2

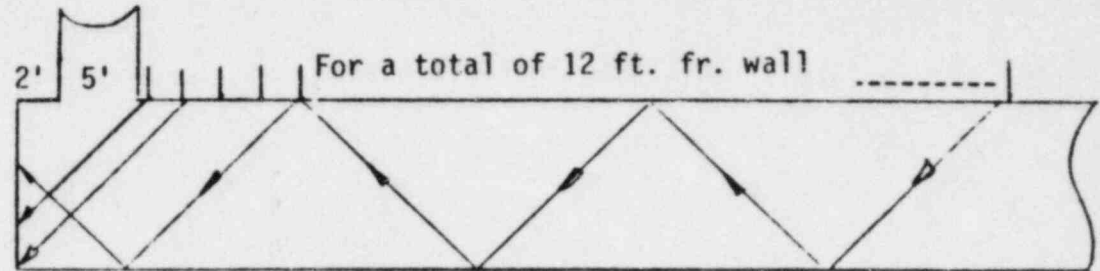
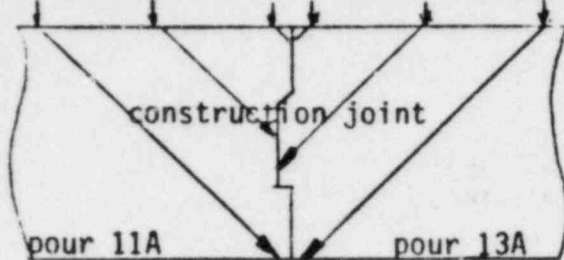


MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

DATE: 7-17-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

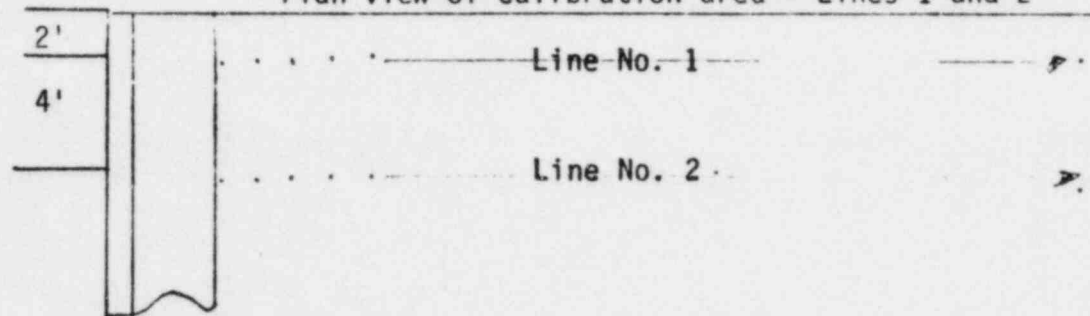
1	108	1	109
2	210	2	205
3	310	3	320
4	420	4	430
5	470 R	5	610 R
6	550 R	6	710 R
7	650 R	7	810 R
8	760	8	860
9	960	9	970
10	1070	10	1080
11	1170	11	1180
12	1270	12	1280

Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	840	830
2	940	940
3	1070	1070
4	1160	1160
5	1280	1270
6	1470	1480

Plan view of calibration area - Lines 1 and 2

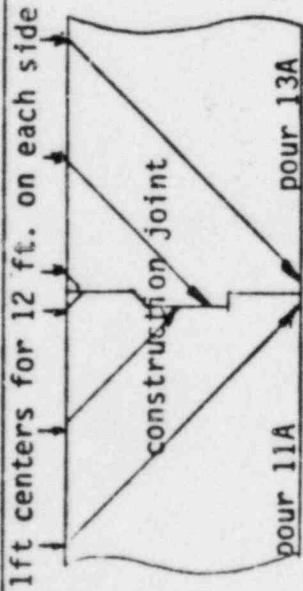


367

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

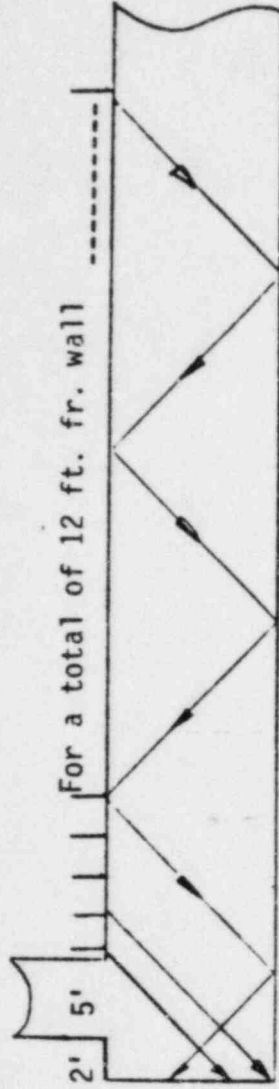
CALIBRATION OF 45° TRANSDUCER

DATE: 7-18-84



Pour 11A to 13A Pour 13A to 11A

1	107	1	108
2	212	2	220
3	310	3	315
4	430 R	4	450
5	470 R	5	600 R
6	540 R	6	705 R
7	650 R	7	810 R
8	760	8	840
9	960	9	970
10	1060	10	1040
11	1170	11	1180
12	1280	12	1260

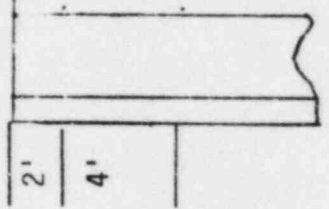


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	840	820
2	935	940
3	1060	1050
4	1170	1160
5	1290	1280
6	1470	1480

Plan view of calibration area - Lines 1 and 2



Line No. 1

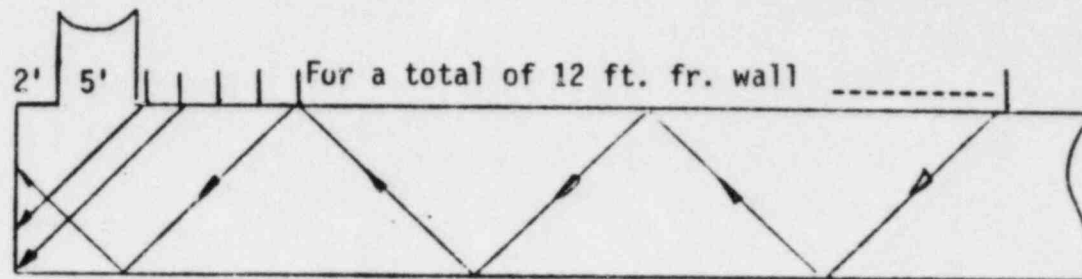
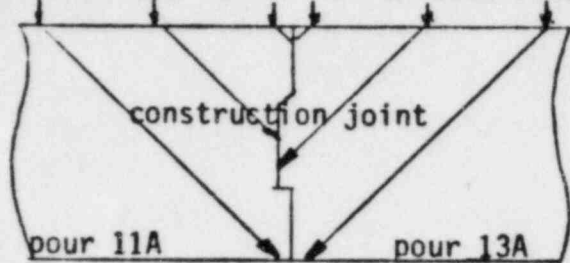
Line No. 2

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

DATE: 7-19-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

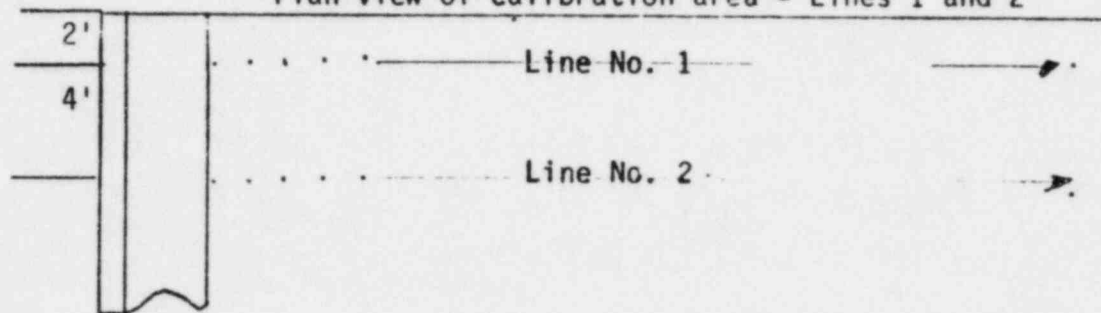
1	110	1	105
2	212	2	214
3	330	3	335
4	420 R	4	430
5	470 R	5	600 R
6	540 R	6	720 R
7	650 R	7	810 R
8	760	8	840
9	950	9	960
10	1060	10	1040
11	1170	11	1160
12	1280	12	1270

Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	830	810
2	930	910
3	1060	1040
4	1180	1180
5	1270	1270
6	1460	1470

Plan view of calibration area - Lines 1 and 2

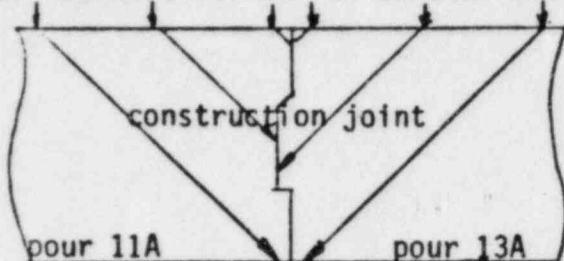


MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

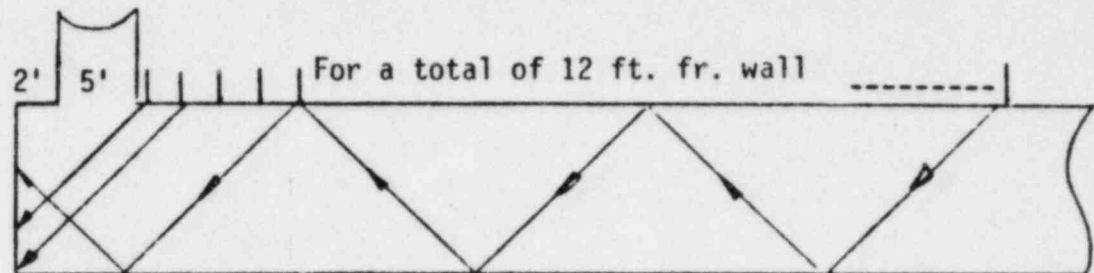
DATE: 7-20-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

1	104	1	109
2	214	2	214
3	330	3	340
4	430 R	4	440
5	460 R	5	510 R
6	540 R	6	720 R
7	650 R	7	810 R
8	760	8	840
9	940	9	950
10	1160	10	1170
11	1170	11	1170
12	1280	12	1290

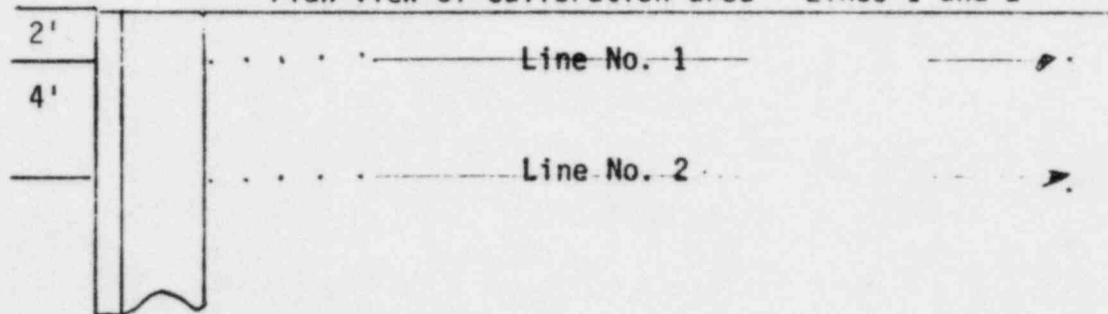


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	840	820
2	930	910
3	1060	1040
4	1170	1180
5	1270	1280
6	1460	1470

Plan view of calibration area - Lines 1 and 2

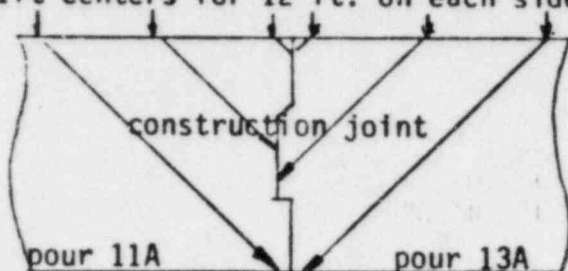


MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

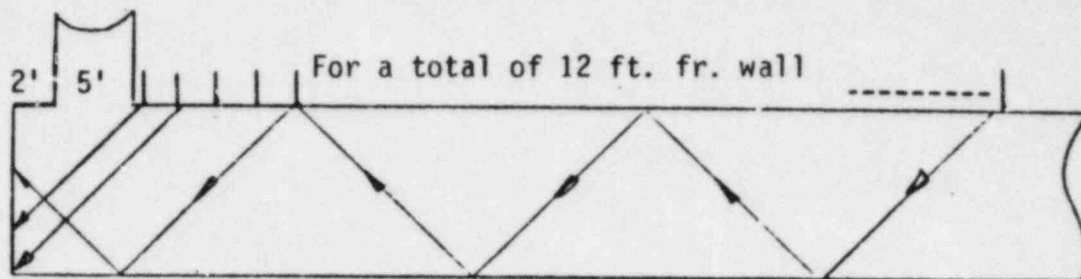
DATE: 7-23-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

1	110	1	107
2	215	2	217
3	330	3	335
4	420 R	4	425
5	460 R	5	610 R
6	540 R	6	710 R
7	650 R	7	810 R
8	760	8	840
9	950	9	960
10	1050	10	1040
11	1170	11	1180
12	1270	12	1280

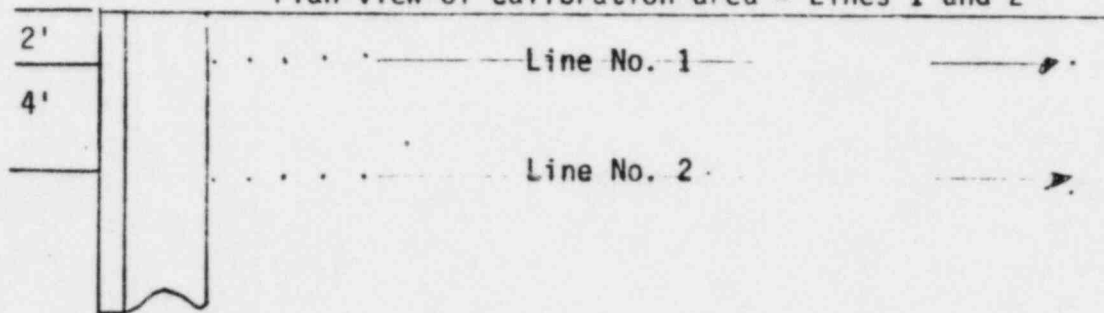


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	840	830
2	930	950
3	1060	1040
4	1170	1180
5	1280	1290
6	1460	1470

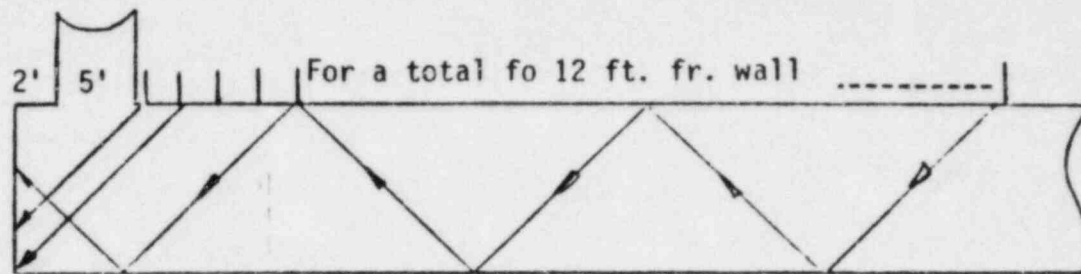
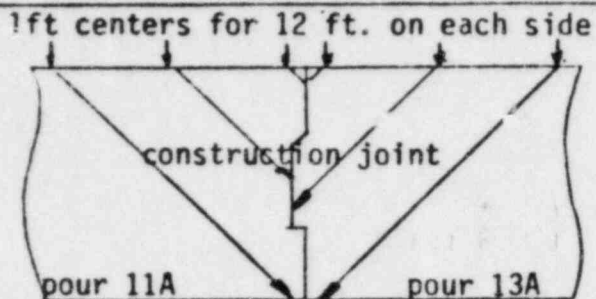
Plan view of calibration area - Lines 1 and 2



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

DATE: 7-24-84



Pour 11A to 13A Pour 13A to 11A

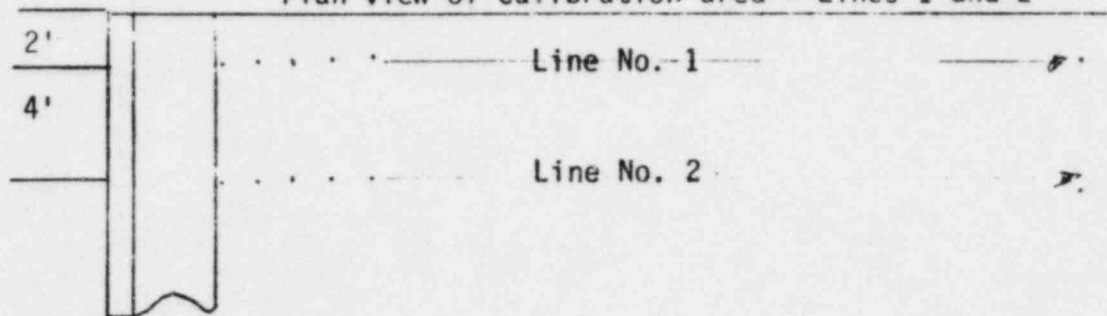
1	110	1	105
2	215	2	210
3	330	3	340
4	430 R	4	450
5	460 R	5	615 R
6	540 R	6	710 R
7	650 R	7	820 R
8	760	8	840
9	910	9	920
10	1040	10	1020
11	1120	11	1140
12	1210	12	1220

Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	830	820
2	940	950
3	1040	1040
4	1150	1160
5	1270	1270
6	1460	1470

Plan view of calibration area - Lines 1 and 2



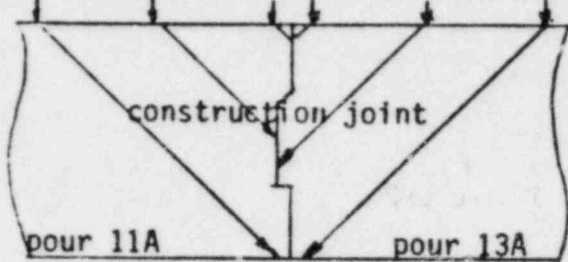
372

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

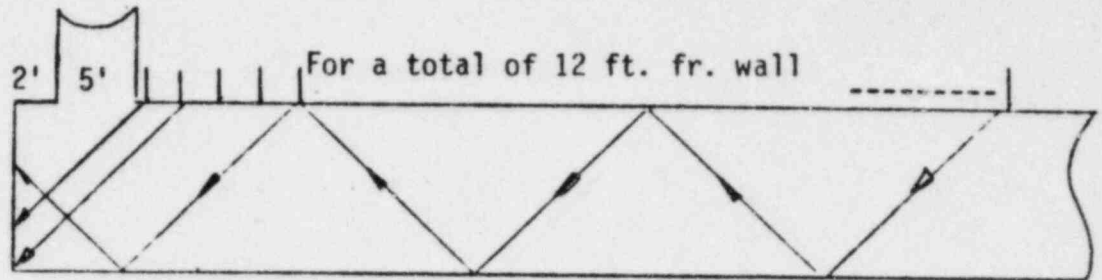
DATE: 7-25-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

1	110	1	110
2	215	2	205
3	320	3	310
4	440 R	4	430
5	450 R	5	615 R
6	540 R	6	710 R
7	650 R	7	830 R
8	870	8	845
9	930	9	920
10	1040	10	1030
11	1140	11	1140
12	1250	12	1240

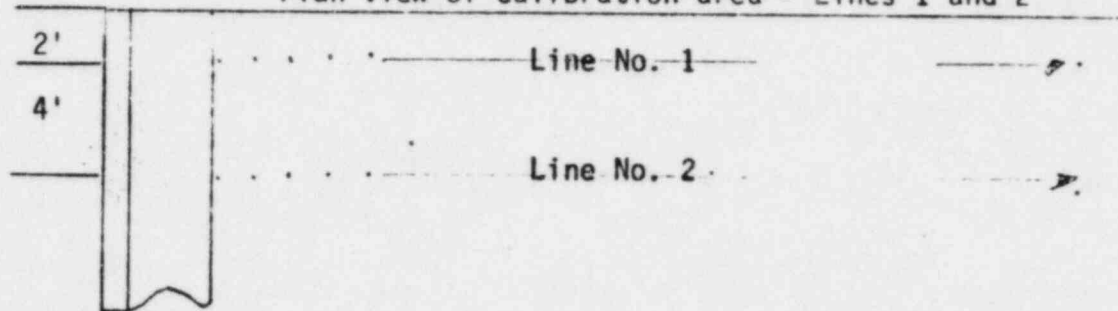


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	830	830
2	940	940
3	1040	1030
4	1150	1150
5	1270	1260
6	1470	1460

Plan view of calibration area - Lines 1 and 2

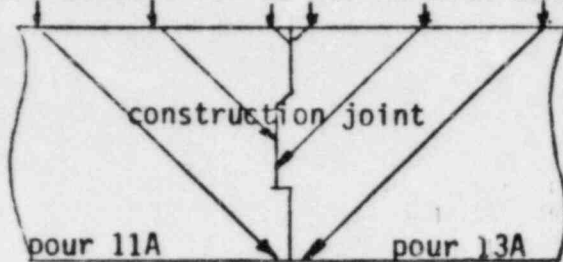


MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

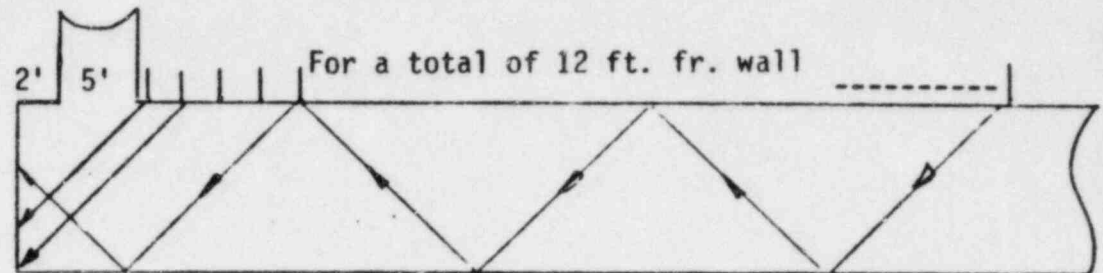
DATE: 7-26-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

1	107	1	110
2	205	2	207
3	315	3	318
4	420 R	4	440
5	450 R	5	600 R
6	540 R	6	690 R
7	650 R	7	830 R
8	760	8	840
9	980	9	970
10	1040	10	1040
11	1180	11	1180
12	1270	12	1290

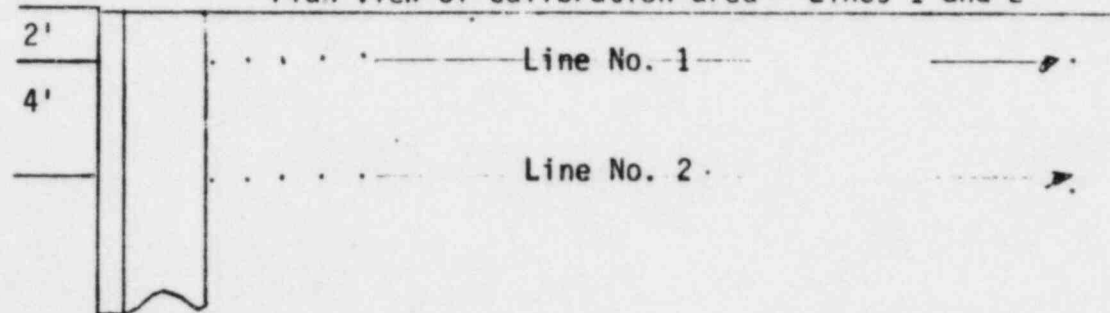


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	820	840
2	960	960
3	1060	1070
4	1170	1140
5	1280	1270
6	1480	1480

Plan view of calibration area - Lines 1 and 2

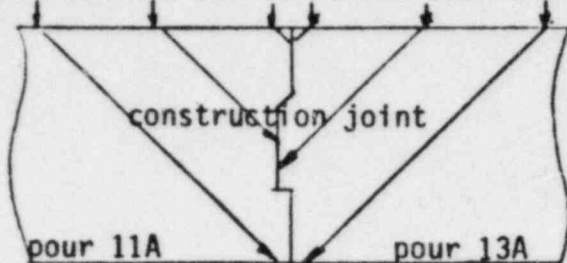


MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

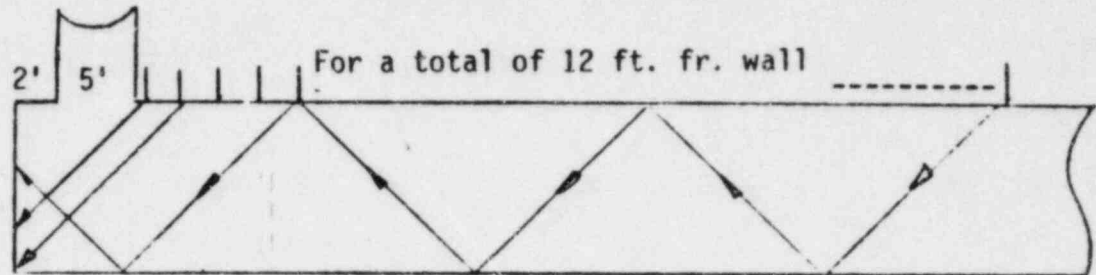
DATE: 7-27-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

1	107	1	108
2	213	2	220
3	325	3	340
4	430 R	4	440
5	460 R	5	610 R
6	540 R	6	705 R
7	650 R	7	815 R
8	760	8	870
9	970	9	980
10	1030	10	1000
11	1170	11	1140
12	1290	12	1260

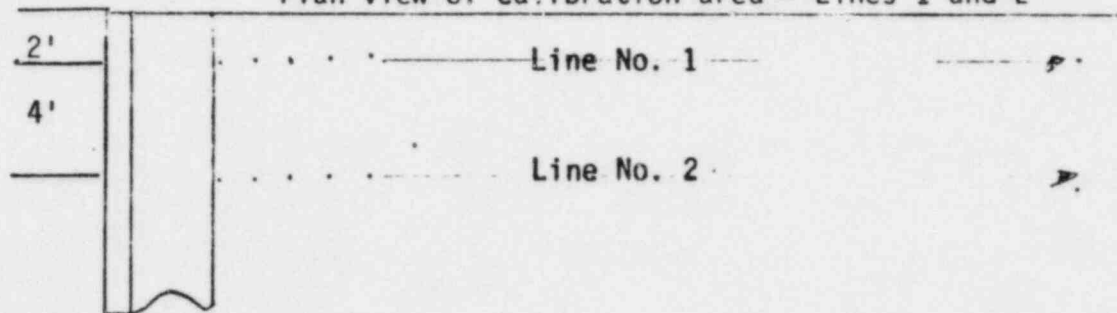


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	840	830
2	960	980
3	1050	1040
4	1170	1180
5	1290	1290
6	1480	1470

Plan view of calibration area - Lines 1 and 2

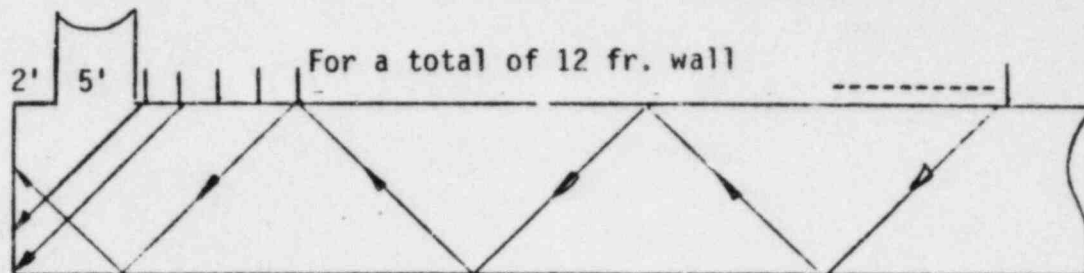
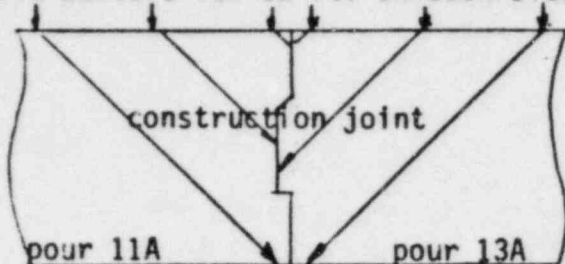


MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

DATE: 7-30-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

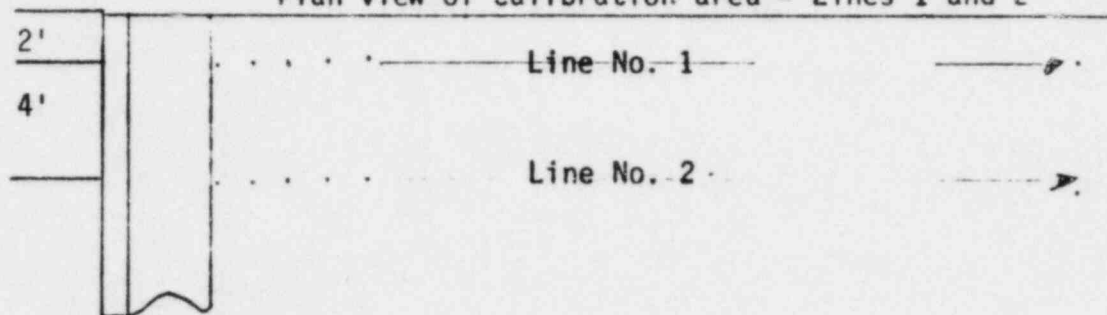
1	106 - 0	1	106 - 0
2	214 - 0	2	217 - 0
3	318 - 0	3	319 - 0
4	427 - R	4	430 - 0
5	460 - R	5	610 - R
6	540 - R	6	710 - R
7	650 - R	7	810 - R
8	760 - 0	8	860 - 0
9	960 - 0	9	964 - 0
10	1070 - R	10	1080 - 0
11	1170 - 0	11	1190 - 0
12	1270 - 0	12	1290 - 0

Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	840	840
2	960	960
3	1050	1050
4	1160	1160
5	1290	1270
6	1470	1480

Plan view of calibration area - Lines 1 and 2

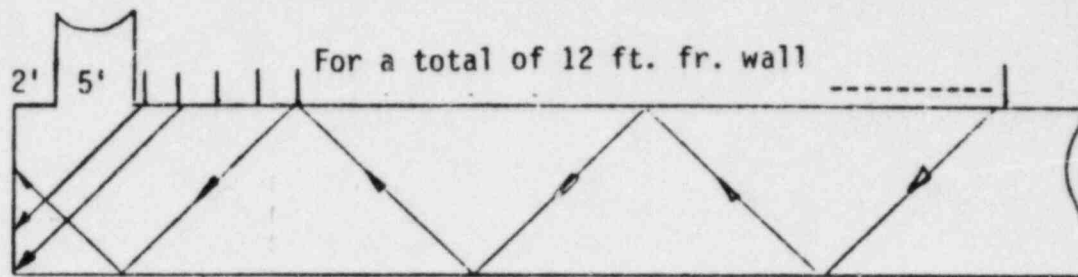
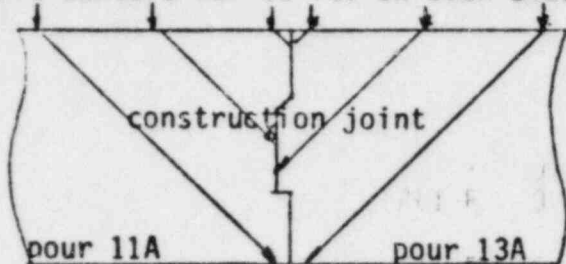


MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

DATE: 8-2-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

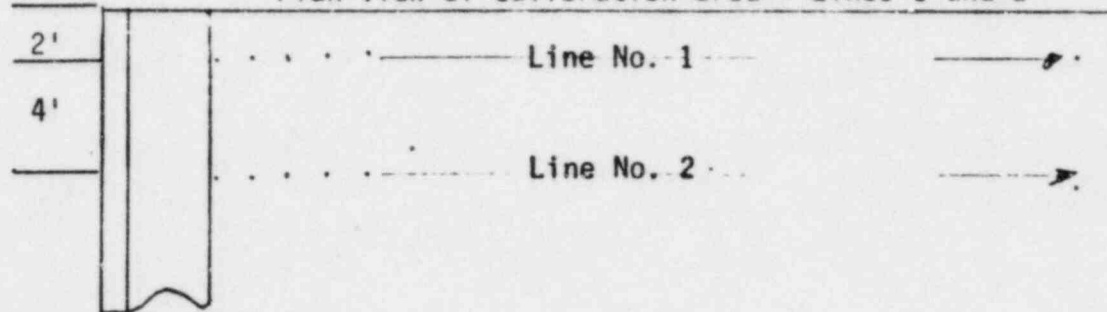
1	109	1	107
2	217	2	214
3	326	3	320
4	430 R	4	434
5	460 R	5	610 R
6	540 R	6	720 R
7	650 R	7	800 R
8	760	8	840
9	960	9	954
10	1040	10	1030
11	1290	11	1260
12		12	

Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	820	830
2	960	950
3	1050	1040
4	1140	1150
5	1270	1280
6	1470	1480

Plan view of calibration area - Lines 1 and 2



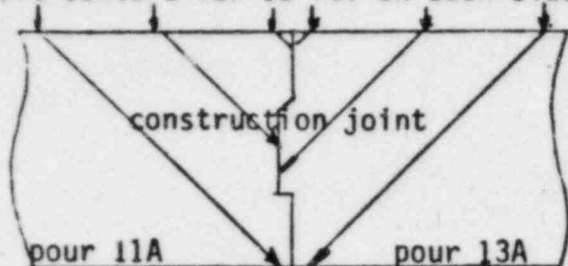
377

MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

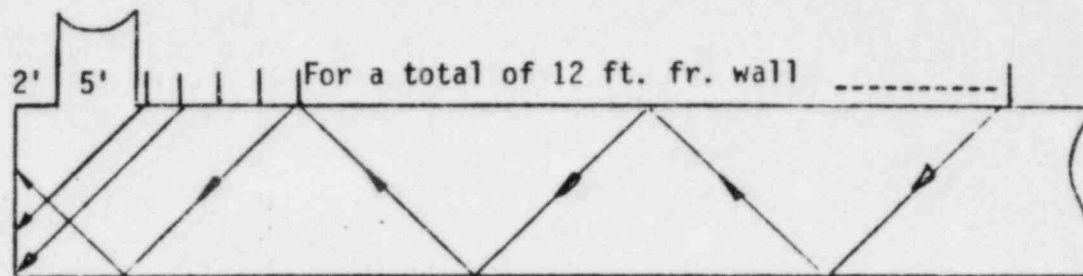
DATE: 8-3-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

1	100	1	98
2	213	2	212
3	320	3	315
4	400 R	4	440
5	460 R	5	605 R
6	540 R	6	695 R
7	650 R	7	815 R
8	760	8	840
9	940	9	950
10	1020	10	1020
11	1140	11	1140
12	1260	12	1290

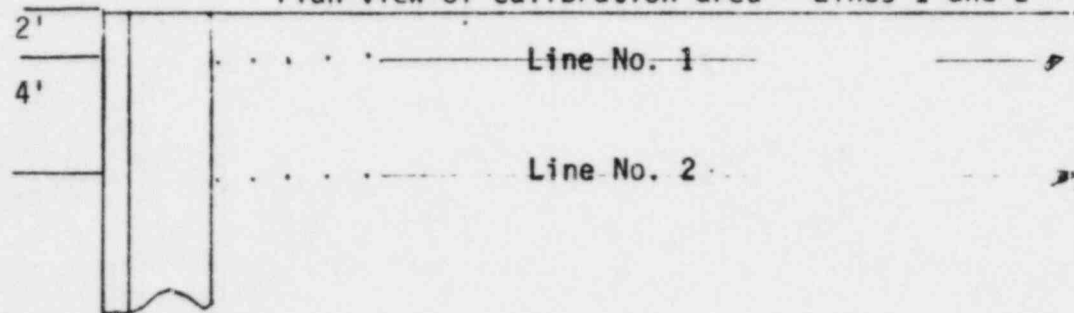


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	820	810
2	960	920
3	1050	1020
4	1140	1150
5	1270	1290
6	1460	1470

Plan view of calibration area - Lines 1 and 2



MUENOW AND ASSOCIATES, INC. CHARLOTTE, NORTH CAROLINA
 CALIBRATION TEST PROCEDURE PERFORMED DAILY PRIOR TO TESTING PROGRAM
 LOUISIANA POWER AND LIGHT WATERFORD NO. 3
 NONDESTRUCTIVE TEST EVALUATION OF BASE MAT CONCRETE FOR CRACK DEPTH AND ORIENTATION

CALIBRATION OF 45° TRANSDUCER

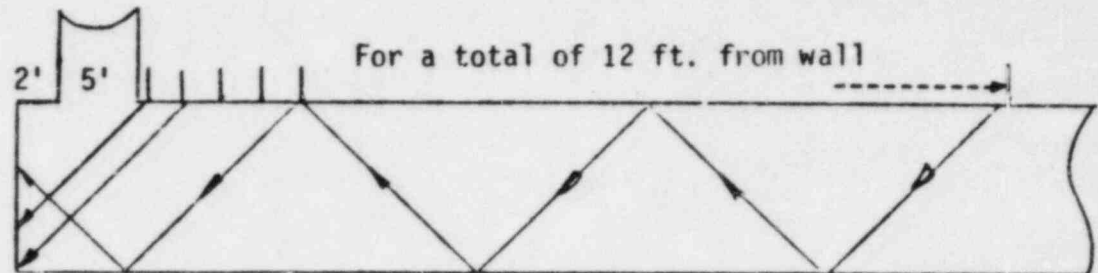
DATE: 8-8-84

1ft centers for 12 ft. on each side



Pour 11A to 13A Pour 13A to 11A

1	110	1	110
2	217	2	213
3	326	3	320
4	430 R	4	436
5	460 R	5	600 R
6	540 R	6	700 R
7	650 R	7	830 R
8	760	8	840
9	950	9	960
10	1050	10	1030
11	1160	11	1140
12	1270	12	1290

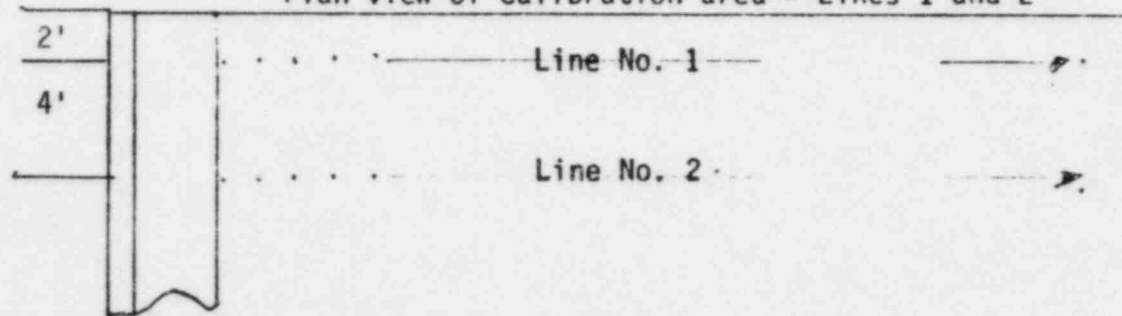


Line No 1

Line No. 2

Test No.	Time to reflector msec	Time to reflector msec.
1	800	810
2	920	910
3	1050	1040
4	1140	1140
5	1270	1280
6	1470	1460

Plan view of calibration area - Lines 1 and 2



379

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR.
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 · (704) 542-2223

APPENDIX NO. 4

RESUME OF EXPERIENCE AND
QUALIFICATIONS FOR MUENOW AND ASSOCIATES, INC.

RICHARD A. MUENOW, P.E.

Muenow and Associates, Inc.

MATERIALS AND NONDESTRUCTIVE TESTING
3940 HUNTCLIFF DR
CHARLOTTE, NORTH CAROLINA 28211
(704) 377-4041 - (704) 542 2223

NAME: Richard Alan Muenow

ADDRESS: Muenow and Associates Inc.
1733 East 7th Street
Charlotte, N. C. 28204

TELEPHONE: 704-377-4042

EDUCATION: Lane Technical High School, Chicago, Illinois 1949
University of Illinois, Champaign, Illinois 1954
B.S. Civil/Geological Engineering

PROFESSIONAL EXPERIENCE:

Pan Am Exploration Co., Shreveport, La. 4 yrs.
Portland Cement Association, Skokie, Ill. 9 yrs.
Law Engineering, Atlanta, Ga. 8 yrs.
Muenow and Associates, Charlotte, N.C. 6 yrs.

GENERAL EXPERIENCE:

Complete responsibility for the administrative, marketing and technical resources concerned with structural evaluations, client contact and project management. Twenty seven years of dealing with structural and material problems relative to their successful completion and service life.

SPECIFIC NUCLEAR EXPERIENCE:

Structural evaluations and recommended repair procedures for the following facilities:

1. Three Mile Island Unit 1 - Ring Beam.
2. Peach Bottom Units 2 and 3 - Foundation Slab.
3. Salem Unit 1 - Containment Wall.
4. Perry Unit 1 - Turbine Bldg.
Auxiliary Bldg. Foundation.
5. Palisades - Containment Walls.
6. Wolf Creek - Containment Walls.
7. Copper Nuclear - Foundation
Containment Walls
Turbine Pedestal
Auxiliary Bldg. Foundation
8. Prairie Island - Fire Damage to Pedestal
9. Marble Hill - Containment Wall.
Turbine Pedestal.
Auxiliary Bldg. Foundation.
Radiation Waste Storage.
10. Brunswick - Containment Walls.
Turbine Pedestal.

11. Oconee - Containment Wall
Dome Concrete
12. Turkey Point - Containment Walls.
Dome Concrete
Foundation.
13. Crystal River - Containment Wall.
Dome Concrete.
14. St. Lucie - Containment Walls.
Auxiliary Bldg.
Dome Concrete.
15. Edwin Hatch - Auxiliary Bldg.
Turbine Pedestal
16. V. C. Sumner - Containment Wall.
17. Browns Ferry - Fire Damage.
18. Surry - Auxiliary Bldg.
19. South Texas - Containment Wall.
20. Comanche Peak - Containment Wall.
Dome Concrete.
Radiation Waste Pool.
21. Waterford - Foundation.
Auxiliary Bldg.
Ring Beam.
Dome Concrete.
22. Grand Gulf - Entire Cooling Tower.
23. Calvert Cliffs - Ring Beam.
Containment Wall.
Dome Concrete.
24. Shearon Harris - Intake Structure.
Containment Walls.
25. WPPSS Unit 2 - Containment Walls.
26. WPPSS Unit 4 - Containment Walls.
Biological shield Wall.
27. Midland - Containment Walls.
28. Callaway - Dome Concrete.
29. River Bend - Intake Structure.
Foundation.
30. Trojan - Auxiliary Bldg.
31. Handford Reservation - 4 Buildings Totally Evaluated.
32. Liner Accelerator - Total Evaluation of Race Track.
33. Princeton Fusion Facility - Foundation.

PATENTS:

Image Converter with Ultrasound #3431462 3/69
Concrete Thickness Equipment #3504532 4/70

PUBLICATIONS:

39 Technical publications all of which are concerned with nondestructive testing of concrete and composite structure.

TECHNICAL ORGANIZATION MEMBERSHIPS:

1. American Concrete Institute (ACI)
Committees 437 and 358

2. American Society for Testing and Materials (ASTM)
Committees C-9 and E-7
3. National Society of Professional Engineers (NSPE)
Committees P.E. in Construction.
4. RILEM (International Union of Testing and Research Laboratories
for Materials and Structures)
Committee - Nondestructive Tests.

REGISTRATION:

State of California #QU 1864

STANDA-
FORM (SF)
254

Architect-Engineer
and Related Services
Questionnaire

1. Firm Name / Business Address:

MUENOW AND ASSOCIATES, INC.
1733 EAST 7th. STREET
CHARLOTTE, NORTH CAROLINA 28204

1a. Submittal is for: Parent Company Branch Office

2. Year Present Firm
Established:
1972

3. Date Prepared:
4-3-84

4. Type of Ownership:

4a. Minority Owned yes no

5. Name of Parent Company, if any:

NONE

5a. Former Firm Name(s), if any, and Year(s) Established:

NONE

6. Names of not more than Two Principals to Contact: Title / Telephone

- 1) Richard Muenow - President - 704 377 4042
- 2) Lorie Muenow - Sec. / Treas. - 704 377 4041

7. Present Offices: City / State / Telephone / No. Personnel Each Office

7a. Total Personnel 22

Charlotte, N.C. 704 377 4042 12
Charleston, S.C. 803 723 7866 6
Chicago, Ill. 312 537 0855 4

8. Personnel by Discipline:

- | | | |
|----------------------------------|-------------------------------|-------------------------------|
| <u>2</u> Administrative | ___ Electrical Engineers | ___ Oceanographers |
| ___ Architects | ___ Estimators | ___ Planners: Urban/Regional |
| ___ Chemical Engineers | <u>3</u> Geologists | ___ Sanitary Engineers |
| <u>10</u> Civil Engineers | ___ Hydrologists | <u>1</u> Soils Engineers |
| <u>4</u> Construction Inspectors | ___ Interior Designers | ___ Specification Writers |
| ___ Draftsmen | ___ Landscape Architects | <u>1</u> Structural Engineers |
| ___ Ecologists | <u>1</u> Mechanical Engineers | ___ Surveyors |
| ___ Economists | ___ Mining Engineers | ___ Transportation Engineers |

9. Summary of Professional Services Fees

Received: (insert index number)

Last 5 Years (most recent year first)

	19 83	19 82	19 81	19 80	19 79
Direct Federal contract work, including overseas	1	1	2	1	-
All other domestic work	4	3	3	3	2
All other foreign work*	1	2	2	1	1

*Firms interested in foreign work, but without such experience, check here:

Ranges of Professional Services Fees

- 1. Less than \$100,000
- 2. \$100,000 to \$250,000
- 3. \$250,000 to \$500,000
- 4. \$500,000 to \$1 million
- 5. \$1 million to \$2 million
- 6. \$2 million to \$5 million
- 7. \$5 million to \$10 million
- 8. \$10 million or greater

10. Profile of Firm's Project Experience, Last 5 Years

Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)
1) 089	53	2508	11)			21)		
2)			12)			22)		
3)			13)			23)		
4)			14)			24)		
5)			15)			25)		
6)			16)			26)		
7)			17)			27)		
8)			18)			28)		
9)			19)			29)		
10)			20)			30)		

11. Project Examples, Last 5 Years

Profile Code	"P", "C", "JV", or "IE"	Project Name and Location	Owner Name and Address	Cost of Work (in thousands)	Completion Date (Actual or Estimated)
089	P	¹ Dallas Main Ctr. Dallas TX.	Shell Oil Co. Evaluation of foundation and repair of concrete	10	83
089	JV	² Frostburg Dam Frostburg Maryland	City of Frostburg Evaluation arch type dam	14	83
089	P	³ Coal Silo Leslie, KY	Leslie Coal Mine Co. for the Factory Mutual Engr. Co. Structural evaluation of failure	29	83
089	P	⁴ Port Jefferson Pwr. Plt. Port Jefferson NY	LILCO Hicksville NY Evaluation of concrete in 500' chimney for wall thickness	59	83
089	P	⁵ 2 Illinois Ctr. Chicago, Illinois	Metrop. Structures Chicago, Ill. Evaluation of beam and column concrete for delaminations	10	83
089	JV	⁶ F Building SRP Augusta, GA.	Dept. of Energy Aiken SC. Evaluation of damaged crane rail	10	Cont.
089	P	⁷ Constantine Dam Constantine, Michigan	Michigan Pwr. Co. Grand Rapids MI. Evaluation of dam and foundation concrete and repair method	8	83

10. Profile of Firm's Project Experience, Last 5 Years

Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)
1)			11)			21)		
2)			12)			22)		
3)			13)			23)		
4)			14)			24)		
5)			15)			25)		
6)			16)			26)		
7)			17)			27)		
8)			18)			28)		
9)			19)			29)		
10)			20)			30)		

11. Project Examples, Last 5 Years

Profile Code	"P", "C", "JV", or "IE"	Project Name and Location	Owner Name and Address	Cost of Work (in thousands)	Completion Date (Actual or Estimated)
089	P	¹ Keystone Steel Co. Peoria, Illinois	Keystone Steel Co. Evaluation of concrete foundation and pouring stand	8	82
089	P	² Public Service of NM Farmington NM	PSNM Albq. NM Evaluation of SO ₄ tanks for R/F and concrete deterioration	12	Cont.
089	JV	³ IBM Farmingdale NY	IBM Farmingdale NY Evaluation of concrete tank wall thickness and insitu condition	4	82
089	JV	⁴ Wall Street Station NYC, NY	NYCTA NYC Evaluation of track foundation concrete	7	83
089	P	⁵ Accelerator Addition Batavia, Illinois	Dept. of Energy WDC Evaluation of foundation concrete and recommend repair	15	83
089	P	⁶ East Huntington Bridge Huntington, WVA	WVA Dept. of Highways Evaluation of plastic concrete during placement operations and repair of cracking	200	Cont.
089	JV	⁷ Philadelphia RT	Philadelphia RT, PA Evaluate .5 miles of overhead structure and recommend repair	5	83

10. Profile of Firm's Project Experience, Last 5 Years

Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)
1)			11)			21)		
2)			12)			22)		
3)			13)			23)		
4)			14)			24)		
5)			15)			25)		
6)			16)			26)		
7)			17)			27)		
8)			18)			28)		
9)			19)			29)		
10)			20)			30)		

11. Project Examples, Last 5 Years

Profile Code	"P", "C", "JV", or "IE"	Project Name and Location	Owner Name and Address	Cost of Work (in thousands)	Completion Date (Actual or Estimated)
089	P	¹ ARCO Refinery Baytown TX.	ARCO Dallas TX Evaluate and supervise concrete of compressor pedestal	64	82
089	P	² MX Missile Silo Vandenburg AFB, CA.	USAF Vandenburg AFB Evaluate concrete in silo behind steel liner plate	12	83
089	JV	³ Bow Valley Complex Calgary, Canada	Bow Valley Management Co. Evaluation of building facade and repair system	14	83
089	JV	⁴ Crystal Dam Chey. Wyom.	Chey. Wyom. Water Dept. Evaluation of arch type dam	15	83
089	P	⁵ Conesville Power Plant Conesville OH.	Ohio Power Co. Columbus, OH. Evaluation of grout and gunite repair	8	82
089	P	⁶ Delaware Dam Columbus, OH	USCE Huntington WVA Evaluation of damage to wing walls for repair estimate	9	82
089	P	⁷ PUREX Building Hanford, WA	Dept. of Energy WDC Evaluation of concrete in high radiation area	43	82

10 Profile's Project Experience, Last 5 Years								
Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)	Profile Code	Number of Projects	Total Gross Fees (in thousands)
1)			11)			21)		
2)			12)			22)		
3)			13)			23)		
4)			14)			24)		
5)			15)			25)		
6)			16)			26)		
7)			17)			27)		
8)			18)			28)		
9)			19)			29)		
10)			20)			30)		

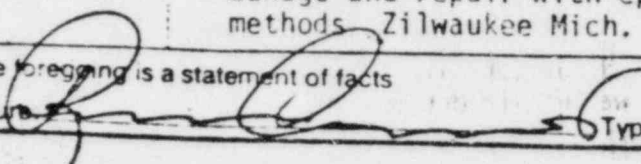
11. Project Examples, Last 5 Years

Profile Code	"P", "C", "JV", or "IE"	Project Name and Location	Owner Name and Address	Cost of Work (in thousands)	Completion Date (Actual or Estimated)
089	P	1 Boston Subway Structural Evaluation Boston, Mass.	Boston Rapid Transit Authority Boston, Mass.	50	81
089	P	2 Racine Dam Damage Inspection and Repair Racine, Ohio	Racine City Electric Coop. Racine, Ohio	37	80
089	J	3 Callaway Nuclear Plant Dome Evaluation Columbia, Mo.	St. Louis Electric St. Louis, Mo.	43	81
089	P	4 Sumner Nuclear Plant Containment Evaluation Sumner, S. C.	SCE & P Columbia, S. C.	80	79
089	C	5 Baltimore Subway Structural Evaluation Balitmore, Md.	MTA Baltimore, Md.	90	81
089	P	6 Ashland Chemical Co. Fire Damage Evaluation Ashland, Ky.	Ashland Oil Houston, Texas	10	80
089	P	7 Hanford Works Structural Evaluation of Damaged Bldgs. Hanford, Wa.	U. S. Dept. of Energy Washington, D. C.	150	Cont.

089		⁸ Marblehill Nuclear Evaluation of Entire Facility New Hope, Indiana	PSI Plainfield, Indiana	240	80
089	JV	⁹ Silo Explosion Evaluation Evaluate and Repair Spec's Galveston, Texas	Cook Elevators Kansas City, Ka.	190	79
089	JV	¹⁰ Silo Explosion Evaluation Evaluate and Repair Spec's Westwego, La.	Westwego Coop. Westwego, La.	50	78
089	P	¹¹ Atlanta Rapid Transit Bridge Evaluation and Repair Atlanta, Ga.	Marta Atlanta, Ga.	15	81
089	P	¹² Grand Gulf Nuclear Plant Evaluate Entire Cooling Tower Port Gibson, Miss.	Miss. P & L Jackson, Miss.	340	80
089	P	¹³ George Hasconie Convention Center Evaluate and Repair Roof Failure San Francisco, Ca.	City of San Francisco San Francisco, Ca.	60	Cont. 82
089	JV	¹⁴ I 696 Bridge Failure Evaluate & Repair Detroit, Mich.	Michigan DOT Lansing, Michigan	30	81
089	JV	¹⁵ Sunshine Skyway Bridge Evaluate Concrete and Soil Foundation Tampa, Fla.	Florida DOT Tallahassee, Fla.	175	80
089	P	¹⁶ Water Treatment Plant Evaluation of Cracks with Repair Procedure - Falmouth, Va.	Water Commission Falmouth, Va.	10	79
089	P	¹⁷ Hyatt House Analysis of Failure Kansa City, Ka.	Hyatt House Hallmark Cards Kansas City, Ka.	45	Cont.
089	P	¹⁸ MX Missile Silo Evaluation of Damage Spokane, Wa.	R. A. Hanson Co. Spokane, Wa.	190	Cont.
089	P	¹⁹ Compressor Pedestal Damage Evaluation & Repair	Arco Oil Co. Houston, Texas	100	81

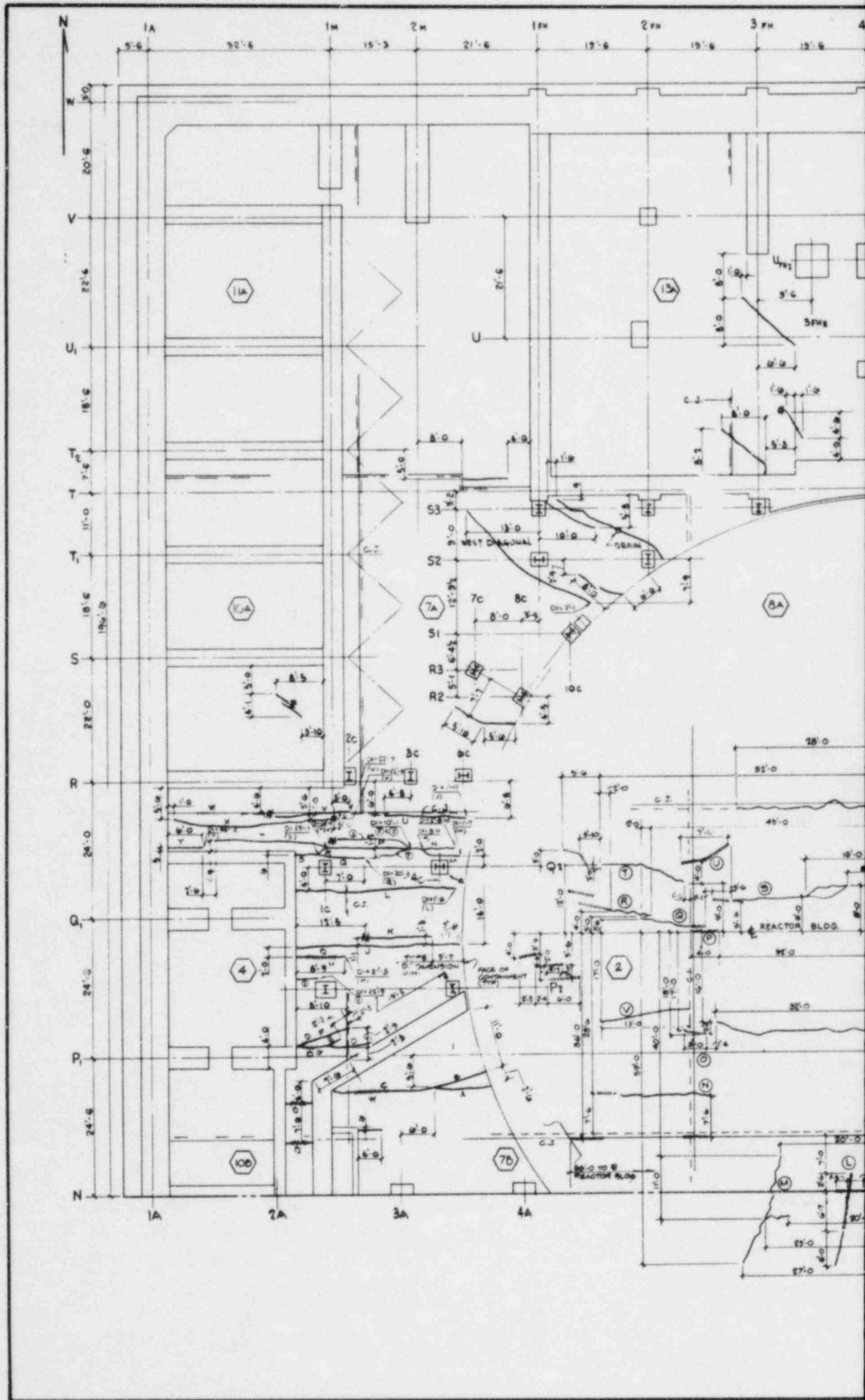
089		20 Campbell Soup Floor Failure Evaluation & Repair Newton, N. C.	Campbell Soup Harrisburg, Pa.	5	81
089	JV	21 Paper Mill - Coosa Pines Foundation Failure Coosa Pines, Al.	Kleenex Co. Coosa Pines	4	81
089	JV	22 Marriott Hotel Garage Failure - Evaluation & Repair Salt Lake City, Utah	Marriott Hotels Arlington, Va.	49	81 Cont.
089	JV	23 Georgia Ports Slab Foundation Failure & Repair Savannah, Ga.	Georgia Ports Authority Atlanta, Ga.	10	81
089	P	24 Fossil Fuel Power Plant San Juan - Foundation	Public Service of N. M. Albuquerque N.M.	24	79
089	JV	25 West Virginia Toll Road Evaluation of 30 miles	West Virginia DOT Charleston WVA	200	Cont.
089	JV	26 US Naval Engr. Center Beam and column failure Evaluate and repair	US Navy Engr. Center Washington DC	5	81
089	P	27 Delaware Dam Depth of damage survey and repair Delaware OH	US Corps of Engrs. Huntington District Huntington WVA	10	Cont.
089	JV	28 Chicago Deep Tunnel Project Shaft evaluation and repair Chicago Illinois	Metro Chicago Sanitary Dist. Chicago, Illinois	90	81
089	P	29 WT Love Dam Evaluation of foundation and concrete in dam Portsmouth OH	Portsmouth Electric Coop Portsmouth OH	80	Cont.
089	P	30 Zilwaukee Bridge Evaluation of damage and repair with epoxy injection methods Zilwaukee Mich.	Michigan DOT Lansing Mich.	40	Cont.

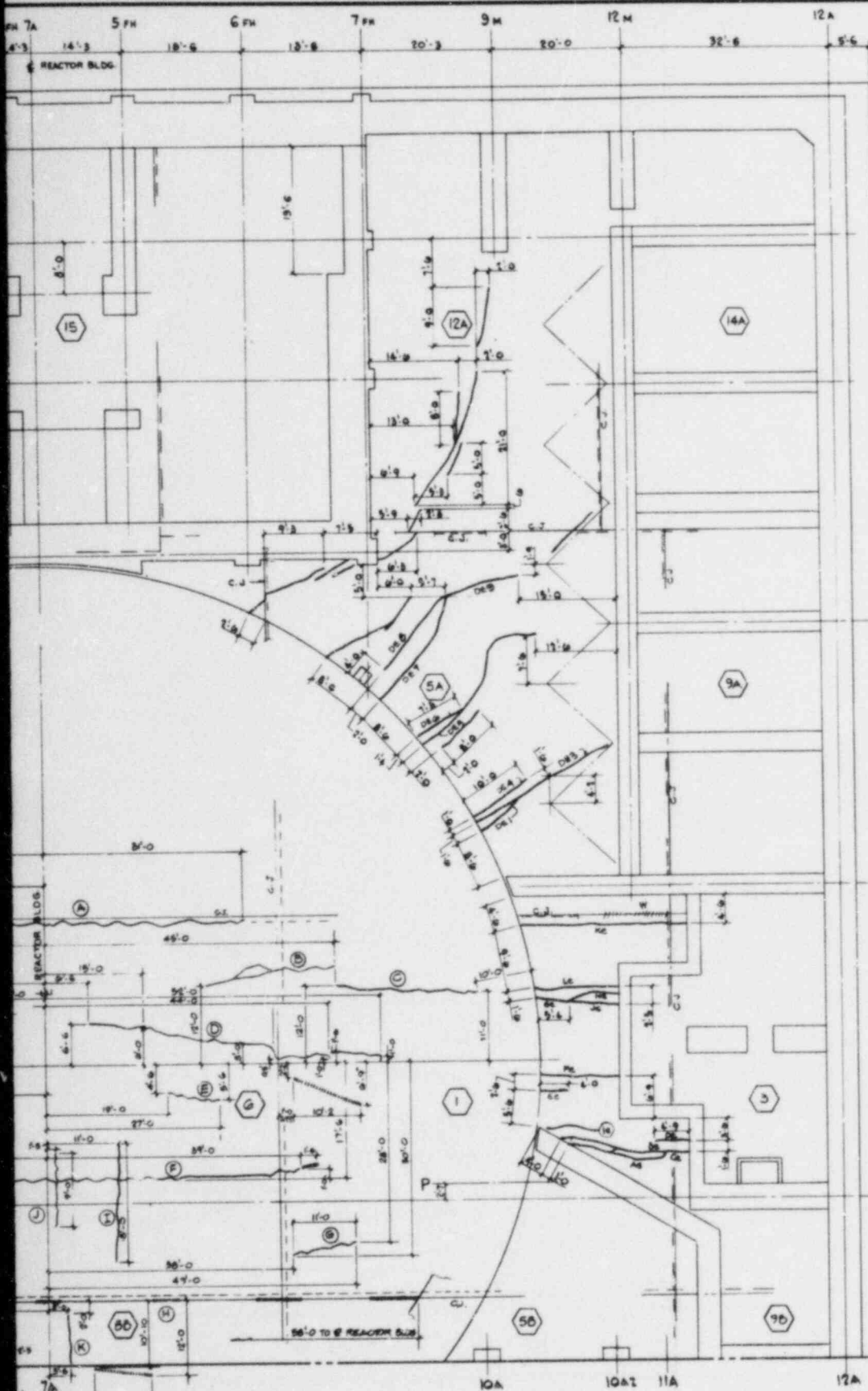
12. The foregoing is a statement of facts

Signature:  Typed Name and Title:

RICHARD A. MUENOW PRESIDENT

Date: 4-3-84





LEGEND

① CONSTRUCTION/SLAB POUR INDEX NUMBER

TI
APERTURE
CARD

Also Available On
Aperture Card

PLAN, ELEV -35.00'

<p>LOUISIANA POWER & LIGHT CO. Waterford Steam Electric Station</p>
<p>BASE MAT CRACK MAP FIGURE 16</p>

8410300215-01